HUMAN SECURITY IN WORLD AFFAIRS: PROBLEMS AND OPPORTUNITIES



Alexander Lautensach and Sabina Lautensach
BC Campus

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Human Security in World Affairs: Problems and Opportunities

Alexander Lautensach and Sabina Lautensach

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The attached style guide was used in the copy editing of this book: Style Sheet for Human Security in World Affairs, 2nd ed [Word file].

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1: Accessibility Statement

BCcampus Open Education believes that education should be available to everyone,d which means supporting the creation of free, open, and accessible educational resources. We are actively committed to increasing the accessibility and usability of the textbooks and resources we produce.

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  - links, headings, and tables are formatted to work with screen readers
  - images have alt tags
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List of Known Accessibility Issues

Location of issue	Need for improvement	Timeline	Work around

Accessibility standards

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Acknowledgements

Even though we had the first edition to build upon, this second edition turned out a steep learning experience for authors and editors alike. Partly that had resulted from numerous new developments in human security worldwide, but mostly it had to do with the new format of the book. Publishing online sure is different from publishing the old way! Nevertheless, or perhaps consequently, we enjoyed the process tremendously — thanks to the support of everybody involved.

We are greatly indebted to the chapter authors; their diligence and patience in the face of unexpected delays and extra requirements was much appreciated.

The publishing expert from BCcampus, Ms Lauri Aesoph, contributed invaluable support to the process, for which we are extremely grateful. Without her help this project would likely not have gotten off the ground in the first place.

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We are also grateful to the University of Northern British Columbia and to BCcampus for their joint support as co-publishers of this textbook. We thank UNBC's Centre for Teaching, Learning & Technology for supporting the editing with a publication grant, and to Mr Grant Potter for his frequent good advice and encouragement.

In our view, this project has come to exemplify synergy; the total exceeding the sum of its parts – not just in terms of chapter contents but primarily in its awesome team of human collaborators.

Alexander Lautensach & Sabina Lautensach
Editors

3: Preface

Preface to the Second Edition

Dear Reader,

Welcome to this second edition of our textbook on human security!

This book, first published in 2013 by Caesarpress, is an experiment in several respects. To our knowledge, it is still the first and only academic textbook that addresses the subject in its full transdisciplinary range. After consultation with the authors it was decided to make this second edition an openly licensed publication, to ensure equitable access and wide distribution. As the chapters address a diverse range of disciplines and topics, it would have been counterproductive to oblige readers to purchase the entire volume if their interest focuses only on a subset of chapters. Every chapter will still be subject to periodical updating by its author(s), which ensures that up-to-date coverage will continue.

In the wake of the COVID-19 pandemic, interest in human security concerns has expanded, and we trust that this book can address the diverse questions that readers might have – for example: How can this global experience (the first of its kind) be best used to develop better cooperation and coordination regimes among the international community? What are the chances of another pandemic soon? How can developing and developed countries find the best ways to recover from the environmental, health-related, economic and political impacts of COVID-19? What kinds and extents of security can we realistically aim for at this stage? Who are 'we' in terms of individuals, communities, regions, countries and allied groups of countries – and how can we conduct and maintain adequate negotiations on the subject?

Readers will find that the chapters in this book go a long way towards pointing them in productive directions, by providing information and arguments but also by stimulating further questions and productive discussion. If there is one factor that the future of human security most depends on, it is the continuation and expansion of informed, open discussions. Some of the challenges the Anthropocene is posing are likely to severely put into question the security of populations and humanity as a whole, if not in terms of bare survival then certainly as far as the quality of our survival is concerned. Without timely, intense and informed discussions that include all concerned parties in an equitable manner, our chances look to be slim indeed. We hope that this book will contribute in the best ways that an academic text can.

On behalf of the chapter authors, and everybody else who contributed to this project, we welcome you once again!

Enjoy the reading, and be safe,
Alexander K. Lautensach & Sabina W. Lautensach (Editors)
10 June 2020

Preface to the First Edition of *Human Security*

Two decades after human security emerged in the literature and began to inform the political agenda of countries, the people who engage with the topic still tend to be experts with diverse academic backgrounds who share a concern about the well-being of human individuals. They gravitated towards the field autodidactically, exploring relevant aspects and communicating about them with like-minded colleagues. Their diverse disciplinary perspectives range from human ecology to political theory, from cognitive psychology to clinical medicine, from cultural anthropology to international law – to name just a few of the fields represented in this text. In the absence of sufficient venues for cross-disciplinary communication that diversity of backgrounds and plurality of discourses often hinders cooperation among human security analysts and slows their progress in addressing important challenges collaboratively. The various unidisciplinary approaches to human security have also left some important fields under-represented.

Surveying the rapidly expanding literature on human security we are impressed by the abundance of contributions while at the same time feeling apprehensive about how little of that wealth of insights has actually contributed towards improving human security in the real world. We suspect that one reason for the shortfall may lie in theoretical misconceptions about reconciling the concepts of security, development, growth, and sustainability. Again what adds to the problem is that most authors do not address all four of those concepts together, that indeed the four concepts are 'owned' by different fields of specialisation. Another observation that led us towards the concept of this textbook is that to our knowledge no textbook exists that is designed as a resource for teaching about human security in the didactic style of an effective learning aid.

We hope that this book will change all that. At this juncture in history humanity faces new challenges, unprecedented in kind and in magnitude, that jeopardise its security and possibly its continued existence. Earth's policy makers as well as all its citizens need to make informed, responsible decisions that determine the fate of many generations. The more informed those decisions are, the more effective and sustainable the resulting policies can be, and the more secure our collective future can become. Responsible decision-making means that the interests of all affected parties and individuals are taken into account equitably and to the best of our abilities. Irresponsible decisions tend to be contested, misinterpreted, or ignored which ultimately contributes little to people's security.

Education systems around the globe are beginning to grapple with the challenge of empowering young people to make those decisions. Even at the university level, an increasing number and diversity of interdisciplinary programs are changing the profile of graduates from unidisciplinary specialist to multitalented, flexible, concerned generalists – people who share the necessary knowledge, skills and dispositions to make the appropriate kind of difference. This text is designed to help students become that sort of graduate, through the following objectives.

- **Provide students with a transdisciplinary overview of human security issues.** Each chapter in this text is written by a different author or team but focuses on common issues in human security. Some chapters introduce the student to an aspect of human security through the lens of a single discipline. Other chapters summarise diverse viewpoints and distil from them analytical conclusions that rely on a plurality of disciplines. As a result, the student develops a broad familiarity with the most pressing challenges to human security through a kaleidoscope of perspectives and ways of knowing.
- **Introduce students to diverse conceptual models and analytical approaches about human security.** Through the wide diversity of subject disciplines represented in the different chapters the student becomes familiar with, and learns to compare, different ways of thinking about security and different ways of communicating about it. The overall message for the student is twofold: Analysing security challenges productively requires in-depth familiarity with the investigative approaches of more than a single discipline; and producing effective solutions relies on the synergistic application of multiple disciplines that are integrated in a pragmatic and eclectic fashion.
- **Inform students about major sources of human insecurity, both in the present and as part of probable futures.** Comprehensive models of human security indicate that sources of insecurity are located in the sociopolitical, economic, ecological, and health-related aspects of human existence. Students will learn to apply those diverse lenses to some of today's most pressing security concerns, including global poverty, international crime, epidemics and pandemics, peak oil, violent conflict, scarcity of food and fresh water, climate change, and ecosystem deterioration. Established trends will be extrapolated and combined to synthesise probable visions of the future, given the understanding that change is a certainty.At the same time the many unsustainable and unsafe policies and practices that have led to the status quo make directed reforms imperative. Underlying those manifestations of crisis and counterproductive policies the student will recognise the real cause for the security crisis: *Homo sapiens* – our numbers, our behaviour, our thinking, and our values and beliefs.
- **Examine the tension and complementation between the local and global dimensions of human security issues.** Human security focuses on the concerns of the individual human being and of the communities they live in. At the same time, many security challenges as well as workable solutions extend from the local to the global dimensions while their manifestations may vary among those dimensions. With the help of case studies and scenarios students will learn to examine human security issues along that continum and across several orders of magnitude. At the heart of this learning process lies the principle of inclusivity, stating that fair decisions must take into account the interests of all affected parties, both those alive and those yet to be born.
- **Promote creative thinking about strategies to address security challenges.** The transdisciplinary approaches explicated in this text provide the student with the cognitive instrumentarium and the multiplicity of lenses to practice their skills of creative thinking and critical analysis and to apply them to search for causations, strategies, obstacles and solutions. Students will realise that the answer to a problem greatly depends on how the problem is framed and what language it is discussed in. Every piece of discourse contains implicit ideological elements – beliefs, values, ideals, etc. Students who learn to identify, analyse and evaluate such content will be much better prepared for complex decision-making tasks.Yet not all such alternative discourses are equally useful or meritorious; truly creative thinking must include metacognition – thinking about what modes of thinking can lead to us to the most desirable goals in the most productive ways. That reflective process must also extend into ethics to allow the student to distinguish which values, beliefs and ideals are conducive towards promoting human security and which are counterproductive. Only through such metaethical analysis can we transcend the paralysis of moral relativism.

- **Encourage the development of dispositions towards caring about human security and becoming actively involved in its promotion.** Among the reasons why we believe this book will make a difference is that many of its chapters encourage the student to develop a personal disposition towards security issues, to take sides, and to become actively involved in solutions. We take seriously the educator's duty to discuss competing values, attitudes, beliefs and ideals, and to encourage moral reasoning. Without giving the student opportunities to become familiar with and to discuss the moral dimension of academic knowledge it would be disingenuous to expect graduates to make the "right" decisions.

The Need for a Textbook on Human Security

We believe this to be the first book about human security that is specifically designed to be used for teaching. In other words, we endeavoured to structure it according to pedagogical priorities rather than reproduce the format of the standard academic monograph. In the light of the topicality of security issues worldwide we cnsider such a textbook to be long overdue. We also aimed to avoid representing an exclusively North American or European perspective as those already abound in the literature; the chapter authors of this text contribute perspectives from diverse cultures and geographical locations.

We perceive a very presssing need to address the implications of global ecological overshoot for human security. As we explain in the introductory chapter, those implications are largely neglected in the literature on human security, even though environmental security is now well represented. With respect to higher education, the potential benefits of this emphasis seem invaluable in terms of contributing to a transition towards sustainable practices.

Our third reason why we enageged in this project is that the boundaries between global terrorism and counter-terrorism are blurring. Given the might of the global military industrial complexes, it seems uncertain to what extent the threat of violent conflict originates with actual terrrorist groups or so-called rogue nations, and to what extent such threats are confabulated, staged, or exaggerated through the power wielded by influential groups with a vested interest in perpetuating violent countermeasures. When the cold war ended those groups must have regarded the prospect of a peace dividend with some concern and doubtlessly engaged in efforts to promote their distinct interests. No corporation worth its stock would have done otherwise. Yet this probable backstage circumstance highlights a grave threat to human security that is also borne out by some of the scenario studies described in the introduction: the co-opting of security policies and security assessments by corporate actors. This reinforces our preceding argument that traditional security thinking is becoming less and less adequate to address the challenges at hand.

Fourth, and perhaps not unconnected with the developments mentioned above, we observe an increasing number of governments with explicitly neoliberal agenda in developed countries (CAN, UK, NZ), some even with absolute majorities. To us this points to the possibility that the citizenry is increasingly goverened by people who listen to corporations more than they listen to the concerns of average individuals. Recent political developments in Canada at the time of writing clearly support that proposition. This lack of representation is accompanied in many places by increasing taxation or increasing deficits to finance corporate bailouts and incessant wars. The public seems ill prepared to oppose those counterproductive policies or even to recognise the underlying problems. In the absence of strong and independent media, education about human security seems to offer the only effective possibility for addressing those problems in the long term.

We would like to acknowledge the invaluable editorial help of Mr Joel Baerg without whom the manuscript might have languished for an inestimably longer time. We also thank everyone of our authors for their patience, their magnanimous acceptance of numerous editorial requests, and for the quality of their work. The University of Northern British Columbia supported the project with a publication grant for which we are grateful. Last but not least, we thank Ms Katherine Otte of Common Ground Publishers for her kind support and flexibility.

About the Organisation of the Chapters

(For an update on the second edition chapter layout, see This Textbook.)

Each chapter begins with a *summary*, the equivalent of the abstract of a journal article. It is followed by a list of *learning outcomes & big ideas* which inform the reader of the chapter's objectives and suggest to the instructor possible criteria for assessment. The body text of each chapter is organised into numbered subsections to make it easy for the reader to locate specific topics.

At the end of each chapter a list of summary points allows for brief recapitulation and review and connects with the learning outcomes & big ideas specified at the beginning. A list of *extension activities & further research* follows for the benefit of students

and instructors. They provide opportunities and guidance for pursuing important ideas beyond the confines of the chapters. Lastly, after a glossary of *terms and definitions* a list of *further reading* specifies which sources the authors of the chapters consider most beneficial for the reader. The bibliographic references from the chapters were pooled into a cumulative list at the end of the book.

Each chapter has undergone a thorough process of peer review and editing. Nevertheless, as editors we take full responsibility for any errors that may remain.

To the best of our knowledge this is the world's first textbook of human security. We hope that students and instructors will find its use as gratifying as we found its conception.

Best wishes,
Sabina Lautensach & Alexander Lautensach
June 2012

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About the Author

Paul Bellamy, MA

Paul Bellamy is a Research Services Analyst in the New Zealand public sector and has published numerous research papers in this role. He is a former political science lecturer at the University of Canterbury and guest lecturer, and he has undertaken work for Jane's International, Transparency International, and the International Institute for Democracy and Electoral Assistance. Outside of his public sector role he has published primarily in the area of international relations and security. This has included co-leading international studies of security and democracies. Paul is also a member of the editorial board for the *Journal of Human Security* and the editorial committee of the *New Zealand International Review*. Please note that the views he has expressed in his chapter are his alone and not necessarily those of his employer. [Read Paul Bellamy's work in Chapter 5.]

Klaus Bosselmann, PhD

Klaus Bosselmann is Director of the New Zealand Centre for Environmental Law at the University of Auckland Faculty of Law. He is chair of various international professional bodies including the IUCN Commission on Environmental Law Ethics Specialist Group and the Global Ecological Integrity Group. Professor Bosselmann has been an advisor to UNEP, IUCN, the EU and the New Zealand and German governments on legal issues related to hazardous substances, biodiversity, climate change and sustainable development. He has authored or edited 25 books in the area of international environmental law, domestic environmental law and sustainability approaches to law-making and global governance. [Read Klaus Bosselmann's work in Chapter 16.]

Malcolm Brown, PhD

Malcolm Brown retired as a senior lecturer in social science at the University of Southern Queensland in Toowoomba, Australia, having previously worked in the UK, France and NZ. He grew up in the small tourist town of Pitlochry in the Scottish Highlands and earned his doctorate at the University of Glasgow. His research has focused on the sociological study of religion, racism and Islamophobia. His current interests include field studies in personal development and metaphysics. [Read Malcolm Brown's work in Chapter 4.]

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Thomas Ditzler is Director of Research for the Department of Psychiatry at Tripler Army Medical Center and training advisor and member of the adjunct faculty at the Center of Excellence, University of Hawai'i. He has completed many humanitarian aid training missions around the world, and consults frequently on disaster mental health. He is a member of the Editorial Board of the Journal of Human Security, and a Member of the International Advisory Council of the Toda Institute for Global Peace and Policy Research. [Read Thomas Ditzler's work in Chapter 2.]

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Richard Gehrmann is senior lecturer at the University of Southern Queensland where he teaches history and international relations. He is a graduate of The University of Cambridge (UK), the University of New England, the University of Southern Queensland and Deakin University. His research interests cover war and society, international relations, military and human geography, ethnic identity and cultural history. He recently co-published *Communication, Interpreting and Language in Wartime* with Amanda Laugesen. [Read Richard Gehrmann's work in Chapter 4.]

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Kathryn Gwiazdon is Executive Director, Center for Environmental Ethics and Law, a member of the Steering Committee of the Ecological Law and Governance Association, and Deputy Chair, Ethics Specialist Group, IUCN World Commission on Environmental Law. In 2016 she founded the Center for Environmental Ethics and Law to serve as the permanent home, and advance the work of, the Biosphere Ethics Initiative. To this end, she organizes and leads on-the-ground meetings of local and global experts (called Relatos); provides presentations and presence at international gatherings, including Conferences of the Parties for international treaties; and develops scholarly research on comparative law, ethics, corruption, and human and environmental rights. The work focuses on real-world practice, and sharing those stories of success and failure on the global scale, to build solidarity to advance the conservation and flourishing of life. Kathryn has taught courses at the J.D. and LLM-level, has worked in more than 15 countries, and serves on several Boards and Steering Committees that advance new frameworks in law, ecological law, climate change justice, ecological integrity, and public health. Her most recent research and publications explore environmental ethics and democracy, state non-action, social justice, and human, national, and global security. [Read Kathryn Gwiazdon's work in Chapter 20.]

Patricia R. Hastings, MD.

Colonel Hastings has had a commitment to Emergency Medical Services since her graduation as an EMT and registered nurse in 1976. She entered the Army in 1983 after completing medical school and completed her residency in Emergency Medicine. During a break in Army service she served as the Medical Director for the State of Arizona Office of EMS she helped develop the state's trauma system and EMS for Children programs. Most of her initiatives focused on educational programs for enhanced scopes of practice and medical control for pre-hospital personnel that had to function is a state with significant time and treatment issues due to its expanse and terrain. COL Hastings served as Medical Director for the Center of Excellence in Disaster Management and Humanitarian Assistance, a World Health Organization Collaborative Center for Civil-Military operations where she again promoted global EMS initiatives and consulted on operations with agencies and governments in Africa, Asia, and Eastern Europe to improve pre-hospital response and austere medical care. Colonel Hastings believes her best assignments were working with Combat Medics and getting 39,000 certified as EMTs for their basic certification. The NREMT was an important supporting partner in this effort over 7 years, from 2002-2008. An enduring legacy is a relationship between NREMT and the US Army that remains and sustains the skills and credentialing of the "68Whiskey", Combat Medic. She is currently the Deputy Assistant Surgeon General (Force Projection) and continues to advocate for Combat Medics and advanced skills training for pre-hospital personnel. [Read Patricia Hastings' work in Chapter 2.]

Ronnie Hawkins, MD. PhD

Ronnie Hawkins has degrees in zoology (BS), medicine (MD) and philosophy (PhD), and taught for many years at the University of Central Florida in Orlando, where her courses included Ethics, Bioethics, Philosophy of Science, Environmental Philosophy, and Existentialism. In her research, she has explored intersectional issues stemming from the attitude of own-group supremacy as it leads to other-group domination, where both humans and nonhumans may be seen as exploited others; later work has led to the possibility that a remedial move might target the reductionism and use-orientation characterizing global industrial capitalism's cognitive style through the enhancement of alternative neural pathways. She considers human security to be coextensive with the integrity of the Biosphere, and believes that human life needs to be seen within the context of all other life that has evolved on this planet; an existential perspective must deal with the possible impending nonexistence of our human species, as well as with our human role in extinguishing the existence of so many of our co-evolutionary partners. Currently she is retired and living in Costa Rica with her husband, and can be contacted through ResearchGate. [Read Ronnie Hawkins' work in Chapter 11 and Chapter 12.]

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Anna Hayes is a senior lecturer in Politics and International Relations in the College of Arts, Society and Education at James Cook University, Australia. She is also an Honorary Research Fellow at the East Asia Security Centre, a collaborative enterprise between Bond University, China Foreign Affairs University and the University of New Haven. Anna specialises in non-traditional threats to security, with a particular focus on the People's Republic of China. Her research examines the ongoing human insecurity of the Uyghurs in the Xinjiang Uyghur Autonomous Region, including Xinjiang's position within China's Eurasian pivot as part of its Belt and Road Initiative. She has also published on Australia's use of the terminology of Indo-Pacific post-Federation, and how the Indo-Pacific concept has long undergirded Australia's regional and strategic outlook, including its Two Ocean Naval strategy. Anna is currently examining Australian responses to China's island-building activities and subsequent militarisation of the South China Sea and its increasing engagement with neighbouring Pacific Island states. Anna recently co-edited: *Inside Xinjiang: Space, place and power in China's Muslim Far Northwest* (Routledge, 2016) with Associate Professor Michael Clarke from the Australian National University. [Read Anna Hayes' work in Chapter 7.]

Christopher LaMonica, MA. PhD

Christopher LaMonica received his PhD in Political Science at Boston University, a Masters in International Development at Harvard University, and a BA in Economics at the University of Massachusetts in Amherst. Prior to pursuing an academic career, Dr LaMonica worked in ocean freight shipping in the US and the UK (for two years), and international development (OECD/Paris; USAID/Lusaka, Zambia; HIID, Cambridge, MA) (for six years). He was a university lecturer at Victoria University of Wellington, in New Zealand (five years) and is now a tenured Professor of Government at the United States Coast Guard Academy, where he has been teaching since 2009. He specializes in African area studies. [Read Christopher LaMonica's work in Chapter 14.]

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Margot Parkes is a Professor at the School of Health Sciences at the University of Northern British Columbia. Margot works with others – across sectors, disciplines and cultural contexts – to enhance understanding of land, water and living systems (ecosystems) as foundational for health and well-being. Margot grew up and completed her medical training in New Zealand, prior to work and training in public health, human ecology and ecohealth in Europe, the Americas and the Oceania region. Margot's research and international collaborations include integrative, partnered and Indigenous-informed approaches, with an emphasis on ecohealth, and ecosystem approaches to health. Ongoing themes include the cumulative health, environment and community impacts of land and water governance, and on watersheds and catchments as settings for intersectoral action to improve health. Margot's work continues to be informed by Indigenous knowledge and leadership across Oceania and the Americas, where she is engaged with a range of research, education and capacity-strengthening initiates that foster next-generation approaches to learning and collaboration to address complex health and sustainability concerns. [Read Margo Parkes' work in Chapter 17.]

Richard Plate, PhD

Richard Plate's research focuses on how people think and learn about complex environmental systems. this work is based on two assumptions: that managing natural resources sustainably will require a shift in how we view ourselves and our relationship to the environmental systems that support us; and that failure to make such changes now will place unnecessary hardships on future generations. The content for this work has included waste management in the Fiji Islands, coastal development and fisheries in the Turks and Caicos Islands, forest management in the southeastern United States, and community adaptations to climate change. He is currently the lead faculty member in the Environmental Studies Program at the University of Central Florida. [Read Richard Plate's work in Chapter 10.]

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Don Spady is a retired paediatrician and former member of the Faculty of Medicine and Dentistry of the University of Alberta and is now an Adjunct Associate Professor of Paediatrics at the University. His current interests include environmental health, environmental ethics, ecological integrity, climate change and resource depletion and how these will affect human health, especially public health and health care delivery. He was a co-editor of the Canadian Public Health Association document Global Change and Public Health: Addressing the Ecological Determinants of Health. He chairs the Medical Advisory Board of the University of Alberta Children's Environmental Health Clinic. Dr. Spady is a member of the Canadian Association of Physicians for the Environment and also represents the Canadian Pediatric Society on the Strategic Advisory Committee of the Chemicals

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Cherry Tsoi holds a Master of Science in Environmental Studies from Lund University. She works in the international non-profit sector on progressive advocacy campaigns, and has both studied the climate justice movement and worked within it for five years. In 2015, Cherry was awarded the Right Livelihood College Grant to conduct field work with 350.org on the democratizing power of the Fossil Free social movement in American politics. Her field work led to an intense interest and belief in the power of social movements to deliver real change in a world governed by profit. In 2018, Cherry's brief stint in urban planning led to the development of a framework for equitable city energy planning, presented at the American Council for an Energy Efficient Economy Summer Study. Her extensive academic and professional research into climate justice theory is evident in her publications on the issues and concerns connecting climate change and racial and economic inequality. Today, Cherry campaigns with a global network of progressive advocacy organizations to improve societies upon the core of values of a healthy environment, just society, open democracy, and fair economy. [Read Cherry Tsoi's work in Chapter 9.]

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Franke Wilmer has been on the faculty at Montana State University for 28 years and a Full Professor since 2001. She also currently serves as Department Head of Political Science. She teaches International Relations, International Human Rights, International Relations theory, International Law and the Politics of War and Peace. She has published numerous articles, book chapters and three books on related issues including the political activism and rights of Indigenous peoples and the role of identity in the political violence in former 1990s Yugoslavia. Her most recent book, a textbook is *Human Rights in International Relations: An Introduction* (Lynne Rienner 2015). Her current research is on the role of empathic engagement in challenging conflict narratives in the case of Israel and Palestine, traveling to Israel and Palestine (the West Bank) four times since 2016. Franke also served in the Montana House of Representatives from 2007-2013 and prior to that, as Chair of the Montana Human Rights Commission. [Read Franke Wilmer's work in Chapter 19.]

John Wilson, MA. PhD

John Wilson is a research analyst for the Parliamentary Library, Wellington. He received his Master of Arts and PhD in Political Studies from the University of Auckland. From 2001 to 2015 he was a visiting lecturer in the School of Government, Victoria University of Wellington, where he taught in the areas of globalisation, political economy, and public policy. His research interests include the impact of global environmental and resource constraints on the domestic economy and how these are likely to affect inter-state relations. His publications include chapters on Iran and Saudi Arabia in Karl DeRouen Jr. and Paul Bellamy, eds., *International Security and the United States* (2008). [Read John Wilson's work in Chapter 13.]

CHAPTER OVERVIEW

1: Introduction

Learning Objectives

- Explain what human security can mean to different people and cultures, based on the history of the concept and an overview of the literature.
- Apply comprehensive models of human security (such as the four-pillars model) to specific problems in human security and identify particular sources of insecurity.
- Explain how the Anthropocene is changing interpretations of human security both in theory and in practice.
- Differentiate between those goals of human security that depend on environmental security and those that do not.
- Learn to develop a vision and a reasoned perspective on future possibilities for human security.
- Become aware of the general range of possible futures for human security and evaluate new information in that context; make educated predictions about possible futures in the light of new information.

Alexander Lautensach and Sabina Lautensach

This introduction contains portions of writings published in the following works: *Austrian Journal of South-East Asian Studies* (2010) 3(2): 194-210; *Australasian Journal of Human Security* (2006) 2(3): 5-14; *Sustainability* (2012) 4(5): 1059-1073; *Routledge Handbook of Global Environmental Politics*, P.G. Harris (ed.) (2012). Further inspiration came from editorials in the *Journal of Human Security*.

This second edition of our textbook of human security marks the 25th anniversary of the official emergence of human security as a guiding concept in world affairs. In contrast, international relations as a discipline is just over a century old, while the concern for human security has probably moved humanity since the dawn of sapience. From the beginning of modern statehood (i.e. 1648) as a guiding concept in sociopolitical affairs, security has been largely discussed within the context of state security. One ongoing challenge for advocates of human security, then, is to extract human security from under the conceptual umbrella of international relations, both within the academy and in public discourse. That has been a prominent goal behind both editions of this textbook. A second major goal arises from the tumultuous changes of 2019/20 that manifested as a worldwide protest movement in favour of making human security more sustainable, and in the first global pandemic that marks humanity's transition to a sustainable future. This introduction sets the stage for the chapter topics as we briefly survey the history of the human security concept, which will be followed by a discussion of its current challenges and its future. Brief summaries of the chapter topics will be connected into that discussion.

1.1: Ontology of the Human Security Concept – Cross-cutting Themes
1.2: Current Challenges – New Questions
1.3: The Future of Human Security
1.4: This Textbook
1.5: Resources and References

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1.1: Ontology of the Human Security Concept – Cross-cutting Themes

Ontology of the Human Security Concept – Cross-cutting Themes

In a rapidly changing world, a quarter century signifies a long time for the development of an idea. During that time human security has morphed into what we regard as a guiding narrative throughout the world. In the early 1990s it became increasingly clear that the end of the cold war would not be accompanied by an end to armed conflict but that instead the nature of violent conflict was changing, away from the traditional interstate wars of the past four centuries towards conflicts within states, fuelled by ethnic, religious or ideological divisions. States no longer seemed to be the only entities whose security mattered. Regions, communities, families and individuals can only feel secure if they have reason to believe that their continued functioning is not going to be threatened at every turn, and the state seemed no longer capable to guarantee that. Moreover, governments increasingly recognised that the security of the state largely depends on the security of its regions, communities, families and individuals, albeit not nearly all of the latter in an equitable fashion; and that financial income by itself constitutes an inadequate measure of that security.[1]

Although those notions came across as unconventional at the time, they were evidenced by the sporadic examples of states failing to fulfil their obligations as security guarantors, to the point where they threatened the security of their own citizens. The most appalling cases cumulated in genocide as exemplified by the Holocaust, the Cambodian killing fields, Rwanda, Syria and a sad long list of others throughout history, dating back long before we had a word for it. At the other end of the spectrum of state power lay examples of states that lost the capacity to assure their citizens' security, as seen in today's Somalia, Iraq, Myanmar and another sad long list. In between we see everyday examples of police brutality, government corruption, media censorship and unscrupulous resource grabbing. It became clear that a primary requirement for the security of human beings was not merely the absence of war but the absence of structural, cultural and personal violence (Galtung, 1969), and that the discipline of international relations as a field of endeavour cannot by itself deliver on those challenges. This was of course not a new idea; but somehow the transition out of the Cold War seemed the right time to express it in the form of a new model of security.

The idea of human security emerged centuries ago in the writings of Hobbes, Locke, Hume, and Rousseau which provided a raison d'être for the modern state as its prime guarantor. Thus, since the birth of the nation state with the Peace of Westphalia in 1648 human security has been implicitly regarded as the primary reason for having a state in the first place (Pitsuwan, 2007). In 1968 Canadian Prime Minister Lester Pearson (1969, p. 43) proposed "… that the peace and security of people take priority over the sovereignty of states…" Historical developments, as alluded to above, also favoured that paradigm shift. Besides the collapse of the Soviet empire, globalization in its many manifestations turned people's attention away from state security and from military threats and defences, towards a more cosmopolitan people-centered perspective, backed by the UN.

Human security as a concept began to gain recognition when it was publicized as the topic of the UN's Human Development Report in 1994 (UNDP, 1994). Since then it has attracted increasing attention among theorists, policymakers, and, to a limited extent (as in Canada during the 1990s), voters. The UNDP's Human Security Framework (Jolly & Ray, 2006) and a report for the UN Centre for Regional Development (Mani, 2002) summarise the influence of human security on UN policy. This influence took three forms: the idea that the primacy of citizens' *human rights* not only obliges the state to protect them but that sometimes they be protected from state authority; the notion that the destitute situation of many people around the world necessitates decisive *development* efforts on the part of states (Thakur, 2010); and the realization that human security is too important and too complex an obligation to be left to national governments in isolation without the support of civil society.

In 2003 the UN Commission on Human Security, chaired by Sadako Ogata and Amartya Sen, reported that the world needed "a new security framework that centers directly on people" and that focuses on "shielding people from acute threats and empowering people to take charge of their own lives" (Commission on Human Security, 2003, p. iv). This goal of individual empowerment seems rather a long way removed from the traditional priorities of state security.

The Human Security Network, founded in 1998, at the time of writing includes twelve developed and developing countries worldwide (plus one observer), who contributed to the UNDP's human security framework. Their relative emphases vary between the human rights focus (e.g. Norway, and the establishment of the International Criminal Court in The Hague) and the development focus (e.g. Switzerland, and formerly Japan). In recent years the Network has somewhat receded out of the public spotlight but its member countries continue to emphasise human security priorities on the international stage.

What seemed new about the concept was its shifted perspective, from the state as the subject and object of security policy to the human individual as the centre of security considerations – from state security to human security (Hampson et al., 2002; Tadjbakhsh & Chenoy, 2006). And since human beings, unlike states, are capable of sensations and emotions, human security was recognised as partly contingent on those particular states of mind that we tend to associate with human well-being. The UN's various definitions since 1994 revolve around the three principles of (a) freedom from fear, (b) freedom from want and (c) freedom to live in dignity (United Nations Human Security Unit, 2016; Annan, 2005). A working definition of human security, based on those principles and credited to David Hastings (2011), would be *the attainment of physical, mental, and spiritual peace/security of individuals and communities at home and in the world – in a balanced local/global context*. The subjective aspect embodied in the three principles dates back to Franklin D. Roosevelt's Four Freedoms (details in Chapter 2).

Those three principles are rooted in basic human needs, expressed, for example, in the Abraham Maslow's (1943) taxonomy and Martha Nussbaum's *ten central capabilities* (2011, pp. 33-34). They depend on variables that extend beyond what has traditionally been regarded as the political arena. This extension and broadening also marks the direction in which the human security concept has developed. Besides the absence of violent threats, some analysts began to include among the conditions for human security a relative safety from economic destitution, from acute infectious disease, minimum complements of safe fresh water, adequate nutrition, and protection from environmental degradation and disasters.

To address those concerns, a useful interpretation of human security must encompass the various dimensions or directions from which threats can emerge, as mentioned above. To address that requirement, the four pillars model of human securitywas proposed (Lautensach 2006). The first pillar consists of the traditional area of military/strategic security of the state and its rule of law; the second is economic security, particularly as it is now conceptualised through heterodox models of sustainable circular or zero-growth economies; the third is public health as described by epidemiology and the determinants of community health and health care priorities; the fourth pillar is environmental security, primarily determined by the complex interactions between human populations and the source and sink functions of their host ecosystems. The four pillars adequately address diverse sources of threats, covering the same ground as the seven dimensions of the 1994 Human Development Report (UNDP, 1994) (economic, food, health, environmental, personal, community, and political security). Those pillars or dimensions interact with each other in a complex network of relationships that sometimes lead to unexpected and sudden effects.

Others were less prepared to extend human security into such 'soft threats' and preferred a more 'narrow' or 'lean' form of the concept. Critics from the Copenhagen School expressed the concern that the concept was running the danger of leaving nothing out, of labelling all human problems security issues; that such securitisation would be of little help for addressing practical challenges because the concept's heterogeneity would prevent people from developing suitably coherent descriptive models that could inform effective policy priorities. In response, proponents of extended interpretations point to the fact that many more deaths occur annually from so-called 'soft' threats than from any threats to national security or armed violence; the fact that most of those deaths would have been preventable translates into an obligation. The 2020 pandemic offered further support for an inclusive model that integrates health, economics, politics and the environment.

Even before the pandemic, the dispute was swayed towards the inclusive view by two developments. First, the realisation dawned that since the mid-20th century the planet had been undergoing drastic changes that were increasingly recognised as pervasive, accelerating and partly irreversible; it was expressed in new conceptual models under names of 'Great Acceleration' (Steffen et al., 2015), 'Safe Operating Space for Humanity' (Rockström et al., 2009) and the new imperatives of Anthropocene era (Burtynsky et al., 2018). Those new circumstances are affecting the security of states as well as all those other pillars and dimensions. Secondly, the UN involved itself in successive global initiatives aimed at ensuring the sustainability of human security across all its pillars or dimensions. This began with the UN's *Millennium Development Goals* (2000-2015) and continued with their *Sustainable Development Goals* (SDGs; 2015-2030) (United Nations, 2015). The latter have gained recognition as a well-known example of the wide and 'people-centred' interpretation of human security informing a program for global development and sustainability that includes the empowerment of non-state actors, bypassing the securitisation debate.[2]

A further direction into which the human security concept was extended was the future. With the advent of the MDGs, and to a much greater extent with the SDGs, it became acceptable to officially express concern with the future well-being of people's children, and, from middle age onward, with the well-being of their children, and so on. This long-term intergenerational concern has gradually come to inform the agenda of human security initiatives, as indicated by the emergence of sustainability in some

form or other as a cornerstone of long-term human security (World Commission on Environment and Development, 1987). More often than not, concern for human security is now synonymous with concern for *sustainable* human security (Lautensach, 2020).

No security provision can be effective unless it is sustainable. In fact, as we will argue below, many practices and policies contribute to people's insecurity for the very reason that they cannot be sustained. Much of the heat in debates about sustainability comes from differences in definitions of sustainability and of sustainable development. The most widely popularized definition originated from a 1987 report of the UN's World Commission on Environment and Development, the so-called Brundtland report (WCED, 1987, p. 24): Sustainable development is development that "meets the needs of the present without compromising the ability of future generations to meet their own needs." Unfortunately it gives no specifics on what those present needs might be, where to draw the line between needs and wants, how to comply with physical limits to growth (Meadows et al., 2004), nor how to address the implied intergenerational conflict. Because of those shortcomings, definitions based more explicitly on the ecological context seem preferable. Wackernagel and Rees (1996, p. 55) defined sustainability as "living off the income generated by the remaining natural capital stocks." These definitions refer to ecological sustainability; other forms of sustainability that have been recognized in the literature include economic, cultural and social sustainability (Lautensach & Lautensach, 2012; Raworth, 2017). Elsewhere, one of us (Lautensach, 2020, p. 2) defined sustainability as "living within limits set by global geophysical processes, by ecological support structures and their capacities, by social groups and interactions, and by the basic needs of all living organisms, including *Homo sapiens*." Regardless which definition one favours, it seems clear that sustainability cannot be omitted from any plan for long-term security as a necessary (though not sufficient) requirement. The SDGs and the Agenda 2030 (UN, 2015) represent clear evidence that sustainability, development and human security are part and parcel of the UN's agenda. The waves of public protests in 2019/20 against irresponsible climate policies indicate growing popular demand for more proactive and forward-thinking governance.

The extended models strengthen the human security concept as they cover comprehensively the interdependent sources of insecurity that were traditionally considered under the purview of different academic specialties and were (and still are) studied largely in isolation from each other. The strength of the comprehensive approach lies in its capacity to detect and characterize synergistic effects and interactions among multiple causes. Moreover, the comprehensive approach allowed analysts to develop methods for assessing and verifying diverse aspects of human security as exemplified by the human security index (Hastings, 2011).

Notwithstanding those analytical strengths, human security represents an intellectual construct, informed by various idiosyncratic notions of well-being, and only in a small part is it informed by objective truths.[3] But that normative aspect can also be regarded as another strength, namely that the value priorities informing its diverse components are shared widely, priorities that focus on the continued security and well-being of human individuals (Thakur, 2010). It seems indisputable that our decisions and actions are influenced to a great extent by our values, aspirations, ideals, attitudes, and unquestioned assumptions—all of which are culturally contingent.[4] This is equally true for people referred to as idealists as it is for so-called 'realists.' People care about human security because they identify with its underlying values and ideals—human welfare, human rights and dignity, justice, non-violence, and the abhorrence of suffering (Kaldor & Beebe, 2010). This reconceptualization as a set of moral norms is evident in several key policy documents of the United Nations. More detailed discussions of the epistemological basis of human security, its ethics and its intercultural interpretations are given in Chapter 2 and Chapter 4.

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1.2: Current Challenges – New Questions

Inclusive interpretations of human security and related multidimensional models have attracted some criticism.[5] We already addressed the charge of securitisation above. Like all complex theoretical models its application requires more data than are usually available; often this makes it difficult to assess specific problem situations and to design appropriate countermeasures. Moreover, the priorities and time frames of the different pillars sometimes differ or even clash. Viewed through the lens of sustainability, some of the SDGs contradict each other (see Chapter 3) and the UN's blindness to ecological overshoot renders their aspirations unrealistic. While those difficulties are obviously real they can be interpreted as directions for further refinement of the concept, rather than providing grounds for its abandonment. The present state of the world displays a huge variety of threats to people's security, only a small subset of which could be, and was, addressed through traditional security thinking and associated policies. This messy situation alone justifies giving new ideas a chance, and the extent of international support which the human security concept has received indicates an emerging general consensus along that line.

Admittedly, not all interpretations of human security are equally useful; some create more problems than they can solve. Development agencies operating under national, super-national or non-governmental umbrellas often interpret human security in biased ways that suit their missions–economic, libertarian, humanistic, and environmental – with varying degrees of success. The majority of the MDGs were not achieved by their target year of 2015, and so far the SDGs have met with mixed results as well (United Nations, 2019). Some of that shortfall probably results from a narrow interpretation of human security that relegates sustainability to a mere afterthought (as, for example, in McIntosh & Hunter, 2010) and interprets environmental degradation as a kind of natural disaster—a dangerous misconception as we will show below.

Another problem arises directly from the UN's framing of human security as freedom from fear and from want (Annan, 2005). With the choices for satisfying wants waning, the alternative of selecting and prioritising among them becomes more urgent. Principles of security are thus paraphrased in negative terms as freedom from a condition that is evidently undesirable. Elsewhere (Lautensach, 2006; Lautensach & Lautensach, 2010) we suggested that such negative definitions are less helpful than they sound. Aside from the logical difficulties with negative definitions, 'freedom,' 'fear' and 'want' are not only highly subjective and emotive concepts, they tend to vary much over time; the extent to which individuals will experience those sensations depends on differential metabolic states, emotional states, situational and associative contexts, and especially cultural backgrounds. An absence of wants or needs can also be caused by an absence of self-confidence, a negative self-image or a defeatist self-concept. Nor is it possible to reduce those wants and needs to minimum requirements for survival. The SDGs have clarified those issues to some extent but they also raised new questions, as will be discussed in Chapter 3.

A more practical objection to those popular interpretations of human security states that the focus on freedoms blinds the observer to the problem of limits or of scale. In any given quasi-closed system (such as an island, a desert oasis, or a planet) the extent to which the human inhabitants' needs and wants can possibly be satisfied depends on the population size (Royal Society, 2012). Other variables, such as individual affluence, life style, and technological sophistication also apply, but only temporarily. For example, the same freedom from water shortage for a region in sub-Saharan Africa can be achieved without much effort for a population of a few thousand while remaining utterly unachievable, or at least unsustainable, if that population ever measured in the millions—as they do now.

The advent of the Anthropocene has profoundly and irreversibly changed our understanding of human security (Chapter 3) (Burtynsky et al., 2018). Anthropocene is the proposed name for a new era marked by profound environmental change caused by a single species – *Homo sapiens*. Essentially those changes amount to Earth having become a different planet – *Eaarth*, as Bill McKibben (2010) called it. Global anthropogenic change concerning climate (see Chapter 9), resources (Chapter 10), and biodiversity (Chapter 11 and Chapter 12) presents new threats, unprecedented in their extents if not their nature.[6] The Union of Concerned World Scientists have issued regular warnings since 1979, pointing to the further increases in human and ruminant populations, in meat production, in world GDP, in tree cover loss, in fossil fuel consumption, in air passengers, and in CO_2 emissions; especially disturbing are the current signs of impact: climate change and warming, ocean acidification, extreme weather, sea level rise, burning of forests and melting of ice caps (Ripple et al., 2017).

In specific contexts (such as a pandemic), it is necessary to prioritise among those threats and identify major sources of insecurity in a community, or region, or increasingly even globally. Combining an attention to threats with the need for sustainability, Alkire (2002, p. 2) defined the objective of human security as "to safeguard the vital core of all human lives from critical pervasive

threats, and to do so without impeding long-term human flourishing." In the light of the Anthropocene, some regard 'flourishing' to no longer be a realistic choice of words, considering that our survival seems to be at stake. What used to be regarded as proactive agenda for preventive policies is increasingly developing into a rearguard battle with natural forces bent on rectifying our global ecological overshoot. For example, returning to the issue of water security (a topic that will be discussed further in Chapter 10), such source analysis would focus on possible causes of water shortage, on the systemic requirements for water security, the limits of the local system, and the current dynamics and trends in the region in order to arrive at long-term effective and sustainable policies. Almost always it turns out that population size governs the problem; every problem seems manageable while it is low and no remedy seems very helpful once it is too high (Ryerson, 2010).

The Anthropocene brings to our attention the prime importance of environmental security, defined as security from "critical adverse effects caused directly or indirectly by environmental change" (Barnett, 2007, p. 5). Heterodox economists, human ecologists and most indigenous cultures worldwide have long understood that all human enterprise takes place and depends on ecological support structures[7] with limited capacities for supplying resources and for recycling wastes. In that we are no different from other animals. What distinguished our species and its immediate ancestors during the past million years or so was a proclivity for expanding our habitat, for colonising diverse environments by adapting to them and by modifying them to our needs (Rees, 2004; see Chapter 3 for a time line).

As noted by numerous authors (e.g. in Heinberg & Lerch, 2010, and in Chapter 3), that proclivity is now for the first time no longer working in our favour. By modifying almost every ecosystem on the planet, by extracting and processing resources in ever more complex ways, and by harnessing diverse energy sources to great effect we succeeded in propagating far beyond the numbers of other medium sized omnivorous mammals. Even by the 1980s our species appropriated over 40% of the total biomass annually produced on Earth (Vitousek et al., 1986); three decades later that amount has increased further (Bar-On et al., 2018). As humans introduce competitor species, modify ecosystems, deplete habitats, and modify landscapes and climates, our environmental impact has driven hundreds of thousands of species into extinction. Our limited skills at managing ecosystems could not prevent the 'trophic downgrading' of many systems into less complex stable states with fewer species (Estes et al., 2011). Biologists are now referring to the 'sixth extinction,' a massive loss of species that resembles past cataclysms in the Earth's history but is proceeding much faster, at five to 74 species per day and still accelerating (Kolbert, 2014). The tragedy in this development lies not just in the irreversible loss of life forms that took millions of years to evolve; because we are part of the web-like communities of species, subject to dependencies from which no species can be exempt, the loss of biodiversity[8] threatens our very own security (see Chapter 12).

To paraphrase the words of Ursula LeGuinn, the relationship of humanity to the Earth resembles that of an infant to its mother, simultaneous utterly dependent and utterly exploitative. This notion seems as self-evident as it remains controversial; it does not sit well with people who would rather believe that populations and economies can grow unencumbered by physical limits. That belief, referred to as cornucopianism (Ehrlich & Holdren, 1971), still dominates the rhetoric of election campaigns, neoclassical economic models, and even humanistic programs for development aid. Rhetoric and unscientific beliefs aside, all living organisms depend on the services of their host ecosystems and are susceptible to their limitations. It was for this simple reason that Norman Myers (1993) referred to environmental security as the "ultimate security."

Overshoot directly threatens human security through biological control mechanisms. In the case of the human species the major control mechanisms are epidemics, malnutrition, and violent conflict. To varying extents those threats will be triggered by essential resources becoming scarce and eventually disappearing (Homer-Dixon, 1999; Meadows et al., 2004), and by the deterioration of key ecosystems (McMichael et al., 2003; Dobkowski & Walliman, 2002; Steffen et al., 2004). The COVID-19 pandemic appears to have been caused by the latter plus the trade in wildlife. If the event is serious enough, the prospect of secondary effects, such as the erosion of the rule of law and of civil society (Myers, 1993), economic failures, and more widespread armed conflict over diminishing resources (Homer-Dixon, 1999; Mach et al., 2019), contributes further urgency. Historical precedents of the collapse of regional cultures, and of the survival of others, illustrate the validity of that model (Diamond, 2005). Those consequences are certain to compromise human security across a broad range of aspects, extending over all four pillars of sociopolitical, health-related, economic, and environmental security.

To summarise numerous reports and analyses—the Anthropocene is teaching human security analysts four basic messages:

1. Challenges to human security increasingly tend to cross borders and affect regional groups of countries or even most of the globe. Major issues, discussed in various chapters of this text, include mass migration, intercultural conflict, lack of global

governance, pollution and other new health hazards, resource depletion, economic instability and crimes against humanity. Success for small countries in drawing international attention to their problems depends on making enough noise and on their luck of being heard (e.g. Poland).

2. Most of the sources of insecurity are raised to critical status as a result of high population numbers and their impacts on the environment; the chances of success with most strategic solutions depend on how they address those impacts and the underlying population issues.
3. Among the four pillars it is environmental security that often supports the other three; likewise, environmental *in*security tends to jeopardise economic, socio-political and health security. More than in past centuries, in the Anthropocene it is often environmental causes that are ultimately responsible for the displacement of populations, for the lack of resources to meet their basic needs, for the deaths and suffering caused by natural disasters and for the destabilization of social order. (See Chapter 9 for an illustrative case example.)
4. Those overarching environmental causes are part of a complex cluster of global environmental change processes that is itself largely caused by human activities (= anthropogenic) and that exceeded the capacity of the biosphere for resource production and waste recycling. Those transgressions are summarized as 'ecological overshoot' (Catton, 1980; McMichael, 2001; Meadows et al., 2004). As discussed by various chapter authors, overshoot can be modelled as excessive environmental impact according to the *I=PAT* relationship[9] (Grossman, 2012), the transgression of global environmental boundaries (Rockström et al., 2009), and also of sociopolitical boundaries (Raworth, 2017), or as our collective ecological footprint exceeding the biosphere's biocapacity (Wackernagel & Rees, 1996; Chambers et al,. 2000). The latter amounted to 170% in 2019.[10]

There are, of course, numerous challenges to human security and sources of insecurity that are only indirectly connected to the global environmental changes of the Anthropocene, although they equal them in novelty. Those challenges include threats to cybersecurity and AI, nuclear armaments and wastes, the failure of governments in many places, the failure of entire states, the rise of corporate hegemonies and hypercapitalism, ongoing violations of human rights in many jurisdictions, and more. Particular attention is beginning to be paid to the culturally sanctioned ritual mutilation of children, often under religious pretences. Most of those challenges are also addressed in this textbook.

Considering all those issues in the context of the Anthropocene, one cannot help wondering what the future holds in store for human security, and to what extents those challenges might prove manageable. We encourage readers to keep the following general considerations in mind as you read through the chapters, and apply what you learn to construct your own reasoned opinion about which futures turn out most likely. A synthesis is offered in Chapter 21.

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1.3: The Future of Human Security

In the light of the daunting challenges posed by the Anthropocene, some analysts openly question humanity's chances of surviving the 21st century at all (McKibben, 2010). Some allow that humanity is likely to survive in some form but only after passing some rigorous challenges and trials by mid-century, including a reduction of its population size. Those challenges will require rigorous reforms towards mitigation and adaptation (Pelling, 2010; Bendell, 2011). Others prefer to ignore the entire problem and pretend that business as usual is likely to continue, with our greatest challenges amounting to no more than what we have encountered so far. We suggest that the information presented in the foregoing introduction on the whole supports the former views.

Let us begin with the prospect of survival. The spectrum of possible combinations of different population sizes, consumption levels, and technological impacts illustrates the multiplicity of choices by which a society determines its mode of survival. The spectrum of choices was aptly described by Potter (1988) as five distinct *modes of human survival:*

1. *Mere* survival: As it occurs in a gatherer-hunter culture; this mode has proven sustainability for low population densities.
2. *Miserable* survival: Lower in quality than mere survival; epidemics, scarcities, great susceptibility to the aggravated consequences of 'natural' disasters;
3. *Idealistic* survival: Surviving without the most nasty of biological control mechanisms; this requires deliberate and universal fertility control or a constant supply of extraterrestrial resources.
4. *Irresponsible* survival: The opposite of idealistic, without collective regard for the ecological requirements; only the most powerful survive acceptably, the vast majority miserably or not at all.
5. *Acceptable* survival: Everybody surviving with an acceptable modicum of comfort, according to models suggested by Lester Brown (2003) and others; this requires enforced equity and moderate population size.

Potter intended those modes to describe the survival of humanity at the global level but the modes apply to regional populations as well. In the Anthropocene those modes become a function of population size, with *miserable* survival becoming the most likely mode for an overly large population and *acceptable* survival remaining an option only for relatively small populations, as in OECD countries (Royal Society, 2012). Each mode is characterised by a corresponding state of public health (Butler, 2016; McMichael, 2001). Given the central importance of human well-being and of principles of justice in popular formulations of human security, sustainable human security on a global scale would manifest as the *acceptable* survival of humanity.

In order to build on those rather sweeping projections, analysts have devised models that allow the characterisation and forecasting of more specific scenarios. They make it possible to identify specific threats or sources of insecurity which provides targets for proactive mitigation. As all forecasting begins with the status quo and current trends, the quantitation of human security and well-being provides the essential basis. Up until the 1990s the quantitative measurement of human well-being rested almost entirely on outdated economic models, particularly on the dynamics of GDP. From 1990 a series of Human Development Reports, commissioned by the UNDP (United Nations Development Programme) arose from the sentiment that economics alone gives inadequate pictures of human security and well-being, nor can it suggest an adequate range of goals for development. To account for the human element and the UNDP's central dictum "people are the real wealth of a nation" (UNDP, 2011), the UNDP's *Human Development Index (HDI)* combines statistics on life expectancy, literacy, education, and standards of living at the national level and below (UNDP, 2019). It is commonly used to classify a country as 'developed' or 'developing'. A high HDI is still biased towards high national consumption and is therefore only sustainable if the country's footprint does not exceed its biocapacity (WWF, 2012).

The *Human Security Index (HSI)* combines indicators of economics, education, social welfare, and some environmental considerations, reflecting the still popular 'triple bottom line' approach. It attempts to quantify a person's security in a more culture-neutral way than does the HDI by maintaining a balance along the dimensions of global-local, individual-society, regional biases, diverse metrics and definitions of human security, and the diversity of human communities (Hastings 2011). It can be used as a criterion to assess the performance of local government.[11] The greatest weakness of both HDI and HSI is their disregard for regional overshoot and ecological footprints. In addition, the HDI reflects conventional assumptions about 'progress' and 'development' and underlying value priorities that remain largely unquestioned in the associated literature.

The first global assessment of status quo global environmental security was the *Millennium Ecosystem Assessment* (UNEP-MAB, 2005), followed by the Intergovernmental Platform on Biodiversity and Ecosystem Services (*IPBES*).[12] The assessment took into

account changes in biodiversity, desertification trends, population pressures, deterioration of watersheds and environmental determinants of public health (sometimes misleadingly referred to as 'environmental health'). Unlike other assessments, this one acknowledged overshoot —it was entitled *Living Beyond Our Means*—even though it fell short of discussing the hard implications. In contrast, the regular SDG Assessment Reports (e.g. UN, 2019) have largely avoided the topic of environmental security.

Questions about the future have now moved to the forefront of human security agenda. The reasons are that global and local change is accelerating, the ever greater numbers of affected people tend to amplify even crises that used to be classified as minor, and tipping points in global environmental changes may be close at hand or even behind us. Out of those concerns, various methodologies have been developed to proceed from a picture of the status quo towards the projection of probable future scenarios. Beginning in the 1970s, pioneering work in that direction was done by Dennis Meadows and coworkers from the Club of Rome (updated in Meadows et al., 2004). More recent projects include the quantitative International Futures forecasting system, which incorporates statistics on demography, economics, energy, agriculture, human capital (education and health), the sociopolitical situation (domestic and international), as well as physical capital (including infrastructure, environment and technology) (Hughes et al., 2012). Other systems include additional significant variables such as environmental trends and human impact, and they variously balance quantitative with qualitative approaches. What these forecasting methodologies have in common is an assessment of the status quo as their starting base; the analysis and modeling of trends; and they recognise as four major factors for change intergovernmental organisations, transnational corporations, civil society (acting through NGOs and spiritual communities), and public awareness of the need for change and the spread of new values. Confounding those forecasting efforts are three factors – ignorance, surprise, and volition (Raskin et al., 2002). This refers to the inevitable fact that information is always incomplete, the turbulent and unpredictable behaviour of complex systems and emergent phenomena (discussed further in Chapter 10), and the consequences of human choice (discussed in Chapter 11).

One scenario study that excels in its broad scope of possible futures and its insightful survey of relevant variables coined the concept of the *Great Transition* (Raskin, 2016). It recognises as driving forces demographics, economics, social issues, culture, technology, environment, and governance. Table 1.1, adapted from that source, summarises its six scenarios and their major characteristics. The six scenarios are classified into three groups that differ in their underlying premises and values. The 'Conventional Worlds' pair of scenarios is based on the assumption of continuity in the current global 'business as usual' approach. The 'barbarisation' pair of scenarios represents an antithesis: they assume that the current social, economic and environmental problems are indicative of overshoot and that they render social decline inevitable. The 'Great Transitions' pair rounds off the range of possibilities by again recognising overshoot but assuming that a resolution through fundamental social transformation will be achieved in time to prevent barbarisation.

Table 1.1 Three pairs of scenarios represent the scope of possible futures for human security. The variation between pairs shows differences in major historical trends. Variation within pairs describes the extents of centrally coordinated intervention (Data source: Raskin, 2016).

SCENARIO		CHARACTERISTICS	UNDERLYING PHILOSOPHIES
Conventional Worlds	*Market Forces*	Continuing economic growth & development for brief time	Market optimism; hidden & enlightened hands; laissez-faire
	Policy Reform	Adjustment through enlightened governance	Controlled economies; environmental stewardship attempted
Barbarisation	*Breakdown*	Ecological & economic collapse, anarchy;	Overshoot causes a population/resource catastrophe;
	Fortress World	Sustainable dictatorships, anarchic hinterlands, global apartheid; gross inequities	Social chaos; tragedy of the commons; atomistic and unconscionable traits dominate social behaviour.
Great Transitions	*Eco-communalism*	Bioregional self-governance & stewardship	Pastoral self-sufficiency; rejection of large-scale industrialism; low population density;
	New Sustainability Paradigm	Global governance, sustainable living by consensus	Sustainability through progressive global social evolution

Within each pair, the scenarios differ by the extent in which governance succeeds in imposing order and coordination on what would otherwise deteriorate into a more disordered, anarchic situation. In conventional worlds that involves the regulation and management of market forces by traditional power structures. In barbarisation the order manifests as a global police state or regime that perpetuates extreme inequity and imposes violent sanctions on any local transgressions. In Great Transitions the order takes the form of a transformed global civilisation that coordinates the activities of what would otherwise remain a random conglomerate of regional sustainable societies. This latter pair of scenarios represents the attempt to combine liberatory, humanistic, and ecological goals into post-industrial models of sustainable living. In terms of human security it represents the most desirable and plausible of futures, given that the negation of overshoot in Conventional Worlds renders that pair unrealistic. According to the World Scientists' Warning (Ripple et al., 2017) this would require the timely transition to renewable energy sources, eliminating pollutants, protection and restoration of ecosystems, sustainable plant based food production, zero-growth economic goals and a timely reduction of population. Plans for sustainable global food security (Willett et al., 2019) and health security (Butler, 2016; Chen et al., 2004) have been published.

The emphasis on long-term sustainability in the Great Transformation indicates an important point. The majority of current development schemes and political assessments in the mainstream adhere to the conventional development paradigm and thus favour Conventional Worlds scenarios, tacitly assuming continuity and denying the imperatives of overshoot. This includes the SDGs as well as most of the assessment methodologies and reviews on human security (e.g. McIntosh & Hunter, 2010). It renders them unjustifiably optimistic (both environmentally and socially), and utopian. In contrast to that overwhelming majority espousing the 'conventional development paradigm', most of the authors of this text recommend 'Great Transitions' type of solutions.

The reason why the conventional development paradigm with its Conventional Worlds type projections cannot realistically inform sustainable solutions lies in ecological overshoot. Its ramifications will extend beyond the energy sector and result in shortages of food (Schanbacher, 2010; Brown, 2003; Willett et al., 2019) and numerous other consumer goods and services. 'Peak everything' (Heinberg, 2007) will lower the standards of living, economic activity, and hence public expenditures. Human labour will be cheap, human welfare dear. With global trade diminishing, regional trade will pick up. In the absence of compensation through global trade, regional overshoot will finally show its effects. Paralleling the case of fossil fuel, the demand for potable fresh water also increases while its availability declines. 'Problem areas' will become sealed off from their neighbouring countries and the inhabitants left to their own devices.[13] Countries rich in resources and low in population (such as Canada) will dominate and countries with well-developed infrastructures can be expected to get along reasonably well. The rest will not be so fortunate. Large countries are likely to fragment. Climate change will be the unpredictable wild card; it has been identified as an important, and increasingly powerful, determinant for armed conflict (Mach et al., 2019). All this suggests that Conventional Worlds scenarios are neither probable nor desirable, whether they be interpreted as brief and risky transition solutions or as a cornucopian utopia. Realistically, the remaining choices will lead to scenarios of the 'barbarisation' and 'Great Transitions' type.

In the light of continuous economic decline, whatever technological advances might be achieved in the next decades will be diluted, perhaps drowned, in a teeming ocean of humanity, most of it struggling to merely survive with some modicum of dignity. The imperative, then, will be not to make human lives more convenient or pleasurable but to follow the principles of distributive justice and to combat suffering by facilitating the speedy attrition of the global human population as much as seems ethically justifiable.[14] When we consider the cumulative harm caused by overpopulation we end up with quite a different assessment of our probable future compared to the majority of development reports. If even the more conservative estimates of future population growth become reality, the challenges to human security will be daunting indeed—and that is without considering climate change!

What, then, are the remaining options? The most effective and morally desirable strategies to meet those challenges and to maximise human security will aim towards Great Transitions type scenarios. This follows, on the one hand, from the lack of feasibility and of sustainability in 'Conventional Worlds' scenarios as argued above. On the other hand, barbarisation scenarios appear to include inordinate amounts of suffering and injustice that warrant all-out efforts to avoid them. Moreover, entrenched injustice renders any system of governance socially unsustainable. Nevertheless, many possible futures involve a succession of several of the six scenarios.

To conclude – in order to achieve a maximum likelihood of being sustainable, the eventual end stage of such successions should nevertheless be of the Great Transitions type. It is to achieve the four goals of peace, freedom, material well-being, and a healthy environment (Raskin et al., 2002) through the means of efficiency, restraint, adaptation and structural reform (Lautensach, 2010). Specific directions and strategies by which that development could be achieved are discussed in several chapters. What the

Concerned World Scientists should also have said in their warnings is this: The longer we wait, the less attention can be paid to human rights in the transition. In 2018, an analysis (O'Neill et al., 2018) of 145 countries indicated that not a single one met the criteria of living within the sustainable limits of Raworth's Donut Model (Raworth, 2017).

Chapter 3 deals with the overriding urgency to promote environmental security and offers some explanations based on the evolutionary history of the human species. Environmental themes are continued from Chapter 9 to Chapter 12. The origins of human behaviour towards 'nature' are covered in Chapter 11, leading into a haunting collection of 'letters from the front' in humanity's 'war against nature'. Chapter 5 addresses the threat of interhuman warfare and other forms of violent conflict. The protection of individuals in conflict situations through international humanitarian law is discussed in Chapter 6. In Chapter 7 and Chapter 13 that line of reasoning is extended into threats to individual security during peacetime through national and transnational crime, displacement, terrorism, and human trafficking. The special challenges to human security emanating from failed states are addressed in Chapter 7. Globalisation in its manifold manifestations and interpretations can promote as well as endanger human security; those possibilities are examined in Chapter 8 and Chapter 14. The complex challenges associated with human rights violations are discussed in Chapter 15.

Although most of those chapters analyse problems and challenges as well as offer possible solutions, the last section of this text focuses more directly on solutions. Chapter 14 addresses how human rights violations can be addressed and prevented, with a particular view on the situation in Africa. The complex issue of governance for sustainability is addressed first at the national level in Chapter 16, and in Chapter 20 at the global level. Health security and the particular challenges concerning its equitable achievement is the focus of Chapter 17. Possibilities for achieving human security at the global level are the focus of the last chapters in the book; Chapter 18 addresses the reduction of armed conflict, and in Chapter 19 strategies for peace building are discussed.

As with all revolutionary movements, major obstacles towards a sustainable and secure world emerge not so much from embattled traditional elites but from the inertia of the multitudes of the "unaware, unconcerned and unconvinced" (Raskin et al., 2002, p. 19). Communities make policy decisions according to Thompson's (1997) four modes of social solidarity (individualist, hierarchical, egalitarian and fatalistic). Inertia hinders the development of consensus along those four lines. Another obvious obstacle is presented by ideologies – counterproductive beliefs, ideals, priorities among values, and attitudes. For example, the dominant conventional development paradigm (CDP), the "tacit ideology of influential international institutions, politicians and thinkers" (Raskin et al., 2002, p. 29) is informed by cornucopian delusions and a relentless insistence on a narrow modernist interpretation of progress (Lautensach, 2010). Other counterproductive ideologies (e.g. human-nature separation, anthropocentrism) are discussed in several chapters, particularly Chapter 11. Additional variation is contributed by cultural diversity (Lautensach, 2020). All those factors determine the extent to which individuals and groups are capable of adaptive learning for the sake of their survival.

How can those obstacles be addressed? As we announced in the preface, recognising and explicating ideological content in public discourse is one of the major goals of this textbook. The literature on human security does not always measure up to that requirement. It abounds with expertly written reviews and analyses of the subject, as exemplified by the works listed below under "General Reading," works that contrast favourably against more popularised books about development and 'progress' that sometimes include attempts at greenwashing or brownlashing. Yet even the casual reader will notice that some of that literature still appears hampered by a unidisciplinary focus and ideological blinkers; a ubiquitous example, now thankfully declining in frequency, are economic analyses that focus exclusively on GDP, externalise ecological costs, discount future costs, and rest on implicit beliefs in endless growth (see Chapter 12 for a critique). Some of the literature discussing 'sustainable development' still suffers from similar unfounded beliefs and thus focuses on 'Conventional Worlds' type scenarios. Well known examples include the literature surrounding the SDGs and UNESCO's Decade of Education for Sustainable Development (2005-2014), continued under SDG #4. In contrast, contributions such as Richard Heinberg's and David Lerch's *Post-Carbon Reader* (2010) explicitly avoid that fallacy. They also address educational imperatives arising from the various challenges to human security, imperatives amounting to empower learners to become survivors.

Also relatively recently, the human security literature expanded to include ethics as a topic of discussion, mainly in the form of specifying particular implications arising from humanitarian forms of utilitarianism. The field would benefit from a further expansion to transcend Western-Eurocentric ethical paradigms and to counteract the historical marginalisation of dissident cultural views such as holistic, land based environmental ethics, as well as lifeboat ethics as Garrett Hardin (1980) advocated. One ethical limitation of human security is that by virtue of its own conceptual focus it cannot transcend anthropocentrism. In Chapter 11,

Ronnie Hawkins explicates the historical roots of the conventional ethics underlying human security discourse, and she explores the boundaries and benefits associated with a move towards a more holistic ethic that values nature for itself

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1.4: This Textbook

One overarching means by which those obstacles towards sustainable human security can be addressed is education. Without that conviction we would not have embarked in this project of a textbook. Even beyond sustainability and the Great Transition, education can address specific challenges in human security, such as cultural safety. For example, “Preparing to be offended” can pre-empt many intercultural conflicts, and contribute towards their resolution, in today’s climate of mass migration (Lautensach & Lautensach, 2011; 2015). An undereducated electorate lacking in civic knowledge and skills are less able to cater towards their own human security or participate in the state’s efforts. Numerous other learning outcomes promoted in the chapters of this book speak for themselves.

This book differs from other university texts in its unabashed but reasoned advocacy for certain values and ideals. Like many others we see no advantage in moral fence sitting in the Anthropocene; McKibben’s *Eaarth* (2010) demands more of us. The fact that the discussion of ethics has only just begun in the human security field also contributed to our decision to connect the text’s pedagogical mission with a commitment against moral relativism. Most educationists now agree that leaving the learner in a moral vacuum by representing all values as equally valid is both deceitful and counterproductive. Deception lies in the misrepresentation of academic discourse as potentially value neutral; all discourse is value laden and thus includes bias. Pretending to be value neutral is also counterproductive because it makes it more difficult for the learner to become skilled at moral reasoning, resolving dilemmas, and justifying moral decisions. The field of human security has long been controlled from behind a curtain by an ill-defined, implicit and poorly grounded ethic, accompanied by assorted ideological baggage, that only now are being exposed to the light of day (Lautensach, 2020). We hope that there, too, this book can make a positive contribution.

Each chapter begins with a list of *Learning Outcomes & Big Ideas* which inform the reader of the chapter’s objectives and suggest to the instructor possible criteria for assessment. It is followed by a *Summary*, the equivalent of the abstract of a journal article. The body text of each chapter is organised into numbered subsections under *Chapter Overview* to make it easy for the reader to locate specific topics.

At the end of each chapter are *Resources and References* where a list of *Key Points* allows for brief recapitulation and review and connects with the *Learning Outcomes & Big Ideas* specified at the beginning. A list of *Extension Activities & Further Research* follows for the benefit of students and instructors. They provide opportunities and guidance for pursuing important ideas beyond the confines of the chapters. Lastly, after the *List of Terms* (all terms and definitions have been gathered in the Glossary of Terms and Definitions at the end of the book) is a list of *Suggested Reading* that specifies which sources the authors of the chapters consider most beneficial for the reader. Finally, *References* for each chapter are listed at the chapter’s end, rendering the chapters more suitable for independent and eclectic reading; some chapters also include a *Bibliography*.

Each chapter has undergone a thorough process of peer review and editing. Nevertheless, as editors we take full responsibility for any errors that may remain. To the best of our knowledge this is still the world’s first textbook of human security. We hope that students and instructors will find its use as gratifying as we found its conception.

Lastly, the choice of an open access, Creative Commons licence was made to maximise the accessibility of this book to learners, educators and the general public. The chapter themes cover an extremely wide range of conventional academic disciplines. A student of one or even several of those disciplines could hardly be expected to purchase the entire book in hardcopy. The same goes for researchers and educators. Moreover, we preferred to signal our preference for the most equitable option in terms of public access, and for the most sustainable, i.e. paperless, form.

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1.5: Resources and References

Review

Key Points

- Human security differs in principle from state-centered security in its subjective, people-centred focus on welfare, justice, dignity and rights.
- Human security can be quantified with a variety of metrics and indices, and differentiated into pillars or dimensions that focus on the key aspects of politics, sociality, economics, health and environment.
- Over its quarter century history as a concept, human security has undergone significant changes and developments. Two dominant change were the increasing focus on sources of insecurity and on environmental security.
- Those changes were influenced by new ideas, new value priorities, historical changes in global power relationships, and lately, global environmental changes marking the Anthropocene.
- In response to the fundamental changes to the global ecology, climate, population dynamics, resource availability and population health, the UN has embarked on an ambitious program described by the Sustainable Development Goals and Agenda 2030. Considerations of sustainable human security informed those goals, albeit with suboptimal results.
- Ongoing global changes give rise to concerns about the mode of human survival and which associated scenarios it might lead to in terms of political power relationships and modes of human security.

Extension Activities & Further Research

1. Write your own future history of the world by combining some of Raskin et al's (2002) six scenarios into a sequence of eras. For each era, describe the status of human security in its various dimensions or pillars – in your community, in your country and globally. You could do this in the form of a table.
2. Identify the chapter(s) in this text where you can learn more about the particular challenges to human security that concern you the most.
3. As you read through the rest of this book, ask yourself with each chapter: Which of Potter's modes of survival are being described by the author(s)? Which ones are being advertised as desirable or probable for the future?
4. As you read through the rest of this book, ask yourself with each chapter: Which of Raskin's scenarios are being described by the author(s)? Which ones are being advertised as probable for the future?
5. The past decade has seen a worrisome increase in mass killings of unsuspecting civilians in places like schools and shopping centres, especially in the US. Do you think that this phenomenon is somehow connected to the Anthropocene? Or is it more likely that there is no connection? How might you find out?
6. Describe how you perceive the future prospects for human security and the bigger geopolitical picture as they arise from the following likely developments:
    a. Increasing desperation to keep economies afloat (i.e. growing)
    b. Disappearance of coastal territories and even countries (especially islands) to sea level rise
    c. Disappearance of the boreal forest in extensive forest fires
    d. In the absence of effective central governance, building of resilience by local communities

List of Terms

See Glossary for full list of terms and definitions.

- Anthropocene
- Conventional Development Paradigm (CDP)
- cornucopianism
- environmental security
- Four Pillars Model of human security
- overshoot
- securitisation
- seven dimensions

- sustainability

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Footnote

1. Those characteristics, as well as the close association between human security and some of the Sustainable Development Goals, were summarized in a keynote speech by Achim Steiner for the UNDP.
2. The 17 SDGs and their targets are summarised in the UN's 2015) Transforming Our World: The 2030 Agenda for Sustainable Development. The connections between the UN's model of sustainable development and their interpretation of human security are expressed in the United Nations Trust Fund for Human Security. A high-level meeting on 19 February 2019 reiterated that commitment with Officials Stress Relevance of Human Security in SDG Era.
3. As Thompson (1997, p. 146) noted, "people tend to feel secure not when all these risks have been eliminated (for that is impossible) but when they perceive them to be satisfactorily coped with."
4. "All action is goal-directed and all goals value-selected" (Madsden, 1996, p. 80).
5. We exempt from our discussion at this time all objections and criticisms that were made on the basis of hidden agenda. For example, the cacophony of critics that emerged after the Club of Rome published their first Limits to Growth in 1972 seemed to have been largely motivated by non-academic interests, as judging by the fact that not one of their objections has passed the test of time.
6. The melting of Himalayan glaciers was still accelerating in June 2019 (Inside climate News 23 June). Imagine the implications for the human security of the millions who live in the valleys of the Indus, Ganges, Brahmaputra and other rivers fed by those glaciers.
7. Ecological support structures include ecosystems, the structural relationships within and among them, biomass, biogeochemical cycles and other homeostatic mechanisms (Wackernagel & Rees, 1996, p. 35). See discussions in Chapter 3, Chapter 9 and Chapter 12.
8. The biodiversity of a region (or planet) consists of the number of species in its biotic communities and the diversity of genetic variants within each species.
9. This relationship connects the environmental impact I of a population of size P with a per capita consumption ('affluence') A and a per capita technological, cultural, institutional impact P.
10. The Global Footprint Network publishes a wealth of statistics and data on footprints and on the ecological overshoot of countries and humanity on the whole: https://www.footprintnetwork.org/our-work/ecological-footprint/ (accessed 3 August 2019)
11. Most informative in that respect are plots of the HIS against the GDP of countries, as shown e.g. in Hastings (2011). Especially interesting are the outliers.
12. The IPBES provides a 2019 update with Nature's Dangerous Decline 'Unprecedented'; Species Extinction Rates 'Accelerating'.
13. For example, India is already building a wall along its border with Bangladesh; North Africa is becoming Europe's 'buffer zone'; the US are fortifying and sealing their border with Mexico; Israel's wall is already complete. Russia's 'Great Firewall' constrains cyber traffic. Other reincarnations of the 'Great Wall' approach will doubtlessly appear.
14. The prospect of limited survival coupled with partial collapse of traditional institutions and orders has been advocated by Jem Bendell (2018), including a program for 'Deep Adaptation' to cope with it.

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CHAPTER OVERVIEW

2: Human Security Foundation Documents and Related Resources

Learning Objectives

- Learners will be able to explain the origins and early development of the *human security* concept, including key international conferences and their outcomes.
- Learners will be able to identify at least two principles of human security that make it distinct from more traditional concepts of security.
- Learners will also be able to access key informational sites to obtain historical documents, specialized information and reports on evolving events and issues.

Thomas Ditzler, Patricia Hastings and Sabina Lautensach

The selection of foundation documents for human security is a daunting task; selected resources must be clear, cogent, and illuminate the core elements and overarching principles of an especially broad and complex concept. In addition, sources must provide information of sufficient heuristic value as to inform policy and foster development and evaluation of programmes and responses. To provide continuity, the list should include not only historically significant international treaties and agreements, but recurrent and periodic resources that address evolving circumstances.

In pursuit of these requirements, we have divided this effort into three general sections. First, we shall provide an overview of the origins of the human security concept, citing a few key events and related documents; second, we shall present an annotated list of significant human security foundation documents and related resources. In some instances we shall also include commentary on respective documents' development, and any special political, contextual or situational issues that would contribute to understanding the documents' intent. Third, we shall list key recurring resource documents and special publications that have demonstrated their utility as monitors of contemporaneous human security issues. These are often annual, occasional, or near real-time reports produced by agencies and programmes of the United Nations, national governments, universities, non-governmental organizations (NGOs), or other human rights/human security related organizations.

This is not purely a reference chapter but one that introduces the various institutions that picked up on human security early and contributed to its growth from. The contributions listed here give a realistic record of the growth of the human security field. They illustrate the power relationships between those least secure and the political institutions in charge of protecting them; and by explicating those relationships they help establish the basis for empowerment. In keeping with the special purpose of this chapter its format differs from the rest; authors, publishers and URLs are specified in footnotes and not in the book's bibliography. While web addresses tend to outdate relatively quickly, the respective institutions tend to maintain those documents in their archives for much longer.

2.1: Origins and Development of the Human Security Concept
2.2: General Foundation Documents for Human Security
2.3: Key Recurring Resource Documents, Publications and Websites
2.4: Resources and References

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2.1: Origins and Development of the Human Security Concept

As the concept of human security emerged in the 1990s, advocates quickly recognized the need to shape a definition that could adequately define the central organizing principles of the concept and provide a common language. Following is a brief overview of some of the more frequently cited events and documents.

1990

The United Nations Development Programme (UNDP) issued the first Human Development Report (HDR); many have since followed. The independent report was commissioned by the UN Development Programme with the note that "its editorial autonomy is guaranteed by a special resolution of the General Assembly (A/RES/57/264), which recognizes the Human Development Report as an independent intellectual exercise." The report was based on the premise that "people are the real wealth of nations." Copies of all reports are available from, United Nations Development Programme, 20 Years of Global Human Development Reports, 1990-2011.

UNDP Human Development Report [PDF]. This iteration of the HDR focused specifically on the development of the human security framework; it is considered a milestone in the evolution of human security. It declares unambiguously that the proper focus for security is the individual, not the state; a clear reprise of the 1990 report. This chapter addresses human security exclusively, noting that human security ultimately emerges from the context of sustainable development. The report also presented "A World Social Charter" that described the political and social values necessary to create a truly "global civil society."

1995

UN World Summit for Social Development (Copenhagen). This report describes the summit at which the construct of human security was disaggregated into in seven core areas:

1. Economic security
2. Food security
3. Health security
4. Environmental security
5. Personal security
6. Community security
7. Political security.

The impetus for the development of the core areas arose, in part, from the criticism that human security was vague and overbroad. The website has three sections:

1. World Summit for Social Development Agreements: The Copenhagen Declaration, the ten commitments, and the Programme of Action
2. World Summit for Social Development Documents: All official texts of the Summit
3. World Summit for Social Development Statements: An archive of all 370 statements made at the Summit

2002

The intent of the UNDP's 1994 Human Development Report was further illuminated in 2002 in Keizo Takemi's presentation, "Evolution of the Human Security Concept, Health and Human Security: Moving from Concept to Action," delivered at the Fourth Intellectual Dialogue on Building Asia's Tomorrow. At the time, Keizo served as Chairman, Committee on Foreign Affairs and Defence and Member of the House of Councillors in the Japanese Diet. In 2006 he was named by UN Secretary-General Kofi Annan to serve as a member of the High Level Panel on UN System-Wide Coherence in Areas of Development, Humanitarian Assistance, and Environment. Keizo is currently a research fellow at the Harvard School of Public Health, a senior fellow at the Japan Center for International Exchange, and concurrently a professor at the Tokai University's Research Institute of Science and Technology Noda, 2002).

2003

In 2003, Sabina Alkire published “Conceptual Framework for Human Security”, in which the author proposed, “The objective of human security is to safeguard the vital core of all human lives from critical pervasive threats, in a way that is consistent with long-term human fulfillment” (pp. 15-40). Alkire’s paper clarifies key terms, traces the historical background and evolving interpretation of human security and examines the interactions between human security and other policy frameworks.

2006

In May 2006, Richard Jolly and Deepayan Basu Ray published “The Human Security Framework and National Human Development Reports: A Review of Experiences and Current Debates.” The authors provided clear support for shifting the focus of security from state boundaries and preservation of strategic national interests maintained by protected military resources, to protection of individuals and communities across a range of threats.

See Suggested Readings for Section 2.1.

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2.2: General Foundation Documents for Human Security

One might profitably argue the value of a more comprehensive list, but our intent is to cite sources providing the most concise overview of critical themes and cross-cutting issues. The authors note that a recent internet search of the term *human security* yielded no fewer than 45,700,000 results! It is hoped the following resources will provide sufficient initial information as to impel astute readers to develop a more personal list as part of their respective continuing inquiries into the evolving role of human security in world affairs.

Due to the high degree of inter-relatedness of human security concerns, selected parts of many foundation documents may often fit in a number of the 'Seven Human Security Categories' cited in the 1995 Copenhagen World Summit, and in the interest of simplicity and brevity we reference only the general themes. Also note that in addition to treaties and other binding instruments, certain international human rights/human security instruments may be characterized as either conventions or declarations. Conventions are legally binding instruments under international law; declarations are not legally binding, but as a practical matter often have referential or moral authority that may create de facto political force.

The Charter of the United Nations and the United Nations Website

The UN Charter was signed on the 26 June 1945, in San Francisco, at the conclusion of the United Nations Conference on International Organization, and came into force on 24 October 1945. Not surprisingly, this is the first source for many in search of foundation documents in human security. Here one finds an easy to navigate source of all relevant information about the UN, from historic data on origin, development, structure and organization, to the UN's relationship with member states, and current initiatives.

The United Nations website offers access to a large collection of foundational documents, programmes and publications. Information is organized under general content areas including Peace and Security, Development, Human Rights, Humanitarian Affairs and International Law. Beginning in the selected area one may easily pursue specific issues. The site also serves as the official source for evolving situations or issues in which the UN has an ongoing interest, and provides access to the recurrent documents and reports of many of the UN's programmes and organizations.[1]

The Geneva Conventions of August 12, 1949, with Protocols Additional of 1977 and 2005

From their origins in the aftermath of the horrific Battle of Solferino, Italy in 1859 to the present, the International Red Cross Movement and the Geneva Conventions illuminate the best efforts of the international community to protect those affected by armed conflict. These four Conventions and three Additional Protocols represent the body of international law that protects non-combatants in areas of armed conflict. Specifically, these include wounded, sick and shipwrecked soldiers who are who are no longer participating in the hostilities (*hors de combat*), civilians, health and aid workers, clergy and prisoners of war. The cogency and brevity of the conventions surprises many and, in their entirety, the compilation of all four conventions occupies only five-eighths of an inch of shelf space (ICRC, 2014).

Protocols Additional (1 and 2) to the Geneva Conventions of August 12, 1949

These instrument describes two protocols: the Protocol Additional to the Geneva Conventions of August 12, 1949, Relating to the Protection of Victims of International Armed Conflicts (Protocol I), and the Protocol Additional to the Geneva Conventions of 12 August 1949 Relating to the Protection of Victims of Non-International Conflicts (Protocol II) Protocol. In both instances the Protocols Additional reaffirm the existing Geneva Conventions, but add additional provisions to accommodate changes in warfare since the end of World War II (ICRC, 1977/96).

Protocol Additional to the Geneva Conventions of August 12, 1949, and Relating to the Adoption of an Additional Distinctive Emblem (Protocol III), December 8, 2005

This instrument concerns the addition of third "distinctive emblem" to represent the presence of the International Red Cross/ Red Crescent. The text notes that "Since the nineteenth century the Red Cross and Red Crescent emblems have been used as universal symbols of assistance for armed conflict victims. With the adoption of an additional emblem – the red crystal – a new chapter in their long history has just been written." Document provides an overview of origin and development of the Red Cross Distinctive Emblem.

Office of the High Commissioner for Human Rights

The Office of the Commissioner for Human Rights (OHCHR) has a unique international mandate to promote and protect human rights as a part of the UN's commitment to the universal ideal of human dignity. Specific site content includes a brief history of the Office's, mandate, mission statement, and structure. Of particular interest are the tabs concerning access to the media center, publications and library, and links to related organizations (UN, 2020).

Manual on the Rights and Duties of Medical Personnel in Armed Conflicts

As the title indicates, the focus of the effort here is to illuminate those parts of the Geneva Conventions and Additional Protocols that pertain specifically to health care in circumstances of armed conflict. Each of the three chapters states the relevant articles of the conventions, accompanied by references to concordant Convention articles and explanatory text (Baccino-Astrada, 1982).

The Commission on Human Security

The home page of the Commission was established under the United Nations Trust Fund for Human Security (UNTFHS) in 1999 in response to challenges identified at the United Nations Millennium Summit, noted elsewhere. During the Summit, Secretary General Kofi Annan called upon the world community to advance the twin goals of "freedom from want" and "freedom from fear." Here, Annan referred to US President Franklin D. Roosevelt's State of the Union Address of January 6, 1941, now informally known as the "Four Freedoms Speech." In his address Roosevelt proposed four fundamental freedoms that people "everywhere in the world" should enjoy: freedom of speech and expression, freedom of worship, freedom from want, and freedom from fear. The first two Freedoms represent values protected by the U.S. Constitution, but the second two endorsed, in forceful terms, a right to economic security and a human rights view of foreign policy. Roosevelt's address is believed by many to have created the plinth on which the moral imperatives of the human security paradigm rest. According to their website, "Since 1999, the UNTFHS has committed over USD 350 million to projects in over 70 countries" (OCHA, n.d.).

In 2016, the UNTFHS published the *Human Security Handbook* [PDF], which reaffirms and updates the concept on the basis of three freedoms, extending from Annan's two: the freedom from want, freedom from fear, and freedom to live in dignity (p. 4). Strategies for human security are people-centred, comprehensive, context-specific, prevention-oriented, and promote protection and empowerment (p. 7).

Human Security of Children

Convention on the Rights of the Child (1989) and the Optional Protocol on the Involvement of Children in Armed Conflict (2000): Machel 10-Year Strategic Review [PDF] (2007) constitutes part two of a follow up to the Landmark Impact of Armed Conflict on Children [PDF] (1996). UNICEF provides the following description of the Machel study:

For those not familiar with the original study, this 236 page text is an essential document on the subject of war and children. Released in 2009, it touches, in-depth, on each guiding principle and sector related to reconstruction and stabilization as well as offering a wealth of data and reference.

In describing the text and its' source material UNICEF notes that:

> The 1996 Machel Study challenged the world to recognize that 'war affects every right of the child.' This follow-up report analyses the progress – and challenges – of the subsequent decade. More than 40 UN agencies, non-governmental organizations and academic institutions – along with children from nearly 100 countries – contributed to this review, which was co-convened by the Office of the Special Representative of the Secretary-General for Children and Armed Conflict and UNICEF.[2]

A Conceptual Framework for Human Security

Alkire offers a general working definition of human security that incorporates an examination of it in context. The paper provides a clear compendium of central organizing concepts that are critical to understanding the large and diverse spectrum of issues engaged by the Human Security concept (Alkire, 2003).

The United Nations Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment

The Convention was adopted by the General Assembly of the United Nations on 10 December 1984 (resolution 39/46) and it is an international human rights instrument comprising three parts. Part 1 defines torture, specifies obligations of states to establish jurisdiction to prevent torture, and, in its instance, to pursue legal action. Part 2 concerns the responsibility of states to report and monitor torture allegations and empowers the Committee Against Torture to investigate allegations. Part 3 governs mechanisms for ratification, entry into force, and amendment of the Convention (UN 1997).

The Universal Declaration of Human Rights (UDHR)

The full text of the Universal Declaration of Human Rights was adopted and proclaimed by the United Nations General Assembly Resolution 217 A (III) on the 10 December 1948. The UDHR document comprises a preamble and 30 Articles that recognize the inherent dignity and equal and inalienable rights of all members of the human family. The Office of the High Commissioner for Human Rights notes it is the culmination of the combined efforts of, "representatives with different legal and cultural backgrounds from all regions of the world, as a common standard of achievements for all peoples and all nations. It sets out, for the first time, fundamental human rights to be universally protected." To ensure the greatest dissemination of the document, the UN website informs readers that, at present, there are 379 different translations of the UDHR available in HTML and/or PDF format (UN 1948).

The International Covenant on Civil and Political Rights (ICCPR)

The Covenant is a part of the International Bill of Human Rights, along with the International Covenant on Economic, Social, and Cultural Rights (ICESCR) and the Universal Declaration of Human Rights (UDHR). It is a multilateral treaty that was adopted by the UN General Assembly in December 1966 and came into force in March 1976. In general the Covenant speaks to the obligation of the signatories to respect individual civil and political rights including the right to life, electoral rights, the rights to due process and a fair trial, and freedom of religion, freedom of speech, and freedom of assembly (UNOHCR, 1966).

International Labour Organization (ILO)

In describing mission and intent, the International Labour Organization website notes that it is:

> the international organization responsible for drawing up and overseeing international labour standards. It is the only 'tripartite' United Nations agency that brings together representatives of governments, employers and workers to jointly shape policies and programmes promoting Decent Work for all. This unique arrangement gives the ILO an edge in incorporating 'real world' knowledge about employment and work.

The ILO website home page displays eight general topic headings:

1. About the ILO
2. Topics
3. Regions
4. Meetings and Events
5. Programmes and Projects
6. Publications
7. Labor Standards
8. Statistics and Data Bases.

As with other specialized agencies of the UN, the ILO website also provides timely information about evolving issues, key resources, and commentary on policy initiatives (ILO, 2020).

World Food Programme (WFP)

The World Food Programme (WFP) is the food-aid arm of the United Nations system. Given the tragic persistence of food insecurity, many human security advocates and researchers find this to be among the most frequently accessed websites. WFP notes that food aid is one of the many instruments that can help to promote food security, which is defined as access of all people at all times to the food needed for an active and healthy life. The website explains that policies governing the use of World Food

Programme food aid must be oriented towards the objective of eradicating hunger and poverty; they note that: “The ultimate objective of food aid should be the elimination of the need for food aid,” (an especially good functional description of sustainability). Targeted interventions are needed to help to improve the lives of the poorest people—people who, either permanently or during crisis periods, are unable to produce enough food or do not have the resources to otherwise obtain the food that they and their households require for active and healthy lives.

Consistent with its mandate, which also reflects the principle of universality, the WFP website notes they will continue to:

- Use food aid to support economic and social development
- Meet refugee and other emergency food needs and the associated logistics support
- Promote world food security in accordance with the recommendations of the United Nations and FAO.

The core policies and strategies that govern WFP activities are to provide food aid:

- To save lives in refugee and other emergency situations
- To improve the nutrition and quality of life of the most vulnerable people at critical times in their lives
- To help build assets and promote the self-reliance of poor people and communities, particularly through labour-intensive works programmes

Food and Agriculture Organization of the United Nations (FAO)

This organization’s website addresses virtually all aspects of food security. General search categories include World Food Situation, Food Security, Hunger and Food Safety (FAO, 2020).

World Health Report – World Health Organization (WHO)

Generally regarded as the “best first source” for general health information, this document has a broad array of topics and data, divided into sections on the WHO itself, health topics, health security, data and statistics, media center, publications, countries, programmes, projects and related resources. The most recent report online dates to 2013. (WHO, 2020).

The Integrated Regional Information Network (IRIN)

IRIN is a humanitarian news and analysis service of the UN Office for the Coordination of Humanitarian Affairs (OCHA). In December 2010, IRIN released “How to sound knowledgeable in Cancun: Selected articles on the humanitarian implementation of climate change.” This collection of articles addresses funding, changing technology, adaptation and mitigation, forecasting, and cost-benefit analysis concerning the humanitarian implications of climate change. The authors note that Haiti, the monsoon flooding in Pakistan, and the danger of WMD technology in the background of many volatile geopolitical areas are reminders of the importance of disaster management within the reconstruction and stabilization framework (IRIN, 2019).

The Multilaterals Project – The Fletcher School, Tufts University

The Multilaterals Project began in 1992 and the effort was originally intended to make environmental agreements more accessible to the general public. The scope of the effort has expanded to now include the texts of international multilateral conventions and other instruments; treaties concerned with human rights, commerce, and trade; laws of war and arms control; biodiversity; cultural protection; and other areas.

Guiding Principles on Internal Displacement – UN Office for the Coordination of Humanitarian Affairs (OCHA) [3]

It is a sad truth that whatever the specific number of displaced persons is at any moment, that number is invariably measured in multiples of tens of millions. In his introductory comments for this OCHA produced resource, Under-Secretary-General for Humanitarian Affairs and Emergency Relief Coordinator Jan Egland referred to Secretary General Kofi Annan’s observation that, “internal displacement is the great tragedy of our times. Internally displaced people are among the most vulnerable of the human family.” It is not an overstatement to say that this document should be considered an essential reference for any student of human security. The narrative style and organizational structure of the work is striking similar to the Geneva Conventions and brings gratifying clarity and utility to an extraordinarily complex issue.

Humanitarian Charter and Minimum Standards in Disaster Response

This book, commonly called the *Sphere Handbook*, is by The Sphere Project. The website describes the Project as a "voluntary initiative that brings a wide range of humanitarian agencies [PDF] together around a common aim – to improve the quality of humanitarian assistance and the accountability of humanitarian actors to their constituents, donors and affected populations." The *Sphere Handbook* "is one of the most widely known and internationally recognized sets of common principles and universal minimum standards for the delivery of quality humanitarian response." Established in 1997, the Sphere Project is not a membership organization. Governed by a Board composed of representatives of global networks of humanitarian agencies, the Sphere Project network today is a vibrant community of humanitarian response practitioners. The handbook itself addresses humanitarian standards for virtually all sectors of humanitarian response including hygiene; nutrition and food aid; shelter, settlement and non-food items; and health services. The book also has several very helpful appendices that provide protocol forms for health services assessment, health surveillance forms, and related topics (Sphere, 2018).

See Suggested Readings for Section 2.2

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2.3: Key Recurring Resource Documents, Publications and Websites

The Human Security Report Project (HSRP)

The Human Security Report Project is an independent research centre is affiliated with Simon Fraser University (SFU) in Vancouver, B.C. Canada. The HSRP tracks global and regional trends in organized violence, their causes, and consequences. The Project publishes research findings and analyses in the *Human Security Report*, *Human Security Brief* series and in the *Mini-Atlas of Human Security*. The website is clear and well organized and the project notes that materials are available in hard copy, but are also available online.[4]

The Mini-Atlas of Human Security [5]

The *Mini-Atlas* is a product of the HSRP mentioned above, but we make special note of it because it is a particularly useful and informative resource for monitoring events. The atlas is described as an "illustrated guide to global and regional trends in human insecurity, the *Mini-Atlas* provides a succinct introduction to today's most pressing security challenges. It maps political violence, the links between poverty and conflict, assaults on human rights—including the use of child soldiers—and the causes of war and peace."

Landmines and Land Rights in Conflict Affected Contexts [6]

Published by the Geneva International Centre for Humanitarian De-mining, this publication addresses the impact of land rights issues in de-mining campaigns related to the return of displaced populations and the restoration of the agricultural sector.

Disaster in Asia: The Case for Legal Preparedness [7]

This advocacy report is published by the International Federation of the Red Cross and Red Crescent Societies and highlights how better national and sub-national legislation can help to significantly reduce the human suffering caused by the growing number of natural disasters. The text takes a rule-of-law approach broadened to include housing, land, and property rights in addition to judiciary reform and criminal confinement. The report serves as a useful working model that both describes and advocates for the potential power of law in shaping both national and regional approaches to disaster prevention, mitigation response, and recovery.

Associated reports

"World Disasters Report" and "Disaster Response and Contingency Planning Guide"

Making an Impact: Guidelines on Designing and Implementing Outreach Programmes for Transitional Justice [8]

Author: Clara Ramirez–Barat. Publisher: International Center for Transitional Justice (ICTJ). The ICTJ states that it "works to redress and prevent the most severe violations of human rights by confronting legacies of mass abuse. ICTJ seeks holistic solutions to promote accountability and create just and peaceful societies." In this paper author Ramirez-Barat presents a highly useful synopsis of the principles of transitional justice by describing the process in the form of the natural history of a successful initiative. The text seeks to provide strategies for outreach initiatives "for prosecutions, truth telling, and reparations programmes, and to provide practitioners with practical guidance in the design and implementation of outreach programmes for transitional justice measures." She also provides practical guidance on the development of outreach programmes, and considers the tasks of working with diverse audiences. It has long been noted that successful transitional justice is a key issue in helping troubled peoples break the cycle of violence. This paper provides the language, concepts, and techniques to help readers become informed about the tasks of such initiatives by providing practical guidance in the design and implementation of outreach programmes.

What's New – The UN Trust Fund for Human Security

This resource is regularly updated and reports on UN initiatives, regional programmes and events, and the UN's *Human Security Newsletter*. News and activities about the UNTFHS, as well as associated resources are also offered.

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2.4: Resources and References

Questions for Discussion

1. What is human security and how is it different from traditional state (national) security?
2. Critics note that the concept of human security, while laudable, is too broad to actually become operational. Do you agree? Discuss.
3. What is the reason most treaties or instruments are developed?
4. What is the basic goal of international humanitarian law?
5. What are the characteristics of international humanitarian law, human rights law, and Geneva law that are distinct from each other?
6. Over time, Geneva Law or the Law of War has changed to deal with changing technology and the circumstances surrounding war. What additions or changes would you make for current times? What changes would you predict in the next 50 years?
7. Imagine a future 10 years hence, where there are no international instruments or treaties covering international humanitarian law, human rights law, and Geneva law. What 10 documents would you want to create to define international rules? Discuss a rank order with colleagues.
8. What is the most persuasive motivation that would cause a country or region to ban certain methods of warfare (e.g. flame, chemical, nuclear, land mines, bombing, biologic, improvised explosives, psychological, rape, starvation, siege, other)?
9. What should be basic humanitarian rights for civilians in conflict areas?
10. How might social or culture issues affect the way in which one interprets international humanitarian law, human rights law and Geneva law?
11. Article XIX of the Universal Declaration of Human Rights notes that:
    - Everyone shall have a right to hold opinions without interference.
    - Everyone shall have the right to freedom of expression; this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of his choice.

    The exercise of the rights provided for in paragraph 2 of this article carries with it special duties and responsibilities. It may therefore be subject to certain restrictions, but these shall only be such as are provided by law and are necessary:

    - For respect of the rights or reputations of others
    - For the protection of national security or public order, or public health or morals.

    This was written at a high level and does not necessarily embrace recent advances in electronic media (i.e. Internet).

    Should the Declaration of Human Rights specifically address the Internet and future changes? Is access to the internet a “right”? Should it be recognized as a “utility” such as electric power or water? Should governments restrict communicators from use of the Internet? Is it fair to look at the status quo from a previous time as the baseline? For example, in 1985 the Internet was a concept, but not in existence and people did “fine.”

Extension Activities & Further Research

1. *Concerning Food Security:* What are some of the second and third order effects of bringing food into an area suffering from famine? Specifically, what are the potential impacts on local security, economy, farmer incentives, debt, possible diversion, etc.?
2. *Concerning Environmental Security:* Some areas of the world are used to dispose of technological or other waste for the developed world. What can be done with international instruments to maximize safety and address local concerns about safety and sustainability issues?
3. *Regarding the Universal Declaration of Human Rights:*Article 6 states that “Everyone has the right to recognition as a person before the law.” How could local culture change this?
4. An iconic photo of an execution during the Vietnam War was taken on February 1, 1968. It shows South Vietnamese National Police Chief General Nguyen Ngoc Loan executing a Viet Cong officer in Saigon during the Tet Offensive.[9] Lém was captured and brought to General Loan, who then summarily executed him because, it was contended that, Lém commanded a Viet Cong

death squad. On this day, 34 murdered South Vietnamese National Police officers and their families were found in a ditch. They had all been bound and shot, and Lém was captured near the site of the ditch. Some of the executed belonged to the family of General Nguyen's deputy and close friend; six were General Nguyen's godchildren. Given this situation: are summary executions justified? What is the status of the Geneva Conventions regarding wars of national liberation?

5. Article 15 of the Universal Declaration of Human Rights states that:
   - Everyone has the right to a nationality, and that
   - No one shall be arbitrarily deprived of his nationality nor denied the right to change his nationality

   In the last quarter of the 20th century many nations have come into existence and many currently have internal strife that may cause the trend of fragmentation to continue. How is the right to a nationality identity protected? Should nationality be determined by original, current, or choice? How might this affect dual nationality?
6. *Concerning the Convention Against Torture:* How does one define torture? In its extreme forms it is easy to identify; try to focus on "threshold effects," that is, the point at which one would begin to question specific techniques or circumstances.

List of Terms

See Glossary for full list of terms and definitions.

- conventions
- declarations
- *hors de combat*

Suggested Reading

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View a current collection of publications on human security on the UN Trust Fund for Human Security website.

View a current collection of UN resolutions, debates and reports of the UN Secretary-General on human security online.

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3. The Guiding Principles are presented at: https://www.unocha.org/themes/internal-displacement/resources. Additional resources are available at https://www.unocha.org/themes/internal-displacement (accessed 18 July 2019)
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10. These authors won the 2017 Springer survey for most influential (i.e. 'most clicked') paper in environmental science 2016. They present the conceptual origins of de-growth, systemic social and ecological limits, and the contribution of de-growth to the transformation.
11. International relations focus but also includes climate change. Focus on global governance.
12. Extends justice over time and space.
13. Updates and strengthens the scientific underpinnings of the Planetary Boundaries framework, and denies any prescription about 'how societies should develop.' ↵
14. Economic globalisation, digital communication, shifts of economic/political/military power, economic growth, science revolutions, detachment from ecosystems. Detailed concept maps summarise the contents of the book for graphically inclined readers.
15. Environmental Change Institute, Oxford University. The seven ways are: 1. From GDP to the donut space; 2. Placing the economy within the biosphere; 3. From rational actors to social & adaptable individuals; 4. From a mechanical equilibrium to the dynamic complexity of systems; 5. From growth orientation to redistribution; 6. From growth to regenerative priorities; 7. From addiction to growth to addiction to holistic welfare.
16. The site summarises metric, policy, subjective/objective benefits, virtue ethics.
17. The 2016 Report can be downloaded from http://en.unesco.org/wssr2016 - executive summary at http://www.worldsocialscience.org/activities/world-social-science-report/2016-report-inequality/ (accessed 18 July 2019)
18. 'Pollution is the largest environmental cause of disease and premature death in the world today. Diseases caused by pollution were responsible for an estimated 9 million premature deaths in 2015—16% of all deaths worldwide—three times more deaths than from AIDS, tuberculosis, and malaria combined and 15 times more than from all wars and other forms of violence. In the most severely affected countries, pollution-related disease is responsible for more than one death in four.' ↵
19. Reports country by country performance on the SDGs.
20. The Social Progress Index is an aggregate index of social and environmental indicators that capture three dimensions of social progress: Basic Human Needs, Foundations of Wellbeing, and Opportunity. The 2018 Social Progress Index includes data from 146 countries on 12 components and 51 indicators (https://www.socialprogress.org/assets/downloads/resources/2018/2018-Social-Progress-Index-Exec-Summary.pdf). See http://www.socialprogressindex.com/ for the world map and country profiles. http://www.socialprogressimperative.org (significance of global average index). More information is available through http://www.socialprogress.org.
21. The treaty database with full texts, commentaries, and State Parties (signatories).
22. Of special interest is the Worst Forms of Child Labour Convention, 1999 (No. 182), found at http://www.ilo.org/dyn/normlex/en/f?..._ILO_CODE:C182
23. Find the UN translation project of the Universal Declaration of Human Rights online.

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CHAPTER OVERVIEW

3: Why Human Security Needs Our Attention

Learning Objectives

- Outline the evolution of the human world-view and describe some of the consequences arising from that world view.
- Outline what constitutes a healthy environment, an ecosystem, the concept of ecosystem services and the essential requirement for ecological integrity as a prerequisite for the health of all life and for human security in general.
- Briefly discuss the role of energy in technological progress and cultural development, particularly the role of fossil fuels as the principal factor in recent human progress and in the genesis of today's environmental crisis.
- Discuss how human security will be affected by the environmental crisis and the crisis arising from declining energy stores.
- Explain the connection between human security and sustainable development in the Anthropocene.
- Analyse the 17 Sustainable Development Goals and explain which ones are designed to strengthen ecological integrity and which ones place additional demands on ecosystem services.

Donald Spady and Alexander Lautensach

The central questions for this chapter are: 'What role does the natural environment play in maintaining human security? What evidence exists that the natural environment is being damaged to such a degree that globally, human security is threatened?' The authors present their perspective on human security as it relates to those questions. The roots of security threats, and of protective adaptations, are identified in the evolutionary history of the human species and in the transformations that we experienced along the way. Some of our former strengths are being turned into liabilities because of the ecological constraints imposed at this time by the biosphere. As a cardinal example of such a shift, we explore the beneficial role that fossil fuels have played in the recent rapid development of human society and also the existential problems to human society that their use has spawned. As a second example, we discuss how different human security aspirations, manifesting as the UN's 17 Sustainable Development Goals, have begun to conflict with each other. Much of the information presented in this chapter is explored more fully elsewhere in the text, especially in Chapter 9, Chapter 10 and Chapter 11.

3.1: Introduction
3.2: What Do We Mean by 'Human Security'?
3.3: How We Got to Where We Are Today
3.4: In What Ways Are Humans the Most Dangerous Species
3.5: So, How Did We Get into This Mess?
3.6: Addressing the Challenges
3.7: Concluding Comment
3.8: Resources and References

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3.1: Introduction

Why should we gravitate towards a human security model rather than adhere to more traditional views of security? The answer lies in the comprehensive interactivity expressed in the four pillar model, as we will briefly review below. Environmental security plays a vital role in affecting numerous aspects of security at the levels of individuals, families, communities, regions, countries and the planet. To make that argument, this chapter provides some context for several issues discussed more completely in later chapters. A concept stressed in this chapter is that both healthy human existence and equitable and sustainable human security requires a healthy environment that can maintain ecological integrity and effective ecosystem functioning; consequently, any serious threat to non-human life ultimately poses a threat to humans. The non-biophysical factors such as economics, cultural beliefs and practices, lifestyles, philosophy, and religion, all of which play important roles in creating and maintaining human security, are addressed elsewhere in this book.

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3.2: What Do We Mean by ‘Human Security’?

The security discussed in this chapter is characterized by living an everyday life within a stable society functioning within a stable environment. The security furnished by a healthy environment provides the primal backdrop to our lives and enables stable society. It is knowing that the air is clean, the water safe, that the sun will shine, the rain will fall, and the seasons cycle predictably. It is the reasonable expectation that if you plant a crop, or cast a net into the water, you will return a harvest. Most of this type of security depends upon the healthy functioning of the supporting components of our environment. When these environmental components are in jeopardy, so are we.

Obviously, other aspects of security also constitute part of our everyday lives. These include reasonable expectations of being able to sleep safely, be warm, grow food, live, be educated and employed, worship, vote and make decisions, dream and be resilient in the face of illness and tragedy. As well, it is the ability and freedom to visit, enjoy life, love, marry, and have children in the knowledge that they will grow and develop, play and learn, and anticipate their own future without undue anxiety. This chapter does not directly address these aspects of security, although it will become obvious that environmental circumstances can profoundly affect them.

A third aspect of security includes military and judicial security. It is the security that commonly comes to mind when we talk about security. We visualize it when we think of ‘Wars on Terror,’ of ‘Homeland Security,’ of multiple check-stops, surveillance cameras —on street posts and in our televisions and computers, of body scanners and of police on every corner and in the sky, of monitoring the internet and sustaining judicial systems geared to overpopulating jails. It is the security provided by standing armies with bloated budgets and also the security presumed by carrying personal firearms or living in gated communities. These types of security are often based on fear and their lack is often connected with greed, self-interest, demagoguery, intolerance and indifference.

These diverse aspects of security can be traced to the seminal work of Abraham Maslow (1943) who classified human needs and aspirations into physiological needs (directly required for survival), safety (health and well-being), love and belonging, social esteem and self-actualization. While some features of Maslow’s hierarchical model have been *superseded*, his basic idea of the diversity of needs remains uncontested. Humanity’s efforts to satisfy all those needs, and our hope that they will be fulfilled in the future, are fundamental to the ideal of security—as evident in former UN Secretary General Kofi Annan’s (2005, pp. 1-3) paraphrasing human security as “freedom from want and fear.” Our basic survival and safety depend most directly on the healthy functioning of our natural environment, while the needs for love, belonging, esteem and success depend on the functioning of societies. *Although* we cannot ignore these latter types of security, this chapter does not address them. Nevertheless, with humans being what they are, all of these types of ‘security’ determine our lives. As our populations increase, the societal priorities of these various forms of security change, and in modern society, the emphasis rarely is placed on the environment. One thing is becoming increasingly obvious: human security faces existential peril because the environment is failing, and the driver of this is human action. To understand why, we need some context regarding security and some history as to how we got here.

The inclusiveness of the concept is evident in the descriptive models of human security. The four pillar model (Lautensach, 2006) distinguishes four traditional areas of security (or sources of insecurity). These are: (a) the military – strategic security of the state; (b) economic security, particularly its conceptualization through unorthodox models of sustainable economies; (c) the health of populations as described by epidemiology and the complex determinants of population health, community health, and health care priorities; and (d) environmental security that is primarily determined by the complex interactions between human populations and the source, sink, and maintenance functions of their host ecosystems. This chapter addresses primarily the fourth pillar. These four pillars include diverse sources of threats and cover the same ground as the ‘seven dimensions’ of the 1994 Human Development Report (UNDP, 1994): economic, food, health, environmental, personal, community and political security. An important strength of this approach is its comprehensive exploration of the interdependence of the different sources of insecurity. These sources were traditionally considered under the purview of different academic specialties and were (and still are) usually studied in isolation from each other. The strength of the comprehensive approach lies in its versatility and its capacity to detect and characterize synergistic effects and multifactorial causation.

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3.3: How We Got to Where We Are Today

Consider a very simple model of human development from the life of pre-humans, highly interactive with and dependent on the natural environment, to life today, in which people barely acknowledge the existence of the natural world, let alone consider it a requirement for their existence. It consists of six steps. The model presented here describes this shift. The steps are not discrete, they reflect stepping stones in human history, and may overlap or run in parallel.

Step 1. Earth: ~ 4.5 Billion years ago: An environment was formed that was capable of supporting simple life and letting it evolve. This began about 0.5-1 billion years after the formation of the Earth and continues to the present (Betts et al., 2018). During this time biogeochemical cycles developed that are essential to all life. These cycles ensure that the necessary chemicals and elements are available at the right time and place and amount for lifeforms to use, and that when they are no longer needed they are recycled, stored temporarily, or safely sequestered somewhere on Earth. They evolved for virtually every element used in life.

These cycles form part of what we call ecosystem services – the benefits people obtain from ecosystems. These include provisioning (food, water, timber), regulating (climate, floods, wastes, water quality), supporting (soil formation, photosynthesis, nutrient cycles) and cultural (recreation, spiritual, aesthetic) services (MEAB, 2005). This definition reflects an anthropocentric perspective, because the first three (regulating, supporting, and provisioning) services are required for all life, and, in a reciprocal manner, the rest of life also acts to maintain these services. On the other hand, cultural services relate only to humans.

Summarized simply, ecosystem services give us a stable climate, food and shelter. It is difficult to overemphasize the complexity and interdependence of the ecosystem processes, but, simply put, they keep the air safe to breathe, the water safe to drink, the soil capable of growing nutritious crops and the climate conducive to organized society. They maintain the stable chemical and physical composition of Earth and provide us with the resources we use for every material thing we create; *nothing is unnecessary and nothing is wasted*. All of these services, processes, and cycles interact with each other and respond in an integrated manner to environmental demands. Through the actions of these ecosystem services, Earth's environment evolved from a primitive and toxic (to most life) environment to one sustaining life today.

Step 2. ~ 200,000 years ago: Pre-historic *Homo sapiens* emerges, living a life closely integrated with and generally subservient to the natural world.

Step 3. ~11,000 years ago: Human society begins to use basic technology, especially weapons and agricultural technology, and lives within local cultures. It slowly develops a perception of being superior to nature (White, 1967). This step gradually transitioned to Step 4.

Step 4. ~11,000 years ago to now. Earth's climate stabilizes at a temperature enabling the development of agriculture and ultimately more advanced human societies. Civilizations are formed and humans live in increasingly complex cultures, with increasingly sophisticated philosophies, religious beliefs, political and economic systems, schools, sciences and technologies. Humans spread into all parts of the world, including under the oceans, to the poles and the mountaintops, and even into space and to the moon.

Step 5. The last 100-200 years of **Step 4**, but with changes so radical as to constitute its own period. It is characterized by the globalized human living in an environment characterized by high technology, aggressive and unsustainable global exploitation of resources, unrestrained consumption combined with indifferent disposition of waste, rapid global transport, and virtually instantaneous global communication. The underlying philosophy is based on human superiority and on economic theory ground on the unrestrained use of natural resources to promote economic growth, human 'progress' and excessive material consumption.

Step 6. Post-WW II to … ? This is a time of living with the consequences of . It is today and tomorrow and the foreseeable future. Life is happening in a rapidly changing, overpopulated, resource constrained, polluted, warming, and politically, economically, and environmentally unstable world. This time (from about the late 20th century on to today) is called the *Anthropocene* (Steffen et al., 2011), a geologic epoch characterized by the dominance of humankind as a global force in its own right. It is so named in recognition that human actions are affecting the fundamental life systems of the planet and a reflection of our awareness that humans *can* change and *have* changed the biological and physical properties of the Earth.

A striking feature of these steps is that the rate of change accelerates as the steps increase in number. Thus, to get to **Step 1** took about one billion years; from **Step 1** to the evolution of *Homo sapiens* (**Step 2**), almost another 3.8 billion years. To get from **Step**

2 to **Step 3** took maybe 200,000 years, and from **Step 3** to **Step 4** less than 10,000 years. The transition from **Step 4** to **Step 5** lasted perhaps 250 years, i.e. lightning fast in comparison. We do not know how long **Step 6** will last, but the progression from **Step 1** to **Step 6** depended on a favourable environment, and today that environment is changing. The general environmental balance that humankind has depended on for over 11,000 years is becoming more and more unstable. How long **Step 6** lasts, and what Step 7 will look like, depends on how rapidly and effectively humans can act to stabilize our environment to a state compatible with maintaining human society.

In short, while humans evolved relatively late, they have rapidly progressed to become Earth's most successful and perhaps most dangerous species.

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3.4: In What Ways Are Humans the Most Dangerous Species

Reasons why humans have become so dangerous include human intelligence and adaptability, easy access to abundant fungible energy, an attitude of superiority over nature and hubris. These enabled humans to constantly develop increasingly complex technologies that empowered humans to do things much more easily and rapidly than they could do otherwise. More recently, access to abundant cheap energy enabled these technologies to progress and develop at a rate beyond our ability to recognize and acknowledge how human actions affect both humans and the non-human world. Our philosophy is more like 'We can do it, so let's do it.' as opposed to 'We can do it, but should we, and why'? As a result, humanity developed the perspective of being 'above' nature, more powerful than nature, a 'belief' that it was exempt from the limits of nature common to other life. This impression is epitomized in Genesis 1, p. 28 (NIV), "God blessed them and said to them, 'Be fruitful and increase in number; fill the earth and subdue it. Rule over the fish of the sea and the birds in the sky and over every living creature that moves on the ground.'" This perspective of moral exceptionalism and anthropocentrism was elaborated later by philosophers and scientists such as Francis Bacon, Rene Descartes and Isaac Newton (White, 1967).

Frankly, in some aspects we *are* different from the rest of nature and we *do* have exceptional gifts which we have used to great effect, but often with little consideration as to the consequences of our actions. Dilworth (2010, p. 2), exploring our current ecological problems, wrote, "Our species is special in being the only species to have constantly developed technology ….and … it is just this technological innovativeness that is responsible for our present ecological predicament. In sum, we have simply been too smart for our own good." However, in this 'success,' humanity seems to have forgotten its roots, and in terms of human development and progress, humans seem to have forgotten that what was created in Step 1 — a healthy Earth capable of supporting life indefinitely — will always be a fundamental requirement for all human life and progress, and must retain primacy. Instead, humanity seems to want to demonstrate its ingenuity by maintaining its material progress with little regard to what it is doing to the Earth. How 'smart' is that?

As individuals we likely consider the human species as the most intelligent species, but with respect to reproduction, our behaviour does not appear to be intelligent. For example, in 1800, the global human population was about one billion in 1800, 1.6 billion in 1900, 6.1 billion in 2000, 7.6 billion in 2018 and will be 10 billion in 2055. (For more information, see Worldometer.) Thus, while it took about 200 millennia to get to a population of one billion, it has taken only 220 years to multiply that eight times more. However, while the size of the Earth has not changed, many of its features and functions have been changed by humans so as to meet the needs of the growing population. Thus the forests, prairies and waters that covered much of Earth have been transformed for human needs, particularly in industry and food production (Hooke et al., 2012; Jackson, 2010). Humanity's impact is profound.

In 1997, Vitousek and coworkers estimated that "between one-third and one-half of the land surface of the Earth has been transformed by human action and that more atmospheric nitrogen is fixed by humanity than by all natural terrestrial resources combined, more than half of all accessible surface fresh water is put to use by humanity, and about one-quarter of the bird species on Earth have been driven to extinction" (Vitousek et al., 1997, p. 494). Other researchers agree (Erb et al., 2009; MEAB, 2005). Today, humans make up nearly 36% of the total biomass of all mammals. Domesticated mammals (cows, sheep, horses, etc) add another 60%; all the remaining mammals, the wild ones: the lions, elephants, bears, etc. form only 4% (Bar-On et al., 2018). Think about that! Of *all* the mammals, only four percent are not in the service of humans; all the rest are under human management, for our convenience, not necessarily our need.

Humans may dominate mammalian biomass but they are only 0.03% of the total biomass of the Earth (Bar-On et al., 2018). As of 2012, about 41% of Earth's ice-free lands were being used for human infrastructure needs: e.g. farms, ranching, logging, industry, cities, suburbs (Barnosky et al., 2014) and there is virtually no part of the Earth that is free of human effects. Talk about the tail wagging the dog.

In 1972, Meadows and coworkers published *The Limits to Growth*, which explored the likely patterns of human population and resource consumption over the following 100 years or so. They concluded that if humanity did not soon constrain resource use, there would be a shortfall of resources sometime in this century. As well, the demands of a growing population would not be met, and pollution from resource extraction, industrial production, and material use would pose environmental problems. Although their predictions were harshly criticized, a 2004 update confirmed most of their conclusions while revising some of their timelines (Meadows et al., 2004). Since then, Turner (2008, 2014), Bardi (2011) and Jackson and Webster (2016) have also revisited the Meadows forecasts and found them generally, and unfortunately, 'on target.'

To quantitate the human impact on Earth, William Rees and Mathis Wackernagel (1996) developed the Ecological Footprint, an estimate of how much of Earth's biological capacity is required by a given human activity or population. Today, it is estimated that every year the world's population uses the equivalent of 1.7 Earths to provide the services we need, the resources we use, and to absorb our waste. (For more information, see the Global Footprint Network.) That is living like the 'average' global citizen. But if you are reading this book, you are probably not the average citizen. You likely live in Canada, the USA or Australia, where the footprint is not 1.7 Earths, but five Earths. Perhaps you live in Brazil where you need only two Earths, or the UK, France or Switzerland (three Earths). Imagine that all your income comes from interest generated by a trust fund. Sometimes, you need a bit more, and so you borrow from the principal. But if you don't pay it back the trust fund eventually runs out; then most often, you will have to go to work, or maybe go on welfare, but somehow your needs will be met. Earth is humanity's trust fund and we have borrowed from it for millennia with apparent impunity. Where do we go when Earth can't provide? Mars?

To characterize the manifestations of human impact, Johan Rockström and coworkers in 2009 identified nine 'planetary boundaries' or primary aspects of key Earth system processes that "define the safe operating space for humanity" (Rockström et al., 2009, p. 472). Three of these boundaries — climate change, global phosphorus and nitrogen cycles, and rate of biodiversity loss— have already been transgressed. Several others—ocean acidification (Feely et al., 2009), stratospheric ozone, freshwater use, and land use change—are close to breaching their limits. The two remaining — atmospheric aerosol loading and chemical pollution— have not yet been satisfactorily quantified because we lack reliable indices with which to measure their effects, but both are major causes of ill health and death in human and non-human life (Piqueras & Vizenor, 2016; Landrigan et al., 2017).

It is obvious that we are using more than Earth can sustainably provide or renew, and Earth's life support systems are starting to fail. This is termed overshoot and reflects the time when the population's demand on an ecosystem exceeds the ability of the ecosystem to respond. Wherever we look, we see threats to human security arising from overshoot. Step 6 is already characterized by serious global ecosystem instability (Romm, 2010). Something has to give.

The above paragraphs summarize a world whose life-supporting systems are deteriorating. Physical and biological limits ultimately govern human life and society and the current situation of breaching these limits and increasing the stresses on Earth's physical and biological systems cannot last. Breaking the limits breaks the planet.

Human existence depends on an acknowledgement of its dependence on nature. Humans, now more than ever in human history, must live their lives with the active and aggressive acceptance of this dependence in all their actions, plans, aspirations, teachings and beliefs.

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3.5: So, How Did We Get into This Mess?

To address that question, let us review the steps in our model. The primal step in creating human security was Step 1: creating an environment conducive to human existence. The key human step was learning to harness energy, particularly energy for food and warmth and later to develop and use various technologies, and to progress. Today's globalized society is based on a philosophy of competition, economic growth, technological progress, credit, and consumption. It is complex, characterized by high levels of material consumption (or aspirations to such an economy), institutions such as governments, universities, banks, churches, militaries, effective health care, generally secure food supplies, rapid communication and transport. Much of today's living is enabled by advanced technologies combined with abundant amounts of cheap, fungible, transportable, energy. In today's globalized society with its complex institutions and scaled-up industries, energy remains our most critical resource, but we are particularly addicted to one form of it: fossil fuels. What is their story?

Fossil Fuels – A Faustian Bargain

Fossil Fuels – The Good

For primitive humans, energy was what came from the sun. In this state, food was opportune, temporary, and unlikely to be stored, and humans lived a hunter-gatherer existence. Later on, fire was tamed and wood and biomass became early sources of energy. Over time, the development of agriculture enabled some semblance of food security. Fixed communities became more common and, while most people were hunters or farmers, merchants and priests and other forms of human occupation evolved. As technologies were developed and improved, and new lands found and exploited, humanity developed well organized societies and civilizations. Initially, their footprint was small and the Earth could easily meet their needs.

Civilizations, like the Roman, Greek, Mayan, Indian and Chinese civilizations, evolved, grew, and ultimately faded away. In all instances, available energy was a central factor in sustaining these civilizations. Some civilizations failed when resources became scarce, or there was local climate change such as drought, or a major catastrophe and a subsequent failure to adapt (Diamond, 2005; Tainter, 1990). For the civilization involved, this was a major disaster, but the effects were mainly local. This contrasts with today's global environmental crisis where the whole Earth is affected by human action and everyone is, or soon will be, affected, by the consequences, no matter where they live or how they live. The difference has been caused by the global use of the fossil fuels (FF) coal, oil and natural gas, which are the non-renewable, decayed, and sequestered products of forests that grew millions of years ago.

Over the last 200 years human society has been increasingly defined by the use of these fossil fuels. The qualities of fossil fuels enabled the rapid expansion of the industrial revolution and most of the improvements in living standards that followed (Cottrell, 1955). Today, fossil fuels energize virtually all forms of transport; they drive our industries, fuel our power plants, drive our economy, and are used to make the tens of thousands of chemicals and products in daily use. Global food production, and population growth, has increased dramatically largely because of fossil fuels that enabled the creation of the fertilizers and pesticides needed to grow crops and the fuel to run farm machinery and deliver crops to market. These fuels enabled the development of a society encouraged to consume more and more, and to throw away, not repair. They have facilitated globalization and the outsourcing of manufacture to lands with cheap labor and marginal environmental protection. We are addicted to them.

Fossil Fuels – The Bad

However, all is not good. The benefits of fossil fuels come with at least three nasty blowbacks: global warming, air pollution, and environmental pollution in general from (mainly) fossil fuel derived synthetic chemicals. Each poses serious threats to ecosystem health and integrity, to human health, and to human security.

Global Warming

To grasp why global warming and fossil fuels are linked and pose such a significant problem, we need to know a bit about how the Earth keeps its temperature at a level suitable for humans. When burned, fossil fuels release carbon dioxide (CO_2) to the atmosphere. This is a greenhouse gas, as are methane, ozone, nitrous oxide, water vapour and some fluorocarbons. Normally, these gases trap enough heat from the sun to maintain average global temperature at a level suitable for human life and progress. Before the industrial revolution, when fossil fuels were not used, atmospheric CO_2 was maintained at an average concentration of around 280 ppm. But after fossil fuels began to be used, the release of CO_2 was faster and greater than Earth could recycle and its

concentration rose in the atmosphere and the oceans. Atmospheric CO_2 levels are already nearing 410 ppm and are rising at ~20 ppm per decade. This excess of CO_2 has led to more heat being trapped on Earth and thus today's mean global temperature is about +1.0°C above preindustrial levels, and it continues to rise at about 0.2°C per decade. This rate of temperature increase is 10 to 20 times faster than rates documented during post ice-age recovery warming and has never been experienced by humans. By about 2040, global mean temperature will be +1.5°C above preindustrial levels. If we continue to burn fossil fuels at current rates, by 2100 global temperatures could be +4°C above preindustrial levels (Anderson & Bows, 2011; New et al., 2011; Bowerman et al., 2011; Betts et al., 2011). Human societies cannot tolerate four degrees and even today, when the temperature is only +1°C, the consequences of global climate change are obvious, far-reaching, uncertain, unprecedented, seemingly becoming more rapid, and for all intents and purposes, permanent; +1.5°C is yet to come (IPCC SR1.5, 2018). Chapter 9 focuses on climate change in greater detail.

What can be done to correct this situation? In the first edition of this book, this chapter discussed the issue of *peak oil*, a situation where fossil fuel production peaked and then rapidly declined to near zero. While still possible, the more urgent situation is that we must rapidly stop burning fossil fuels, even though supplies remain. But, since fossil fuels play such a huge role in human society, it seems sensible to ask the questions: (1) "Is global warming that big a problem?" and (2) "What will we do if we can't use fossil fuels for energy?"

For question 1 the answer is *yes*. Anthropogenic global warming is an existential threat to human society and possibly the human species; it is the first such threat in human history. It also poses a threat to other forms of life and to the functioning, but not the existence, of Earth. Its effects include ocean acidification (AMAP, 2013) and warming, sea level rise (Jevrejeva et al., 2018), loss of insect life (Lister & Garcia, 2018), loss of sea life (WWF, 2016; McCauley et al., 2015), diminished mammal diversity (Davis et al., 2018), ocean dead zones (Breitburg et al., 2017), and water and food insecurity (Flörke et al., 2018; Ritchie et al., 2018; Turral et al., 2011; Betts et al., 2018).

Each of these consequences affect how humans live, how they grow food, work, and maintain their health, and how their economies and societies function. A steady diet of these effects leads to, amongst other things, mental distress, societal unrest, and political instability (Smith & Vivekananda, 2007; Natalini et al., 2015; Bellemare, 2014; Lagi et al., 2011; USGCRP, 2016). While many of these are principal consequences of global warming, some are also due in part to other biophysical and societal factors acting together to lead to general insecurity. These effects are explored and detailed more completely in intermittent reports of the Intergovernmental Panel on Climate Change (e.g. IPCC, 2007; IPCC, 2012), the most recent being a report detailing the potential effects of a rise in mean global temperature of 1.5°C (IPCC SR1.5, 2018).

While the mechanisms of action are varied and complex, all of these effects are caused directly or indirectly by the use of fossil fuels. Five self-reinforcing human processes have been identified as causes of overshoot: economic growth, population growth, technological expansion, arms races, and growing income inequality (McMichael, 1993; Furkiss, 1974; Coates, 1991; Daly & Cobb Jr., 1994). These are explored more completely in later chapters of this book. However, it is clear that whatever causal mechanisms have been identified, we must stop burning fossil fuels. But this is hard to do.

Answering question 2—replacing fossil fuels—is much harder. In 2016 fossil fuels provided 86% of global energy consumption. The rest was provided by nuclear and hydropower (11.2%) and wind, solar and other renewables (2.8%) (World Energy Council, 2016.). Nuclear power is non-renewable energy and has significant waste management issues; the rest (hydroelectricity, solar [thermal and photovoltaic], wind, and tidal energy) are renewable; but their use leads to, likely eventually solvable, major problems of energy storage and integration into the electric grid system management. As well, most renewable energy sources are best used in static situations, such as power stations, and not in transportation. Unfortunately, these other energy sources are unlikely to replace fossil fuels quickly or completely (Heinberg & Mander, 2009; MacKay, 2009). Therefore, we must choose between continuing to use fossil fuels, (the Business As Usual or BAU approach), and thus likely face a 4°C world in about 80 years, or we must soon start a transition to a simpler, lower energy, less consumptive, lifestyle.

Yet for some reasons we dawdle, we continue with business as usual. Since the 1990's, there have been conferences organized annually by the United Nation that specifically address issues relating to climate change. They are called the Conference of Parties (COP), the most recent one (COP24) was held in Katowice, Poland. Unfortunately, in the end, promises are made, targets set, but everything is aspirational and little happens. *Numerous other climate conferences and commissions have suffered similar fates*. There have also been scientific 'warnings' such as the *Scientific Consensus on Maintaining Humanity's Life Support Systems in the 21st Century* (Barnosky et al., 2014) and the *World Scientists' Warning to Humanity: A Second Notice* (Ripple et al., 2017; [first

warning UCS, 1992]); all to little apparent effect. This chapter does not explore the reasons for this inaction, save to say that strong economic and political forces appear to be acting against any effective global action to reduce emissions. This occurs even in the face of obvious global warming and environmental catastrophes such as drought, extreme flooding, unprecedentedly destructive forest fires, sea level rise, food and political insecurity, examples of which *all* happened in 2018 and *all* of which had global warming as an important factor in their genesis (Herring et al., 2018). It is possible that there will be some attempt to significantly reduce fossil fuel use, but the time frame is governed more by politics than by science.

Global warming is the poster child for what happens when a planetary boundary is exceeded; in this instance, the ecosystem process of thermoregulation is impaired. Two other planetary boundaries that are also closely related to fossil fuel use are air pollution and chemical pollution, each of which — independently — pose major problems for human and environmental health and security but not at quite the same level of danger. The degree to which they are transgressing their boundaries is unknown because we cannot measure the levels of pollution globally, but they seriously harm both humans and the environment, and threaten environmentally based human security. This chapter does not explore these issues in the depth they require. We discuss them briefly to raise awareness of their role in influencing human security. A closer look at the connections between ecological integrity and human health will be taken in Chapter 17.

Air Pollution

Air pollution is defined as an excessive amount of ambient particulate matter. Biomass, used mainly in developing countries for heating and cooking, and fossil fuels, used globally for nearly everything, account for about 85% of airborne particulate pollution (Landrigan et al., 2017). In 2015, air pollution (ambient $PM_{2.5}$) was the fifth-highest ranking global mortality risk factor (Cohen et al., 2017). In adults, air pollution can cause ischemic heart disease, chronic obstructive pulmonary disease, asthma, lung cancer, and stroke. In children it can cause asthma and can affect a child's normal development. There are other forms of air pollution as well; e.g. acid rain, which have a strong environmental effect, especially on aquatic organisms.

Coal-burning power plants are a major source of air pollution but they are being phased out in many parts of the world, because of the need to reduce CO_2 emissions. Using fossil fuels for transport is also a significant source of air pollution. Regulatory initiatives have played a major role in reducing the health burden of air pollution, particularly from transportation. In the US, a recent study showed that improvement in air quality between 1990 and 2010 resulted in up to 38% fewer deaths than if air quality had remained unchanged (Zhang et al., 2018).

Chemical Pollution

Chemical pollution lacks any standard measure to assess its effects, and the effects on humans and the environment are considerably harder to assess (Diamond et al., 2015). In part, this is because of: 1. difficulties in measuring exposure, 2. difficulties in measuring effects, 3. our ignorance of what to look for, 4. their presence in the environment in the form of unknown, unmanageable, and unmeasurable mixtures of chemicals,and 5. their overwhelming importance in society. Regardless of this high level of ignorance we do know that chemicals are a significant source of human illness and death (Prüss-Ustün et al., 2011; Grandjean & Bellanger, 2017). The environment is also clearly affected. A good example is the association of systemic pesticide use and the collapse of insect populations (van Lexmond et al., 2015; Malaj et al., 2014).

Chemical pollution independently poses very serious problems for humanity and clearly threatens environmental stability. Currently, there are over 140,000 chemicals on the global market (UNEP, 2013). Many come directly or indirectly from petroleum and are generically called petrochemicals; they account for 90% of total feedstock demand in chemical production today (OECD/IEA, 2018).

Chemicals include plastics, food additives, pesticides and fertilizers, household chemicals, pharmaceuticals, cosmetics, construction materials, electronic products, shoes, clothes, nanoparticles and many others.

We depend on chemicals to maintain our lives, to clothe and feed us, to make us more attractive, to treat our illnesses, build our homes and run our businesses. However, as good as they are, their production, use and disposal has resulted in chemical pollution throughout the globe. Chemical waste is found in the deepest parts of the oceans (Jamiesonet al., 2017), in freshwater ecosystems (Malaj et al., 2014), and in polar regions (Letcher et al., 2010). Pollution is not an inevitable consequence of chemical use; some chemicals contaminate the environment but do not apparently harm it. In some cases, contamination may shift to pollution if and when we learn what to look for, or how to measure it. We do know that many of the synthetic chemicals released into the

environment cannot be metabolized into simpler compounds because no metabolic pathways exist to break them down to safer end-products. Thus, they stay in the environment and can pollute it. They get into animals and plants and may affect their metabolism, their health, their ability to reproduce, to forage, and to live.

For example, relatively common chemicals called endocrine disruptors can affect the normal endocrine metabolism of many forms of life, including humans (Bergman et al., 2013; Gore et al., 2015; Trasande, 2019). The effects of these can manifest at any age but are particularly dangerous at the earliest stages of development of the organism. At that time even very small exposures to a chemical can have major long term adverse effects. Health issues associated with endocrine disruptors include neurodevelopmental delay, autism, cancer, adult diabetes, thyroid function, infertility, and feminization. These health issues lead to considerable economic costs. A recent study done in Europe suggested that the health costs due to inadvertent exposure to endocrine disruptors was approximately €163 billion (1.28% of the EU GDP) (Trasande et al., 2016; Grandjean & Bellanger, 2017). A similar study done in the US found even greater costs.

The effects documented in these studies usually relate to humans; we lack the knowledge or resources to more systematically explore how the natural world is affected. We do know that chemical pollution has resulted in loss of biodiversity, lowered bird and insect populations, and affected the ability of many organisms to thrive (Halden et al., 2017; EEA, 2012).

Plastics are another chemical family having both major positive and negative qualities. First made in the early 1900's, their production became widespread in the late 1940's and now their production exceeds most other man-made products. In 1950, global plastic production was ~2 million metric tonnes (Mt); in 2015, it was ~ 380Mt. At that time, about 8300 Mt of virgin plastic had been produced in total and about 6300 Mt of plastic waste had been generated, nine percent was recycled, 12% was incinerated (which often releases toxic materials) and 79% was in landfills. By 2050, it is estimated that about 12,000 Mt of plastic waste will be accumulating (Geyer et al., 2017).

A key aspect of plastics is that while their human use may be as short as a few seconds, their environmental existence lasts centuries. Plastics do not degrade at all or only very poorly. Often, they just break down into smaller particles which eventually make their way to oceans where they can be ingested by ocean life (Gallo et al., 2018). In the ocean, they can then affect the health of animals mechanically, by strangling them or by blocking their intestines. Plastics can degrade into smaller and smaller particles, called microplastics, which can enter the cells of organisms and act as vectors for chemicals that have become attached to the plastic. Hence, they transfer their toxicity to an organism. The problem of plastic pollution is so massive that it is predicted that by 2050 there will be more plastic bits in the ocean than there are fish. Recently, microparticles of plastic have been found in human faeces.

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3.6: Addressing the Challenges

Throughout the first five steps outlined above, humanity's struggle for security showed little evidence of any globally collective consciousness. The first major concerted efforts at the international level were made by the League of Nations, established in 1920 and succeeded by the United Nations from 1945. They focused on the socio-political pillar and only gradually included some economic and health-related aspects of human security. Environmental security was not addressed by any international initiative until the UN's eight Millennium Development Goals (MDGs), which represented a token step in that direction (UNEP-MAB, 2005). In 2015 they were replaced by the Sustainable Development Goals (SDGs; Figure 3.1) (UN, 2015) which placed environmental security on the conceptual map of the international community. Their achievement is planned for 2030.



Figure 3.1: United Nation's Sustainable Development Goals. [Long Description]

The 17 SDGs represent the most significant global collaborative initiative towards a sustainable future, and the first that takes into account some of the ecological context. They span diverse areas addressing the four pillars and focus on many significant sources of insecurity. However, they collide with the fundamental problem of ecological overshoot. This is illustrated in Table 3.1.

In the right column, the SDGs are classified as achievable, partly achievable, or unachievable: those SDGs that depend on natural resources are now unachievable; those that depend primarily on social justice are achievable; three SDGs depend on both and are therefore partly achievable. The respective numbers of the SDGs are specified.

The centre column lists the eight MDGs with their respective numbers where they correspond with the focus areas of the SDGs. They are again classified as achievable (aligned to the left side), unachievable (aligned right), or partly achievable (centered). Only one MDG, number 7 *Ensure Environmental Sustainability*, falls into the latter category. Some achievement on number seven was possible through the equitable allocation of social and economic capital; but its dependence on planetary resources prevented any substantial progress. By their target date of 2015 most of the MDGs' targets had not been achieved.

Table 3.1a Contradictions within the Sustainable Development Goals (SDGs): Focus areas of the SDGs as related to the MDGs (2000–2015)

Focus	Achievable	Partly achievable	Unachievable
Poverty	Dignity (#1)		Poverty (#1)
Food security			Hunger (#1)
Health security			Disease, malnutrition (#4, 5, 6)
Education	Access (#2)		
Gender equality	Justice (#3)		
Water		Planetary resources (#7)	
Energy		Planetary resources (#7)	
Economic growth, employment			Planetary resources (#7)
Infrastructure, industry			Planetary resources (#7)
Inequality	Justice (#3)		
Cities			Planetary resources (#7)
Consumption, production			Planetary resources (#7)
Climate change		Planetary resources (#7)	
Oceans			Planetary resources (#7)
Terrestrial ecosystems			Planetary resources (#7)
Societies	Justice (#3)		
Global partnerships	Partnership (#8)		

Table 3.1b Contradictions within the Sustainable Development Goals (SDGs): Focus areas of the SDGs (2015–2030)

Focus	Achievable	Partly achievable	Unachievable
Poverty			No poverty (#1)
Food security			Zero hunger (#2)
Health security			Good health (#3)
Education	Quality education (#4)		
Gender equality	Gender equality (#5)		
Water		Clean water, sanitation (#6)	
Energy		Affordable, clean energy (#7)	
Economic growth, employment			Decent work, economic growth (#8)
Infrastructure, industry			Industry, innovation, infrastructure (#9)
Inequality	Reduced inequalities (#10)		
Cities			Sustainable cities, communities (#11)
Consumption, production			Responsible consumption, production (#12)
Climate change		Climate action (#13)	
Oceans			Life below water (#14)
Terrestrial ecosystems			Life on land (#15)
Societies	Peace, justice, strong institutions (#16)		
Global partnerships	Partnerships for the goals (#17)		

The problem arises from the fact that seven SDGs (1, 2, 3, 8, 9, 11, 12) require primarily that additional ecosystem services and natural resources be mobilized. In contrast, three other SDGs (13, 14, 15) require that our demands on the biosphere be reduced. Regardless of which of those SDGs are prioritized, or whether we try to achieve them all equitably, some of them will slip even further from our grasp (von Weizsaecker & Wijkman, 2018, p. 39). Five other SDGs (4, 5, 10, 16, 17) depend primarily on social justice, ethical changes and legislative reform – resources that are not subject to physical limitations. They are exempt from the constraints imposed by our overshoot, which renders them more achievable. The remaining SDGs (6, 7, and partly 13 on climate change) depend on both kinds of resources. Comparing the entries for the MDGs and SDGs indicates that very limited improvement was achieved on the grantability issue.

Considering that the SDGs and the associated Agenda 2030 mission document were developed by some of the world's most educated minds, and that the SDGs are much celebrated for their 'progressiveness', we are faced with what appears to be a huge blind spot in the minds of many educated people (O'Neill et al., 2018). The above-mentioned warnings by the scientific community (Ripple et al., 2017) were hardly taken into account. This has been interpreted as a fundamental failing in today's systems of governance and education (Lautensach, 2018).

The example of the SDGs illustrates, on the one hand, the global extent of shared concern and of corresponding efforts at this stage. On the other hand, their limited success to date (UN, 2018) indicates a persistent blindness to basic scientific understanding of what sustainability means; it shows an insufficient commitment to incur the necessary sacrifices that a globally effective Transition to

sustainability would entail; and it takes no notice of crisis causation, ecological overshoot and the ongoing expansion of ecological footprints.

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3.7: Concluding Comment

This chapter has shown us why we need a healthy environment, why we need a world that can meet human demand while still maintaining adequate resources and services for non-human life. The discussion of fossil fuels illustrates how one critical resource can pose fundamental problems for the health of all life, for the functioning of Earth's life supporting systems, and ultimately for the maintenance of human security. It has also shown what happens when we place too much demand on Earth's life supporting systems, and why we need to seriously consider what we are doing to our world. It is not just being nice to the plants and animals; it is saving our own skin, because humans need what non-human lives provide and do for us. As humans, we need ecological integrity, we need intact ecosystems, we cannot maintain our life supporting systems by ourselves.

This chapter has provided a rationale for why a healthy environment is required for human security, but, as mentioned early on, it is not the only factor determining security. There are other factors, discussed elsewhere in this book that now play their key roles at global scales. These include issues such as politics, theology, economics, culture, city planning, business considerations, social planning, and ethical considerations. However, at this stage they increasingly tend to get into each other's way. Early in this chapter we wrote, "The security discussed in this chapter is characterized by living an everyday life within a stable society functioning within a stable environment." That security no longer exists because Earth can no longer provide a stable environment. As we see from the discussion surrounding Table 3.1, one consequence of overshoot is that the pursuit of one kind of security now tends to jeopardize the achievement of another. Only through a reduction of ecological overshoot (or degrowth) can we hope to solve that conundrum.

Human progress has created an unprecedented global environmental crisis that is leading to a multitude of unprecedented global social, political, and economic crises. While there may be pockets of 'perceived security', globally right now there is no genuine human security anywhere and no prospect of such security being a reality for a long time. What do we do? The moral philosopher Mary Midgley wrote, "Wisdom … comes into its own when things become dark and difficult rather than when they are clear and straightforward." (Midgley, 2005, p. x) With that in mind, maybe a threat to our security is not all bad. Maybe these next decades will form the basis for the next significant step in our evolution, one that moves us from the current adolescence of the human species into a more mature, wiser species, fewer in numbers, considerate of, and well aware of its place on Earth and its limits in exploiting Earth's gifts — one developing a better view of what humanity can really be.

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3.8: Resources and References

Review

Key Points

- Human evolution has been marked by a series of momentous transformations, each allowing us to support greater numbers and greater levels of consumption.
- Humans have a great proclivity to expand their habitat, to adapt hostile environments to their needs and to adapt their cultures to environmental contingencies and changes.
- Some civilizations that proved unable to do so disappeared. Others who were able to meet challenges presented by their environments flourished.
- The present situation represents an unprecedented challenge as for the first time the challenge is global, human numbers are staggeringly high and getting higher, and we continue living lives based on unsustainable practices. We cannot continue to live this way.
- Human security on a global and equitable basis now seems farther away than at any time in human history. Our heavy use and reliance on fossil fuels for energy is a major reason but by no means the only one.
- Our collective global ecological overshoot has led to a situation where some aspects of human security have become unachievable because they conflict with other areas.

Extension Activities & Further Research

1. In what ways are humans the most dangerous species? Dangerous to whom?
2. What do you think are your 'fundamental requirements'?
3. Ask yourself: How do I benefit from fossil fuels? What would happen to me if they were not available anymore?
4. Describe Step 6. How do you see it evolving over your lifetime?
5. If you were the Secretary General of UN, what recommendations would you give to the working groups in charge of the SDG programme?
6. Explore how our current environmental crisis is likely to affect each of the four pillars of human security, first in your community, then in your country, then globally.
7. Where do you see the greatest obstacles toward the adoption of effective policies to cope with the loss of fossil fuel energy and its consequences? Consider factual circumstances as well as popular beliefs, cultural traditions, ideologies, etc.
8. What are your responsibilities to future generations?
9. What are your responsibilities to the Earth?
10. Watch the documentary *Living in the Future's Past*. It streams on Amazon Prime; use the *Living in the Future's Past* study guide [PDF].
11. Suggest some changes that you could make to your personal life (that possibly aren't already as well publicised as walking, biking and carpooling) to reduce fossil fuel consumption. Estimate the chances that these changes can be scaled to a community level or national level. The objective is to initiate some thinking about some innovative solutions.
12. A well illustrated summary of the key features of the Anthropocene is found in Encyclopedia of Earth's site Welcome to the Anthropocene. Identify which features manifest most prominently in your home community or region.

List of Terms

See Glossary for full list of terms and definitions.

- biological capacity
- degrowth
- ecological integrity
- ecosystem
- ecosystem services
- environment
- overshoot

- ppm

Suggested Reading

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Long Descriptions

Figure 3.1 long description: Graphic of the United Nations' Sustainable Development Goals, numbered 1 to 17. In order, they are:

1. No poverty
2. Zero hunger
3. Good health and well-being
4. Quality education
5. Gender equality
6. Clean water and sanitation
7. Affordable and clean energy
8. Decent work and economic growth
9. Industry, innovation and infrastructure
10. Reduced inequalities
11. Sustainable cities and communities
12. Responsible consumption and production
13. Climate action
14. Life below water
15. Life on land
16. Peace, justice and strong institutions
17. Partnerships for the goals

Media Attributions

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Footnote

1. This is an excellent introduction to the basic aspects of ecological change. It is well written and is possibly more relevant today than when it was written in 1982. Strongly recommended.
2. This spells out our current situation and underscores the need to stay below 1.5°C.
3. An important description of how chemical pollution affects human health.
4. A well-written, enjoyable, and excellent description of the energy options available to us today.
5. A good summary of our current predicament with respect to consumption and the use of resources.

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CHAPTER OVERVIEW

4: Conflicting Perspectives

Learning Objectives

- Understand that human security is informed by a plurality of ideas; some of them contradict each other to various extents. Particular situations call for particular compromises.
- Acknowledge that around the world, diverse philosophical perspectives on security developed over time. Globalisation has brought them into contact with each other, which often causes conflict.
- Recognise the relationship between human security and human rights is contested; many authors argue convincingly that the latter is necessary, but not sufficient, for the former.
- Realise that while the security needs popularised by Abraham Maslow may bear universal significance across cultures, the hierarchy in which they are commonly presented does not.
- Understand that a considerable portion of the values underlying human security are culturally contingent, question how far can this relativism be extended before it becomes unjust.
- Discern between freedom of religion and freedom from religion, when they are practised in tandem, enhance human security. When either is practiced in isolation from the other, it threatens human security.

Malcolm Brown and Richard Gehrmann

Many conflicting perspectives in the study of human security are derived from a dichotomy of ‘the West’ and ‘the rest’, which is expressed in many ways: Western and Eastern cultures; the developed world and the developing world; the North and the South; modern and traditional values; secularisation and religiosity; egalitarian and hierarchical polities. This chapter explores the strengths and weaknesses of these dichotomies in the light of human security concerns and paradigms. It focuses on the global contributions of religion to both human security and human *in*security, and on the relationship between human security and human rights.

4.1: Introduction
4.2: On Globalisation
4.3: Human Rights and Human Security
4.4: Notes from an Ethnography
4.5: A Hierarchy of Needs?
4.6: The West and the Rest?
4.7: Freedom of Religion, Freedom from Religion
4.8: Conclusion – Paradoxes of Universality
4.9: Resources and References

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4.1: Introduction

The chapter explores the strengths and weaknesses of some conflicting perspectives on human security, with a focus on the contributions of religion to human security and human insecurity. This focus reflects a major concern of post-9/11 conceptions of human security (see for example, Shani et al., 2007; Wellman & Lombardi, 2012; Shani, 2016), but it is really not that new. Islamophobic perspectives in the West can be traced back through the Rushdie affair, the oil crisis of the 1970s, the Suez crisis and post-war decolonisation, back to the crusades, and even to the first wave of Islamic expansion in the 7th century. According to Edward Said (1995), the Orient – a concept that includes the Muslim world – is fundamentally a Western creation and a tool of Western hegemony. Over the past millennium, a dualism of Orient (East) and Occident (West) has been constructed and maintained through various Western discourses – literary, political, academic, popular, and media – in which the Orient/Muslim world is defined in terms of *complémentarité* (Laroui, 1990, pp. 155-65) with the West. Thus the Muslim world becomes, by definition, what the West is not. It is portrayed as essentially different and inferior because it is believed to be homogeneous and unchanging, in contrast to the cultural diversity and progress that characterise the modern West, or at least the modern West's conception of itself. If it is homogenous, it cannot be tolerant, because tolerance depends on (and indeed is) an acceptance of heterogeneity. If it is unchanging, it will never grasp the benefits of modernity, and the Oriental Muslim mind and conscience will always be stuck in the past.

For Said and other critics, this type of Orientalism constituted a rationale for European colonial expansion in the 19th century (Said, 1995), and it continues to be seen as associated with attempts to maintain American hegemony in the Middle East and parts of South Asia. It also constitutes a lens through which Islam is perceived and portrayed. As such, Western representations of Islam – including academic ones – often reflect Orientalist assumptions. The main theme of these representations has been the irrationality of the Muslim world as it is defined by those representations. In the colonial period, the central stereotype of the Orient related to its sensuality, allowing Victorian Europe to imagine its alter ego, a "world of excess" which "was populated by androgynes, slave traders, lost princesses and the degenerate patriarch" (Turner, 1994, p. 98). The sultan's harem, surrounded by belly dancers, produced exotic tales of Arabian nights and pages of case material for Freudian theorising. In the post 9/11 Western imagination, this sensuality appears not merely to have been hidden behind chadors and burqas, but to have been destroyed altogether. Yet the sense of exoticism remains. The bearded fundamentalist, the suicide bomber and the veiled woman who collaborates in her own oppression may not be the object of Western fantasies, but they continue to bear the label of irrationality.

A vanished sensual vision of the Orient can be contrasted with perspectives that overemphasise conflict in the historical interactions between of Islam and Europe, and these were preoccupations of Brendon Tarrant who murdered 51 people in March 2019 in the New Zealand city of Christchurch. These mass shootings occurred during Friday prayers at two different mosques, as he live-streamed his attack and published a manifesto explaining his acts of mass murder. The killer specifically focused on the significance of historical discord between the West and the Islamic world, a point emphasised by his inscription of the dates of Western – Islamic battles on his weapons. This was an attack on human security not based on the Christian religion but on a cultural western secular ethno-nationalist worldview similar to the 2011 killings perpetrated by Norwegian killer Anders Breivik. Following the attacks, an Australian far right Senator attracted widespread condemnation (and subsequent electoral defeat) for his assertion the attacks had occurred because Muslims had migrated to New Zealand, essentially blaming them for their own murder. Globalisation contributed to the open and accepting immigration policy of New Zealand, to the killers' absorption of racist messages, and to the politician's use of this tragedy to emphasise his political platform. A distorted misuse of religious history and an associated mass killing had further fuelled a narrative of Islamophobia.

These phenomena have a long history, which needs to be appreciated in order to understand present-day human security dilemmas and the conflicting perspectives that respond to them. However, this chapter focuses on more recent developments. The emergence of globalisation provides the context within which diverse perspectives become *conflicting* perspectives, because it is only when they come into contact with each other that they are able to disagree.

Another major theme of this chapter is the relationship between human security and human rights, which is central to a number of conflicting perspectives. Whether or not human rights should be universal or culturally located is a controversial issue with no easy answer. It has important consequences for discussions of human nature and the concept of Asian values, which has been articulated by political leaders in Singapore, Malaysia, and Taiwan. A related question concerns whether or not human rights should be norm based or criterion based. A norm-based approach assesses human rights situations in relative terms, comparing what actually

happens within a given culture; a criterion-based approach is based on universal rules and standards, such as international human rights laws. Another way of asking this is to choose between valuing ends and valuing means. Do we accept relative outcomes including improvements in the human situation within a given culture, or do we always insist on doing the *right* thing according to moral and legal standards? Can apparent human rights violations be excused when they constitute an improvement on an existing situation? In order to address this question concretely, this chapter draws on ethnographic fieldnotes from a study conducted by one of the authors.

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4.2: On Globalisation

We begin with a more conceptual consideration of globalisation. Roland Robertson defined globalisation as "the compression of the world and the intensification of consciousness of the world as a whole" (1992, p. 8). Since he wrote this in 1992, the word has entered everyday language, to the extent that expanding on this definition is unnecessary. Aspects of his theory include the concept of the *glocal* (a portmanteau of global and local), and the significance of religion.

It is not that the word 'glocal' was underused. Rather, it is rarely used in a judicious way. It has been used to refer to all sorts of conceptual meetings between the global and the local, and, consequently, is used to parody the sort of lazy and pretentious social science that is popularly associated with the worst excesses of postmodernism. However, Robertson uses the term much more carefully:

> Global capitalism both promotes and is conditioned by cultural homogeneity *and* cultural heterogeneity. The production and consolidation of difference and variety is an essential ingredient of contemporary capitalism, which is, in any case, increasingly involved with a growing variety of *micro*-markets (national-cultural, racial and ethnic; genderal; social-stratificational; and so on). At the same time micro-marketing takes place within the contexts of increasingly universal-global economic practices…. We must thus recognize directly 'real world' attempts to bring the global, in the sense of the macroscopic aspect of contemporary life, into conjunction with the local, in the sense of the microscopic side of life…. The very formulation, apparently in Japan, of a term such as *glocalize* (from *dochakuka*, roughly meaning 'global localization') is perhaps the best example of this. Glocalize is a term which was developed in particular reference to marketing issues, as Japan became more concerned with and successful in the global economy. (1992, p. 173)

Robertson then cites examples which ironically seem to have prefigured the injudicious overuse of the term 'glocal'. Examples of such 'travelling parochialism' include the American traveller who regards access to CNN as 'a global right', and the saying that 'with satellite television, you never know you left home'. However, he concludes:

> what this kind of observation seriously downplays is the increasingly complex relationship between 'the local' and 'the global.' It underestimates the extent to which 'locality' is chosen; it underplays the extent to which 'the local' media are, certainly in the USA, more and more concerned with 'global' issues ('local' reporters reporting from various parts of the world, according to 'local' interest); and it is not explicit about the shared, global homogeneity of 'going home.' All of this comes about through an inability, or unwillingness, to transcend the discourse of 'localism-globalism.' (1992, p. 174)

This tension between the global and the local (and attempts to transcend it) is at the root of several conflicting perspectives in human security. In a world of globalisation, our local, national and ethnic identities are more important than ever. This can manifest itself in a negative form as was seen in the aftermath of the Islamic State (ISIS) intrusion into the Syrian Civil War in 2014. Millions fled both the violence of the original conflict and the imposition of religious values by an extremist minority. The role of contemporary media in a globalised world meant asylum seekers could be attracted to seek refuge in Europe where jobs, housing, and community offered real human security in contrast to makeshift camps in a neighbouring country. Whether their ethnic identity was Christian or Yazidi, or whether they were secular or moderate Muslims appalled by the Salafi jihadist extreme vision of ISIS, their local identity prevented acceptance of the new fundamentalism of ISIS. Yet, while many who fled did gain refuge, others found themselves confronted by Europeans themselves more conscious of a localised ethno-nationalist identity that emphasised their difference from these desperate refugees.

There is a real clash between the global and the local. In Australia, people might eat McDonald's, but still think of themselves as patriotic Australians, and approve of campaigns to buy Australian. They do not usually think what the consequences of buying Australian would be if everybody else in the world followed their example and bought their own local products, leaving Australian companies unable to export. But this shows what happens when the global and the local clash with each other. Inoffensive identity might mean havingone's nation's flag hanging from a flagpole in their garden, retaining an un-needed second citizenship for nostalgic reasons or having some symbol of their ethnicity on the mantelpiece or in a wardrobe (e.g. a picture of the ancestral Greek island, a tartan kilt). Sometimes, people fight wars over their ethnic and national identities – the wars in the former Yugoslavia in the 1990s are vivid examples of this, as is the ongoing struggle of the Kurds. Political parties emerge to represent particular ethnic groups within the context of a nation state, and sometimes these parties demand independence.

The second of Robertson's themes that we focus on is the significance of religion to globalisation. Religion has been given increased recognition in the broader field of international relations (Hurd, 2008; Philpott, 2018) and is also important to human security, both in the sense that human security demands protection of religious freedom, and in the sense that religion is sometimes a threat to human security. Robertson (1992, pp. 1-2) recognizes this, and discusses a number of overlaps between the sociology of religion and the study of globalisation. While acknowledging the centrality of secularization to the sociology of religion, he states:

> I have become increasingly conscious of the extent to which 'religion' became during the nineteenth century, but particularly in the first quarter of the twentieth century, a categorical mode for the 'ordering' of national societies and the relations between them. In that sense 'religion' was and is an aspect of international relations. (1992, p. 2)

Human security is widely viewed as a paradigm within the discipline of international relations (though cf. Acharya, 2004). Consequently, we can observe that religion is an aspect of human security, and that religion 'orders' or 'categorizes' human experiences of security and insecurity. The fear of Islam and the experience of Islamophobia are probably the most vivid examples at present. But the significance of liberation theology to human security in Latin America and Eastern Europe in the 1970s and 1980s should not be underestimated, and nor should its lasting effects (cf. Robertson, 1992, p. 42). Christianity is also a part of the human security paradigm. For conservative African Anglican Christians, the values of liberal Christians in Western Europe who ordain women priests, support same sex marriage and ordain gay priests threatens their sense of security, and leads to a challenge to the authority of Anglicans in the west (Brittain & McKinnon, 2018). Not all those who supported the election of President Donald Trump were Christians of the politicised religious Right, but this grouping was emboldened by this shift in the American political landscape, and the insecurity of Americans associated with anti-globalisation also speaks to this image of a Christian America.

In his discussion of Japan – the country from which the concept of the 'glocal' originated – Robertson observes that not only is the phenomenon of religion important to global issues and international relations, but so is the concept of religion. Japan is a sort of global laboratory of interactions between religion and society. This is because religious syncretism (the combining of different religious systems) is relatively common, because "in Japan individuals frequently adhere to more than one religious orientation," and because of the proliferation of New Religious Movements, each one of which problematizes earlier definitions of religion (1992, pp. 86, 88, 93-4). "At the same time," comments Robertson, "there has been a well–developed view that since the abolition of State Shinto and the enforcement of religious freedom by the American occupiers after World War II Japanese religion has been at best an epiphenomenon of an increasingly secularized culture" (1992, p. 189). Freedom of religion, freedom from religion: both are essential to human security, and both can threaten human security.

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4.3: Human Rights and Human Security

There are conflicting perspectives on the relationship between human rights and human security. They can essentially be classified into the following three groups:

1. "Human rights define human security" (Ramcharan 2002, p. 9)
2. Human security builds on human rights
3. The fundamental tension between human rights and human security.

From a human security perspective, the first of these positions is the most modest. If human rights define human security, then human security can be evaluated according to whether or not human rights are respected in practice. There is little if any need to define human security differently from human rights, and international human rights instruments such as the Universal Declaration of Human Rights (UN, 2015) provide the legal framework for evaluating human security.

Wolfgang Benedek argues not only that "human rights can help define the concept of human security," but also that "human rights lie at the core of human security" (2008, p. 13) by providing a "sound conceptual and normative foundation" for human security that ensures it is an "operational concept firmly rooted in international law" (Benedek et al., 2002, p. 16). More programmatically, "the best way to achieve human security is through the full and holistic realisation of all human rights" (2008, p. 13). The difference between the legal concept of human rights and the political concept of human security is recognized, but Benedek states that "human security concerns are increasingly translated into legal obligations through international conventions and protocols" (2008, p. 14).

Many will worry that Benedek's concept of "the interrelationship of human security and human rights" (2008, p. 14) subsumes human security under the human rights tradition. It is unlikely this will find much favour among advocates of a human security perspective, because it makes the perspective superfluous if not redundant. But there is more to human security than respect for human rights law.

While many who hold human rights to be an extension of natural law, an essential property of all human beings by virtue of their being human, an empirical fact is that human rights are defined in legal terms. If someone claims x as a human right, it is not good enough to assert a vague feeling that x should be a human right. It is necessary to point to legal documentation, domestic and/or international. But if someone claims that the lack of x constitutes a lack of human security, recourse to *legal* argument is unnecessary.

In other words, the second position, that human security builds on human rights, not only gives the field of human security a *raison d'être*, but also recognises the importance of work undertaken within the legal human rights tradition, and the reality of subjective and more inclusive notions of security that are less legalistic. So Tadjbakhsh and Chenoy (2007, p. 10) are being realistic when they say that "security needs to be redefined as a subjective experience at the micro level in terms of people's experience." This is not a recipe for chaotic relativism, but a recognition that building human security on human rights is building a subjective concept onto an objective, criterion-based, legal one. This extends the first perspective – that human rights define human security, but does not negate it. Hampson et al. (2002, p. 15) argue that "the denial of fundamental human rights" is "the main reason for human insecurity," but this is within the context of the "fundamental liberal assumption that individuals have a basic right to "life, liberty and the pursuit of happiness" that the international community has an obligation to protect and promote" (2002, p. 5). This perspective also conceptualizes human security as built on three 'pillars,' which Tadjbakhsh and Chenoy summarise as "the natural rights/rule of law approach," which includes human rights, "the safety of people/humanitarianism approach" and "the sustainable development approach" (2007, pp. 49-50).

The third perspective – that there is a fundamental tension between human security and human rights – can be found in the work of Caroline Thomas. The problem she identifies is the centrality of property rights to legal human rights frameworks, and this introduces a neoliberal competitive and possessive individualism into notions of human security. For Thomas, this focus on the "security of the individual," based on an "extension of private power and activity, based around property rights and choice in the market place," undermines a more substantive human security, which "describes a condition of existence in which basic material needs are met, and in which human dignity, including meaningful participation in the life of the community, can be realised" (2001, p. 161). This material concept of human security "elucidates the poverty, inequality and security link clearly" (Thomas, 2001, p. 163). That is: "When a privileged elite defends its too large share of too few resources, the link is created between poverty,

inequality and the abuse of human rights" (Smith, 1997, p. 15). In other words, the defence of the property rights embedded in international human rights instruments causes inequality, and this creates human insecurity.[1]

Ultimately, this adds up to the insight that "human security is indivisible; it cannot be pursued by or for one group at the expense of another" (Thomas, 2001, p. 161). Outside of a neo-realist International Relations framework, it is hard to argue that human security can be pursued by one group at the expense of another and still be a meaningful concept. However, Thomas's materialist argument seems more questionable. Property rights are a part of human rights as they are defined in international law. However, the Universal Declaration of Human Rights (UN, 2015) – which, although not enforceable in international law is still the closest thing we have to an international benchmark – also includes the right to social security (Article 22), the right to work (Article 23.1) and to "just and favourable remuneration" (Article 23.3), the right to a standard of living adequate to ensure one's health and well-being (Article 25.1), and the right to education (Article 26). The problem of some human rights conflicting with human security will be discussed further in Chapter 15.

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4.4: Notes from an Ethnography

There are approximately eight million Shan people, mostly in Shan State, which has been de facto part of Burma (Myanmar) since its independence in 1948. The guaranteed right to secede from Burma after ten years was never honoured. Neither have other human rights been respected, with the Shan people routinely being subjected by the Burmese military to forced labour, while little was spent on their health and education. Although the Shan people outnumber the Tibetans and the Palestinians, their plight is largely unknown, in contrast to the persecution of Burma's Muslim Rohingya people by ultra-nationalist Buddhists in 2016 that attracted greater attention worldwide.

What follows is excerpted from the field notes of an ethnography conducted by one of the authors of this chapter on the Thai-Burma border. Some details have been changed for reasons of confidentiality.

Today I had lunch in a Chinese Muslim vegetarian restaurant, in a Thai village not far from the Burmese border. We had scrambled yellow tofu with rice noodles, accompanied by samosas and sweetcorn fritters. My companions included a Jewish Australian woman and three Shan people, all Buddhist. The Shan people all work for SalusWorld, a mental health NGO that works to heal psychological trauma caused by human rights abuses around the globe. They included a Shan woman who has recently started a postgraduate degree, which, given that many Shan people in Thailand do not go to school, even fewer go to university, and even fewer still are women, is quite remarkable.

Before lunch, we went to a nearby orange farm to assess the possibility of opening a school for the children of Shan refugees, many of whom work on the orange farms of the area for less than 100 baht (US$3) a day. Although they are refugees in the sense of being outside their country through conditions not of their own making, they are not legally recognised as refugees by the Thai government or the UNHCR. Hence, they have no papers, and their children are not entitled to a state education. This is why a number of NGOs – secular and faith-based – fund and operate schools like this potential one. That said, it is possible for Shan children to enter government schools if they meet certain criteria – notably having a sufficient level of competence in the Thai language. So, the NGO schools often focus on teaching Thai language to the Shan children, as well as English, mathematics, and Shan history. If they get into the government schools, it is possible for them to get formal school and even university qualifications, Thai citizenship, and better job opportunities.

After visiting the potential school site, we visited a Shan family on another orange farm. They have a four month old daughter, and the people from SalusWorld were delivering milk because breast feeding has become impossible, and they gave advice about vaccinations that were available at a nearby clinic. The parents both work on the farm, earning 180 baht a day between them, so a sufficient supply of milk is not something they can afford. Their main job is to spray the orange trees with pesticides. Some of the nearby orange farms use pesticides that are illegal even in Thailand; I have no way of telling if this farm is one of them, but it is certain that the pesticides would have long term negative health effects on the whole family. They had no protective clothing beyond simple scarves that they wrapped around their faces while spraying. It had been raining, and the puddles were a deep green pesticide colour.

The family have been in Thailand for six months. They escaped from Burma, and considered their living conditions to be far better than anything they had experienced previously. They were genuinely happy and relieved to be here.

Had the human security paradigm emerged in the 1930s, the perspective of my Jewish Australian companion would have merited extensive discussion. Today, her Zionism would strike many non-Jews as a threat to human security, but she would see it as necessary to the human security of her relatives and her fellow Jews. The human security of the Chinese Muslims in the village where we ate is another story. They escaped from China during the time of the Communist Revolution – some of the older generation fought for the Kuomintang. The restaurant was beside a mosque, where they were able to worship freely. The researcher's own human security was enhanced by being able to eat in accordance with his vegetarian principles.

As for the Shan people, even the worst human rights violations they experienced in Thailand were not enough to make them wish they were in Burma. The border was onlya few kilometres away, but this barrier protected them from the Burmese military. The human security of the workers on the orange farms was compromised by their low wages, the health risks from the pesticides, and the precarious legal state that their lack of papers put them and their children in. These human insecurities were real. It is not too strong to call them human rights violations. Yet their relief at being in Thailand rather than Burma was equally real. A point worth

emphasising in this chapter on religion in human security is that both Thailand and Burma are majority Buddhist states, with vastly different approaches to the intersection between the principles of human security and the principles of their faith.

Yet, there are no *de minimis* violations of human rights. In other words, human rights constitute a minimum acceptable standard, not a vague set of aspirations. They are necessary to human security. It is no defence of human rights violations to say they are less bad than the violations that occur elsewhere. Human rights violations cannot be excused by culture, or *national* security needs, or even by a democratic veto. Human rights are universal and indivisible, and they are the foundation of human security. Or are they?

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4.5: A Hierarchy of Needs?

The psychologist Abraham Maslow (1943) posited a hierarchy of needs, grouped into five categories. If an 'earlier' need is unsatisfied, then other needs will be treated as irrelevant. The categories are:

1. Physiological or survival needs
2. The need for safety
3. A need for love, affection and belonging
4. Esteem needs
5. The need for self-actualization.

Maslow argued that his hierarchy of needs applied to all human beings in all cultures, and that there is a "relative unity behind the superficial differences in specific desires from one culture to another" (p. 389).

If this is right, then his argument could be translated into human security terms as follows. Shan people seek fulfilment of their immediate primary needs, such as food and drink. When these needs are not met, they may risk their safety in order to escape from Burma and work on an orange farm in Thailand where their primary needs will be met, at least for a time (until exposure to pesticides affects their physical well-being). Certainly, some have fled Shan State because they were forced to labour for the Burmese military, and were therefore unable to make a living for themselves. However, even if their immediate needs are met in Shan State, then the lack of longer-term safety may become apparent, and they may take the same decision to flee.

However, there are others who risked their safety – and became political prisoners, subject to torture and risking summary execution – because of their strong feelings about the political situation in Burma. They felt that the military regime denied their human rights, and those of their compatriots. In other words, primarily due to a lack of self-actualization – not just for themselves, but for others too – they were willing to risk their safety and their physiological equilibrium.

A large number of human actions and decisions can be explained, or at least conceptualised, in Maslow's terms. Some, apparently, cannot. The question that arises is whether or not this is culturally relative. Does Maslow's hierarchy work better for explaining people's felt needs, and actions to fulfil those needs, in one culture than in another? Most importantly, does it work better in the West than in the developing world? In other words, is it ethnocentric?

Hofstede (1984) argues that it was. He cites a 14-country study by Haire, Ghiselli and Porter (1966) in which managers were asked to rate the importance of a number of needs, all of which were aligned with Maslow's five categories; the only country in which the managers responded as predicted by Maslow's theory was the USA, the country Maslow was from. Hofstede claims that:

Maslow's value choice … was based on his mid-twentieth century US middle class values. First, Maslow's hierarchy reflects individualistic values, putting self-actualization and autonomy on top. Values prevalent in collectivist cultures, such as "harmony" or "family support," do not even appear in the hierarchy. Second, … even if just the needs Maslow used in his hierarchy are considered – the needs will have to be ordered differently in different culture areas. (1984, p. 396)

Hofstede classifies these culturally ordered needs in four categories, according to what the 'highest' need would be in a given culture area:

1. Self-actualization
2. A combination of security and assertiveness needs
3. Social relationship needs
4. A combination of security and relationship needs (1984, p. 396).

While he places the USA and other Western counties in the first of these categories, he places Thailand in the fourth (1984, p. 393). Even the Theravada Buddhist monk – who seeks Nirvana for himself – seeks self-transcendence, not self-actualization.

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4.6: The West and the Rest?

If there is a hierarchy of needs, its structure is not universal, and consequently, we would expect the different nations and culturally-defined regions of the world to define their human security needs in different ways, congruent with the ways in which their hierarchies of needs are constructed. However, this raises two important issues. First, there is the question of 'Asian values' – the argument that security and community are more valuable in an Asian context than freedom and democracy, and that this justifies policies and activities that would be considered unjustifiable in the West. Second, the fact that different nations and regions of the world have different human security *needs* does not in itself mean that they have different human security *paradigms*.

Asian Values

'Asian values' reflects a model of consciousness that is linked to the growing authoritarianism that characterises the second decade of the 21st century. Examination of the Asian values debate is more important than ever, with this model actively being exported to China from Singapore. Paradoxically, ideas of dominance spread from this small state to a larger one in a reversal of the normal process by which ideas are diffused (Ortman & Thompson, 2016, p. 40). It remains controversial, and the debate surrounding it is polarized. Surain Subramaniam (2000) traces the concept back to the 1970s, and summarises the "cultural relativist" position associated with the "Singapore school" that "liberal democratic values and Asian culture are fundamentally incompatible" (2000, p. 20).

Asian values were earlier seen as conflicting with modernization, but in the early 1970s the concept came to connote a commitment to modernization that would avoid the fads of Western cultural and economic life. After the end of the Cold War, however, proponents of Asian values contrasted them with Western triumphalism and the threat, real or imagined, of a new Western imperialism. Those proponents interpreted Fukuyama's (1993) 'end of history' and Huntington's (1996) 'clash of civilizations' theses as intellectualizations of this new triumphalism/imperialism, and, consequently, the concept of 'Asian values' was framed in opposition to them. The emergence of China as a global power through its Belt and Road Initiative that began in 2013, and China's increasing geopolitical influence has also fuelled interest in a model that offers an alternative to Western liberal democratic worldviews.

While the concept was sometimes stated in a confrontational way – that Asian values were superior to Western values – its application was more pragmatic, based on a view that, simply put: "Asian values are superior to western liberal values *in confronting the challenges facing Singapore*" (Subramaniam, 2000, p. 22; original emphasis). While the Singaporean argument was made in other countries, it was not always made in the same way. In an intervention that may surprise readers of *The End of History*, Fukuyama points out:

Lee Kuan Yew [of Singapore] has attracted considerable attention by arguing that Confucianism supports a certain kind of political authoritarianism. Lee Teng-hui [of Taiwan] has called on his Confucian scholars to prove just the opposite – that there are, in fact, precedents for democracy in Confucian thought. Strategies like this are adopted in all cultural systems. Christianity can be and has been made to support slavery and hierarchy and authoritarianism as well as the abolition of slavery and the promotion of democracy and equal rights. (1997, p. 148)

So ultimately it is the content of allegedly Asian values that is of significance, not their basis, nor their motivation. Furthermore, the notion that 'Asian values' are applicable to the whole of Asia is at least as questionable as the notion that liberal democracy is applicable to the whole world. According to Subramaniam:

Asian values as conceived by the Singapore school are ostensibly Confucian values. However, some are also consistent with Weber's Protestant work ethic. Others defy strict categorization. The inventory of Asian values as conceived by the Singapore school consists mainly of the following: respect for authority, strong families, reverence for education, hard work, frugality, teamwork, and a balance between the individual's interests and those of society. (p. 24)

It is tempting to criticise the concept of Asian values on the grounds that 'they really mean' something else, and that they are a front for self-interested tyranny. However, the more productive criticism is a response to the actual claim of the proponents of Asian values, namely that they are appropriate to the modernization challenges facing Asian societies and economies. Amartya Sen's reading of the empirical evidence leads him to the conclusion that: "On balance, the hypothesis that there is no relation between freedom and prosperity in either direction is hard to reject" (1997, pp. 33-34). He also argues that authoritarian government has an

inflexibility that makes it unresponsive to disasters and other unforeseen circumstances, and that "the political incentives provided by democratic governance acquire great practical value" (1997, p. 34).

Sen argues that the concept of Asian values is an unrealistically homogenous one, when viewed against the enormous diversity of Asian cultures. He also points out that there are Western systems of thought that place an emphasis on order and harmony, as opposed to freedom and dissent. Furthermore, Asian traditions such as Buddhism place an emphasis on individual freedom as a necessary component of the search for truth and enlightenment, and he provides an extensive description of how such an emphasis has been given political application over the centuries.

Sen (1997, p. 40) rejects the concept of Asian values as "not especially Asian." Subramaniam (2000, pp. 30-31) concludes that the "cultural relativist" position and the contrasting "universalist" one—that "the liberal democratic path has universal applicability"—are both only half right. For him: "The debate has become a missed opportunity to:

- Examine the plurality of cultures and values in Asia
- Seek common ground among the many Asian cultures and values
- Work out areas of consensus between the proponents of liberal democratic values and the proponents of Asian values" (2000, p. 31).

Such a search for common ground is likely to be more conducive to global human security than attempts to delineate another West versus Asia 'clash of civilizations.' Another consideration is that the diversity of Asian critiques of Asian values demonstrates the rich and extensive range of human values further challenging the Asia versus the West dichotomy. Critics also argue Asian values marginalises the perspectives of India, the world's largest democracy and historically a major force within Asian cultural history. Indeed, India's founding Prime Minister Jawaharlal Nehru advocated support for universal concepts of democracy because of its opposition to colonialism, the values of socialism as well as an understanding of a humanist liberal tradition (Varshney, 2015, p. 923).

Human Security Paradigms

Hofstede (1984) claims that 'Third World social scientists' have frequently been educated in the West, and are therefore imbued with ethnocentric Western approaches which masquerade as science, and that it therefore requires exceptional personal courage and independence of thought to break from, or even problematize, these approaches. Perhaps he underestimates the contributions of thinkers from outside the Western metropoles. It is clear that without their contributions, the study of human security would be far behind where it is now.

The contributions of Muhammad Yunus and Amartya Sen are especially notable. Both have won Nobel Prizes, and have contributed to academic discourses and practices of human security. Yunus' development of microcredit has had a practical impact, and he has contributed significantly to the theory of social business (e.g. Yunus, 2010); in both spheres his work has contributed to human security by improving the economic security (freedom from want) of some of the poorest people in the world. In Sen's case, not only has he contributed directly to the field of human security as an academic, but he has also contributed to United Nations discourses of human security, human rights, and development. Yet we have to ask whether or not Hofstede's claim about 'Third World social scientists' is right in the cases of Yunus and Sen: do they both have essentially Western minds in Asian bodies, or is there an appreciable 'Bangladeshiness' or 'Indianness' to their work that needs to be appreciated?

Yunus's impetus came from observing the lives of the rural poor in Bangladesh, and his model was not initially conceptualised as more than a local response to local circumstances. Yet, it has been applied not only in the developing world, but also to situations of poverty in the United States, continental Europe, Scotland, and Japan, among others (Yunus, 2010, vii-xxiv, pp. 160-162). Tadjbakhsh and Chenoy show that Sen's central contributions to the social sciences were made in response to the development needs of the South Asian subcontinent:

Sen's theoretical revolution, in the technical language of "functionings" and "capabilities", was in tandem with the practical dictates of Mahbub ul-Haq, the Pakistani planner associated with the foundation of the UNDP Human Development Approach, who posed a simple statement that the purpose of all public policies is to increase people's choices. In his "Development as Freedom," Sen elaborated on why and how freedom is at the same time the main goal and the main means to achieve development. (2007, p. 20)

Tadjbakhsh and Chenoy locate their own perspective within an experience of the developing world and its relations with the West:

the collaboration brought together one Iranian woman who had been educated in American universities and had worked in the UN before moving to teaching, and an Indian woman steeped in the tradition of activism that, fortunately, does not escape the faith of intellectuals in India. (2007, p. 5)

Using the language of 'the South' and 'the North' (broadly equivalent to the 'developing' and 'developed' counties of the world), Tadjbakhsh and Chenoy point to:

the collective experience … of mistrust … with concepts that came from international organizations, which to the South, were often seen as institutions led by powerful Northern nations. Whether it was democracy, human rights and now human security, the discourses smacked of power in the construction of the terms. (2007, p. 4)

This does seem like an appreciably Southern paradigm, which elucidates the 'Northernness' of some others. This is especially apparent when they discuss the notion of humanitarian intervention, a particular use of the concept of human security in international politics which has extended the just war theory to one that legitimises war when it is prosecuted for reasons, or pretexts, of human security (2007, p. 196ff). The lack of intervention in Rwanda in 1994, and the actual intervention in Kosovo in 1999, have both been debated extensively. The Rwandan case has been used to justify subsequent interventions in Kosovo, Iraq, and Libya, for example, although Chomsky (1999, p. 81) has argued that the intervention in Kosovo "greatly accelerated slaughter and dispossession." Tadjbakhsh and Chenoy observe that "incidents of selective humanitarian intervention have made much of the South, especially Civil Society, cynical of the concept to the extent of rejecting it" (2007, p. 198). They cite Walden Bello (2006) as an example:

most of us, at least most of us in the global South, recoil at Washington's use of the humanitarian logic to invade Iraq. Most of us would say that even as we condemn any regime's violations of human rights, systematic violation of those rights does not constitute grounds for the violation of national sovereignty through invasion or destabilization. Getting rid of a repressive regime or a dictator is the responsibility of the citizens of a country.

This is at least suggestive of a distinctively Southern human security paradigm. The existence of such a paradigm would be significant in that it allows its proponents to criticise the tendency of some in the South to reject human security in its entirety as a tool of Western neo-imperialism. Tadjbakhsh and Chenoy say that "the advent of human security should be seen, instead, as the triumph of the South to put development concerns into global security discussions" (2007, p. 35), because "a human security approach for the South would allow it to shed international light on the concerns of underdevelopment and individual dignity at a time when state-based interests are increasingly being used in the global war against terrorism" (2007, p. 35). And for Mahbub ul-Haq (1998, p. 5), human security paradigms create the potential for a "new partnership between the North and the South based on justice not on charity; on an equitable sharing of global market opportunities, not on aid; on two-way compacts, not one-way transfers; on mutual cooperation, not on unilateral conditionality or confrontation."

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4.7: Freedom of Religion, Freedom from Religion

Religious fervour can easily become grounds for human insecurity, but conflicting religious cultures do not necessarily generate such results. Akbar Ahmed (1999, pp. 181-184) looks at a number of issues relating to the experiences of the Muslim community in the Outer Hebrides, an archipelago off the north-west coast of Scotland where people still speak the Gaelic language, which has largely died out in the rest of Scotland. What occurs is an unusual meeting of two minority ethnic cultures: British Pakistani on the one hand and the Gaels of the Hebrides on the other. According to Ahmed, the Muslim community fitted in very well, respecting the important Hebridean custom of Sabbath observance (doing no work on Sundays), even though this is not part of the Muslim faith. This is a side of globalisation that is not always observed. Although this specific meeting of minority cultures is unusual, it is part of a pattern that is unremarkable. The lack of human insecurity experienced by the Gaels and the Muslims as a result of their interaction means that there is little to say about this aspect of globalisation. A rare example of a similarly high level of human security becoming internationally newsworthy occurred in 2016 in the British city of Leicester, and only achieved international recognition because of its association with a key component of British mass popular culture, soccer or Association Football; after the Leicester team won the English Premier league it became apparent that the racially diverse white and South Asian population of the city were harmoniously united in their support for their team (Williams & Peach, 2018, pp. 423-425). The first example would not even be discussed were it not for its surprising location and the second attracted attention because of its link to sport, but both are more representative of the experience of human security than more ‘newsworthy’ discussions of war, extreme poverty, or human rights violations could ever be.

It is important to establish that context before observing that some of the strongest criticisms of the human rights tradition – which has been extended in human security perspectives – has come from Islamic countries. In 1981, the Iranian representative at the United Nations argued that the Universal Declaration of Human Rights (UDHR) was based on a secular understanding of the Judeo-Christian tradition, and was thus incompatible with the core values of Muslim countries, and with the foundations of those values.

As a result of such concerns, the Cairo Declaration on Human Rights in Islam was promulgated in 1990.[2] It was a declaration by the Organisation of the Islamic Conference (OIC) which, at the time, consisted of 45 states (including Palestine, which is recognised as a state by the OIC). The declaration was presented in a form similar to the UDHR, but with notable differences in content. Unfortunately, these differences seem to reflect a weaker commitment to religious freedom, gender equality, and freedom of speech than the UDHR. For example:

- Islam is the religion of true unspoiled nature. It is prohibited to exercise any form of pressure on man or to exploit his poverty or ignorance in order to force him to change his religion to another religion or to atheism. (Article 10)
- Woman is equal to man *in human dignity*, and has her own rights to enjoy as well as duties to perform, and has her own civil entity and financial independence, and the right to retain her name and lineage. (Article 6a; added emphasis)
- Everyone shall have the right to express his opinion freely in such manner as would not be contrary to the principles of the Shari’ah. (Article 22a).

It is unfortunate that many people have taken this as evidence of a lack of commitment to human rights within Islam per se. Yet the Cairo Declaration was an instrument of state actors; that is to say, it is a political document, drafted, debated and signed by those who held political power. The contributions of Muslim civil society to discussions of human rights and human security have been extensive and diverse, in keeping with the Qur’anic challenge to Muslims and Christians to “vie with one another in doing good works” (The Qur’an 5, p. 48). Yet the contributions of Muslim civil society are often mistrusted and marginalised, which undermines the human security of Muslims worldwide. Mustapha Kamal Pasha puts it as follows, in a quotation which ties together several strands of this chapter:

A […] major problem in human security discourses belongs to its fixation on a ‘hierarchy of needs’ model and its latent economism pronounced in cataloguing various indices of insecurity. Alternatively, an appreciation of the inviolability of cultural identity to the sustenance of the human condition can help displace the hegemony of economism. Such appreciation need not rest on cultural relativism or essentialism, merely the indivisibility of social life forms. In the post 9/11 context, life-worlds placed under sustained political surveillance are not merely addenda to received indices of human insecurity. Rather, culturally fractured life-worlds direct inquiry towards processes and structures of power and their effects. (2007, p. 191)

Importantly, the Cairo Declaration asserts human rights that are not enshrined in the UDHR, and thus, potentially at least, contributes to the *extension* of human rights and human security. For example:

- In the event of the use of force and in case of armed conflict, it is not permissible to kill non-belligerents such as old men, women and children. The wounded and the sick shall have the right to medical treatment; and prisoners of war shall have the right to be fed, sheltered and clothed. It is prohibited to mutilate or dismember dead bodies. It is required to exchange prisoners of war and to arrange visits or reunions of families separated by circumstances of war. (Article 3a).
- Everyone shall have the right to live in a clean environment… . (Article 17a).
- Everyone shall have the right to live in security for himself, his religion, his dependents, his honour and his property…. A private residence is inviolable in all cases. It will not be entered without permission from its inhabitants or in any unlawful manner, nor shall it be demolished or confiscated and its dwellers evicted. (Article 18a, c).

To argue that these articles are reflective of Islam per se would be as unwarranted as making the same argument about the ones cited earlier. Yet, they do reflect a religious perspective on human rights and human security that is too influential to be ignored. Furthermore, freedom of religion is recognised as a human right in the UDHR, and this right "includes the right … to manifest [one's] religion or belief in teaching, practice, worship and observance" (Article 18). The right to manifest one's religion in practice does not exclude the right to manifest it in political or cultural practice; although the right to abandon one's religion has of course been problematic, as Abdullah Saeed and Hassan Saeed (2004) have noted. Freedom of religion is not confined to the private sphere, and to make it so would infringe on the human rights and human security of many people.

However, religion outside of the private sphere can also infringe on people's human rights and human security. For example, the right to marry is guaranteed by the UDHR and other human rights declarations, including the Cairo Declaration. Yet this right is effectively denied to gay people in the vast majority of countries around the world, and attempts to legally extend it to gay people have met with substantial opposition, primarily but not exclusively from religious quarters. Such opposition to gay rights is seen as a lack of modernity, although more complex dynamics regarding the intersection between marriage rights, Muslim cultures and LGBTIQ politics need to be considered (Rahman, 2014). Homophobia and Islamophobia are both threats to human security. The denial of gay rights and the denial of religious rights are both denials of human rights, and undermine human security. Freedom of religion and freedom from religion, when they are practised in tandem, enhance human security. When either is practiced in isolation from the other, it threatens human security.

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4.8: Conclusion – Paradoxes of Universality

The existence of national and ethnic particularisms seems to be universal. In his discussion of racism and nationalism, Etienne Balibar (1991, p. 54) observes that “the theories and strategies of nationalism are always caught up in the contradiction between universality and particularism.” At the simplest level, states assert their right to independence on the grounds that they are merely asserting the same right that is claimed by every other state, and, simultaneously, that there is something special about them that gives them the right to be a state when this right is denied to other social, cultural, or ethnic groups, a position redolent of racism.

Yet racism would seem to create inequalities of human rights that undermine human security. The contradiction between universality and particularism is not only a problem for nationalism; it is also a problem for human rights and human security. It is ethnocentric to reject the notion that human rights are culturally determined and therefore apply differently in different cultures. Yet it is racist to condemn a group of people to a lower standard of human rights than we would accept for ourselves, merely because they belong to a different ethnic, cultural, religious, or national group. These contradictions seem irresolvable. However the tensions are not all negative. They provide opportunities for a continued dialectic, through which Universalists and Particularists can be constantly challenged to evaluate and possibly change their positions, and continually create better instruments of human rights and human security. Ultimately, the existence of conflicting perspectives in the study of human security is actually a positive dynamic that has the potential to enhance human security in different cultures and societies.

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4.9: Resources and References

Review

Key Points

- Many conflicting perspectives in the study of human security are derived from a dichotomy of 'the West' and 'the rest,' which is expressed in many ways: Western and Eastern cultures; the developed world and the developing world; the North and the South; modern and traditional values; secularisation and religiosity; egalitarian and hierarchical polities.
- The emergence of globalisation provides the context within which *diverse* perspectives become *conflicting* perspectives.
- Whether or not human rights should be universal or culturally located is a controversial issue with no easy answer. A related question concerns whether or not human rights should be norm-based or criterion-based.
- Conflicting perspectives on the relationship between human rights and human security can be classified as (a) human rights define human security, (b) human security builds on human rights and (c) a fundamental tension between human rights and human security.
- The example of the Shan people shows that even the worst human rights violations they experience in Thailand may not be enough to make them wish they were in Burma. However, human rights constitute a minimum acceptable standard, not a vague set of aspirations. They are necessary to human security. Human rights violations cannot be excused by culture, or national security needs, or democratic veto.
- The hierarchy in which Maslow's needs are presented is culturally relative. Different cultures variously regard their 'highest' need as (a) self-actualization, (b) a combination of security and assertiveness needs, (c) social relationship needs and (d) a combination of security and relationship needs.
- There may be a distinctively Southern human security paradigm. Human security paradigms create a potential partnership between the Global North and the Global South.
- Some Muslim countries have argued that the Universal Declaration of Human Rights (UDHR) is incompatible with Islam. The Cairo Declaration on Human Rights in Islam (1990) seems to reflect a weaker commitment to religious freedom, gender equality, and freedom of speech than the UDHR, but this is not evidence of a lack of commitment to human rights within Islam. Muslim civil society has contributed extensively to discussions of human rights and human security.
- Freedom of religion is not confined to the private sphere. This would infringe on the human rights and human security of many people. However, religion outside of the private sphere can also infringe on people's human rights and human security. Freedom of religion and freedom from religion, when they are practised in tandem, enhance human security. When either is practiced in isolation from the other, it threatens human security.
- It is ethnocentric to reject the notion that human rights are culturally determined and therefore apply differently in different cultures. Yet it is racist to condemn a group of people to a lower standard of human rights than we would accept for ourselves, merely because they belong to a different ethnic, cultural, religious, or national group. This contradiction may be irresolvable, but it provides an opportunity for Universalists and Particularists to create better instruments of human rights and human security.

Extension Activities & Further Research

1. Think about ways in which globalisation has influenced the local area in which you live. How has this influenced the identities of the people in the area? How has it influenced your own sense of identity?
2. Of the three conflicting perspectives on the relationship between human rights and human security (human rights define human security, human security builds on human rights, and there is a fundamental tension between human rights and human security), which one makes most sense to you? Why?
3. Find out more about the Shan people of Burma and northern Thailand. Why do you think their situation is so widely unknown?
4. The example of the Cairo Declaration shows that cultural distinctiveness can be used to dilute human rights, but can also provide the inspiration to extend human rights. Drawing on cultures that you are familiar with, or that you have researched, propose one or more potential human rights that are not listed in the Universal Declaration of Human Rights.
5. Find ways in which religious freedoms are sometimes restricted, both in your own country and elsewhere. Think of ways in which these situations could be improved.

List of Terms

See Glossary for full list of terms and definitions.

- Asian values
- civil society
- criterion-based human rights
- ethnocentric
- freedom of religion
- globalisation
- hierarchy of needs
- humanitarian intervention
- norm-based human rights
- Orientalism

Suggested Reading

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Footnote

1. Editors' note: A similar argument is presented in Chapter 15 in the form of a fundamental difference between those human rights that are grantable and those that are not.
2. See The Nineteenth Islamic Conference of Foreign Ministers (Session of Peace, Interdependence and Development), held in Cairo, Arab Republic of Egypt, from 9-14 Muharram 1411H (31 July to 5 August 1990), The Cairo Declaration On Human Rights In Islam. http://www.icla.up.ac.za/images/un/use-of-force/intergovernmental-organisations/oic/THE%20CAIRO%20DECLARATION%20ON%20HUMAN%20RIGHTS%20IN%20ISLAM.pdf (accessed 9 Aug 2019)

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CHAPTER OVERVIEW

5: Threats to Human Security

Learning Objectives

- The impact of threats to human security is more easily assessed in terms of direct humanitarian costs of violent conflict; when one takes into account indirect social, economic, health-related, and environmental consequences such assessment becomes much more complicated.
- Threats to human security originate from the socio-political, economic, health-related, and environmental areas. Even though the former area is often perceived as the origin of violent conflict, its consequences ramify into all four areas.
- The shapes and the consequences of violent conflict have changed considerably since World War II (WWII).
- Addressing the diverse threats to human security requires the development of a more comprehensive and logically consistent understanding of human security.

Paul Bellamy

Human security focuses on the protection of individuals. Violent conflicts, especially of an intrastate nature, are a major threat to human security because of their wide-ranging and devastating impact. Key factors that can cause conflict include a state's history, personalities of its leaders and external actors. Beyond conflict, major threats to human security target the health of people, law and order, state authority, economy and the environment. To address them, a better understanding of the components of security is needed, and associated with this, the sources of threats to this security. It is much better to address issues before they threaten lives and livelihoods.[1]

5.1: Introduction
5.2: Assessing Human Security
5.3: Violent Conflict as a Threat to Human Security
5.4: Other Threats to Human Security
5.5: Conclusions
5.6: Resources and References

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5.1: Introduction

Whereas the traditional goal of ‘national security’ was the defense of the state from external threats, the focus of human security is the protection of individuals. Human security and national security are often mutually reinforcing. However, individuals living in secure states are not necessarily secure themselves. The protection of the state from foreign attack is a necessary condition for its security, but not sufficient for human security. Identifying potential threats that can erode human security is a key reason to study the subject area. A better understanding of human security should ultimately improve the ability to counter such threats, or at least limit their magnitude, and enhance the effectiveness of attempts aimed at reducing those threats. The need for research in this area is reinforced by human security being a relatively new concept, and the comparative scarcity of comprehensive literature on human security defined in a broad sense.

There is no consensus regarding the exact threats that individuals are protected from by human security measures. Although proponents of human security agree that its primary goal is the protection of individuals, there is debate over what that entails. Proponents of the ‘narrow’ concept of human security focus on violent threats to individuals, while acknowledging that such threats are strongly associated with poverty, lack of state capacity, and different forms of socio-economic and political inequity (i.e. ‘structural violence’). Proponents of the ‘broad’ concept believe that the range of threats should be widened to include hunger, disease and natural disasters. According to the *Human Security Report 2005*, the two approaches are complementary (Bellamy, 2008, p. 4). Then United Nations (UN) Secretary-General Kofi Annan used what can be described as a ‘narrow’ concept of human security when he referred to it as focusing upon “the protection of communities and individuals from internal violence” (University of British Columbia, 2005, p. VIII).

While this chapter focuses on violent conflict and its diverse consequences, other threats to the security of individuals are also outlined. For example, the health, and ultimately the lives of individuals can be threatened by a state’s inadequate infrastructure. Inadequate health, sanitation, food and water supply systems all can increase the likelihood of disease and malnutrition. Crime, especially of a serious nature, and terrorism, threatens lives and human well-being, and thus human security. Similarly, state, social and economic problems threaten livelihoods and can cause grievances, while issues like global warming affect the environment, biodiversity and people. These developments in turn can cause discontent and instability (DeRouen and Bellamy, 2008, p. XII). The UN has recognized the diversity of threats to human security. At the 2005 World Summit it was declared that “all individuals, in particular, vulnerable people, are entitled to freedom from fear and freedom from want, with an equal opportunity to enjoy all their rights and fully develop their human potential” (UN News Centre, 2008). The 2018 Intergovernmental Panel on Climate Change (IPCC) identified climate change as the greatest threat to humanity’s security (IPCC, 2018).

This chapter first outlines selected indicators useful for evaluating the degree to which human security is threatened before reviewing actual threats. Violent conflicts are primarily examined because of their wide-ranging and devastating impact on human security. More specifically, intrastate conflicts are examined, as they are now the dominant form of conflict worldwide, and their peaceful resolution is often particularly difficult. Major effects of violent conflicts on human security are assessed, followed by a brief outline of selected factors that can cause these threats. Other threats, such as those to the state and economy, health, law and order and environment are also identified

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5.2: Assessing Human Security

Various indicators can be used to assess human security, and to identify factors that threaten it. The UN Development Programme (UNDP) publishes an annual Human Development Index (HDI) that provides a relevant comparative analysis of international human development indicators. This is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable, and experiencing a decent standard of living. Health is assessed by life expectancy at birth, while knowledge is assessed via the mean schooling years for adults aged 25 years and more, and expected years of schooling for children of school entry age. The standard of living is measured by Gross National Income (GNI) per capita (UNDP, n.d.).

According to the UNDP's 2018 HDI Report, the overall trend globally was toward continued human development improvements. Many countries had advanced through the human development categories: out of the 189 countries measured, 59 countries were in the very high human development group and 38 in the low HDI group. In 2010, the figures were 46 and 49 countries respectively. Movements were driven by changes in health, education and income. Health improved significantly, as illustrated by life expectancy at birth. This increased by almost seven years globally, with sub-Saharan Africa and South Asia making the greatest progress, each experiencing increases of about 11 years since 1990. School-age children could also expect to be in school for 3.4 years longer than those in 1990. However, disparities continued between and within countries. On average, a child born in a country with low human development could expect to live just over 60 years. Contrasting this, a child born in a country with very high human development could expect to live to almost 80. Likewise, children in low human development countries could expect to be in school seven years less than children in very high human development countries. A key source of inequality within countries was the gap in opportunities, achievements and empowerment between women and men. Internationally, the average HDI for women was six percent lower than for men, due to women's lower income and educational attainment in many countries (UNDP, 2018a).

The 2018 HDI highlighted major deficiencies in well-being and life opportunities in countries and territories where human security was threatened. The top five places in the global HDI rankings were Norway, Switzerland, Australia, Ireland and Germany. The bottom ranked five countries were Niger, the Central African Republic, South Sudan, Chad and Burundi.The varying threat levels were clearly illustrated by comparing the lives of people in countries ranked the highest and lowest on the HDI. The average person in Norway (at the top of the HDI), and the average person in countries such as Niger (at the bottom), experienced vastly different levels of deficiency in well-being and life opportunities. The life expectancy in Norway was 82.3 years, GNI per capita (constant 2011 United States $ purchasing power parity or PPP) was $68,012, and the mean years of schooling for adults was 12.6 years. Contrasting this, the life expectancy in Niger was 60.4 years, GNI per capita was $906 and the mean years of schooling 5.4 years (UNDP, 2018b).

The Global Peace Index (GPI) is produced by the Institute for Economics and Peace (IEP), an independent, non-partisan and non-profit think tank. This ranks 163 independent states and territories according to their level of peacefulness. The GPI comprises 23 indicators of the absence of violence or fear of violence in three thematic domains. The first refers to the extent of ongoing domestic and international conflict. Here indicators include the number and duration of internal conflicts, and deaths from external and internal organized conflict. The level of societal safety and security is then measured via indicators such as the level of perceived criminality in society, political instability, and the number of refugees and internally displaced people as a percentage of the population. Finally, the degree of militarization utilizes indicators ranging from military expenditure as a percentage of Gross Domestic Product (GDP) along with nuclear and heavy weapons capabilities, through to the number of armed services personnel per 100,000 people (Institute for Economics and Peace [IEP], 2019, pp. 2, 84-85).

According to the UNDP's 2018 HDI Report, the overall trend globally was toward continued human development improvements. Many countries had advanced through the human development categories: out of the 189 countries measured, 59 countries were in the very high human development group and 38 in the low HDI group. In 2010, the figures were 46 and 49 countries respectively. Movements were driven by changes in health, education and income. Health improved significantly, as illustrated by life expectancy at birth. This increased by almost seven years globally, with sub-Saharan Africa and South Asia making the greatest progress, each experiencing increases of about 11 years since 1990. School-age children could also expect to be in school for 3.4 years longer than those in 1990. However, disparities continued between and within countries. On average, a child born in a country with low human development could expect to live just over 60 years. Contrasting this, a child born in a country with very

high human development could expect to live to almost 80. Likewise, children in low human development countries could expect to be in school seven years less than children in very high human development countries. A key source of inequality within countries was the gap in opportunities, achievements and empowerment between women and men. Internationally, the average HDI for women was six percent lower than for men, due to women's lower income and educational attainment in many countries (UNDP, 2018a).

The Fragile States Index (FSI) is another useful indicator of the degree to which human security is threatened. This index is produced by the Fund for Peace (FFP), an independent, nonpartisan, non-profit research and educational organization working to prevent violent conflict and promote sustainable security. Twelve conflict risk indicators are used to measure the condition of a state, and these can be compared over time to determine whether they are improving or worsening.

The FSI examines four areas – cohesion, economic, political, and social and cross-cutting – with three indicators for each of these. The cohesion indicators are: the security apparatus (security threats to a state); factionalized elites (the fragmentation of state institutions); and group grievance (divisions and schisms between different groups in society). Economic indicators are: economic decline; uneven economic development; and human flight and brain drain (the economic impact of human displacement). Political indicators are: state legitimacy (the representativeness and openness of government and its relationship with its citizenry); public services (the presence of basic state functions serving people); and human rights and the rule of law. Finally, social and cross-cutting indicators are: demographic pressures (such as high population growth); refugees and internally displaced persons; and external intervention (FFP, 2019, pp. 33-41).

A fragile state has various attributes. These often include the loss of physical control of its territory or the monopoly on the legitimate use of force. Other attributes include the erosion of legitimate authority to make collective decisions, an inability to provide reasonable public services, and the inability to interact with other states as a full member of the international community. The 2019 FSI surveyed 178 countries with Yemen, Somalia, South Sudan, Syria and the Democratic Republic of the Congo (DRC) the five most fragile states. Yemen, the most fragile, has struggled with prolonged civil war and a humanitarian catastrophe, while Saudi and Emirati coalition-led forces have also intervened. By the end of 2018, 75% of the population needed humanitarian assistance and over 3.5 million people were displaced. Contrasting these states, the five least fragile were Finland, Norway, Switzerland, Denmark and Australia (FFP, 2019, pp. 6-7, 17).

Various methods are used to measure environmental sources of insecurity. The Environmental Performance Index (EPI) by Yale University and Columbia University, in collaboration with the World Economic Forum, ranks 180 countries on 24 performance indicators. These are across ten issue categories covering environmental health and ecosystem vitality. The categories are air quality, water quality, heavy metals, biodiversity and habitat, forests, fisheries, climate and energy, air pollution, water resources and agriculture. More specifically, the indicators range from tree cover loss, wastewater treatment and species protection to sanitation. These metrics provide a gauge at a national level of how closely countries measure up to established environmental policy goals. Switzerland, France, Denmark, Malta and Sweden were the highest ranked for their environmental performance in 2018 contrasting the worst performers – Burundi, Bangladesh, the DRC, India and Nepal (Yale University et al., 2018).

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5.3: Violent Conflict as a Threat to Human Security

Since the two World Wars, armed conflict has been a major and direct threat to many individuals worldwide, and thus is a good indicator of the state of human security. A study covering 1946 to 2001 identified a total of 225 armed conflicts. Of these, 163 were internal conflicts involving conflict between the state's government and internal opposition groups without other states intervening (DeRouen & Heo, 2007, p. 2). The Stockholm International Peace Research Institute (SIPRI), an international institute dedicated to research into conflict, armaments, arms control and disarmament, in 2018 said that global security "has deteriorated markedly in the past decade." The "broad trend so far this decade is an increase in armed conflicts, with the number each year returning to the levels of the start of the 1990s as the cold war was coming to an end." Moreover, in many places human security has been eroded by the fluid and often chaotic nature of conflict. The number of armed groups active in each conflict has tended to increase: the average rising from eight in each intrastate conflict in 1950 to 14 in 2010. Indeed, in Syria over 1,000 separate militias have been identified, and in Libya as many as 2,000 (SIPRI, 2018a, pp. 3, 18).

Based on the Uppsala Conflict Data Programme (UCDP), the world's main provider of data on organized violence, and the oldest ongoing data collection project for civil war, there were 52 active state-based armed conflicts in 2018, an increase from 50 in 2017.[2] The years since 2014 have been characterized by the highest numbers of armed conflict since 1946. For the fourth consecutive year, the UCDP registered over 50 ongoing conflicts. Only one year prior to 2014 experienced numbers that high: 1991 with 52 conflicts. This trend was largely driven by Islamic State (IS or Islamic State of Iraq and Syria, ISIS) expanding beyond Iraq where it originated. IS was active in 12 different state-based armed conflicts in 2018 compared to 16 in 2017. Eighteen of the 50 intrastate conflicts were internationalized with troops from external states supporting one or both sides in the conflict. Six conflicts reached the intensity level of war, with at least 1,000 battle-related deaths. This was a decrease by four from 2017, and the lowest number recorded since 2013. The decline corresponded to a significant reduction in battle-related deaths during 2018. At just over 53,000 fatalities, the numbers had decreased by 21% since 2017, and by almost 50% since the peak year of 2014 when over 104,000 fatalities were recorded (Pettersson et al., 2019).

Only two state-based conflicts were interstate in 2018—the border conflict between India and Pakistan and conflict between Iran and Israel that became active for the first time in 2018 (Pettersson et al., 2019). However, interstate tensions exist that could spark conflict. This is shown by the often tense relationship between North Korea and South Korea. Tensions were particularly high in 2017 with Pyongyang staging its sixth nuclear test. Despite a June 2018 summit between the North Korean leader Kim Jong-un and US President Donald J. Trump, the North reportedly continued its nuclear programme. Another February 2019 meeting collapsed with Pyongyang refusing nuclear disarmament in return for lifting economic sanctions.[3] The long-term resolution of tensions remains uncertain after Trump briefly visited the North in June 2019. Tensions in the South China Sea over multiple territorial claims and freedom of navigation operations, along with US-China rivalry have increased in recent years too.

Non-state armed conflicts also occur. These involve the use of armed force between two organized groups, such as rebel groups or ethnic groups, neither of which is the government of a state. Some of these conflicts are fought between formally organized groups, such as rebel groups. This has occurred in Sudan between the Lord's Resistance Army and Sudan People's Liberation Movement/Army. Other conflicts occur with fighting between less-organized groups like tribes, frequently over land or other resources. This is illustrated by the fighting in Kenya between the Kikuyu and Kalenjin ethnic groups, often over land rights. The UCDP has recorded 721 non-state conflicts since 1989, with a yearly average of 39 active conflicts. In 2018, 76 such conflicts were registered compared to 83 in the peak year of 2017. The past six years had all recorded higher levels of non-state violence than any other year since 1989. Increased non-state violence was driven by numerous inter-rebel conflicts in Syria, inter-cartel violence in Mexico, and communal conflicts in Nigeria, mainly along farmer-herder lines (Pettersson et al., 2019; Human Security Research Group, 2014, pp. 95-98).

Impact of Violent Conflict on Human Security

Humanitarian Impact

An obvious feature of violent conflict is the widespread loss of life. Casualties are especially frequent among civilians and those most vulnerable, such as women, children (who are often recruited as fighters) and the elderly. This is because cities and urban areas, which generally have large civilian populations, are strategically important, and hence control over these is often strongly

contested. Battle lines are also frequently non-existent or poorly defined, with conflict occurring throughout the country. This makes it difficult for civilians to find safe havens.

The conflict in Iraq since the 2003 overthrow of President Saddam Hussein by US-led coalition forces graphically demonstrates the potential loss of life. There is debate over whether the conflict during its height was a civil war; widespread casualties and human rights violations associated with civil wars were clearly apparent. James Fearon defined the conflict as a civil war, and a January 2007 US National Intelligence Estimate said that the term accurately described key elements of the conflict. These included growing ethno-sectarian identities, the changing character of violence, ethno-sectarian mobilization and population displacements (Fearon, 2007).

Although casualties from violence in Iraq have declined since peaking in 2006-2007 they still occur. Iraq Body Count, a non-governmental organization, records violent deaths that have resulted from the 2003 military intervention in Iraq. Its detailed public database includes civilian deaths caused by US-led coalition and Iraqi government forces, and paramilitary or criminal attacks by others. The database indicates that 16,393 civilian violent deaths occurred during 2016 (compared to a peak of 29,517 in 2006), with preliminary figures amounting to 13,183 in 2017 and 3,319 in 2018 (Iraq Body Coun,t 2019). While US troop withdrawals were completed in December 2011, US-led coalition forces assisted the Iraqi Government in its fight against IS fighters. From 2014 Iraq was engaged in a military campaign to recapture territory lost to IS in the western and northern portion of the country. During 2017, Iraqi forces retook Mosul and, in response to a *Kurdistan Regional Government* referendum, took control over disputed territories across central and northern Iraq previously occupied and governed by Kurdish forces. In December 2017, Iraqi Prime Minister Haider al-Abadi publicly declared victory against IS amid continued tensions among Iraq's ethnosectarian groups. However, the group remained active.[4]

The devastating impact of violent conflict is magnified by the indiscriminate use of modern weapons. The firepower of weapons has increased significantly since World War II and can be used to devastating effect, particularly in urban areas where many civilians reside. Furthermore, the availability of such weapons has increased. The SIPRI estimated world military expenditure was $1,822 billion in 2018. Global military spending gradually rose following a post-2009 low in 2014, and in 2018 was 76% higher than the 1998 post-cold war low. Expenditure represented 2.1% of global GDP, or $239 per capita in 2018. The five biggest spenders were the US, China, Saudi Arabia, India and France. At $649 billion, US military expenditure increased for the first time in seven years – by 4.6%. The US was by far the largest spender in the world, accounting for 36% of global military spending. Expenditure increased in Central America and the Caribbean, Central Europe, Central and South Asia, East Asia, North America, South America, and Western Europe. Spending decreased in Eastern Europe, North Africa, Oceania, South East Asia and sub-Saharan Africa. Total expenditure of the Middle Eastern countries for which data was available also declined (Tian et al., 2019, pp. 1-3). Ambassador Jan Eliasson, Chair of the SIPRI Governing Board, has called high global military expenditure a "cause for serious concern" as it "undermines the search for peaceful solutions to conflicts around the world" (SIPRI, 2018c, n.p.).

The impact of modern weapons on civilians is illustrated by the war in the former Yugoslavia during the 1990s. Tensions between the republics comprising the Socialist Republic of Yugoslavia (Bosnia-Herzegovina, Croatia, Macedonia, Montenegro, Serbia and Slovenia) increased in the late 1980s, as the Communist regime's grip on power was eroded by reforms in the Soviet Union and the Eastern Bloc. Ultimately, the country disintegrated, and fighting started in September 1990. By July 1991, a civil war ravaged Yugoslavia. Much of the conflict occurred in towns and cities, and involved heavy weaponry such as artillery and tanks. Sarajevo, the Bosnian capital, was under siege from 1992 to 1995. Serbia was then bombed by the North Atlantic Treaty Organization (NATO) in 1999. A more recent conflict started in March 2014 when Russian forces annexed the Ukraine's Crimean Peninsula, significantly increasing tensions between the West and Russia. Over 10,000 civilians have been killed or wounded as a result of the Russian intervention in eastern Ukraine, where modern weaponry has been deployed (CIA, 2019). This was graphically shown by the July 2014 shooting down of a Malaysian airliner by pro-Russian forces that killed all 298 people on board.[5]

No less deadly are common lighter and low-tech weapons. Many of the Rwandan deaths during the 1994 conflict (outlined later) were caused by machetes. Rocket-propelled grenades, bombs and improvised explosive devices (IEDs) have been very costly in Iraq and Afghanistan. In recent years such incidents have declined in Iraq, but risen in Afghanistan (Kester & Winter, 2017). A 2019 UN report documented 3,804 civilian deaths (another 7,189 were injured) in the Afghan conflict during 2018. Anti-Government Elements were responsible for 6,980 civilian casualties (2,243 deaths and 4,737 injured), mainly caused by the indiscriminate use of suicide IEDs and the deliberate targeting of civilians with these devices (UN Assistance Mission in Afghanistan, 2019). IS has frequently used suicide bombings, including customised armoured car bombs.[6] Other countries facing

such indiscriminate weapons include Pakistan and Russia. Incidents in Pakistan include deadly attacks during the July 2018 Pakistani general election. With regard to Russia, in October 2015 a Russian airliner was destroyed by a bomb over Egypt, killing 224 people, and in April 2017 a deadly bombing occurred on the Saint Petersburg Metro.[7]

Apart from conventional weapons, there is the threat of unconventional weapons. At the start of 2019, nine states; the US, Russia, the United Kingdom, France, China, India, Pakistan, Israel and North Korea possessed approximately 13,865 nuclear weapons. According to SIPRI in 2019, Russia and the US, which collectively accounted for over 90% of global nuclear weapons, had extensive and expensive programmes under way to replace and modernize their nuclear warheads, missile and aircraft delivery systems, and nuclear weapon production facilities. The other nuclear-armed states all were either developing or deploying new weapon systems or had announced their intention to do so. (SIPRI, 2019, p. 10). Moreover, chemical weapons have been used by Syrian President Bashar al-Assad, as in April 2017, and the UK in September 2018 warned Russia that it would pay a “high price” if it continued to use chemical weapons following the use of a nerve agent in Salisbury earlier that year from which one person died.[8]

The Doomsday Clock uses the imagery of apocalypse (midnight), and the contemporary idiom of nuclear explosion (countdown to zero), to convey threats to humanity and the planet. It has become a universally recognized indicator of the world’s vulnerability to catastrophe from nuclear weapons, climate change, and new technologies emerging in other domains. The decision to move (or to leave in place) the Clock’s minute hand is made annually by the *Bulletin of the Atomic Scientists*’ Science and Security Board, in consultation with its Board of Sponsors. In January 2018 the minute hand was moved 30 seconds closer to catastrophe: two minutes to midnight, the closest the Clock had been to Doomsday. This was because in 2017 “we saw reckless language in the nuclear realm heat up already dangerous situations and re-learned that minimizing evidence-based assessments regarding climate and other global challenges does not lead to better public policies” (Mecklin, 2018, n.p.). The US intention reported in October 2018 to withdraw from the 1987 Intermediate-Range Nuclear Forces Treaty has been critiqued in the *Bulletin* given its negative impact on nuclear arms control (Reif, 2018); the US suspended its obligations under the Treaty effective February 2, 2019 (White House, 2019).

War crimes add to the cost. Human rights are frequently violated as social mores against such crimes are eroded while law and order collapses. These developments provide fertile ground for historical animosities to surface, for leaders to exploit tensions, and for factions to seek revenge for perceived past injustices. This, in turn, can start a cycle of violence as factions commit violence against each other that provokes retaliation. Such violence increases the level of hatred and the risk of war crimes. Human rights may also be systematically violated as terror and brutality are used to win dominance over the civilian population, and to ensure its compliance. Moreover, a breakdown of law and order can provide the opportunity for widespread violations to occur unhindered by fear of punishment. The International Criminal Court (ICC) was established to help end this impunity and gross violations of international humanitarian law. By August 2019 there had been 27 cases before the Court, some involving more than one suspect. ICC judges had issued 34 arrest warrants, while 16 people had been detained in the ICC detention centre and appeared before the Court. Fifteen people remained at large. Charges had been dropped against three people due to their deaths. Judges had issued nine convictions and four acquittals (ICC, 2019). Other courts such as the International Criminal Tribunal for the former Yugoslavia focus on war crimes during specific conflicts. In November 2017 former Bosnian Serb commander Ratko Mladić was jailed for life for genocide and other atrocities.

The term ‘one-sided violence’ refers to the use of armed force by the government of a state or by a formally organized group against civilians resulting in at least 25 deaths in a year. The UCDP has recorded a total of 274 actors engaged in one-sided violence since 1989, with a yearly average of 33 active actors. In 2018, there were 32 actors compared to 31 in 2017. Governments or formally organized groups targeted and killed at least 4,500 civilians during 2018, the lowest level since 2012. IS was the actor most heavily involved in this violence with nearly 1,800 civilian fatalities recorded in 2018, a decline from previous years. With a few exceptions, most notably Rwanda in 1994, non-state actors have targeted civilians more frequently than states have. Governments were responsible for 18% of the fatalities in 2018, one such actor being the Nicaraguan government which violently cracked down on protesters opposing new social security reform (Pettersson et al., 2019). The earlier conflict in Rwanda during the 1990s provides graphic evidence of the atrocities that can occur. Historically, there had been intense tribal animosities between the Tutsis and the Hutu, and such tensions worsened when the Presidents of Rwanda and Burundi died in an April 1994 suspicious plane crash. It was against this background that extremist Hutu militia and elements of the Rwandan military began the systematic massacre of Tutsis. Approximately 800,000 Tutsis and moderate Hutus were killed (DeRouen & Heo, 2007, p. 6).

Gender-based violence frequently occurs during conflict. The incidence of rape increases with law and order collapsing and power being held by those holding weapons, often young poorly educated males abusing alcohol and other drugs. Violence can occur with ill-discipline, but may also be employed as another tool to gain the population's submission. Such violence is illustrated by the DRC conflict. Ethnic strife and civil war occurred with a major inflow of refugees in 1994 from conflicts in Rwanda and Burundi. A short civil war in 1997 was followed by continued ethnic unrest. Amnesty International has reported that tens of thousands of women and girls were systematically raped by combatants. Many suffered gang rapes or were taken as sex slaves, while the rape of men and boys was reported too. Rape was often preceded or followed by the deliberate wounding, torture or killing of the victim. Women suffering injuries or illnesses caused by rape were frequently denied medical care. Furthermore, victims were often abandoned by their husbands and excluded by their communities because of prejudice. This condemned them and their children to extreme poverty (Amnesty International, 2005). In Nigeria ongoing instability has included groups of schoolgirls being kidnapped by the militant Islamist group Boko Haram.

Children are frequently recruited as child soldiers by warring groups. They are viewed by groups as a readily available supply of recruits easily trainable and indoctrinated, who require no pay, and eat less food than adults. Children as young as eight years have been recruited, often forcefully, and are especially vulnerable when separated from their families or orphaned. The problem is most critical in Africa while children are also used as soldiers in various Asian countries and in parts of Latin America, Europe and the Middle East (DeRouen & Heo, 2007, p. 7). Myanmar has had an estimated 75,000 plus child soldiers, one of the highest numbers of any country (University of British Columbia, 2005, pp. 113-115).

Additional casualties can occur under the regime that emerges victorious from a conflict. Groups that use violence to seize power are likely to be willing and capable of widespread violence if they feel their power is threatened, and are likely to take extreme measures against perceived threats. This is illustrated by the brutal force used by Libyan leader Muammar Gaddafi in 2011 against uprisings that ultimately resulted in his death, and by Bashar al-Assad against 2011 uprisings and during the resultant costly civil war. Furthermore, victorious groups might employ force to ensure that their directives are fulfilled, which may include violent and extreme ideals themselves. The resultant social and economic disruption can cause widespread hardships. The plight of Cambodians under the Khmer Rouge from 1975 to 1979 is a particularly graphic case of violence and radical change after a civil war. By the time the Khmer Rouge lost power in early 1979, as many as 1.7 million people had died through mass executions, malnutrition or disease (Bellamy, 2005, p. 17). More recently, IS brutally administered its occupied territories before a US-backed alliance of Syrian fighters announced in March 2019 that the jihadist group had lost its last Syrian territory. This brought a formal end to the 'caliphate' it proclaimed in 2014.[9]

The devastating effect of conflict remains long after the fighting has subsided or concluded. Higher mortality rates often remain, for it is time-consuming to rebuild the country's damaged infrastructure, such as health and sanitation systems. Agricultural production will be compromised, and ecosystems will have suffered damage, exerting combined negative effects on public health. The reduced pool of available resources hinders rebuilding efforts. For example, there may be few people with the necessary expertise and skills as they would likely have fled the conflict or become casualties. This is especially problematic given the likelihood of greater demand for basic services because of damage, and the resultant increased threat of infectious diseases aggravated by a reduced ability to counter health threats. According to one study, during a five year civil war (the average length of a civil war is approximately seven years) infant mortality increased by 13%, and remained 11% higher than the baseline in the initial five years of post-war peace (World Bank, 2003, pp. 23-24, 93).

Lives are further threatened by the remnants of conflict. Unexploded ordnance and cluster munitions often claim lives and cause injuries; landmines are especially menacing. Landmines are frequently utilized given their inexpensiveness, ready availability and ease of use. This frequent use, along with the difficulty and cost of clearing mines and their indiscriminate harm to people and livestock, enhances their threat. Those who survive encounters are often maimed and face the prospect of losing their ability to work, and thus their livelihoods. They can also become ostracized from society. Some 61 countries and areas around the world are contaminated by landmines, and thousands of people live with this threat. In 2016, an average of 23 people around the world every day lost their life or limb to a landmine, or another explosive remnant of war. Thus, over 8,605 people were hurt or killed that year (International Campaign to Ban Landmines, 2018). Mined roads and destroyed bridges are significant obstacles to post-conflict recovery, because they hamper the use of valuable natural resources. For instance, minefields surrounding major population centres prevent the use of land suitable for agriculture and resettlement. The deaths and injuries of many Cambodians since the war there highlight the menace posed by mines.

As death and destruction spreads, many people attempt to flee. Refugees often carry minimal possessions and are forced to survive with these, at least until they find new homes or obtain assistance at refugee camps. Refugees are unlikely to receive adequate help from a weakened state, and are vulnerable to attack and to disease. The plight of refugees is further worsened by the trauma of witnessing the death and injury of relatives and friends. According to the UN High Commissioner for Refugees (UNHCR), the global population of forcibly displaced people grew from 43.3 million in 2009 to 70.8 million in 2018, a record high. Most of this increase happened between 2012 and 2015, driven primarily by the Syrian conflict (Syria had the highest number of refugees with 6.7 million). Other conflicts also contributed to this rise, including Iraq, Yemen, the DRC and South Sudan, along with the significant flow of Rohingya refugees from Myanmar to Bangladesh at the end of 2017. The refugee population under UNHCR's mandate had nearly doubled since 2012. In 2018, the increase was driven particularly by internal displacement in Ethiopia and asylum-seekers fleeing Venezuela (UNHCR, 2019).

Refugee camps often find it difficult to provide adequate care, food and shelter to an influx of refugees fleeing a conflict. The World Food Programme and the UNHCR in early 2017 expressed serious concern that critical shortages in food assistance were affecting some two million refugees in 10 countries across Africa. For instance, many malnourished refugees were fleeing conflict in Somalia and South Sudan (UNHCR, 2017). Without adequate support, infectious diseases can rapidly spread among people already weakened by their flight from conflict, especially those most vulnerable. Many refugees who have fled abroad and are not in camps experience major problems too. These people often have little money to afford accommodation, are traumatized, and cannot access local support systems because of their legal status or language barriers. Thus, they are vulnerable to exploitation, abuse and radicalization.

Economic Impact

The economic impact of conflict is disastrous. During a conflict, a society diverts some of its resources from productive activities to destruction. Hence, there is a double loss: the loss of resources that contributed to pre-conflict production, and the loss from the damage inflicted (World Bank, 2003, p. 13). Skills are lost with the death and exodus of people, and the damage to the country's infrastructure and environment seriously impedes economic development and activity. The loss of reliable electricity supplies reduces productivity, and damaged transport systems hinder both the inflow of resources and the outflow of products. Furthermore, the uncertainty surrounding conflict discourages investment; it can also heighten economic instability as people try to stockpile goods, and as inflation reduces the value of money. According to the 2019 GPI, the global economic impact of violence lessened for the first time since 2012, decreasing by 3.3% or $475 billion from 2017 to 2018. The global economic impact of violence was $14.1 trillion in PPP terms during 2018, equivalent to 11.2% of global GDP. This improvement was primarily due to the decrease in the impact of armed conflict particularly in Iraq, Colombia and Ukraine (IEP, 2019, p. 4).

The impact of conflict is illustrated by the economic performances of countries witnessing conflict. One World Bank study found that during civil war countries generally grow around 2.2% more slowly than during peace. Thus, after a typical civil war of seven years' duration, incomes would be approximately 15% lower than had no war occurred (assuming steady growth as a default). This implies the incidence of absolute poverty increased by about 30%. The cumulative loss of income during the war would be equal to approximately 60% of a year's GDP. Another study analysed the economic impact of civil war using data from about eighteen countries affected by such conflict. For fourteen countries whose average growth rates of GDP per capita could be calculated, the average annual growth rate was negative 3.3%. Moreover, macro-economic indicators worsened during the conflict. In all eighteen economies, the external debt increased as a percentage of GDP; in fifteen countries, per capita income dropped; in thirteen countries, food production declined; and in twelve countries export growth fell (World Bank, 2003, p. 17). The devastation of Syria's economy by civil war and international sanctions further illustrates the negative impact of conflict. After eight years of fighting it was estimated that Syria's GDP was, at best, one-third of its pre-war level.[10]

A conflict's economic impact is not restricted to the country experiencing it. As countries are closely interlinked by the global economy, when conflict affects the economy in one country it often affects others, especially neighbours. The impact's magnitude is shaped by the nature of the country's economy. Conflict in a country that has a large economy with strategic resources such as oil is likely to have a larger impact on the global economy than conflict in a country with a small, resource-limited economy. The impact of conflict and instability on the global economy is illustrated by developments in the Middle East. In 2018 rising oil prices occurred against the background of geopolitical instability there. This included the US decision to unilaterally exit the July 2015 nuclear deal with Iran, under which Tehran agreed to limit its sensitive nuclear activities and accept international inspectors in return for the lifting of economic sanctions. Other instability was caused by domestic upheaval in Venezuela, tensions between

Saudi Arabia and Iran, and ongoing conflicts in Iraq, Libya, Syria and Yemen.[11] Regional tensions continued in 2019, including a September attack on major Saudi oil facilities reducing global oil supplies by five percent and increasing prices.[12] While price rises may be interpreted as a positive development by other oil producing countries, they often have a detrimental impact on many economies and societies.

Conflict can have an especially damaging impact on the economies of neighbouring countries. This impact can include reduced investment and the disruption of trade. According to the World Bank, having a neighbour at war reduces a country's annual growth by around 0.5% (World Bank, 2003, p. 35). Economic growth rates may be adversely affected for various reasons. For example, conflict often discourages investment, as apparent in Africa. During 2004, the UN said that African instability and war were having a 'ripple effect' across the continent, and discouraging investment. Africa had the lowest level of foreign investment of any continent, about $15 billion a year (IRIN, 2005). Trade obstacles caused by conflict are especially challenging for landlocked countries, such as in Africa. The 1976-1992 civil war in Mozambique doubled neighbouring Malawi's international transport costs and triggered an economic decline (World Bank, 2003, p. 35).

The economic impact of conflict is magnified by additional demands faced by regional economies. The plight of refugees that escaped from a conflict can strain the economies of neighbouring countries. The World Health Organization (WHO) has reported that resources have been strained by Afghan refugees entering Pakistan, with major problems arising. According to WHO, housing conditions have been inhumane, sanitation conditions below minimal standards, and there has been inadequate drinking water. WHO warned that outbreaks of communicable diseases often occurred with such problems (WHO, 2001).

Additional economic demand comes from increased defense expenditures, caused by threat perceptions in countries close to conflict. Fuelled by anxiety that the conflict could spread, there is an increased threat of regional instability, and border disputes might arise as various warring factions seek to use border areas as sanctuaries. The impact of threat perceptions is shown by international defense expenditure, which has already been outlined.

Addressing the Root Causes: Explaining Violent Conflict

Given their massive threat to human security, it is vital to better understand the key factors that can cause violent conflict, especially intrastate wars, in order to prevent their occurrence or at least to enhance our ability to resolve them quickly. Conflict is closely associated with other threats noted later in the chapter, so only three factors are briefly examined here.

History of Past Violent Conflicts

Once a country has experienced a conflict, the threat of additional violence is elevated. The risk of a subsequent war for countries that have recently experienced war is estimated as two to four times higher. One reason for this is that the same factors that caused the initial war often remain operative (World Bank, 2003, pp. 83, 104). Indeed, these factors might have become stronger because of the ensuing destruction and casualties. Suspicion, grievances, and persistent hostility between opposing factions hinder reconciliation, and require time to be overcome. The difficulty of bringing to justice key personalities responsible for conflict poses another obstacle to reconciliation. A return to conflict is also facilitated by the likely post-conflict unemployment of many people with little experience except in fighting, and by the widespread availability of weapons. Moreover, the fate of weapon stockpiles after a war can generate tension when there is little trust between groups. The threat of ongoing conflict is illustrated by the situation in Angola where conflict has occurred since independence in 1975. Despite a 2002 ceasefire, and the establishment of a UN mission to oversee the peace process, conflict continues in areas like Cabinda.

Autocratic Populist Leaders

Autocratic state and insurgency leaders can increase and exacerbate tensions that cause conflict. Leaders in countries with insurgencies and unrest often have alienated much of the population by abusing their power. This abuse frequently includes brutality against opposition, placing allies in powerful positions while excluding others, corruptly exploiting the state's resources, and failing to improve living conditions and to resolve serious issues among the general population. Poor and incompetent leadership also erodes the regime's legitimacy and encourages disillusionment, particularly in cases of obvious policy failure. Such a decline of legitimacy can be exploited by the regime's opposition. A leader's responsibility for the outbreak and continuation of conflict is shown by Serbian President Slobodan Milosevic's influential role in the conflict within the former Yugoslavia during the 1990s. Likewise, Bashar al-Assad has confounded many observers by holding on to power despite a rebellion by a large part of Syria's population. His brutal crackdown on 2011 protests had triggered a devastating conflict, and drawn in other countries such as

Iran, Russia and the US. By August 2019 over 500,000 were estimated to be dead or missing, while the regime had retaken most of the territory previously held by opposing forces.[13]

Insurgency leaders often increase tensions that encourage conflict. Rebel military organizations generally have hierarchal and dictatorial structures, with significant power held by a charismatic leader. Rebel leaders frequently preach intolerance, revenge, and the need for direct action against their enemies. They are likely to exploit the grievances of various groups to rally support around the insurgency, and ruthlessly pursue power. Moqtada Sadr, a powerful radical Shia cleric, illustrates the important role of such leaders. In 2003 Moqtada Sadr established a militia group, the Mehdi Army, which fought against US-led forces in Iraq. As sectarian violence increased after Saddam Hussein's fall this group was accused of staging reprisal attacks against Sunni Arabs. After nearly four years abroad he returned to Iraq in January 2011, and ultimately headed an alliance that won the May 2018 Iraqi parliamentary elections.

External Actors

Assistance from external actors to groups can worsen conflict. Of 163 internal conflicts between 1946 and 2001, 32 involved external participation by other states (Gleditsch et al., 2002, p. 620). External actors may become involved in conflicts by deploying their own forces or by helping to finance, equip or train factions they support, or through logistics and intelligence sharing. Regardless of their particular involvement, violence often increases as warring groups become stronger, especially when outside powers directly intervene on their behalf. This intervention can be encouraged when external actors benefit from the conflict, or from a victory of a group aligned with their own interests. External involvement often occurred during the cold war, when the Superpowers and their allies promoted their rival strategic interests through proxy conflicts. This is illustrated by the American and Soviet involvement in Afghanistan during the late 1970s and 1980s. Post-cold war case studies include Iran's support of militias in Iraq fighting US-led forces. This reportedly included providing weapons and explosives, and training in Iran (Gordon & Lehren, 2010). Gaddafi also deployed mercenaries to fight insurgent groups in 2011, while Russian and Iranian forces have provided significant support for the Syrian regime.

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5.4: Other Threats to Human Security

State Vulnerability

The presence of key political institutions providing adequate and appropriate avenues to exercise rights, to express opinions, and to address grievances is vital in reducing the likelihood of violent conflict and unrest. This includes a representative central government able to provide the basics of good governance. However, this is not the case in many countries. Barriers to political participation and poor living conditions often encourage enlistment into rebel armies, a premise supported by the work of Barbara Walter, who studied the recurrent nature of civil war (Walter, 2004, p. 385). The term 'fragile state' indicates a dangerous post-cold war development, a development measured in the Fragile States Index (FSI) already mentioned. Symbolic of such states is the collapse of law and order, along with basic services. This phenomenon is often accompanied by violent conflict, as in Somalia. Where the state's fundamental features are strong, major conflict and human insecurity are less likely, as with New Zealand (Henderson & Bellamy, 2002, p. 88). It should be noted, however, that a strong and stable state does not constitute an absolute guarantee of acceptable human security for its citizens. For instance, the North Korean dictatorship has defied many forecasts of collapse but has an appalling human rights record.

Political grievances can impact upon law and order. In Iran (ranked 52 in the 2019 FSI), rival candidates challenged Mahmoud Ahmadinejad's victory in the June 2009 presidential election and alleged vote-rigging. Their supporters then staged mass protests. The following year parliamentary elections in Iraq (FSI=13) resulted in no coalition winning enough votes for a majority, and political uncertainty contributed to increased violence. Mass protests in Egypt (FSI=34) against President Hosni Mubarak that ultimately led him to leave power in February 2011 were fuelled by his rule through emergency law. This gave the state sweeping powers of arrest and violated fundamental freedoms. Vladimir Putin's March 2012 presidential election victory in Russia (FSI=73) led to demonstrations against the election's conduct, while protests occurred after authorities disqualified various opposition candidates from standing in September 2019 local elections. Violence followed the July 2018 presidential election in Zimbabwe (FSI=10), the first such post-independence election without former leader Robert Mugabe on the ballot paper (FFP 2019: 7). Protests in Hong Kong against an extradition bill proposed by the government in early 2019 led to widespread demonstrations that continued after the bill's withdrawal that September.

Internal divisions such as those derived from ethnicity, region, religion, and economic inequity can cause tension, ultimately threatening human security when groups cannot resolve differences peacefully. According to the World Bank, if the largest ethnic group in a multi-ethnic society forms an absolute majority, the risk of rebellion is increased by approximately 50%. In such societies, minorities may reasonably fear that even a democratic political process might cause their permanent exclusion from influence (DeRouen & Heo, 2007, p. 18). Socioeconomically dominant ethnic minorities are at particular risk, as in the case of ethnic Chinese in Indonesia or the Philippines (Chua 2003).[14] There have also been some tensions between local populations and Chinese migrants in Africa.

The risk of unrest and conflict can be further increased by intense rivalry between two similarly sized groups over issues like political influence and power. The World Bank asserts that both polarization and dominance can cause problems. A very polarized society divided into two equal groups has an estimated risk of civil war approximately six times higher than a more homogeneous society (World Bank, 2003, pp. 57-58). Discontent can be especially strong when people are fighting for their right to live in their ancestral home, as was evident in the Ethiopian war (1976-1985). The conflict in Nigeria from 1967 to 1970 shows the potentially destructive nature of ethnic divisions. India has experienced serious clashes between Hindus and Muslims, as over the disputed holy site of Ayodhya. More recently, conflict between the Shiites and Sunnis in post-Saddam Hussein Iraq has persisted.

Economic Threats

Beyond the economic damage caused by conflict, poor economic development limits the resources available to construct strong political institutions. Likewise, the government's ability to meet the population's needs and demands are restricted by a poor economy. Here grievances over economic problems like inflation and unemployment increase as they affect living conditions, and they become stronger as such conditions deteriorate. For instance, the decline of Venezuela's economy, despite its oil wealth, has led to mass unrest in recent years. Globalization contributes to this effect as technological innovations allow even people in the poorest and most remote areas to learn about better conditions elsewhere. Dissatisfaction with the government intensifies when the living conditions of groups are unequal due to government favouritism and corruption (DeRouen & Heo, 2007, p. 16). Here people

are more likely to support factions promising better conditions even through using force. Resource ownership often becomes an issue when ownership (especially of land) is distributed unevenly. For example, white farm ownership in Zimbabwe and South Africa, and government moves to address this, has caused tensions. The plundering of natural resources by a minority can finance opportunistic rebellions. Through all those factors, resources can motivate conflict (Collier & Hoeffler, 2005, p. 632). Diamonds have been identified as influencing the incidence of civil wars but generally not the onset of conflict; easily exploited diamond deposits can be used to finance prolonged conflict (Lujala et al., 2005, pp. 559-560).

Even in the absence of violent conflict, economic malaise can threaten human security. The *2019 Global Report on Food Crises* estimated that over 113 million people across 53 countries experienced acute hunger requiring urgent food, nutrition and livelihoods assistance in 2018. Conflict and insecurity was the key driver of food insecurity. Some 74 million people—two-thirds of those facing acute hunger—were located in 21 countries and territories affected by conflict or insecurity. Around 33 million of these people lived in 10 countries in Africa. Climate and natural disasters pushed another 29 million people into situations of acute food insecurity, while economic shocks were the primary driver of acute food insecurity for 10.2 million people (Food Security Information Network, 2019).

Economic mismanagement and corruption are major threats to the livelihood of people in many countries. Such problems hinder development, increase living costs and might encourage discontent. Transparency International, a non-government organization fighting corruption, included 180 countries and territories in its 2018 Corruption Perceptions Index. These were ranked by their perceived levels of public sector corruption according to experts and business people using a scale of 0 to 100. Here 0 (zero) was highly corrupt and 100 was irreproachable. Their report stated that more than two-thirds of countries scored below 50, with an average score of 43. Furthermore, “despite some progress, most countries are failing to make serious inroads against corruption.” Corruption was the worst in Somalia, Syria, South Sudan, Yemen, North Korea and Sudan. The least corrupt were Denmark, New Zealand, Finland, Singapore, Sweden and Switzerland (Transparency International, 2019, pp. 1, 2-3).

The threats of a struggling economy and economic inequality to human security are particularly evident where instability and conflict occurred previously. In February 2011 the Food and Agriculture Organization of the United Nations (FAO) noted that its global food price index (a measure of the monthly change in international prices of a basket of food commodities) had risen above its previous June 2008 peak, a year during which food price increases triggered violent protests in countries ranging from Haiti and the Philippines to Yemen. In 2008, price increases were driven by factors such as droughts, floods and oil price rises. In 2010, these factors returned, along with speculation about weak harvests in 2011 (Gilmour, 2011). The World Bank estimated that food price increases had placed 44 million people in the developing world back into poverty.[15] Ultimately, the food price index peaked in 2011 between 2001 and August 2019 (FAO, 2019). Furthermore, global economic growth and stability has been threatened by the US-China trade war, and other factors such as a slowing Chinese economy and concerns over the impact of Brexit, the United Kingdom’s withdrawal from the European Union, finalised on 31 January 2020.

Natural disasters can clearly have a major disruptive impact on already economically vulnerable states. While academic evidence on the economic impact of natural disasters is mixed, natural disasters can destroy tangible company assets such as buildings and equipment along with human capital, thus reducing their production capacity (Ono, 2015). The negative impact of natural disasters is graphically shown by the January 2010 Haiti earthquake that caused up to 300,000 deaths. Here unrest was triggered by the slow pace of post-disaster reconstruction.[16]

Economic threats can be further aggravated by the often officially prescribed solution – regional economic development and growth – contributing to the region’s environmental impact on ecosystems, as well as to the global ecological overshoot of humanity. The former can irreversibly damage local ecological support structures, while the latter can cause similar damage worldwide and perpetuates inequity and exploitation Those consequences lead to often unforeseen (by the usual key decision makers) costs in health care and the economy, which in turn render future economic threats even more serious.

Foreign investment and loan dependency can be destabilizing. While rates of foreign direct investment to Africa have increased during recent years, little is known about how this will affect the political environment. Some research indicates that in states with a low regard for civil liberties, or with ‘unhealthy’ economies (such as a cash deficit), increased access to investment is associated with a higher number of conflict actions by the state. This can occur because access pushes regimes into using violent strategies to secure their domestic environment, and to ensure their survival against opposition and armed combatants (Kishi et al., 2017). Loan dependency is another risk, especially when loans are spent unwisely and cannot be repaid, that can prevent the government from providing basic services, and encourage unrest. In 2018 the International Monetary Fund warned that at least 40% of low-income

countries in the region were either in debt distress or at high risk.[17] Chad (ranked 7 in the 2019 FSI), Eritrea (FSI =17), Mozambique (FSI =33), the DRC (FSI =5), South Sudan (FSI =3) and Zimbabwe (FSI =10) were considered to be in "debt distress" at the end of 2017 while Zambia (FSI =40) and Ethiopia (FSI =23) were downgraded to "high risk of debt distress" (FSI 2019: 7).[18] Concern has also been expressed over corruption and countries becoming indebted to China, the single largest bilateral financier of infrastructure in Africa.[19]

Health-Related Threats

Promoting and protecting health is essential for ensuring human welfare, along with sustained economic and social development, and well-functioning ecological support structures. People rate health one of their highest priorities, which frequently makes it a political issue, and a potential grievance as regimes try to meet peoples' expectations. The circumstances in which people grow, live, work, and age strongly influence the quality of their lives and deaths. Education, housing, food and employment all impact on health, as do a country's standards of environmental health. Timely access to health services including promotion, prevention, treatment and rehabilitation is also important. This cannot be achieved for the majority of people without a well-functioning health financing system (WHO, 2010, p. IX). Thus, low-income countries that experience conflict and disasters that significantly damage the health system, basic infrastructure, and environmental basis are especially at risk. This is because they are least able to rebuild their systems, and in turn might experience mass causalities and further unrest.

Yemen, where a civil war rages, experienced a cholera outbreak that in 2017 was called the largest and fastest-spreading outbreak of the disease in modern history.[20] Between 28 September 2016 and 12 March 2018 there were 1,103,683 suspected cholera cases and 2,385 deaths reported (Shaikh, 2018). The Ebola virus has hit poor African states particularly hard. By early August 2019 there had been over 1,800 deaths and over 2,700 people infected by an outbreak in the DRC that started in August 2018. This represented the second-largest outbreak in the history of the virus. It followed the 2013-2016 epidemic in West Africa that killed over 11,300 people.[21]

A few threats disproportionately impact upon world health, and hence particularly threaten human security. According to WHO, the leading global risks for mortality (other than infectious diseases) have been high blood pressure (responsible for 13% of deaths globally), tobacco use (nine percent), high blood glucose (six percent), physical inactivity (six percent), and overweight and obesity (five percent). These increased the risk of chronic diseases like heart disease, diabetes and cancers. They affected countries across all income groups. Disability-adjusted life year (DALY) are frequently used to measure deaths at different ages and disability. One DALY basically equates one lost year of 'healthy' life, and the burden of disease measures the gap between current health status and an ideal situation where everyone lives into old age, free of disease and disability. The leading global risks for burden of disease, as measured in DALYs, were underweight (six percent of global DALYs), unsafe sex (five percent), alcohol use (five percent) and unsafe water, sanitation and hygiene (four percent). Excluding alcohol use, all threats especially affected populations in low-income countries, particularly in Southeast Asia and sub-Saharan Africa. Alcohol use has a unique geographic and sex pattern. Its burden was highest for men in Africa, middle-income countries in the Americas and some high-income countries (WHO, 2009, pp. V, 5, 9).

According to WHO, of the 56.9 million deaths worldwide in 2016, ischaemic heart disease and stroke were the world's biggest killers with them accounting for a combined 15.2 million deaths. These diseases had been the leading causes of death globally in the last 15 years. Lower respiratory infections were the most deadly communicable disease, causing 3.0 million deaths worldwide in 2016. Over half of all deaths in low-income countries during 2016 were caused by 'Group I' conditions. These included communicable diseases, maternal causes, conditions arising during pregnancy and childbirth, and nutritional deficiencies. Contrasting this, less than seven percent of deaths in high-income countries resulted from such causes. Lower respiratory infections were among the leading causes of death across all income groups (WHO, 2018).

Most health threats vary according to income. A high proportion of the world's poor are estimated to have no access to health services simply because they cannot afford to pay when they need them. Their risk of contracting disease is greatly elevated by the adverse environmental conditions in which they live. They risk being pushed into poverty, or further into poverty, as illness prevents them from working (WHO, 2010, p. 5). In low-income countries, relatively few risks are responsible for a large percentage of deaths, and loss of healthy years. These risks generally act by increasing the incidence or severity of infectious diseases. The leading risk factor for low-income countries was underweight, about 10% of the total disease burden. In combination, childhood underweight, micronutrient deficiencies (iron, vitamin A and zinc) and suboptimal breastfeeding caused seven percent of

deaths and 10% of total disease burden. The combined burden from these nutritional risks was nearly equivalent to the entire disease and injury burden of high-income countries (WHO, 2009, p. 9). For those who do not die, frequent illness and chronic disability prevent children from attending school, and adults from working or caring for their families. Thus, families can become trapped in a downward spiral of poverty, lost opportunity and poor health.

For high and middle-income countries (and for the affluent elites in poor countries), the most important risk factors are chronic diseases like heart diseases and cancer. Tobacco is one of the leading risks for both. This accounted for 11% of the disease burden, and 18% of deaths in high-income countries. For these countries, alcohol, overweight and blood pressure were leading causes of healthy life years lost (WHO, 2009, p. 9). Even in high-income countries where people still enjoy comparatively high human security, disasters can pose serious health threats that cause both acute trauma and long-term health issues. New Zealand has a history of earthquakes, though fatalities have been comparatively low (Bellamy, 2016). The September 2010 and February 2011 earthquakes in Christchurch, New Zealand, caused widespread problems such as anxiety, depression and stress among residents. The devastating March 2011 earthquake in Japan has caused major long-term health issues given its magnitude, and the associated radioactive pollution. With middle-income countries, risks for chronic diseases also cause the largest share of deaths and DALYs. Risks like unsafe sex, unsafe water, and lack of sanitation cause a larger share of burden of disease than in high-income countries (WHO, 2009, p. 9).

Threats can similarly be influenced by demography. The profile of risks varies with age. Some risks affect children almost exclusively, such as underweight and under nutrition (apart from iron deficiency). Among adults the risks also vary considerably with age; much of the health burden from addictive substances, unsafe sex, absence of contraception, iron deficiency and child sex abuse occurs in younger adults. Contrasting this, the health burden from risk factors for chronic diseases like cardiovascular disease and cancers predominately falls on older adults. Men and women have been affected about equally from risks associated with diet, the environment and unsafe sex. However, men suffered over 75% of the burden from addictive substances, and most of the burden from occupational risks. Women suffered the entire burden from lack of contraception and unsafe abortions, 80% of deaths caused by iron deficiency, and approximately two thirds of the burden caused by child sexual abuse (WHO, 2009, p. 9).

The catastrophic impact of Japan's 2011 earthquake on its nuclear industry underscored the role of a safe environment in public health. Pollution in its many forms, radioactive or chemical, can have devastating effects on people's health that range from acute illness to long-range chronic dysfunctions that often remain undiagnosed (Chen et al., 2004). Here too the main burden is usually carried by the world's poor, although catastrophes, such as the one in Japan, act indiscriminately. Their impact also tends to be regional or global rather than nationally delimited, and mitigation efforts often largely rely on nature's own capacity to renew itself, or at least to dilute the noxious agents. Such spectacular disasters sometimes distract from the essential role of healthy ecosystems everywhere in maintaining the health of human populations, by producing food, shelter and energy, and by recycling wastes back into biomass and clean water. Those essential functions, which often do not even feature in economic analyses of a country's health status, tend to become obvious only when the integrity of an ecosystem becomes compromised by human impact, or when its capacities become overtaxed (Hales et al., 2004; Crisp, 2010). Ecosystems also support human population health through other mechanisms, the details of which are yet to be understood (Chivian, 2001).

Crime

As another chapter in this text focuses on crime, only crime that tends to be associated with violent conflict, namely the production of illegal drugs and the intentional killing of a person by another (intentional homicide), is briefly outlined here. Conflict, poor governance and widespread poverty can cause a recognized government to lose control over its territory, whereupon illegal activities, such as drug cultivation, can become widespread. The cultivation or control of the illegal drug industry often provides a vital revenue source for guerrilla groups. Cultivation can also become an income source for people whose economic options were reduced by conflict, or who live in areas controlled by guerrilla and criminal groups. An estimated 95% of the global production of opium occurs in countries experiencing civil wars (World Bank, 2003, p. 41).

The link between conflict and illegal drugs is demonstrated by Colombia. Colombian intelligence sources have estimated that 40% of the country's total cocaine exports are controlled by paramilitaries, and their allies in the narcotics underworld. Indeed, it is "impossible to distinguish between paramilitaries and drug traffickers" (Human Rights Watch, 2003). Over 900 tonnes of cocaine were produced in Colombia during 2017, prompting fears that it was losing the war on drugs.[22] Sinister accessory roles can also be played by powerful external actors with an interest in the drug trade, such as the British Government during the 19th century

Chinese opium wars. In some countries (e.g. South East Asia) the cultivation and trafficking of narcotics serve as income sources to corrupt governments which relativises the label of illegality.

Intentional homicide represents the most serious end of the spectrum of violent crime, and hence poses a major threat to human security. Such crime helps to shape peoples' perceptions of insecurity, is often widely reported and influences attitudes towards law enforcement. Widespread protests can arise when authorities are believed to be incapable, or unwilling, to counter the occurrence of violent crime. This is shown by mass anti-crime protests in Mexico sparked by many deaths related to drug-related violence. President Felipe Calderon deployed the army to fight the cartels in 2006, and over 28,000 people had died by 2010 with violence spreading into Central America. Indeed, US Secretary of State Hillary Clinton in September 2010 commented that Mexican drug-related violence increasingly had the characteristics of an insurgency.[23] In March 2018 Philippines President Rodrigo Duterte said he planned to withdraw his country from the ICC after it began examining his controversial war on drugs. Police claimed they had killed around 4,000 drugs 'suspects', whereas rights groups suggested the figure could be much higher.[24] The country officially left the ICC in March 2019.

As one of the most effectively recorded crimes, law enforcement data on intentional homicide is generally more readily available than for other crimes. Thus, rates of intentional homicide per 100,000 population have sometimes been used as a proxy for levels of violent crime, or even overall crime (Harrendorf et al., 2010, p. 7).

According to the UN, the overall number of people who suffered a violent death because of homicide increased from 395,542 in 1992 to 464,000 in 2017. However, with the global population rising faster than the increase in recorded homicide victims the global homicide rate, measured as the victims of homicide per 100,000 people, fell from 7.2 in 1992, to 6.1 in 2017. Organized crime was responsible for 19% of homicides. The homicide rate in the Americas (17.2) was the highest recorded in the region since reliable records began in 1990. Africa's rate (13.0) was also above the global average (6.1). The rates in Asia, Europe and Oceania were below the global average (2.3, 3.0 and 2.8 respectively) (UN Information Service 2019). The July 2011 massacre by Anders Behring Breivik in Norway and March 2019 mosque massacre in New Zealand focused attention on far-right extremist groups often associated with racism and violence, while ongoing mass shootings in the US have generated significant discussion over gun control.

Terrorism

There is much debate over what constitutes terrorism. In accordance with conventions on terrorism, such as the Geneva Conventions and Security Council resolution 1566 (2004), the UN refers to terrorism as actions intended to cause death, or serious bodily harm, to civilians or non-combatants when their purpose is to intimidate a population, or to compel a Government or an international organization to commit or to abstain from doing any act (UN, 2010). Terrorism has allowed weaker and smaller insurgent groups to pose major threats to human security. The threat of terrorism is internationally acknowledged, particularly since the 11 September 2001 al-Qaeda attacks on the US. These attacks left nearly 3,000 individuals dead or missing (DeRouen & Heo, 2007, p. 13) in the worst international terrorist attack as at its 18th anniversary.

According to the US Department of State, in 2017 a total of 8,584 terrorist attacks occurred worldwide, resulting in over 18,700 deaths and more than 19,400 people injured. These casualty figures included more than 4,400 perpetrator deaths and 1,400 perpetrator injuries. The total number of terrorist attacks worldwide in 2017 decreased by 23% and total deaths due to terrorist attacks decreased by 27%, compared to 2016. This overall trend was primarily due to significantly fewer attacks and deaths in Iraq. Although attacks took place in 100 countries in 2017, 59% of all attacks occurred in five countries (Afghanistan, India, Iraq, Pakistan, and the Philippines). Seventy percent of all deaths due to terrorist attacks occurred in Afghanistan, Iraq, Nigeria, Somalia and Syria. IS was responsible for more attacks and deaths than any other perpetrator group in 2017. However, it undertook 23% fewer terrorist attacks and caused 53% fewer total deaths, compared to 2016. IS and groups that had pledged allegiance to it staged attacks in over 20 countries in 2017 (US State Department 2018). IS and National Thowheed Jamath were linked to April 2019 Sri Lankan bombings that killed over 250 people, while in August 2019 it was reported that IS was regaining strength in Iraq and Syria.[25]

The growth of terrorist groups has been facilitated by the link between conflict and terrorism. The state's lack of control over territory, along with the general absence of law and order, can help terrorist groups. In those areas, terrorists can operate with little or no interference from state authorities. Indeed, terrorist organizations often constitute a militant faction of much larger political opposition groups, the majority of whom remain non-combatant. Terrorists can establish organizational structures, recruit and train

followers, and develop international networks for intelligence and supplies. Conflict, together with a government's 'clumsy' efforts to control it, might also make people more receptive to supporting terrorists, or at least accepting their presence. Terrorists often exploit the strong emotions arising from death and destruction; for instance, by serving as a conduit for retribution.

Afghanistan illustrates how countries experiencing conflict can become terrorist havens. After the Taliban seized power in 1996 they allowed al-Qaeda to establish bases, and Osama Bin Laden, the terrorist group's leader, allegedly lived there. Despite the Taliban losing power in December 2001, conflict and lawlessness remain, as both Taliban and al-Qaeda elements operate within the country or near its borders. A study published in 2018 found that the Taliban were in full control of 14 districts (four percent of the country), and had an active and open physical presence in a further 263 (66%). Furthermore, in September 2019 it was reported that the Taliban controlled more territory than at any time since the 2001 US invasion.[26] Nor has Osama Bin Laden's death in May 2011 ended al-Qaeda attacks. Likewise, UN Secretary General António Guterres said in February 2019 that IS had "substantially evolved into a covert network," and was "in a phase of transition, adaptation and consolidation." IS leader Abu Bakr al-Baghdadi in April 2019 also vowed to seek revenge for its loss of territory.[27]

State-sponsored terrorism represents the reciprocal situation, where terrorist methods are employed by a ruling faction to promote their agenda, and strengthen their power while avoiding public scrutiny. Well known examples include the 20th century military dictatorships in Latin America, Saddam Hussein's Iraq and other Middle East autocracies, and some of the more totalitarian regimes behind the 'iron curtain.' A problematic variant of state-sponsored terrorism can occur in the form of radical and sweeping counter-terrorist policies. These are implemented by a regime in response to a terrorist insurgence. In such cases the general populace can be caught between the brutality of both the government and terrorists. Indeed, Amnesty International during April 2011 announced a major worldwide campaign, Security with Human Rights. This aimed to expose governments that violated human rights in the name of national security or of countering terrorism, or governments that used the threat of terrorism as a pretext to undermine human rights. Countries criticized for such actions included the US, Turkey and Pakistan (Amnesty International, 2011). In 2018 Guterres asserted that "We must fight terrorism together, with methods that do not compromise the rule of law and human rights" (UN News, 2018).

Environment

The natural environment within which people live and interact provides an essential basis for their lives. This is because ecosystems provide key 'services' for human communities: production of food, raw materials, and energy; and recycling of wastes back into resources. These services cannot be supplanted by any technologically conceived methods as the operation of technological devices itself depends on ecosystem services, and non-renewable resources (Myers, 1993).

The World Economic Forum (WEF) identifies and ranks global risks through its annual Global Risks Perception Survey, which asks the Forum's network of business, government, civil society and thought leaders to gauge the risks facing the world. Environmental risks dominated the results of the WEF *Global Risks Report 2019* on both dimensions of their likelihood and impact. According to the Report, "Of all risks, it is in relation to the environment that the world is most clearly sleepwalking into catastrophe." Overall, the five risks most likely to occur in order of their likelihood were: extreme weather events (e.g. floods and storms etc.); the failure of climate-change mitigation and adaption; major natural disasters (e.g. earthquakes, tsunami, volcanic eruptions and geomagnetic storms); massive incidents of data fraud/theft; and large scale cyber-attacks. The five risks that would have the biggest impact, ranked according to their magnitude, were: weapons of mass destruction; the failure of climate change mitigation and adaption; extreme weather events; water crises; and major natural disasters (WEF, 2019; Myers & Whiting, 2019, n.p.).

A key indicator for the state of the environment is biodiversity. This reflects the number, variety and variability of living organisms, and how these vary according to location and change over time. Biodiversity is important for the integrity and resilience of all ecosystems, and it is the basis for the benefits provided by ecosystems to people. Biodiversity loss has direct and indirect negative effects on eight key factors. The first four are: food security (biodiversity often increases the adaptability of communities to change); vulnerability (ecosystems tend to lose their resilience and stability as species are lost); health (a balanced diet requires diverse foods); and energy security (wood fuel provides over half the energy used in developing countries, and thus shortages can cause major problems). The other factors are: clean water (the loss of forests and watersheds reduces water quality and availability); social relations and cultural identity (many cultures attach values to ecosystems or their components); freedom of life-

style choice (the loss of species and ecosystems often means a loss of choices); and finally basic materials (biodiversity provides goods people need to live) (UNEP, 2010).

The environment's significance is highlighted by the importance of biodiversity; threats to ecological integrity can have a major impact on human security. Indeed, biodiversity and ecosystem integrity are internationally threatened in many ways. According to Guterres, "Protecting and restoring ecosystems and ensuring access to ecosystem services are necessary for the eradication of extreme poverty and hunger. Reducing deforestation and land degradation and enhancing carbon stocks in forests, drylands, rangelands and croplands are needed for mitigating climate change. And protecting the biodiversity of forests and watersheds supports clean and plentiful water supplies. These are just some of the benefits of biodiversity. Yet, despite this understanding, biodiversity loss continues around the globe" (UN 21, May 2018, n.p.).

In 2017, German researchers found that a 75% fall in the population of insects critical to food systems had occurred in the past 27 years, raising fears of "ecological Armageddon." Human destruction of habitats for farming, mining, infrastructure development and oil and gas production was the primary driver of biodiversity loss (Martin, 2018). A UN-backed study of biodiversity in 2018 stated that "Biodiversity, the essential variety of life-forms on earth, continues to decline in every region of the world" (Doyle, 2018). Human activities were causing an alarming decline in the variety of plant and animal life, thereby jeopardizing food, clean water and energy supplies.

The Intergovernmental Panel on Climate Change (IPCC) has estimated that global warming is likely to reach 1.5° C between 2030 and 2052 if it continues increasing at the current rate (high confidence). Climate-related risks to health, livelihoods, food security, water supply, human security, and economic growth were projected to increase with such warming (IPCC, 2018). Moreover, the US in June 2017 indicated it would withdraw from the December 2015 Paris Agreement on Climate Change Mitigation, the central aim of which includes pursuing efforts to limit the global temperature rise to 1.5° C. Given the significant and credible evidence of climate change, the lack of active moves to address the issue by some countries is concerning. Climate change can play a role in fostering conflict. For example, traditional systems for sharing resources can erode if farmers suddenly have to adapt to different growing seasons or herders need to move their cattle at different times. Such conflict has been reported around Africa's Lake Chad between farmers and herders. While there is debate over their findings, some studies have suggested that climate change caused or exacerbated a severe drought in Syria during the late 2000s that triggered mass migration from farmland into cities, contributing to tensions that led to its civil war.[28]

The impact of environmental threats on human security is graphically evident in recent disasters. In August 2010 wildfires caused by a severe heat wave killed people and devastated crops in Russia. This disaster led Russia, the world's third largest wheat exporter in 2009, to ban grain exports, thus increasing international wheat prices. That same month some scientists linked those fires, along with floods in China and Pakistan, to global warming.[29] A Centre for Research on the Epidemiology of Disasters report found that earthquakes and tsunamis claimed more lives than any other type of hazard in 2018, with over 10,000 lives lost. Floods, droughts, storms and wildfires affected more than 57 million people. Floods affected the largest number (over 35 million), with 23 million in the Indian State of Kerala alone. Over nine million were affected by drought worldwide. The Kenyan population accounted for a third of this number, followed by Central American countries (2.5 million people). Two-thousand eighteen was a record-breaking year for wildfires. The US experienced its deadliest outbreak in over a century, and Greece suffered a record number of wildfire casualties as 126 lost their lives (UN News, 2019). With hotter, drier conditions such disasters have become more common. Different climatic conditions also mean forests can take far longer to recover.[30]

A different way in which environmental deterioration can threaten human security stems from the relationship between resource availability, and the stability of human economies and societies. Historical examples of cultures, even entire empires, collapsing because of ecosystem damage illustrate this essential dependency (Diamond, 2005). Other more contemporary examples show that the scarcity of natural resources caused by environmental deterioration often leads to violent conflict, and the massive displacement of 'eco-refugees' (Homer-Dixon, 1999). The increase in the frequency and severity of such crises illustrate the environmental impact of unprecedented multitudes of humanity, in some cases through their over-consumption, and in others through their sheer numbers (McKee, 2005).

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5.5: Conclusions

The focus on human security means that the protection of individuals is prioritized. While violent conflict poses a significant threat, there are many other threats that can harm individuals. These relate to threats to health, law and order, the economy and the environment. This chapter first outlined some metrics for evaluating the degree to which human security is threatened. It then reviewed actual sources of human insecurity. Violent conflicts were prioritized because of their wide-ranging and devastating impact. More specifically, intrastate conflicts were the focus because they dominate conflict internationally, and their peaceful resolution is often difficult. As a threat to human security, their most important effect is the widespread loss of life and livelihoods. War crimes, and the negative economic impact of conflict, are additional serious concerns. Key factors that can cause conflict include a state's history, leadership and external actors.

Beyond conflict, major threats to human security target the health of people, law and order, state authority, economy and the environment. Promoting and protecting health is essential to human welfare, and ultimately human security. Global health threats include widespread pathological conditions, such as high blood pressure and diabetes. Some of the causes for chronic illness depend on lifestyle, while many other causes are environmental. Numerous health threats vary according to income. With regard to crime, illegal drugs and 'intentional homicide' are serious international threats. Concern over terrorism has significantly increased since the 11 September 2001 attacks. The absence of key political institutions providing adequate and appropriate avenues to guarantee rights, to express opinions, and to address grievances can cause instability. This is especially likely when there are strong internal divisions in a country. Poor economic development also limits the resources available to construct strong political institutions, along with the government's ability to meet the population's needs and demands. This in turn increases grievances. Finally, there are threats to the environment support base of populations. A key indicator of the threat level to environmental support structures is the state of biodiversity. Major challenges like global warming and overconsumption seriously threaten the ecological basis of human security. The situation is confounded by the adverse environmental impact of some efforts to boost economic growth.

The world faces new and greater challenges to human security in the 2020s. A better understanding of the components of security is needed, and associated sources of threats. This includes the diverse range of conflicts and their causes, especially those that have not traditionally been associated with security. Such an understanding hopefully will facilitate the development and use of tools to effectively counter such threats.

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5.6: Resources and References

Review

Key Points

- Although proponents of human security agree that its primary goal is the protection of individuals, the debate continues over the priorities among specific threats.
- Proponents of the 'narrow' concept of human security focus on violent threats to individuals. They acknowledge that such threats are strongly associated with poverty, lack of state capacity and different forms of socio-economic and political inequity.
- Proponents of the 'broad' concept believe that the range of threats should be widened to include hunger, disease, natural disasters and loss of ecological integrity.
- Violent conflicts, especially of an intrastate nature, are a major threat to human security because of their impact. Both 'narrow' and 'broad' concept proponents agree that such conflict is not the only threat to the security of individuals.
- The health, and ultimately the lives of individuals can be threatened by a state's inadequate infrastructure.
- Crime, especially of a serious nature, and terrorism in its various forms, threaten lives and thus human security.
- State, social and economic problems threaten livelihoods and can cause grievances, while issues like global warming affect the environment, biodiversity and ultimately people. Multiple interactions between those factors exist.
- The components of security and its threats can be better understood if the diverse range of conflicts and their causes is taken into account. This will further the development and effective use of tools to counter such threats.

Extension Activities & Further Research

1. There is debate over defining human security along the narrow and broader conceptualisations. What are the advantages and disadvantages of each definition?
2. The assessment of the human security of specific countries by the UNDP as described in the overview section is not universally accepted. What potential future problems can you identify with the criteria employed by the UNDP, particularly life expectancy and income? Which criterion might be least problematic and why?
3. Who benefits from assessments of threats to human security? In whose interest might it be to lower an assessment, or to exaggerate it?
4. How can the assessment of a security threat lead to improvement of the security situation? Explain the requirements using a case study.
5. All the major sources of human insecurity as discussed in this chapter tend to affect each other. Give some examples of such relationships, and explain how they work.
6. What threats are particularly serious in your country or region, and what factors contribute to their strength?
7. What threats do you perceive will be especially serious for your region in the future, and why?

List of Terms

See Glossary for full list of terms and definitions.

- biodiversity
- Brexit
- DALY
- ecosystem
- Environmental Performance Index (EPI)
- Fragile States Index (FSI)
- Global Peace Index (GPI)
- Human Development Index (HDI)
- intentional homicide
- terrorism

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Footnote

1. Please note that the views expressed in this chapter are not necessarily those of the author's employer.
2. State-based armed conflict involves violence where at least one of the parties is the government of a state. Thus, violence occurs between two states or violence between the government and a rebel group.
3. See British Broadcasting Corporation (BBC) news stories: 4 August 2018: North Korea continuing nuclear programme – UN report' and 26 April 2019: 'North Korea profile – Timeline.'
4. See Krishnadev Calamur's 31 August 2018 piece in *The Atlantic*: ISIS Never Went Away in Iraq.
5. See BBC News from 5 June 2018: Ukraine profile – Timeline.
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10. The Economist. 7 September 2019. 'Wings over prayers'. Page 20.
11. See Adam Vaughan's 17 May 2018 article in *The Guardian*: What are the factors driving up the price of crude oil?
12. BBC, 16 September 2019: Saudi oil attacks: US says intelligence shows Iran involved.
13. BBC, 3 September 2018: Syrian President Bashar al-Assad: Facing down rebellion; BBC, 9 October 2018: Sense of an ending for Syria's war on Idlib front line; and BBC, 30 August 2019: Syria war: Russia announces ceasefire in Idlib rebel stronghold.
14. Editors' note: Sometimes violence erupts as soon as external powers urge the implementation of Western-style democratic reforms; the disenfranchised majority will feel empowered and violence is likely to erupt against the hegemonic group (Chua, 2003).
15. See Michael Schuman's 14 July 2011 *Time* article: A Future of Price Spikes.
16. BBC, 31 May 2018: Haiti Timeline.
17. Kwasi Kpodo's 8 May 2018 *Reuters* article: IMF warns of rising African debt despite faster economic growth.
18. BBC, 3 September 2018: Should Africa be wary of Chinese debt?
19. See footnote 18.
20. See Kate Lyons's 12 October 2017 article in *The Guardian*: Yemen's cholera outbreak now the worst in history as millionth case looms and Alanna Shaikh,'s 8 May 2018 piece in the *UN Dispatch*: Yemen is currently facing the largest documented cholera epidemic in modern times. A new report warns it could get worse.
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25. See *New York Times* piece by Eric Schmitt, Alissa J. Rubin and Thomas Gibbons-Neff from 19 August 2019: ISIS Is Regaining Strength in Iraq and Syria.
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CHAPTER OVERVIEW

6: Human Security in the Context of International Humanitarian Law and International Criminal Law

Learning Objectives

- Summarise the main ethical considerations that have led state parties to agree on conventions and protocols to protect people in violent conflict.
- Describe the legal instruments that allow for human individuals to be recognised as victims or perpetrators under International Humanitarian Law.
- Implementation and enforcement of International Humanitarian Law are hampered by diverse political contingencies.

Hennie Strydom

This chapter introduces the idea of protection for non-combatants in armed conflicts and explains how international law can accomplish such protection. The Geneva Conventions and associated Protocols define the situations under which protection is indicated in both international and internal conflicts. Different protection is afforded to prisoners of war, wounded and shipwrecked, and displaced people. Certain means and methods of war are also proscribed. The responsibilities of states and of individuals are defined, as well as the conditions that constitute breaches of those responsibilities. War crimes, crimes against humanity, genocide and aggression are defined and mechanisms for the prosecution of state and individual transgressors are outlined. The key legal developments supporting human security include certain human rights, international humanitarian law, international criminal law, and good governance. The chapter concludes with a discussion of obstacles, particularly with respect to the responsibility to protect (R2P) and boundaries of state sovereignty.

6.1: Introduction
6.2: Situations in Which the Protective Measures Will Apply
6.3: Who and What Are Protected?
6.4: Means and Methods of Warfare
6.5: Different Responsibility Regimes, Core International Crimes and Enforcement Options
6.6: Conclusion - The Future of the Responsibility Regimes
6.7: Resources and References

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6.1: Introduction

As the preceding chapter (Chapter 5) made clear, few incidents have such a devastating impact on human lives than armed conflict between or inside countries. It is therefore understandable that we find, even in ancient times, rules and customs of warfare with a humanitarian purpose, namely to prevent unnecessary suffering in armed conflict situations and to provide protection for certain categories of persons, such as the wounded and the sick and those not taking part in the hostilities and who can be classified as non-combatants. Today these rules and customs are largely codified in the sense that they form part of multilateral international treaties or conventions binding upon the states that have become party to them and in some instances these treaties enjoy universal or near universal acceptance by the states of the world. We refer to this body of international law as international humanitarian law (IHL) or the law of war. It must be made clear at the outset though, that IHL is not concerned with the question whether an armed conflict or the resort to armed force is lawful or justifiable. That question is determined by other rules of international law which fall outside the scope of this chapter.

However, IHL applies the moment an armed conflict has started and its sole purpose is to regulate the way in which hostilities should be conducted with a view to save and protect those who are not or no longer directly participating in the hostilities and to place restrictions on the means and methods of warfare. A first question that arises is where do we find the principles or rules applicable in these situations? To answer this question it is necessary to note the way in which states create binding law in the international legal order. This can happen in two ways: first by way of a uniform practice or custom which states follow with regard to a specific matter and which they accept as binding law between them. A rule that has come about in this manner constitutes customary international law and is binding on all states, except on a state that has persistently objected to the customary law rule. Of greater importance in our day and age is the second way in which states create binding international law, namely by concluding multilateral international agreements, also known as treaties or conventions. Sometimes even existing customary international law principles are taken up in these treaties and become codified in that way. IHL, in particular, is one of those branches of international law that has been extensively codified by means of multilateral treaties over the last hundred and fifty years. The consequences of this codification process are twofold: firstly, there now exists a well-established body of law regulating state conduct in the course of an armed conflict. This body of law is extensively covered by the documents listed in Table 6.1.

The second consequence is that non-compliance with IHL principles by a state party (who acts through its armed forces) to the conflict, will result in the legal responsibility of the state, which is a form of civil liability, and placing an obligation on the state to make reparations. At the same time the individual(s) responsible for the breach of an IHL norm may be held criminally liable for the breach on the basis of individual criminal responsibility. These two forms of liability co-exist and the one does not exclude the other. These matters will be dealt with more fully, later on in this chapter.

Table 6.1 Documents that codify International Humanitarian Law[1]

DOCUMENT NAME	YEAR
Geneva Convention I for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field (GCI)	1949
Geneva Convention II for the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea (GCII)	1949
Geneva Convention III Relative to the Treatment of Prisoners of War (GCIII)	1949
Geneva Convention IV Relative to the Protection of Civilian Persons in Time of War (GC IV)	1949
Protocol I Additional to the Geneva Conventions of 1949 relating to the Protection of Victims of International Armed Conflicts	1977
Protocol II Additional to the Geneva Conventions of 1949 relating to the Protection of Victims of Non-International Armed Conflicts	1977

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6.2: Situations in Which the Protective Measures Will Apply

As indicated in the introduction, the main purpose of IHL is to provide protection for certain categories of persons and objects and to place certain restrictions on the means and methods of warfare. Before these matters are dealt with more extensively, it is first necessary to acquaint ourselves with the situations in which this body of law will find application. In this instance we should resort to the four Geneva Conventions of 1949 (Geneva Conventions I-IV, see Table 6.1), which constitute one of the major codifications of IHL with universal support. In Articles 2 and 3, common to all four conventions, three situations are listed, namely an armed conflict between two or more of the contracting parties (i.e. the typical international armed conflict situation); all cases involving a military occupation by one of the contracting parties of the territory, in whole or in part, of another contracting party; and armed conflicts not of an international character taking place in the territory of one of the contracting parties (i.e. the so-called internal armed conflict situation).

In 1977, the Geneva Conventions were supplemented by two Protocols. By virtue of Protocol I, Article 1(4), the protective measures of the Geneva Conventions and their supplementation by Protocol I, were extended to cover also "armed conflicts in which peoples are fighting against colonial domination and alien occupation and against racist regimes in the exercise of their right of self-determination, as enshrined in the Charter of the United Nations …" The inclusion of wars of national liberation as a situation falling under the Geneva Conventions was, and still is, a controversial matter. The reason for this is that governments are often reluctant to recognise an insurgent movement as a "party to an armed conflict" and prefer to deal with insurgents in terms of ordinary national law, often classifying them as ordinary criminals or terrorists posing a threat to national security. This is further borne out by the fact that nineteen of the UN's 193 member states have not yet ratified Protocol I, including the United States, Pakistan, India, Turkey, Thailand and Myanmar.

As far as internal armed conflicts are concerned, it must be noted that it is only Common Article 3 of the Geneva Conventions that specifically covers this type of conflict. The article's protective measures extend to the humane treatment of the wounded and the sick and those not taking actively part in the hostilities, including members of the armed forces who have laid down their weapons; and the prohibition, under all circumstances, of acts involving violence to life and person, the taking of hostages, outrages upon personal dignity and the passing of sentences without due process. Common Article 3 also makes it possible for the parties to an internal armed conflict to bring into force, by means of special agreements, all or part of the other provisions of the Geneva Conventions.

Protocol II of 1977 has expanded on the definition of internal armed conflict by limiting it to conflicts taking place on the territory of a contracting party between the armed forces of the contracting parties and dissident armed forces or other organized armed groups "which, under responsible command, exercise such control over a part of its territory as to enable them to carry out sustained and concerted military operations and to implement this Protocol" (Protocol II, Article 1(1). The threshold of control over a part of a state's territory and the concomitant ability to carry out sustained and concerted military operations mean that conflicts falling below this standard will not be covered by IHL principles and will be dealt with in terms of the law of the land. As a consequence of this requirement, Article 1(2) of Protocol II explicitly excludes from the operation of the Protocol "situations of internal disturbances and tensions, such as riots, isolated and sporadic acts of violence and other acts of a similar nature, as not being armed conflicts." The different situations here can be explained with reference to the Libyan conflict. Inspired by popular protests against undemocratic, oppressive regimes in Tunisia and Egypt, Libyan citizens took to the streets in February 2011 to protest against the dictatorial regime of Colonel Muammar Gaddafi who ruled over the Libyan people for 42 years. In an attempt to restore internal order, the Gaddafi regime responded with forceful action involving the police and armed forces. In the beginning this confrontation could be classified as a typical internal disturbance or spontaneous act of revolt (Protocol II, Article 1(2)) and as such fell outside the ambit of Article 1(1) of Protocol II. But the moment the protesters organized themselves as a rebel movement with a command structure, took up arms and started controlling parts of the Libyan territory an armed conflict within the meaning of Article 1(1) developed as a result of which the parties to the conflict had to conduct their hostilities in accordance with the laws and customs of war.

At this point it is appropriate to take note of the Martens Clause, which is considered to be part of customary international humanitarian law. This clause was inserted, on the initiative of Fyodor Fyodorovich Martens (1845-1909), one of Russia's most respected international law scholars, in the preamble of the 1899 Hague Convention II containing the Regulations on the Laws and Customs of War on Land, and restated in the 1907 Hague Convention IV on the same matter. It now also forms part of the 1977

Protocol I to the Geneva Conventions. Article 1(2) states as follows: “In cases not covered by this Protocol or by any other international agreements, civilians and combatants remain under the protection and authority of the principles of international law derived from established custom, from the principles of humanity and from the dictates of public conscience.” It should be clear from this formulation that the clause serves the purpose of covering situations which can be considered grey or not being covered unequivocally by some or other established treaty or customary law principle.

The clause was also considered by the International Criminal Tribunal for Yugoslavia (ICTY) in the case of *The Prosecutor v Kupreskic* (IT 95-16, Trial Chamber Judgement of 14 January 2000) where the accused persons were charged with crimes against humanity resulting from the persecution and deliberate and systematic killing of civilians during the Yugoslav war. As a result of the Martens Clause the Tribunal argued that although some countries have not ratified Protocol I, they may still be bound by general rules having the same purport, because of the way states and courts have implemented the clause, it clearly shows that “principles of international humanitarian law may emerge through a customary process under the pressure of the demands of humanity or the dictates of public conscience, even where State practice is scant or inconsistent” (para. 527). And elsewhere, following this argument, the Tribunal concluded that “[d]ue to the pressure exerted by the requirements of humanity and the dictates of public conscience, a customary rule of international law has emerged on the matter under discussion” (para. 531).

In concluding this part, three remaining issues must be addressed, albeit briefly. The first deals with the distinction made by the 1949 Geneva Conventions and the two Additional Protocols of 1977 between international and non-international armed conflicts with the vast majority of provisions in these instruments dealing with the former. In recent times this distinction has been subjected to criticism and reassessment, also because of the fact that the majority of armed conflicts in today’s world are internal in nature and causing a disproportionate number of civilian casualties and ill-treatment of civilians. The argument in favour of doing away with the distinction is based on the reasoning that restrictions on the conduct of hostilities and the need for measures to protect certain categories of persons in armed conflict situations exist regardless of the question whether the conflict can be classified as international or non-international. Put differently, it is the nature of the danger people are exposed to and not the formal classification of the situation that is decisive. Support for this argument is often based on Article 1, which in all four of the Geneva Conventions, determines that the “High Contracting Parties undertake to respect and to ensure respect for the present Convention in all circumstances.”

The second issue relates to what has become colloquially known as the ‘war on terror’ after the 9/11 terrorist attacks in the United States and the United States’ military response to that attack. Much has been written on the matter and a contentious issue is whether we can classify the so-called ‘war on terror’ as an armed conflict in the legal sense of the word and to which IHL will apply. An immediate response should be that terrorist attacks will only be covered by IHL to the extent that they form part of an armed conflict, be it international or non-international. If not they could be classified as violent criminal acts and punishable in terms of the criminal laws of the country where they occur. Terrorist acts forming part of an armed conflict and involving attacks against civilians could qualify as indiscriminate attacks and therefore punishable as war crimes. From this it also follows that recourse to armed force against those responsible for terrorist actions as part of an armed conflict situation, will likewise be subject to the same rules as in any other armed conflict. A recent case in point is the military conflict involving the Islamic State (ISIS).

The last issue relates to the application of IHL principles in failed states. Of specific importance here is the situation where a government in de facto control of government functions reaches such a level of disintegration as a result of internal opposition and violence in the country that it is no longer in a position to perform ordinary governmental functions, and loses control over the exercise of law and order as well as other forms of authority. If the ensuing implosion of government structures coincides with the disintegration of the armed forces an anarchical situation arises characterised by a proliferation of armed factions, a breakdown in the chain of command within the various factions, and divisions in the control over the national territory.

In such situations, civilians are mostly at risk because they cannot rely on government intervention and protection of any kind and they often find themselves at the mercy of one or several of the splintered armed factions whose main purpose in such circumstances is often self-preservation and self-enrichment through crime and wanton violence. From a humanitarian point of view the paradox should be clear: as state structures collapse the reliance on humanitarian aid organisations increases but their interventions become more hamstrung when they cannot rely on the support and cooperation of the central authorities any more. One of the most serious humanitarian challenges identified by the International Committee of the Red Cross in these and other armed conflict situations is the violence against health care workers, facilities and patients. Data collected in sixteen countries

between 2008 and 2010 have shown a clear pattern of violence aimed at hindering the delivery of health care, ranging from direct attacks on medical personnel and facilities to looting and kidnapping (ICRC, 2012).[2]

In anarchical situations brought about by the collapse of authority and state structures humanitarian aid organisations have no choice but to establish and maintain contact with each of the factions involved in the conflict and to negotiate humanitarian spaces for civilians, the sick and the wounded. Precarious how this may be, such efforts and the concessions that may materialize from them are often the only hope for civilians and other vulnerable persons caught between the different armed factions. A fundamental question that arises in these circumstances is the applicability of IHL principles. Here we should invoke the provisions of Common Article 3 to the Geneva Conventions which oblige the parties to any non-international armed conflict to respect the humanitarian principles mentioned earlier on. Although Common Article 3 does not define the term "party to a conflict" it is generally accepted that to qualify as such, an armed group opposing a government must have at least a minimum degree of organization and discipline enabling them to respect IHL. However, since Common Article 3 has a broad humanitarian purpose an unduly restrictive interpretation of its meaning will run counter to the provision's underlying spirit. Also relevant are the protective measures provided for in Protocol II to the Geneva Conventions on condition that the threshold requirement for the existence of an armed conflict situation referred to earlier on has been met. This means that dissident armed forces or other organized armed groups opposing the government must exercise such control over a part of the state's territory as to enable them to carry out sustained and concerted military operations (Protocol II, Article 1(1)). Excluded from the operation of the Protocol will be internal disturbances such as riots and isolated and sporadic acts of violence (Protocol II, Article 1(2)). In this context reference should also be made to the following conclusion by the Appeals Chamber of the International Criminal Tribunal for Yugoslavia in the Tadić case:

we find that an armed conflict exists whenever there is a resort to armed force between States or protracted armed violence between governmental authorities and organized armed groups or between such groups within a State. International humanitarian law applies from the initiation of such armed conflicts and extends beyond the cessation of hostilities until a general conclusion of peace is reached; or, in the case of internal conflicts, a peaceful settlement is achieved. (*Prosecutor v Tadić*, IT-94-AR72, 1995, para. 70)

This understanding of the applicability of protective measures in internal armed conflicts must not detract from the difficulties presented by anarchical situations, especially with regard to the effective implementation of IHL norms. The following observation should therefore be taken note of:

The problem posed by this type of conflict is therefore not so much that of which norms are applicable as it is that of their implementation. This can be said of all national and international legislation applicable on the territory of the State which is disintegrating. Since by definition the disintegration of the State carries with it the risk of non-compliance with the entire corpus of the law, it is in the interest of the international community to make sure, by means of cooperation and in accordance with the UN Charter, that such "no-law" zones do not come into existence. (Sassòli et al., vol II, 2011, p. 679)

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6.3: Who and What Are Protected?

The Principle of Distinction

It is a fundamental principle of IHL that parties to a conflict must at all times distinguish between combatants and civilians and between military objects and civilian objects and to refrain from attacks against civilians and civilian objects. It is therefore important to know who will qualify as a combatant in an armed conflict situation. For current purposes it would suffice to mention two of the main categories. All members of the armed forces of a party to the conflict as well as members of militias or volunteer corps forming part of such armed forces will be classified as combatants. In the second instance, members of other militias or volunteer corps will likewise qualify for combatant status provided that they fulfil the following conditions: they must be under a responsible command; must have a distinctive emblem recognisable at a distance; must carry their arms openly; and must conduct their operations in accordance with the laws and customs of war (see Geneva Convention III, Article 4). As a consequence of this classification, all persons falling into any of these categories have a legal duty to distinguish themselves from the civilian population during each military engagement and for the duration of the engagement.

In giving effect to this principle of distinction, Article 48 of Protocol I to the Geneva Conventions contains the following unequivocal provision: “In order to ensure respect for and protection of the civilian population and civilian objects, the Parties to the conflict shall at all times distinguish between the civilian population and combatants and between civilian objects and military objects and accordingly shall direct their operations only against military objectives.” On the basis of this rule, Protocol I outlaws acts or threats of violence which have the primary purpose of spreading terror amongst the civilian population; indiscriminate attacks which employ a method of warfare that causes incidental loss in civilian lives disproportionate to the military objective; acts of reprisal against the civilian population; or the shielding of military objects by means of the presence or movement of civilians (Article 51). Protocol I also lists the civilian objects that should remain free from military attacks and prescribes the duties parties to the conflict have with regard to the precautionary measures they must take in complying with their obligations in terms of the Protocol (see Chapters III and IV of Protocol I).

Prisoners of War

A combatant who falls into the hands of the enemy is entitled to prisoner of war status and to be treated accordingly. This matter is regulated by Geneva Convention III and the basic rule on the treatment of prisoners of war is found in Article 13 which states as follows:

Prisoners of war must at all times be humanely treated. Any unlawful act or omission by the Detaining Power causing death or seriously endangering the health of a prisoner of war in its custody is prohibited, and will be regarded as a serious breach of the present Convention. In particular, no prisoner of war may be subjected to physical mutilation or to medical or scientific experiments of any kind which are not justified by the medical, dental or hospital treatment of the prisoner concerned and carried out in his interest. Likewise, prisoners of war must at all times be protected, particularly against acts of violence or intimidation and against insults and public curiosity.

In following this basic point of departure, Geneva Convention III contains an extensive array of rules covering matters such as the internment of prisoners of war; disciplinary proceedings against prisoners of war, the capture and transmission of information about prisoners of war and their repatriation after the end of hostilities. Moreover, if there is doubt whether a person who has fallen into the hands of the enemy forces belongs to any of the prisoner of war categories, such person shall enjoy the protection afforded under Geneva Convention III until such time as their status has been determined by a competent tribunal (Article 5). Also to be noted is that under Article 8 of the Rome Statute of the International Criminal Court, certain acts against prisoners of war could constitute war crimes.

The Wounded, Sick and Shipwrecked, and Aid Agencies

Geneva Conventions I and II as well as Protocol I contain the rules for the protection of the wounded, sick and shipwrecked and extends the protection to medical personnel and facilities, administrative support staff and religious personnel. These categories of persons must not be attacked and must be allowed to perform their duties on the battlefield.

Linked to this are the measures in the Geneva Conventions and Protocols to protect in times of armed conflict the use of emblems such as the red cross, the red crescent and the red crystal and to keep free from attack facilities where these emblems are displayed. In times of armed conflict these emblems are used to provide protection of medical personnel and facilities and medical means of transport. It therefore stands to reason that their misuse or abuse, which may constitute a war crime, must be prevented.

Refugees and Internally Displaced Persons

International law on refugees is regulated by the 1951 UN Convention Relating to the Status of Refugees and its 1967 Protocol. In this context 'refugee' is defined in narrow terms, describing a person who has fled his or her country based on a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion, and who, because of that fear is unable to return to his or her country of origin. However, it should be obvious to any observer of international events that armed conflicts are often the cause of large numbers of civilians fleeing to other countries to escape from hostilities and to find sanctuary elsewhere, quite often under auspices of the United Nations. It is therefore noteworthy that the 1969 Organisation of African Unity (OAU) Convention Governing the Specific Aspects of Refugee Problems in Africa has adopted a wider definition of 'refugee' to include also those fleeing armed conflict situations. The provision is worded as follows:

The term "refugee" shall also apply to every person who, owing to external aggression, occupation, foreign domination or events seriously disturbing public order in either part or the whole of his country of origin or nationality, is compelled to leave his place of habitual residence in order to seek refuge in another place outside his country of origin or nationality. (Article 1(2))

Under IHL war refugees will be entitled to the protection available to civilians in times of armed conflict and may therefore rely on the protective measures of Geneva Convention IV and Protocol I if they find themselves outside their national state and on the territory of one of the other parties to the armed conflict. As such they will be classified as protected persons in terms of the Geneva Conventions and will also be entitled to seek assistance from the International Committee of the Red Cross or other aid agency. The party to the conflict in whose hands such protected persons find themselves remains responsible for their treatment irrespective of any individual responsibility which may be incurred (See Geneva Convention IV, Articles 4, 29, 30). This responsibility includes the responsibility to facilitate, under certain conditions, the rapid and unimpeded passage of all relief consignments, equipment and personnel, even if destined for the civilian population of the adverse party (see Protocol I, art 70). Preventing relief operations from taking place could constitute a war crime under Article 8 of the Rome Statute of the International Criminal Court.

As opposed to refugees, displaced persons are civilians fleeing *within* their own country to escape armed conflict. They are therefore entitled to the protection afforded them by Common Article 3 to the Geneva Conventions and Protocol II to the Geneva Conventions. Article 18(2) of Protocol II, for instance, stipulates as follows:

If the civilian population is suffering undue hardship owing to a lack of the supplies essential for its survival, such as foodstuffs and medical supplies, relief actions for the civilian population which are of an exclusively humanitarian and impartial nature and which are conducted without any adverse distinction shall be undertaken subject to the consent of the High Contracting Party concerned.

The issues here are well-illustrated by the response of the UN Security Council in 1991 to the repression of the Iraqi civilian population, including in the Kurdish populated areas, by Saddam Hussein's regime which led to massive flows of refugees towards and across international frontiers. In resolution 177 (1991), the Security Council insisted that Iraq allowed "immediate access by international humanitarian organizations to all those in need of assistance in all parts of Iraq and to make available all necessary facilities for their operations …" (para. 3). In reaction to this resolution Operation Provide Comfort was launched, in which American, British and French armed forces established "safe havens" in northern Iraq, preventing military flights over the area and allowing Kurds to remain without fear of attack by Iraqi forces.

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6.4: Means and Methods of Warfare

Apart from providing protection for civilians and other categories of protected persons during armed conflict, IHL also regulates the means used to conduct hostilities (means of warfare) and the way in which hostilities are conducted (methods of warfare). These matters are now subjected to three basic rules codified in Article 35 of Protocol I. This provision determines that (a) the right of the parties to an armed conflict to choose the means or methods of warfare is not unlimited; (b) it is prohibited to employ weapons and methods of warfare that would cause superfluous injury or unnecessary suffering; and (c) it is prohibited to employ means and methods of warfare which are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment. In view of these restrictions states parties are under an obligation, when developing, acquiring or adopting new weapons, to determine whether such weapons will be prohibited by this Protocol (Article 36).

Under these rules the use of certain weapons will be prohibited in all circumstances because of their inherent characteristics and indiscriminate effects, in other instances the use of a certain weapon could be merely limited or restricted. To the first category belongs the use of expanding bullets, blinding laser weapons, poisonous gases, biological and chemical weapons, anti-personnel mines and cluster munitions.[3] Viewed as being contrary to considerations of humanity the use of these weapons has over time become outlawed by means of specific multilateral treaty arrangements with the result that their use will constitute a war crime under current international criminal law. To the second category belong restrictions on the use of certain conventional weapons now governed by a series of Protocols annexed to the 1980 Convention on Prohibitions and Restrictions on the Use of Certain Conventional Weapons.

A case of a special kind is presented by nuclear weapons. That this is by definition a kind of weapon that would certainly fall foul of the object and purpose of Article 35 should not be in dispute. In 1996, the International Court of Justice rendered an advisory opinion in the famous Nuclear Weapons case on the question—submitted to the Court by the General Assembly of the United Nations—whether the threat or use of nuclear weapons can in any circumstances be permitted under international law. In its analysis of international humanitarian law and principles the Court concluded that the “principles and rules applicable in armed conflict—at the heart of which is the overriding consideration of humanity—make the conduct of armed hostilities subject to a number of strict requirements.” Following this logic, the Court then reasoned that “methods and means of warfare, which would preclude any distinction between civilian and military targets, or which would result in unnecessary suffering to combatants, are prohibited.” Consequently, because of the “unique characteristics of nuclear weapons … the use of such weapons in fact seems scarcely reconcilable with respect for such requirements” (ICJ Reports 226, 1996, para. 95). However, in the final analysis, the Court, having considered what it called the “present state of international law,” reached the conclusion (by the casting vote of the President of the Court!) that it could not reach a definitive conclusion as to the legality or not of the use of nuclear weapons by a state “in an extreme circumstance of self-defence, in which its very survival would be at stake” (para. 97). In instances not involving this extreme position the Court was unanimous in its opinion that the threat or use of nuclear weapons should also be compatible with the requirements of international law applicable in armed conflict, particularly “those of the principles and rules of international humanitarian law …” (para. 97D).

Another issue under this theme is the increasing development and potential use by a growing number of states of ‘lethal autonomous weapon systems,’ which refers to weapon systems that function without meaningful human control over the critical functions of selecting and detecting individual targets. Because of the human rights and international humanitarian law implications of the use of such weapon systems, among others, the matter has featured for some time on the agenda of the UN Human Rights Council and other UN Bodies (see for instance UN Human Rights Council Documents A/HRC/23/47 of 9 April 2013 and A/HRC/26/36 of 1 April 2014) and has attracted volumes of scholarly contributions in recent times on the legal, moral and ethical implications of the use of such weapons with some calling for an outright international ban on such weapon systems.

On 12 September 2018, the European Parliament adopted a resolution (2018/27529RSP) calling on member states and the European Council to adopt as a matter of urgency a common position on lethal autonomous weapon systems that ensures meaningful human control over the critical functions of such systems. The resolution also raised concerns that the development of these weapon systems could prompt an unprecedented and uncontrolled arms race and about the implications of their use for key questions of international human rights and international humanitarian law. In response to this resolution a report was published in November 2018 indicating that there is an emerging consensus between European states that meaningful human control over the

use of force should be retained, especially with regard to critical functions such as selecting and attacking targets, that human control is a prerequisite for compliance with international humanitarian law and as a way of ensuring accountability. [4]

When we speak about methods of warfare we have in mind certain tactical or strategic considerations meant to outweigh or weaken the enemy. In this case too, the methods of warfare are not unlimited and methods causing unnecessary suffering or superfluous injury will be prohibited. It is now well established that the following are forbidden: giving or ordering no quarter, pillaging, perfidious conduct (misuse of a flag of truce or other protected emblem) and starvation of civilians.

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6.5: Different Responsibility Regimes, Core International Crimes and Enforcement Options

State Responsibility

The traditional approach to international law considers violations of IHL to be committed by states and for that reason state parties incur certain responsibilities with regard to measures that must be taken to prevent and repress transgressions. This is also clear from the first article to the Geneva Conventions and Protocols clearly stating that the High Contracting Parties "undertake to respect and to ensure respect" for the Conventions and Protocols "in all circumstances". It is also important to note that in terms of the Geneva Conventions no state party shall be allowed to absolve itself or any other state party of any liability in respect of grave breaches (see below) under the Conventions (See Geneva Conventions I-IV, Articles 51, 52, 131, 148 respectively). Under Article 91 of Protocol I to the Geneva Conventions a state party to a conflict who has violated the provisions of the Conventions or of the Protocol will be liable to pay compensation and will be held responsible for all acts committed by persons forming part of its armed forces. This rule is in keeping with the general international law principles on state responsibility and entails that the state responsible for the violation (by virtue of the actions of its armed forces) must compensate the state injured by the violation and not the individual victims of the violation. This rule is at variance with human rights law which normally requires that the individual harmed is entitled to an effective remedy.

A first obligation that arises for state parties in the case of a breach is to institute an enquiry into the breach once any other state party to the conflict has requested such an investigation and the parties have agreed on the procedure to be followed. Once the violation has been substantiated by means of the enquiry, the parties to the conflict are obliged to put an end to it and to repress it with the least possible delay (Geneva Conventions I-IV, Articles 52, 53, 132, 149 respectively).

These mechanisms have been supplemented by Protocol I to the Geneva Conventions in two ways. In terms of Article 89 of the Protocol the parties to the Protocol undertake, in the case of serious violations of the Conventions or of the Protocol, to act, jointly or individually and in cooperation with the United Nations, against the violations. For this purpose Article 90 provides for the compulsory establishment of an International Fact-Finding Commission to enquire into any facts alleged to have constituted a grave breach of the Conventions or the Protocol. However, the use of this mechanism by a state party to investigate allegations against another state party is subject to the depositing of declarations by both parties reciprocally accepting the competence of the Commission to enquire into the allegations.

The Grave Breaches Regime

Certain violations of IHL are considered to be so serious that they fall under a special regime in terms of the Geneva Conventions and additional Protocol I and in terms of which states parties incur special responsibilities. These violations are known as grave breaches and involve acts against protected persons or property amounting to "wilful killing, torture or inhuman treatment, including biological experiments, wilfully causing great suffering or serious injury to body or health, and extensive destruction and appropriation of property, not justified by military necessity and carried out unlawfully and wantonly" (Geneva Convention I, Article 50. See also Geneva Conventions II-IV, Articles 51, 130, 147 respectively). Article 85 of Protocol I has expanded on this and "grave breaches" will now also include attacks on the civilian population; indiscriminate attacks affecting the civilian population in the knowledge that such attacks will cause excessive loss of life or damage to civilian objects; attacks against works or installations containing dangerous forces knowing that such attacks will cause excessive loss of life or damage to civilian objects; making non-defended localities and demilitarized zones the object of attack; making persons who are no longer participating in hostilities the object of attack; the perfidious use of the distinctive emblem of the red cross, red crescent or red lion and sun or other recognised protective sign, etc.

In these instances state parties are obliged to enact legislation necessary to provide effective penal sanctions for persons responsible for these breaches. Secondly, state parties must search for persons alleged to have committed these breaches and prosecute them before their own courts, regardless of the nationality of the offender. If it so wishes, a state party may also hand an offender over to another party for prosecution provided that the other party has made out a prima facie case against the offender. In addition, states parties must take measures necessary for the suppression of all violations of the conventions and the protocol (Geneva Conventions I-IV, Articles 49, 50, 129, 146 respectively; Protocol I, Articles 85, 86).

These provisions form the basis of the current international criminal law regime providing for individual criminal responsibility for war crimes, as opposed to state responsibility, and for the prosecution, before national or international tribunals, of individual offenders. The grave breaches provisions also base prosecutions in the national courts of the states parties on the concept of universal jurisdiction. This means that any state, regardless of the nationality of the offender or the place where the violation occurred could establish its national jurisdiction over the matter by means of national legislation and institute a prosecution against the offender once arrested on, or transferred to, the territory of the state willing and able to prosecute.

Individual Criminal Responsibility

Since the Nuremberg (Nürnberg) trials immediately after WWII the concept of individual criminal responsibility for what is generally referred to as the violations of the laws and customs applicable in armed conflict situations, has become firmly established. This development has greatly benefitted from the establishment of the two ad hoc tribunals, the International Criminal Tribunal for Yugoslavia (ICTY) in 1993 and the International Criminal Tribunal for Rwanda (ICTR) in 1994, and most definitely from the establishment in 1998 of the permanent International Criminal Court (ICC). On occasion, the potential impact of the developments that evolved since WWII in this area has elicited the following comment:

The regular prosecution of war crimes would have an important preventive effect, deterring violations and making it clear even to those who think in categories of national law that IHL is law. It would also have a stigmatizing effect, and would individualize guilt and repression, thus avoiding the vicious circle of collective responsibility and of atrocities and counter-atrocities against innocent people. Criminal prosecution places responsibility and punishment at the level of the individual. It shows that the abominable crimes of the twentieth century were not committed by nations but by individuals. By contract, as long as the responsibility was attributed to States and nations, each violation carried within it the seed of the next war. That is the civilizing and peace-seeking mission of international criminal law favouring the implementation of IHL. (Sassòli et al., 2011, vol I, p. 396)

We have now reached a point where international criminal law can claim to have produced a well-developed set of substantive principles and procedural rules by means of which the effective prosecution of the most serious crimes of concern to the international community can be undertaken with a view to bringing to an end impunity for the perpetrators of such crimes. What follows is a general overview of the crimes considered to be of the most serious concern for the international community and over which each state is supposed to exercise its jurisdiction. For this purpose, and in view of limited space, the focus will be on the provisions of the 1998 Rome Statute of the International Criminal Court, which brought into being the ICC and which determines the Court's powers, functions and jurisdiction. Article 5(1) of the Rome Statute states that the Court's jurisdiction will be limited to the crime of genocide; crimes against humanity; war crimes; and the crime of aggression. At the time when the Rome Statute was negotiated some states wanted terrorism and international drug trafficking to be included as well, but this attempt was unsuccessful.

The Core Crimes: War Crimes

As indicated earlier on, what we refer to today as war crimes are closely related to the grave breaches concept in the Geneva Conventions and in Protocol I. In Article 8(2) of the Rome Statute we find different categories of war crimes, each one containing a long list of acts which can be prosecutable as war crimes. Under the first category (Article 8(2)(a)) "war crimes" means grave breaches of the four Geneva Conventions. The second category (Article 8(2)(b) identifies "war crimes" with "other serious violations of the laws and customs applicable in international armed conflict" which are given further substance by means of a list containing twenty acts that will constitute "war crimes" under this category. An important third category relates to acts committed in an armed conflict not of an international character (Article 8(2)(c) and (e)), i.e. the so-called internal armed conflict situation. The acts that will constitute war crimes under this category are those mentioned in Common Article 3 to the Geneva Conventions and which have been dealt with earlier on. However, there is also a second, more extensive list of acts which will amount to war crimes when committed in a non-international armed conflict according to the Rome Statute. This list mentions, amongst others, armed attacks against civilians and against personnel and facilities involved in humanitarian assistance; attacks against educational, religious, scientific and cultural facilities; pillaging of a town or place; and most importantly acts of rape, sexual slavery, enforced prostitution, forced pregnancy, enforced sterilization and any other form of sexual violence, and the conscripting or enlisting of children under the age of fifteen into the armed forces or armed groups. These latter additions are a reflection of the kind of atrocities modern-day internal armed conflicts have come to represent, namely the sexual abuse of women and girls as a deliberate instrument of war and the use of child soldiers to supplement ragtag armed militias and to spread terror in local communities.

By creating the possibility that grave breaches qualify as war crimes even in non-international armed conflicts, the Rome Statute has introduced an important development. Prior to this grave breaches were only possible in the course of an international armed conflict (see *Prosecutor v Tadic, Appeals Chamber Decision on Jurisdiction*, IT-94-1-AR 72 (1995)). Perhaps this is a further illustration of how fluid the boundaries between international and non-international armed conflicts for purposes of the enforcement of IHL can become. Here we simply have a later treaty law arrangement causing substantive changes to the existing legal regime covering non-international armed conflicts and bringing about a greater parity of esteem in the relevance of IHL norms for the two types of armed conflict.

Core Crimes: Crimes Against Humanity

Acts like murder, extermination, enslavement, unlawful deprivation of liberty, torture, rape, enforced disappearances of persons, etc. are perfectly suitable to be classified as ordinary common law crimes and in many countries are prosecuted as such under ordinary national criminal law. But these acts may also be defined as crimes against humanity and the question is therefore what factor or circumstance will cause an ordinary common law crime such as these to become a crime against humanity in terms of international criminal law?

The answer to this is the following. In the first instance the act in question (murder, etc.) must be committed as part of a *widespread or systematic* attack directed against any civilian population, with knowledge of the attack. Secondly, the attack in question must be of a special kind, namely it must involve the multiple commission of any of the above acts and it must be "pursuant to or in furtherance of a State or organizational policy to commit such attack" (Rome Statute, Article 7). It is because of these two elements that crimes against humanity are considered to be particularly serious and they explain why the concept of crimes against humanity has become part of customary international law since its condemnation by the Charter of the Nuremberg Tribunal (See Article 6 of the Charter).

Furthermore, it must be noted that over time the nexus between crimes against humanity and an armed conflict has disappeared with the result that these crimes can also be committed in a time of peace. It is this absence of an armed conflict as a precondition for the commission of crimes against humanity that distinguishes war crimes from crimes against humanity. But this difference may also have implications for the question whether the crimes in question can be committed against civilians alone. If the existence of an armed conflict is taken out of the equation it makes sense to consider why members of the armed forces should be excluded as possible victims of such crimes, since by pure logic, they could equally become the victims of crimes against humanity irrespective of whether there exists an armed conflict or not.

Core Crimes: Genocide

Two incidents that occurred during WWI had a profound influence on developments concerning crimes against humanity and genocide. The first incident was the Armenian genocide committed by the Turkish government between 1915 and 1918. These atrocities were not called war crimes despite the fact that they took place in the course of an armed conflict, nor were they referred to as acts of genocide. Instead they were referred to as crimes committed against "civilization" or the "dictates and laws of humanity". The second incident were the offences committed by Germany and its allies in the course of WWI and which came to be described in terms similar to those used in respect of the Armenian genocide. The turning point came with the discovery towards the end of WWII of the atrocities committed against the Jews and other groups by the Nazis and the subsequent solemn declaration issued by the Allied Powers (the United States, the United Kingdom and the Soviet Union) that those responsible will be pursued to the end and prosecuted for their abominable deeds. Even at this point the atrocities were not referred to as genocide but described as crimes against humanity.

The term genocide was conceived in 1944 by a Polish-Jewish lawyer, Raphael Lemkin, in his treatise *Axis Rule in Occupied Europe*, to denote the destruction of a nation or an ethnic group by means of a coordinated plan of different actions which are aimed at the destruction of the essential foundations of national groups that will eventually bring about the annihilation of the groups themselves. Four years later, in 1948, the General Assembly of the United Nations adopted the Convention on the Prevention and Punishment of the Crime of Genocide (GA resolution 260 A (III) of 9 December 1948), in which the contracting parties confirm that "genocide, whether committed in time of peace or in time of war, is a crime under international law which they undertake to prevent and to punish" (Genocide Convention, Article 1). In Article 2, genocide is defined as:

> Any of the following acts committed with intent to destroy, in whole or in part, a national, ethnical, racial or religious group, as such:

a. Killing members of the group;
b. Causing serious bodily or mental harm to members of the group;
c. Deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part;
d. Imposing measures intended to prevent births within the group;
e. Forcibly transferring children of the group to another group.

This legal definition of genocide enjoys universal recognition and has been reaffirmed in several international instruments since 1948. It is now also part of the Rome Statute of the ICC, which, in Article 6, adopts the definition of the Genocide Convention verbatim.

The distinctive feature of the crime of genocide lies in the specific intention with which the acts are perpetrated. This means that the perpetrator must have the specific and direct intent to bring about the annihilation of the group to which the victims belong. It is this specific intent which distinguishes genocide from crimes against humanity and war crimes. Intent, as an element of the crime of genocide, is usually inferred from the conduct of the perpetrator, the methodological manner in which the crime was committed and the way in which the victims were targeted or selected.

But our main concern should not be the legal issues related to the crime of genocide. Of far greater concern is the way in which states respond to this most heinous of crimes and the way in which they fail to comply with their cardinal legal duty in terms of the Genocide Convention to prevent and to punish genocide. In 2001, the then Secretary-General of the United Nations, Kofi Annan, has quite correctly identified the underlying problem by stating that the United Nations has:

> A moral responsibility to ensure that vulnerable peoples are protected and that genocides never occur again. Yet, on two occasions in the recent past, in Rwanda and former Yugoslavia, the international community and the United Nations failed to live up to this responsibility. We have learned from those experiences that the very first step in preventing genocides is to address the conditions that permit them to occur. (Secretary-General Report *Prevention of Armed Conflict* UN Doc A/55/985-S/2001/574, 7 June 2001, para. 161)

In no uncertain terms this means that the culture of reaction to gross human rights violations must be replaced by a culture of prevention. Genocide does not occur overnight. In all cases it is preceded by premeditated and careful planning characterised by an extensive propaganda phase often long before the operational phase of the actual annihilation is set in motion. Such situations call for a far more serious consideration of preventive obligations imposed on the international community by international law than has hitherto been the case. It is also settled law that the duty imposed on states to prevent genocide is an erga omnes obligation, meaning it is a duty every state owes to the international community as a whole and as such it constitutes a jus cogens norm which is considered so important for the existence of an orderly international community that no derogation from it is allowed (see Article 53 of the Vienna Convention on the Law of Treaties, 1969). According to the International Law Commission the following are recognised by the international community as *jus cogens* norms: the prohibition of aggression, genocide, slavery, racial discrimination, crimes against humanity, torture and the right to self-determination (ILC Report, 53rd session, UN Doc A/56/10, 2001 and commentary to Article 26, para. 5 at 208). It follows then that the prevention of the *commission* of genocide and crimes against humanity must equally qualify as a *jus cogens* norm.

It must be pointed out here that the *erga omnes* obligation to prevent gross human rights violations such as genocide and crimes against humanity should be understood as a 'best effort' obligation which requires states to take all reasonable and necessary measures to prevent an event from occurring. It is therefore not an obligation that involves a guarantee that the event will not occur; the obligation is one of means and not of result. Thus, a breach of the obligation to prevent is linked to a manifest failure by the state or states concerned to take all measures necessary and within its or their power to prevent the genocide or crime against humanity from taking place (See *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina v Serbia and Montenegro*, 2007 ICJ Reports 1 para. 430; Méndez: 2007, pp. 225, 226). In the case of the measures taken being unsuccessful in preventing the crime from occurring, the international community still carries the obligation to ensure that the violations are prosecuted and punished.

There could be a number of reasons why the international community is reluctant to intervene preventively in imminent cases of genocide or crimes against humanity. Two that stand out should be mentioned here. The one is the deep-seated respect for the principle of state sovereignty which is still the paramount principle on which international relations are based and which prevents states from intervening too easily in the affairs of another state. But state sovereignty can also function as a masquerade for

indifference, a lack of political will or a complex of political and strategic reasons preventing a state from taking timely action. The second reason is denial coupled with a failure to reach consensus in the international community on the true nature of the atrocities by, for instance, repeated statements that a certain situation does not constitute a full-blown genocide or crime against humanity or using all kinds of euphemisms to dance around the problem without taking decisive action. In the end semantics become more important than facing up to the atrocities.

A preventive measure that is often debated but rarely implemented because of its highly controversial nature is humanitarian intervention. Its controversy stems mainly from two sources. Firstly, from a widespread concern that it may be abused for ulterior motives and used as a pretext to achieve certain political or strategic objectives which have nothing to do with rescuing civilians in a foreign state from a great peril; and secondly from a fear that the consequences of the intervention, which is undertaken with military means, may do more harm than good, such as causing an increase in the number of casualties, extensive damage to the infrastructure of the state, and more refugees fleeing to neighbouring countries. This often confronts the international community with a serious dilemma: what is the appropriate response when, for instance, large numbers of civilians in a war-torn country face imminent death? Should a no-action attitude be adopted or should there be a unilateral or collective military intervention by a state or states of the international community to try and save the civilians from death or serious maltreatment. A tragic case in point is the failure of the UN and the OAU in 1994 to intervene decisively to prevent the killing of 800,000 civilians in the course of the genocide in Rwanda. Compare also the example of NATO's Kosovo bombardment below.

In Article 4(h) of the Constitutive Act of the African Union (2000) the Union has reserved for itself the right (as opposed to duty) to intervene in a member state of the Union in respect of grave circumstances such as war crimes, genocide and crimes against humanity. Whether the Union will ever be able to marshal the necessary political will for exercising this right is of cause open to debate. In the recent case of the Libyan conflict the United Nations Security Council decided, by Resolution 1973 (2011) to authorize:

Member States that have notified the Secretary-General, acting nationally or through regional organizations or arrangements, and acting in cooperation with the Secretary-General, to take all necessary measures, notwithstanding paragraph 9 of resolution 1970 (2011), to protect civilians and civilian populated areas under threat of attack in the Libyan Arab Jamahiriya, including Benghazi, while excluding a foreign occupation force of any form on any part of Libyan territory, and requests the Member States concerned to inform the Secretary-General immediately of the measures they take pursuant to the authorization conferred by this paragraph which shall be immediately reported to the Security Council. (para. 4)

This was preceded by statements in this resolution as well as in resolution 1970 (2011) to the effect that the gross and systematic violations of human rights committed during the internal armed conflict in Libya may amount to crimes against humanity. The military response that followed was largely a NATO offensive and undertaken as a form of humanitarian intervention to protect civilians as authorized by resolution 1973. However, in the unfolding of events it also became clear that NATO pursued a second objective, namely the targeting of the Gaddafi regime which led to allegations that NATO abused the Security Council's authority to facilitate a regime change in Libya instead of protecting civilians. This is but one incident that demonstrates the controversial nature of humanitarian intervention by military means, and it raises the question whether in certain circumstances it may be necessary to remove a regime by force to prevent the continuation of atrocities against a civilian population under threat by their own government. This is further illustrated by the Syrian government's violent crackdown against a pro-democracy uprising in which thousands have been killed since the start of the riots in 2011. On 4 February 2012, yet another attempt by the Security Council to obtain agreement amongst its members for stronger action against the Syrian regime failed because of a veto by Russia and China, two of the five permanent members in the Council. The resolution in question called for an immediate end to the violent crackdown and for President Assad to step down. This was interpreted by the Russian and Chinese governments as creating an opportunity for military intervention and regime change by forceful means in the style of the Libyan incident, a measure both governments were vehemently opposed to, seemingly on the basis of the rule against interference in the internal affairs of states (Zifcak, 2018). But one should not exclude other, more ulterior motives. Since the Soviet days Syria has been a loyal client state of Russia, including in the arms trade business, and as far as China is concerned, the country's own human rights and democracy record is far from exemplary!

Another, earlier example was Operation Allied Force involving a large-scale aerial bombardment in 1999 by NATO with the objective of destroying Yugoslav military infrastructure in Kosovo. The justification for this offensive was based, amongst others, on the necessity to end all military action and violent repression by the Milosevic regime and to establish a UN administration over

the territory. Any offensive action of this nature would need Security Council authorisation in terms of Chapter VIII of the UN Charter. Since it was clear from the beginning that Russia and China would use their veto right in the Security Council the offensive was undertaken without Security Council authorization which led to an international debate on the legality of the bombardment, a matter that even ended in proceedings before the International Court of Justice when Yugoslavia, arguing against the legality of the use of force by NATO, asked the Court for provisional measures, which failed on a finding by the Court that it did not have jurisdiction in the matter (see *Cases Concerning the Legality of the Use of Force (Yugoslavia v 10 NATO States*), Provisional Measures, ICJ Reports, 1999).

The controversial nature of humanitarian intervention is also as a result of a potential claim by states that under certain circumstances states might have a 'right' to intervene militarily or by other coercive means. If such a right exists the first question then is how it relates to the fundamental prohibition on the use of force in Article 2(4) of the UN Charter and on non-intervention in the internal affairs of states in Article 2(7) of the UN Charter. Over many years these conflicting notions exposed major divisions in the international community with no progress being made on what should be done when widespread, gross and systematic human rights violations occur in a country unwilling or unable to provide the necessary protection. The challenge to find a new consensus on this was put forward in 1999 during the 54th session of the UN General Assembly when the then Secretary-General of the United Nations, Kofi Annan, called on states to find common ground in upholding the principles and purposes of the UN Charter and on when it is necessary to act in defence of our common humanity.

In September of the following year the Canadian government, in response to this challenge, announced the establishment of an Independent Commission on Intervention and State Sovereignty (ICISS) which published a report in 2001 which has become the subject of much debate ever since. The report's main contribution lies in its interpretation of state sovereignty as implying a *duty* of a state to protect its own citizens. Consequently, when a population faces serious harm as a result of internal armed conflict or repression and the national state is unwilling or unable to bring to an end or avert the harm, the principle of non-intervention will have to make way for the international *responsibility to protect*. As an exceptional and extraordinary measure a military intervention pursuant to the exercise of the duty to protect will only be justified in cases where actual or apprehended large scale loss of life is imminently likely to occur as a result of deliberate state action or state neglect or inability to act. Equally important are the report's views on the substantial conditions that must be met at the outset to prevent any intervention of this kind to be abused for ulterior purposes or to become a disguised form of aggression. These conditions are: 1. the primary purpose of the intervention must be to halt or avert human suffering, i.e. the right intention; 2. the use of military means must always be a last resort and after non-military means have been exhausted or found to be inappropriate; 3. the planned military action must be proportional to securing the humanitarian objective in question; and 4. the military means must stand a reasonable chance of success (ICISS Report, p. 35 et seq).

In view of its primary responsibility for peace and security (see Article 24 of the UN Charter), the UN Security Council must remain the principal body to decide on the use of force (see also Article 42 of the UN Charter). This is equally true in the case of the use of military means for humanitarian purposes. Here, we should take note of the consensus position in the ICISS Report where it is clearly stated that "it is the Security Council which should be making the hard decisions … about overriding state sovereignty" and it is the Security Council that "should be making the often even harder decisions to mobilize effective resources, including military resources, to rescue populations at risk …" (Article 49). But what are the implications of inaction, i.e. when, for instance, through the veto of one of the permanent members of the Security Council, the Council is paralysed and prevented from acting in these circumstances? That the Council itself stands to suffer the most with regard to its stature and credibility is a clear message in the ICISS Report, for, if because of the veto ad hoc coalitions of states, or even individual states, decide to circumvent the UN system and successfully perform their duty to protect, questions about the usefulness of the Security Council may have enduring consequences (ICISS Report, p. 55).

At the occasion of the 2005 World Summit, states of the world committed themselves to the responsibility to protect principle in the following terms (General Assembly Resolution A/RES/60/1 paras. 138, 139):

Each individual State has the responsibility to protect its populations from genocide, war crimes, ethnic cleansing and crimes against humanity. This responsibility entails the prevention of such crimes, including their incitement, through appropriate and necessary means. We accept that responsibility and will to act in accordance with it. The international community should, as appropriate, encourage and help States to exercise this responsibility and support the United Nations in establishing an early warning capability.

The international community, through the United Nations, also has the responsibility to use appropriate diplomatic, humanitarian and other peaceful means, in accordance with Chapters VI and VIII of the Charter, to help to protect populations from genocide, war crimes, ethnic cleansing and crimes against humanity. In this context, we are prepared to take collective action, in a timely and decisive manner, through the Security Council, in accordance with the Charter, including Chapter VII, on a case-by-case basis and in cooperation with relevant regional organizations as appropriate, should peaceful means be inadequate and national authorities are manifestly failing to protect their populations from genocide, war crimes, ethnic cleansing and crimes against humanity.

Core Crimes: The Crime of Aggression

When the Rome Statute of the ICC was adopted in 1998, the crime of aggression was listed amongst the crimes over which the Court would exercise jurisdiction (Article 5(1)). However, this was made subject to the adoption of a definition of the crime of aggression – still missing at the time – setting out the conditions under which the Court shall exercise jurisdiction with respect to the crime of aggression (Article 5(2)). The task to find a suitable definition of the crime of aggression was assigned to a special working group who reported on the matter during the Rome Statute's first review conference which took place in 2010 in Kampala, Uganda. At this occasion a resolution was adopted on a definition of the crime of aggression which will be the subject of an amendment to the Rome Statute in accordance with Article 121 of the Statute. This means that the amendment will have force and effect for states parties that have accepted the amendment one year after they have become parties to the Rome Statute (Rome Statute, Article 121(5)).

The resolution adopted in Kampala defines a crime of aggression as the "planning, preparation, initiation or execution, by a person in a position effectively to exercise control over or to direct the political or military action of a State, of an act of aggression which, by its character, gravity and scale, constitutes a manifest violation of the Charter of the United Nations" (Resolution RC/Res.6, 11 June 2010, para. 1). The means by which the act of aggression is executed involves the use of armed force by a state against the sovereignty, territorial integrity or political independence of another state in any of the forms specified in the resolution (see para. 2). Currently, thirty seven states have ratified the amendment of the Rome Statute in accordance with this resolution to provide for the crime of aggression. This is brought about by the insertion of the following new provisions in the Rome Statute: Articles 8bis, 15bis, 15ter and 25(3)bis.

If this amendment meets with the approval of a large number of states parties it will indeed be an historic occasion and a triumph for the criminal-justice response to international atrocities of a kind which other measures by the international community have failed to stop or prevent. It will also mark the culmination point of a post WWII development which has recognised at Nuremberg that there is something like a crime against peace based on considerations that now inform the Rome Statute's crime of aggression.

However, at the same time we should understand the political and legal complexities of this development. The criminal-justice perspective to the crime of aggression cannot escape the realities of international relations and international politics for the simple reason that it has implications for the collective security system of the United Nations Charter. Any act of aggression will amount to a violation of the principles of the UN Charter and as such could trigger the collective counter-response provided for in Chapter VII of the UN Charter. Furthermore, the Charter assigns *primary* responsibility for international peace and security to the Security Council (Article 24 of the UN Charter), where the five permanent members of the Council (the USA, China, United Kingdom, Russia and France) have the veto power, and in terms of Article 39(1) of the Charter, the Council is the only body that can determine whether an act of aggression exists. This explains the delicate balance between the powers of the Security Council and the powers of the Court introduced into the Rome Statute by the Kampala resolution. This is reflected in the power given to the prosecutor, when considering that there is a reasonable basis to proceed with an investigation in respect of a crime of aggression, to first ascertain whether the Security Council has made a determination of an act of aggression committed by a state concerned. Where a determination has been made, the prosecutor is entitled to proceed with the investigation into the crime of aggression (paras. 6, 7).

If the Security Council has not made a determination within six months after the notification to the Secretary-General, the prosecutor is likewise entitled to proceed with the investigation, provided that the pretrial chamber of the Court has authorised the investigation (para. 8). The resolution has made a further attempt at securing the independence of the Court, by stating that a determination of an act of aggression by an organ other than the Court shall not have an effect on the Court's own findings in this regard (para. 9). But there still remains the overriding power of the Security Council in terms of Article 16 of the Rome Statute which allows for a deferral of an investigation or prosecution for a renewable period of twelve months on request by the Security

Council in terms of Chapter VII of the UN Charter. The reference here to Chapter VII of the UN Charter, which deals with acts of aggression and threats to international peace and security, should make it clear that the tension between the idealism of international criminal justice and the realism of international politics is an inseparable part of the Rome Statute.

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6.6: Conclusion - The Future of the Responsibility Regimes

A first conclusion regards the responsibility of states parties to ensure respect for the obligations in international treaties for the protection of war victims, and secondly the prospects for the international criminal justice system for the prosecution of individual transgressors.

As was noted earlier, state parties are obliged to respect and to ensure respect for the principles enunciated in the Geneva Conventions and Protocols. According to the ICRC and a number of states this treaty obligation implies that every contracting party is entitled to request that another contracting party involved in an armed conflict must live up to what the Conventions and Protocols stipulate. Cassese has correctly pointed out that this right or entitlement of a state party:

> Accrues to any contracting State from the mere fact of being a party to the Conventions or the Protocol: it is not necessary for it to prove that it has a specific and direct interest in the observance of the rules violated. In other words, the obligations laid down in the Conventions and the Protocol are *erga omnes contractantes* and consequently each of the latter is endowed with the corresponding right to demand their fulfilment, irrespective of any damage it may have suffered from the wrongful action. … This feature of the obligations at hand *constitutes the necessary precondition* for the possible characterization of *gross breaches* of the Conventions and the Protocol as international crimes of States. (Cassese, 2008, p. 409)

A crucial question that arises from this understanding of states parties' treaty obligations relates to the kind of action considered by states to be authorised by the Conventions and Protocol. A survey on this conducted by the ICRC in 1972 has shown that the majority of states took the view that states parties are entitled to exercise supervision over compliance collectively as well as individually and that measures to ensure compliance could cover both preventive action and reaction to breaches. However, despite this understanding amongst states of their obligations in terms of the Conventions and Protocol, state practice with regard to concrete actions in response to violations confirmed a very cautious approach by states in reacting to serious breaches of IHL principles and that the tendency is to limit reaction to verbal condemnation of the breaches and to appeals to the belligerent parties to comply with their obligations (Cassese, 2008, p. 412). On the reaction by individual states it has been noted that:

If one contrasts the daily perpetration of gross violations of human rights during armed conflicts with the legal reaction of other States, the impression is exceedingly dispiriting. Only in very unique and exceptional circumstances do third States publicly react to them. They normally prefer to keep aloof or, at most, they approach the delinquent State via diplomatic channels when they wish to request that it discontinue the wrongdoing. (Cassese, 2008, p. 413)

From the perspective of state responsibility this remains one of the flaws in the quest for more effective enforcement of IHL norms and it is unlikely that any fundamental change will occur any time soon. It is at the same time also a problem of political leadership which in many instances is strikingly inadequate in the face of gross violations of IHL and other norms which occur so regularly in times of armed conflict.

The international criminal justice system has made considerable progress in ending the impunity of individual perpetrators for war crimes, crimes against humanity and genocide. Apart from the establishment of the two ad hoc tribunals, the ICTY (1993), the ICTR (1994), and the permanent International Criminal Court (1998), the following tribunals are equally noteworthy examples of this progress: the East Timorese Tribunal (2002), the Special Court for Sierra Leone (2002), the Cambodia Tribunal (2003) and the Lebanon Tribunal (2009).

One should not be oblivious to the obstacles that may stand in the way of effectively enforcing humanitarian law principles through an international criminal justice system, especially when considering the future success of the ICC and its potential international role in bringing about an efficient and trustworthy international legal regime for the punishment of individual perpetrators. One obvious obstacle is international cooperation. The ICC cannot function without the assistance of states parties in matters such as the execution of warrants of arrests, the apprehension and transfer of suspects, the gathering and securing of evidence, the making available of witnesses, and financial assistance for the day to day running of the system. After all, states parties have undertaken in Article 89 of the Rome Statute to cooperate fully with the Court in its investigation and prosecution of crimes falling within the jurisdiction of the Court. However, some recent developments have shown how easily this cooperation can be undermined. A case in point is the reaction by the African Union to arrest warrants authorised by the ICC for the arrest of sitting heads of state, namely Al-Bashir in Sudan and the late Muammar Gaddafi in Libya. In both instances the African Union refused to cooperate with the ICC, citing differences of opinion on the issue of immunity against legal process of sitting heads of state and interference by the

Court in peace negotiations the African Union were involved in in both instances. Another example is South Africa's deliberate failure to arrest Al-Bashir in 2015 while attending an African Union summit in the country and to surrender him to the ICC. This failure occurred in clear violation of South Africa's Rome Statute obligations and the country's own legislation (see the ruling of South Africa's Supreme Court of Appeal in the case of *Minister of Justice and Constitutional Development and Others v Southern African Litigation Centre* 2016 (3) SA 317(SCA).

This is not the place to go into the merits of these claims, but they illustrate the fragile position the ICC finds itself in and how important it is for the international community to address such issues and to find consensus on them, lest the whole effort of building up an international criminal justice system over half a century runs aground on the harsh realities of international politics.

A second obstacle of note relates to the complementary nature of the ICC's jurisdiction. The Court's jurisdiction is based on the notion that the primary responsibility for the prosecution of individual perpetrators lies with national courts and that the ICC will only assume jurisdiction if the state concerned is unwilling or unable to proceed with an investigation and prosecution (see Articles 1 and 17 of the Rome Statute). But this approach places the ball squarely in the court of national states to, *inter alia*, adopt the necessary national legislative and other measures that will empower their national legal systems to conduct the necessary criminal proceedings against persons accused of the crimes listed in the Rome Statute. Although the Rome Statute boasts hundred and twenty two ratifications, there is concern over the relatively low number of states that have adopted national measures for the effective implementation of the Rome Statute. As long as this situation does not improve significantly so long will there be "safe haven" states where fugitives can avoid criminal accountability. If it is accepted that an essential function of criminal prosecutions is the restoration of confidence in the rule of law, then that objective must be vigorously pursued at the national level as well.

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6.7: Resources and References

Review

Key Points

- Non-combatants in armed conflicts are protected by international law in the forms of the Geneva Conventions and associated Protocols.
- Their protection extends to both international and internal conflicts.
- Different protection is afforded to prisoners of war, wounded and shipwrecked and displaced people.
- International law also regulates the responsibilities of states and of individuals in terms of means and methods of war.
- War crimes, crimes against humanity, genocide, and aggression are defined by international law, and mechanisms for the prosecution of state and individual transgressors are outlined.
- Current legal developments supporting human security include the development of certain human rights, of international humanitarian law, of international criminal law and of norms for good governance.
- Obstacles on the way towards further development of international law are encountered in the context of initiatives for the responsibility to protect (R2P) and when boundaries of state sovereignty are tested.

Extension Activities & Further Research

1. Examine the ethical principles and considerations that provide the basis for IHL and for the restrictions it places on the conduct of armed conflict. Do you consider this basis sufficient or would you advocate for its expansion? Present your case.
2. The use of nuclear weapons has been limited to specific circumstances (Section 6.4). Picture a scenario where the current state of political relations in the Middle East renders the use of nuclear weapons a distinct possibility. How would the pros and cons be represented in the International Court of Justice?
3. Protocol I of the Geneva Conventions, which has not been signed by the US, refers to wars of liberation "against colonial domination and alien occupation." If the Protocol had been in place at the time, to what extent could it have been applied to protect the combatants in the American War of Independence (1775-1783)?
4. Describe the trend underlying the development of IHL and how it might manifest in the future.

List of Terms

See Glossary for full list of terms and definitions.

- *erga omnes*
- genocide
- grave breaches of the Geneva Conventions and Protocols
- *jus cogens*
- Martens Clause
- *prima facie*
- Rome Statute

Suggested Reading

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Footnote

1. These and many other sources are accessible on the International Committee of the Red Cross (ICRC) website.
2. For new sources see WHO's Surveillance System for Attacks on Health Care and the ICRC's New global system to monitor attacks on health care.
3. Editors' note: Depleted uranium ordnance is apparently not mentioned in that category.
4. See Crunch Time: European Positions on Lethal Autonomous Weapon Systems, Update 2018 [PDF], also available at PAX for Peace.
5. Editors' note: The frequent references to legal documents in this chapter are not included in this list; those documents are freely accessible online.

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CHAPTER OVERVIEW

7: Individuals and Groups Outside of the State System

Learning Objectives

- Explore and define the term ‘stateless’ and what factors can cause ‘statelessness.’
- Analyse and discuss the refugee crisis noting the key international conventions related to refugees and state obligations to refugees, including environmental refugees.
- Compare and contrast statist vs. human security approaches to refugees and asylum seekers.
- Discuss what is meant by ‘alienated citizenship’ and how it can lead to sub-state terrorism.
- Compare and contrast statist vs. human security approaches to countering terrorism.

Anna Hayes

In this chapter the security status of individuals and groups outside of the state system is examined. The chapter begins with an examination of statelessness and its drivers. It then examines the extent and causes of the global refugee crisis, illustrated by case examples from the global north and the global south. Within this discussion, the chapter also explores the relatively new phenomenon of environmental refugees, and how climate change could cause an increase in forced migration as vulnerable populations are compelled to leave their home locales due to climatic changes. In doing so it discusses the precarious situation of environmental refugees, who are still not recognised under the United Nations High Commission on Refugees (UNHCR) definition of a refugee. The chapter then considers vastly different individuals and groups outside of the state system to those mentioned above, namely alienated citizens and terrorists. Avenues leading to the alienation of the citizen from the state are described, including roads towards terrorism and the possible effects of anti-terrorism legislation and strategies on the status of individuals. Case examples from current issues are discussed throughout the chapter.

7.1: Introduction
7.2: Individuals and Groups Outside of the State
7.3: Alienated Citizenship and Sub-state Terrorism
7.4: Counter Terrorism, Human Rights and Human Security
7.5: Conclusion
7.6: Resources and References

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7.1: Introduction

In 2004, Tom Hanks starred in a movie called *The Terminal*. Hanks played Viktor Navorski, a character that ends up becoming stateless due to civil war in his home country. This causes him to be denied entry to or exit from the United States (US). Viktor is forced to take up residence in JFK International Airport and the comedy-drama depicts his experiences as a person living outside of the state system. The importance of *The Terminal*, and its depiction of statelessness however, is that Viktor's story is based on the real-life story of Mehran Karimi Nasseri, who spent 18 years living in the departure lounge of France's Terminal One, Charles De Gaulle Airport. Nasseri's case is an interesting example of statelessness, but it also demonstrates the vulnerability of refugees. After being granted refugee status by Belgium, Iranian-born Nasseri tried to settle in the United Kingdom (UK), which he claimed was his mother's country of origin. En route to the UK, his documents were stolen in Paris and upon his arrival in Britain he was turned back to France. Thus began his life in the terminal and provided the story upon which the movie was based.

This chapter explores the experiences of individuals and groups outside of the state system. It firstly provides a general overview of the phenomenon of statelessness before focusing its attention on refugees and asylum seekers. In doing so it examines the refugee crisis, current trends in refugee flows worldwide and state responses to refugee movements. It examines the link between refugee outflows and breakdowns in human security, using the Rohingya crisis as a case study. It then critiques Australia's tough stance against asylum seekers, using the experiences of an asylum seeker (named Michael), who was deported from Australia to dangerous circumstances in his homeland Angola, as a case study. That section also examines the impact of 9/11 on state responses to refugees and asylum seekers, and how states can best address the needs of refugees so they can contribute to their new country of citizenship. It then identifies what is meant by environmental refugees, and how climate change will lead to the rise of environmental refugees if appropriate climate action is not taken.

The chapter then examines other individuals and groups outside of the state system. It focuses on alienated citizens who committed acts of sub-state terrorism, using Timothy McVeigh and Anders Behring Breivik as case studies. The two case studies have many similarities, and reflect both McVeigh's and Breivik's experiences of alienation and subsequent acts of sub-state terrorism. It then examines statelessness as a motivation for terrorism. In this examination, Wafa Idris, the first female suicide terrorist of the Second Intifada, provides our case study. Idris' act of terrorism brought attention to Palestinian statelessness, and it also provides a useful basis for gendered analysis of terrorism and responses to terrorism. The chapter ends with a broad overview of counter terrorism in the 21st century, and the changes to human rights and human insecurities that have resulted. This discussion also highlights what constitutes a human security based approach to countering terrorism.

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7.2: Individuals and Groups Outside of the State

An individual or group of individuals who are stateless are not recognised as a national (or a citizen) of any state in the world. As a result, they lack legal recognition. Therefore, they may experience difficulty travelling as they do not have citizenship documents such as a current passport, and they may not be eligible to access education or healthcare services. They may also be prevented from marrying, and they do not have voting rights. Their cumulative experience is one of marginalisation and exclusion. According to Manly and Persaud (2009):

Stateless people are in many ways the ultimate 'forgotten people' and identification of statelessness remains a major challenge. Frequently, stateless persons live on the margins of society and are, almost by definition, 'uncounted.' (p. 7)

Statelessness can result from war, conflict, persecution and natural disasters (see Case Study 7.1). For some individuals and groups, statelessness is temporary, and they are able to return to their former residence, resuming their citizenship and nationality once the situation that caused them to flee has been resolved or its effects muted. Others however, may never be able to return to their home country. At the close of 2017, the UNHCR reported there were 3.9 million *identified* stateless individuals worldwide (UNHCR, 2018a, p. 51) (See Table 7.1). However, if we take into consideration unreported or unidentified stateless individuals, the UNHCR believes that the total number of stateless individuals worldwide is much higher, possibly in the vicinity of 10 million people (UNHCR, 2018a).

Table 7.1 Identified stateless persons, 2005–2017[1]

YEAR	STATELESS PERSONS
2005	2.3 million
2006	5.8 million
2007	2.9 million
2008	6.5 million
2009	6.5 million
2010	3.4 million
2011	3.4 million
2012	3.3 million
2013	3.4 million
2014	3.4 million
2015	3.6 million
2016	3.2 million
2017	3.9 million

Stateless individuals experience heightened human insecurity. In addition to impinging on the above mentioned rights and facilities, statelessness increases an individual's vulnerability to violence, rape, disease, starvation, gross human rights violations, and human trafficking for labour and sexual servitude. There have been attempts to provide legal frameworks around the protection of stateless peoples, beginning with the Nansen passport, issued by the League of Nations during the 1920s and 1930s to protect stateless refugees displaced by World War I. The UN followed up with the 1954 Convention relating to the Status of Stateless Persons and the 1961 Convention on the Reduction of Statelessness. Stateless individuals are also covered by the Universal Declaration of Human Rights (1948), and there are specific statements related to statelessness in both the Convention on the Rights of the Child (1989) and the Convention on the Elimination of All Forms of Discrimination Against Women (1979). However, if we consider the large number of stateless individuals worldwide, and the persistently inadequate state responses to stateless persons, there currently does not appear to be an effective model for adequately responding to the human rights and human security needs of individuals

outside of the state system (van Waas, 2009). Also, not all states worldwide are party to these conventions, so they do not uphold them or fulfil their responsibilities to stateless individuals who enter their state. Therefore, more work will need to be done in order to compel states to respond to issues of statelessness into the 21st century.

Case Study 7.1

The Rohingya Refugee Crisis: Statelessness and Human Insecurity

The Rohingya people have lived in the Rakhine State in Myanmar (Burma) for centuries. However, as a predominantly Muslim population, their position within the modern state of Myanmar has been marred by anti-Muslim prejudice, discrimination, marginalisation, human rights violations, and statelessness (Ahsan Ullah, 2016).

Following changes to its citizenship laws in 1982, ethnicity in Myanmar became increasingly politicised (Beyrer & Kamarulzaman, 2017). The changes were introduced under the military dictator General Ne Win, who came to power in 1962 in a coup d'état. General Ne Win's changes meant that citizenship became based on ethnicity, with categories of citizenship including citizens (predominantly Buddhist Burmans); associate citizens and naturalised citizens. Under Section 6 of the Act, Rohingyas should have been able to acquire citizenship under the categories of either associate or naturalised citizens (having previously held citizenship in Burma post 1948). However, lack of official documentation to prove their ancestry in Burma, meant they were denied citizenship and many Rohingyas became stateless peoples (Ahsan Ullah 2016). The resultant statelessness has meant that the Rohingyas have been denied civil and political rights for decades (Beyrer & Kamarulzaman, 2017).

Moreover, ethnicised politics has heightened insecurity for Rohingyas. There have been deliberately exclusive nationalist slogans such as 'Burma for the Burmans,' 'to be Burman is to be Buddhist,' and anti-Muslim riots targeting Rohingyas. In addition, in 1978 the Burmese military launched a campaign of ethnic cleansing against the Rohingya (and other ethnic minority groups), resulting in torture, murder and rape being carried out against Myanmar's Muslim population (Ahsan Ullah, 2016, p. 289). This was not the first time such violence against Rohingyas has occurred. There have been a number of expulsions of Rohingya from Burma to neighbouring countries, including in the late 1700s, early 1800s, the 1940s, 1978, 2012 and in 2015. Regional history and colonial experiences coalesce into a potent mix when it comes to Myanmar and this has contributed to significant difficulties in Myanmar's sense of national unity as a multi-ethnic and multi-religious society. Put simply, to be Burmese and to be Buddhist simply does not reflect the ethnic and religious make-up of the state, despite strong desires from the state's pro-Buddhist agitators.

The most recent outbreak of violence and expulsion of the Rohingyas began in late 2016, continuing into 2017. Following attacks on police stations and an army base in October 2016 by the armed ethno-nationalist insurgent group the Arakan Rohingya Salvation Army, Myanmar's armed forces launched a brutal retaliatory campaign against not only the Arakan Rohingya Salvation Army but the Rohingya civilian population of Myanmar. Satellite imagery and first-hand accounts by those fleeing signal there has been widespread burning of Rohingya homes and communities, threats of violence to those who have not immediately fled to Bangladesh, torture, extrajudicial killings, and systematic rape of Rohingya girls and women by security forces (UNHCR, 2018a; Beyrer & Kamarulzaman, 2017).

Known worldwide as the 'Rohingya Refugee Crisis', by the end of 2017 the number of Rohingya forced to flee the Rakhine State numbered 655,500 (UNHCR 2018a). This expulsion constitutes ethnic cleansing. It has been estimated that of those who have fled, 25% are women, 20% are men, and 55% are children (UNHCR, 2018a). In his assessment of the situation, the United Nations High Commissioner for Refugees Filippo Grandi (cited in UNHCR, 2018a, p. 25) concluded:

> Nowhere is the link between statelessness and displacement more evident than for the Rohingya community of Myanmar, for whom denial of citizenship is a key aspect of the entrenched discrimination and exclusion that have shaped their plight for decades.

Myanmar's State Counsellor Aung San Suu Kyi has been strongly criticised for her ongoing silence on the persecution of the Rohingyas and the resultant refugee crisis. There have also been strong calls for her to be stripped of her 1991 Nobel Peace Prize, which was awarded for her "non-violent struggle for democracy and human rights" (Nobel Foundation 2018). According to Olav Njoelstad, the secretary of the Norwegian Nobel Committee, Aung San Suu Kyi will not be stripped of her prize as each award is

for the achievements of the recipient up until it is awarded (cited in Reuters, 2018). Furthermore, the rules regulating the Nobel prizes do not contain avenues for the withdrawal of previously awarded prizes. In the meantime, the State Counsellor's silence on the Rohingya refugee crisis continues and there are now more than 930,000 Rohingya refugees living in Bangladesh (UNHCR, 2018a, p. 24).

Currently, responses to statelessness often lack political will and effective state-based solutions. This has resulted in increased human insecurity and prolonged suffering for those affected. According to Manly and Persaud (2009, p. 7) the UNHCR cannot replace the state, largely because of the continuing dominance of the state in an international structure that is predominantly shaped by realism. Therefore, durable state-based solutions are necessary in dealing with this humanitarian crisis, ones that focus on human rights and human security. States are the first stage in the prevention of statelessness. This requires them to respect and uphold the human rights and security of their citizens. In areas where stateless citizens make up much of the social fabric of a state, citizenship campaigns that provide citizenship to such peoples should be undertaken.

In 2003, 190,000 Indian Tamils were finally provided citizenship in Sri Lanka (Manly & Persaud, 2009). The Indian Tamils are also known as 'Estate Tamils' or 'plantation Tamils' because they were brought to Sri Lanka from India by the British as bonded labour in the 19th century to work on tea and coffee plantations (Manly & Persaud, 2009). Accounting for approximately five percent of the overall population, Indian Tamils have long been stateless peoples in Sri Lanka. While there had been an earlier granting of citizenship to some, it took until 2003 for all remaining Indian Tamils to gain citizenship, thereby removing their statelessness. The role of colonialism in the region, and forced labour migration as part of colonial control, is important here as it left the Indian Tamils in a situation of statelessness, and significant human insecurity, for generations. Therefore, it is important for us to consider how historical events continue to impact the human security of populations globally, particularly those in the global south.

Following formal recognition of their citizenship within Sri Lanka, Indian Tamils now have access to services and support provided by the state, and they now have political and voting rights, which were previously denied to them. For the Sri Lankan state, it can now refocus its efforts on the inclusion of the Indian Tamils as citizens of their state, not excluding/ overlooking them on the basis of their lack of citizenship or perceived illegality. It has also eased some of the ethnic tensions that existed among the wider Sri Lankan community, which had seen strong cleavages based on ethnicity, caste and citizenship status (or lack thereof) between the Sinhalese majority, the Sri Lankan Tamils (who were already recognised citizens of Sri Lanka), and the Indian Tamils (Shastri, 1999; Hollup, 1992). This example demonstrates an effective state-based response to statelessness within host state borders.

Scholars such as Steiner (2009) see amnesties, that is, the granting of citizenship to stateless persons within a host state, as a tangible solution to state concerns over illegal immigrants. Steiner posits quite succinctly "[a] final way to get rid of illegal immigrants is to make them legal" (2009, p. 39). In fact, the US has used amnesty programmes in the past to legalise illegal immigrants to the extent that by 2000, 5.7 million illegal immigrants had been legalised via such amnesties (Steiner, 2009). However, more recent efforts to provide similar amnesty programmes have not been supported.[2] The US and Sri Lanka are not alone in passing such amnesty programmes in the past. According to Steiner, since the 1990s Greece, Spain and Italy have all passed amnesty programmes to help solve the problems associated with the marginalisation and illegality of immigrants within their borders, many of whom are contributors to the state's labour market. Furthermore, by granting such stateless persons citizenship rights through amnesties, their labour can be unionised (as they are no longer illegal workers in a black market trade). This is beneficial not only to the formerly stateless workers, who are often victims of exploitative work conditions, but it also ensures more fair and equitable working conditions for all workers as it removes the threat of labour displacement and wage depression, which can result in areas of a large black market labour force.

We now turn our examination to refugees and asylum seekers. These groups constitute a significant proportion of the world's stateless people. They often face insurmountable obstacles in their quest for human security, and we will consider a range of factors relevant to them as individuals or groups outside of the state system.

Refugees and Asylum Seekers

It was the League of Nations that first articulated (albeit limited) protection rights for refugees. Conflicts in the early part of the 20th century saw many people in need of sanctuary as they fled violence and persecution. When the League was dissolved in 1946, it was replaced by the newly established UN. In an attempt to respond to the huge numbers of people displaced by the Second World War, the UN appointed the UNHCR in 1950, replacing the League's International Refugee Organisation. Also at that time,

the UN set about to codify what constituted a refugee and what the international society's obligations to refugees should be. In 1951, the Convention Relating to the Status of Refugees was finalised and approved by the United Nations. It came into force in 1954. According to the original Convention, a refugee is any person who:

owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it. (UNHCR, 2010, Article 1 (A) (2) 1951 Convention, p. 14)

The 1967 Protocol Relating to the Status of Refugees made slight, but important, amendments to the original convention. The ultimate goal of the Protocol was to widen the scope of the convention to make it a more objective definition representing the range of threats that had emerged since the refugee convention was first envisioned. The Convention also inspired the codification of other regional conventions including the 1969 Organisation of African Unity Refugee Convention in Africa and the 1984 Latin American Cartagena Declaration. However, these conventions have been criticised for not adequately including gender-based vulnerabilities such as female genital mutilation, laws that prohibit or punish gay and lesbian sexual orientations, women and girls being denied education or the ability to work outside of the home, for example, all of which may cause people subjected to such persecutions to flee their country, seeking asylum elsewhere. Currently, these types of issues are examined on a case-by-case basis, which does not inspire confidence that people in these groups will be protected.

The 1951 Convention and the 1967 Protocol, known collectively as the *Refugees Convention*, are important as they identified that foreign nationals seeking asylum must be granted the same types of human rights as those normally experienced by citizens of a state. Therefore, the statelessness of refugees does not abolish their human rights. In addition, the international society of states must uphold those rights and protect refugees, regardless of their statelessness. The Convention recognises that this can only be achieved through international burden sharing, one that signatories of the Convention have committed to uphold.

There are currently 147 signatories to the Convention and/or Protocol, including both developed and developing states in the global north and the global south. By ratifying the Convention and/or Protocol, these governments have indicated their willingness to provide sanctuary to those fleeing persecution and to honour and uphold their human rights. If we consider the obligations of states to asylum seekers and refugees, and we contrast this with current state responses to asylum seekers and refugees, the following questions should be asked. Why are refugees and asylum seekers increasingly being viewed through the lens of illegality? What rights do they have to seek asylum? How do state responses to asylum seekers uphold or contravene their human rights and human security?

In recent years, refugee flows have attracted heightened attention from governments and citizens of many states around the world. Asylum seekers however, have also attracted significant attention. Asylum seekers are those fleeing persecution who have not yet been formally declared refugees by the UNHCR or other governing body. This is usually because they are unable to access a UNHCR camp near where they live and are therefore forced to flee persecution by crossing state borders, often without travel documents or travel permits. While this is also a right enshrined by the Refugees Convention, asylum seekers have increasingly been associated with 'illegality' and they are often wrongly viewed as being economic migrants, not refugees.

In 1995, the world refugee population peaked at more than 27 million. This is an unsurprising figure if we consider the events that were occurring around that time. The Cold War had recently ended, the USSR had broken up, and there was a revival in some areas of ethnic tensions, rivalry, nationalism and ultra-nationalism. The Persian Gulf War (1990-1991) had driven five million people to flee persecution. Throughout the 1990s, almost three million people fled persecution in the former Yugoslavia, and the Rwandan Genocide (1994) sent over two million refugees into neighbouring countries. In addition to these specific events, civil wars and instability throughout many areas of the world were also causing people to flee persecution in droves. Complicating the situation further was that the end of the Cold War meant that capitalist states no longer regarded there to be an ideological need to accept refugees, many of whom were from developing countries. This contrasted from previous policy positions, which on occasions had seen Cold War politics influence state acceptance of refugee flows, particularly if the refugees were from communist states (Human Security Centre, 2005).

Table 7.2 Hosting countries of refugees, 2017[3]

COUNTRY	NUMBER OF REFUGEES
Turkey	3.5 million
Pakistan	1.4 million
Uganda	1.4 million
Lebanon	989,900
Islamic Republic of Iran	979,400
Germany	970,400
Bangladesh	932,200
Sudan	906,600
Ethiopia	889,400
Jordan	691,000

Following the 1995 peak, the numbers of refugees decreased to 15.4 million by the close of 2010 (UNHCR, 2011, p. 5). However, recent conflicts have increased numbers and at the close of 2017 the UNHCR (2018a, p. 13) estimated there were 25.4 million refugees worldwide (including 5.4 million Palestinian refugees who are under the care of the United Nations Relief and Works Agency for Palestine Refugees in the Near East). In addition, there were 3.1 million applications for asylum still under consideration and 40 million internally displaced people (IDP) (UNHCR, 2018a, pp. 3 & 33). The major refugee hosting countries at the close of 2017 were Turkey, followed by Pakistan, Uganda, Lebanon, the Islamic Republic of Iran, Germany, Bangladesh, Sudan, Ethiopia and Jordan (UNHCR, 2018a, p. 18) (see Table 7.2). The Syrian Arab Republic is the largest country of origin for current refugees (6.3 million people, almost one-third of all refugees), followed by Afghanistan, South Sudan, Myanmar (see Case Study 7.1), Somalia, Sudan, the Democratic Republic of Congo, the Central African Republic, Eritrea and Burundi (UNHCR, 2018a, p. 14) (see Table 7.3). What is important to note about these countries is that they are all areas of conflict, including sites in the ongoing War on Terror, or states that do not uphold human rights for their citizens. Human insecurity is rife in these states. Therefore, it is not surprising that their citizens have been forced to flee persecution.

Table 7.3 Major origin countries of refugees, 2017[4]

COUNTRY	NUMBER OF REFUGEES
Syrian Arab Republic	6.3 million
Afghanistan	2.6 million
South Sudan	2.4 million
Myanmar	1.2 million
Somalia	986,400
Sudan	694,600
Democratic Republic of Congo	620,800
Central African Republic	545,500
Eritrea	486,200
Burundi	439,300

Asylum seekers are regularly incorrectly labelled in both political discourse and media reports as ‘illegal aliens/immigrant’ and ‘queue jumpers,’ and states such as the US, the UK and Australia have introduced mandatory detention as part of their processing

procedures. Increasingly, refugees and asylum seekers are being viewed as security threats to both the state and its citizens. Post 9/11, tightened immigration controls and increasing xenophobia have led traditional safe havens to close their doors to refugees and asylum seekers. The human security and the human rights of refugees and asylum seekers are increasingly being challenged and overturned, and many asylum seekers and refugees face years in camps and detention centres before being granted sanctuary and citizenship rights (if these rights are in fact granted at all) by receiving states.

In Australia, the US and the UK, there has also been a tendency to view the current 'refugee crisis' and numbers of asylum seekers as rapidly increasing to widespread proportions, and that they are seeking to migrate to countries in the global north for purely economic reasons. The above statistics demonstrate that while numbers of refugees are increasing, they are increasing in places experiencing conflict, war and violence, and with the exception of Germany, they are mainly being hosted by other states in the global south. In addition, over the past few decades the US, the UK and Australia have all become increasingly focused on tightening border security, even when it comes to asylum seekers. These states hold the misperception that they are being 'swamped' by 'waves' of asylum seekers and refugees. However, this is simply not the case, and closer examination of refugee statistics above attest it is neighbouring states to the conflict or crisis that are shouldering the largest hosting responsibility (see Table 7.2 and Table 7.3).

Table 7.4 Number of refugees and peoples of concern, 2000–2017[5]

YEAR	NUMBER OF REFUGEES	NUMBER OF PEOPLE OF CONCERN
2000	12.1 million	21.8 million
2001	12.1 million	19.9 million
2002	10.5 million	20.8 million
2003	9.5 million	17 million
2004	9.5 million	19.5 million
2005	8.6 million	21 million
2006	9.8 million	32.8 million
2007	11.3 million	31.6 million
2008	10.4 million	34.4 million
2009	10.3 million	36.4 million
2010	10.5 million	33.9 million
2011	10.4 million	35.4 million
2012	10.4 million	35.8 million
2013	11.6 million	42.8 million
2014	14.3 million	54.9 million
2015	16.1 million	63.9 million
2016	17.1 million	67.7 million
2017	25.4 million	68.5 million

Closer examination of refugee numbers demonstrates they have waxed and waned over the past seventeen years in direct correlation to global insecurity and areas of conflict (see Table 7.4). This is also evident when examining the number of 'persons of concern,' mainly comprising of internally displaced persons, stateless persons or people seeking asylum, over the same period. Overall, these figures demonstrate the correlation between human insecurity and population outflows, either inside the state (internal displacement) or across state borders as refugees and asylum seekers. If we reconsider the previously mentioned major

hosting states we see further evidence that a large flow of refugees from the global south to the global north is simply not reflected in current statistics on refugee flows. Instead, it is typically neighbouring states to the conflict that shoulder the heaviest population outflows.

Furthermore, if we compare states such as the US[6], the UK [7], and Australia [8] to Turkey, Pakistan and Uganda, the above figures demonstrate that the former states are receiving far fewer asylum seekers and refugees than the latter states. Also worrisome is that in Australia, failed attempts at asylum have seen asylum seekers facing deportation back to their former homes (see Case Study 7.2). Some failed asylum seekers have even committed suicide in detention, rather than be expelled from Australia and forced to return home. *Non-refoulement*, which is the principle that people should not be sent back to countries where they face persecution, has become binding international law.

Case Study 7.2

The Long Journey to Freedom

Michael, a Bakango man from Angola, was interviewed by researchers investigating examples of the Australian government deporting asylum seekers on the grounds that they did not qualify as refugees. He told them he had fled Angola as he was well-known for having opposed the Angolan government during the civil war and for refusing to act as a government spy. With the help of a friend, Michael fled Angola by plane, claiming asylum upon arrival.

He was interviewed by a representative from the Department of Immigration and Multicultural and Indigenous Affairs (DIMIA), and then placed in mandatory detention for the next three and a half years. During his detention, Michael took part in a protest at the detention centre, and was then sent to a prison for a period of time. While in prison he was raped twice, before being sent back to the detention centre.

The Federal Court ruled twice in favour of Michael fulfilling the categorisation of being a refugee in need of protection. However, on both occasions the Refugee Review Tribunal rejected these decisions. With only one day's notice, Michael was deported from Australia in 2000. DIMIA sent Michael to South Africa where they engaged the services of a private company, P&I (Protecting and Indemnity) to repatriate him. P&I first tried to send him to the Democratic Republic of Congo, but Michael refused to travel and he was then held in a cell at the airport. Michael demanded to see the Angolan Ambassador, who confirmed that he was in fact Angolan, but the Angolan officials who visited Michael told him he should return to Australia as his safety could not be guaranteed should he return to Angola. Although Amnesty International tried to help Michael, the Australian government refused his requests for assistance.

Michael was held in the cell for three days before being repatriated to Angola. Upon his return he was immediately incarcerated for being anti-government, and for fleeing Angola and claiming refugee status in a foreign country. Before leaving Australia, a friend had given Michael some money. After three months in jail he was able to bribe a prison guard to allow him to escape. He took refuge in a remote part of Angola, away from his hometown. The same friend then provided further assistance to Michael and he was able to go to another global north country. This country accepted his claim for refugee status after just six months and when interviewed, Michael was adjusting to life in a safe location, he was learning to become a brick layer, and he was hoping to be reunited with his wife and child who still lived in Angola, through a family reunification scheme.

Michael's story demonstrates a failure by the Australian government to not only uphold its obligations as a signatory of the *Refugees Convention*, but also to recognise decisions made in courts of law that rule in favour of an asylum seeker proving they are a legitimate refugee. It also demonstrates that Australia has contravened the *non-refoulement* principles of the Convention. The report that contains Michael's account found that of the 40 rejected and deported asylum seekers that the researchers spoke to, only five were found to be living in safe circumstances. This does not represent a commitment to human rights or an honouring of Australia's commitment to stateless peoples (Glendenning et al., 2004).

Over the past decade, Australia has faced increasing scrutiny due to the high rates of self-harm and suicide by asylum seekers in detention. After years of advocacy by human rights and refugee groups, and some prominent Australian politicians, in July 2011, the Commonwealth Ombudsman announced that an inquiry into the high rates of self-harm and suicide in detention would be undertaken. Despite the findings of inquiry, which recommended the maximum period of detention for asylum seekers should be 90

days and that “prolonged detention exacts a heavy toll on people, most particularly on their mental health and wellbeing” (Commonwealth of Australia, 2012, p. X), Australia maintains its tough stance towards asylum seekers, particularly irregular maritime arrivals. Excessive time spent in detention, numbering in the years rather than months or days, offshore processing, and documented sexual and physical abuse of detainees, as well as serious mental health issues resulting from detention including self-harm and suicide are features of Australia’s continuing treatment of asylum seekers. These practices reflect the enmeshment of Australia’s approach to asylum seekers with domestic politics, to successive governments wanting to prove their tough security credentials to domestic electorates by honing in on vulnerable asylum seekers (Archbold, 2015; Tazreiter, 2017). These practices also demonstrate that Australia is not upholding its responsibilities under the *Refugees Convention*.

The Commission on Human Security (2003) believes that solutions to refugee crises need to firstly consider if their former homeland has transitioned to peace and security. If this has occurred, refugees should be offered the option of voluntary repatriation and resettlement. In areas where this cannot be achieved, perhaps because conflict is ongoing or refugees feel unable to return to their former home, resettlement in a new state should be pursued. This requires cooperation from states to accept refugees into their overall immigration programme. All too often, the focus on refugees settles on their vulnerability and their perceived ‘burden’ to the state. While refugees face increased human insecurity before and during their escape from persecution, once they are provided sanctuary and citizenship in their new locale they should be considered a valuable and contributing member of that state and society. According to the *Human Security Now* report (Commission on Human Security, 2003), some of the areas that require attention by receiving states include:

establishing secure livelihoods [for refugees], protecting people against downside risks, reducing inequalities among communities, strengthening governance and respecting human rights. (p. 48)

If we consider Michael’s story from Case Study 7.2, after settling in a safe location, one that honoured his human rights and human security, Michael undertook employment training so he could become a settled member of his new state. Increasingly however, states are closing their doors to refugees. As previously mentioned, the post-9/11 political and security climate has seen states like the US, Canada and Australia restrict their intakes of refugees. In fact, the Commission on Human Security (2003, p. 48; Refugee Processing Centre, 2019) reported that the US refugee resettlement figures dropped from 69,886 in 2001 to just 27,131 in 2002 in the wake of the 9/11 attacks and the more rigorous security checks that resulted.

However, in addition to the above mentioned human insecurities and persecutions, which force people to flee their homes, the link between environmental insecurity and forced migration also warrants consideration. Myers and Kent (1995, p. 18) defined environmental refugees as “persons who no longer gain a secure livelihood in their traditional homelands because of what are primarily environmental factors of unusual scope.” They argued that should scientific predictions on the effects of a climate out of equilibrium come to pass, climate change could cause substantial increases in refugee, asylum seeker, and IDP numbers in affected areas.

People in low-lying atoll/island states throughout the Pacific have been identified as particularly vulnerable to rising sea levels. Similarly, people in other low-lying areas such as Haiti, Bangladesh, Vietnam and India (to name a few) are also expected to be affected by rising sea levels. However, climate change will also cause more lengthy and recurrent droughts (as has been witnessed in countries in the Sahel and Horn of Africa), desertification, more damaging and intensive cyclones/typhoons/hurricanes, and other climatic changes. Therefore, it is increasingly likely that environmental/climate change-induced migration will grow into the future, should environmental insecurity grow as anticipated. In spite of this, the UNHCR does not currently include environmental refugees into its mandate or definition of refugees, and there is ongoing debate over their status, or not, as refugees.

On the other hand, scholars such as Mortreux and Barnett (2009, p. 111) argue the impacts of climate change on populations may be less severe than expected. Their research has demonstrated that people “respond to events (such as climate change)” and that adaptation (adapting to rising sea levels for example) could mean that population flows may not be as numerous as currently predicted. While this is a fairly optimistic viewpoint of future scenarios for vulnerable populations, other scholars such as Urosevic (2009) believe that there must be more focused analysis of the plight, and inclusion, of environmental refugees in the existing UNHCR refugee mandate. According to Urosevic, the UNHCR is the logical organisation to respond to environmental refugees, and that a protocol, like the 1967 Protocol, should be passed so as to expand the Convention to specifically include environmental refugees. Such a protocol would be most pertinent in assuring the human security of affected and vulnerable populations, particularly those forced to flee as environmental refugees. This has not yet been achieved however, and the UNHCR acknowledges that environmental refugees are not covered by the existing *Refugees Convention*. This acknowledgement occurs

alongside statements that the UNHCR expects both displacement and human insecurity to grow alongside increasing environmental insecurity worldwide.

At present, the UNHCR promotes planned environmental migration to be mainstreamed within climate change mitigation and adaptation policies (UNHCR, 2015, p. 12). This type of migration refers to vulnerable populations being relocated under planned migration strategies by the state in which they live, resulting in a forced internal displacement, but one that is planned, staged and carefully managed rather than an abrupt forced migration like what occurs during periods of conflict or sudden catastrophe. However, this is not an easy undertaking, especially for states within the global south. Furthermore, even with such a planned approach to migration, forced migration of any kind can lead to increased human insecurity and tensions between the migrating and receiving populations if resources are scarce or if numbers are significant, even if they reside within the same state.

In their examination of environmental migration in Papua New Guinea, Connell and Lutkehaus (2017) explored the forced migration of Manam Islanders within Papua New Guinea. Manam Island is located about 12 kilometres from the New Guinea mainland and it is an inhabited volcanic island. There have been many eruptions in the past, whereby Manam Islanders have temporarily evacuated to the mainland by canoe and as a result they had forged good relations with the coastal communities on the mainland. Such evacuations usually involved just a couple of affected villages (perhaps two or three out of the fifteen villages) to one occasion in 1957-1958 whereby the whole island had to evacuate. Furthermore, these evacuations were only temporary and the Manam Islanders returned to their island once the volcanic activity had subsided.

In 2004/2005, all 10,000 Manam Islanders were forced to suddenly evacuate the island following a major volcanic eruption. The length of time of their stay and their numbers overwhelmed the host population, leading to a significant drain on available resources, which strained relations. Within six months of their resettlement on the mainland, social tensions between the two groups began to increase, as did human insecurity, and violent conflicts led to some deaths. Even though volcanologists have identified the volcano to be an ongoing environmental hazard, by 2015 several thousand Manam Islanders had returned to Manam Island, despite it no longer receiving government support or facilities. They have been motivated to return, despite the dangers, due to a range of factors including kinship and traditional connections to their traditional land, the experiences of dislocation from their land and the inability to acclimate to mainland life which is very different to island life, right through to the ongoing tensions in the host communities on the mainland.

Further volcanic activity and eruptions could see more dislocation for returned Manam Islanders into the future. Together with supporting Manam Islanders who have stayed on the mainland, the plight of the returned Manam Islanders requires careful management by Papuan authorities. For our purposes, the Manam Island experience is useful in demonstrating that migrations like these, even when occurring within state borders, have the potential to exacerbate human insecurity among both evacuated and receiving populations. Therefore, prevention of the need for such relocation in the first place makes more sense than accepting such an outcome as a fait accompli. While this example was a sudden migration due to volcanic activity, the experiences of both populations are likely to be similar for low-lying populations who, due to rising sea levels, face forced resettlement from islands or low-lying coastal regions, to the mainland or higher ground. Even staged environmental migration, like that proposed by the UNHCR, is likely to cause adjustment problems, especially if it is not well managed or supported. This will be a significance governance issue for many states in the global south into the coming decades as the predicted sea level rises begin to alter where habitation of such low-lying areas is able to occur.

One such state that has begun its preparedness for such an eventuation is the small atoll state of Kiribati in the Pacific. In 2014, the Kiribati government bought land on one of Fiji's islands as a protective measure for their population should rising sea levels make their own atolls uninhabitable (Caramel, 2014; Connell & Lutkehaus, 2017). While this transaction provides some refuge for the peoples of Kiribati should they have to leave their atoll homeland, the act itself will render them stateless as sovereignty does not transfer to the land thereby making them stateless peoples living in Fiji. When interviewed about the purchase and the anticipated environmental migration that drove such a decision, the President of Kiribati Anote Tong stated "We would hope not to put everyone on [this] one piece of land, but if it became absolutely necessary, yes, we could do it" (cited in Caramel, 2014). Forced migration due to environmental insecurity is an issue that could increase both human and state insecurity into the future, and if whole populations from low-lying states like Kiribati have to relocate, statelessness will also result.

In addition to those individuals or groups outside of the state system discussed above, some individuals and groups within a state system may feel that they are politically, socially, culturally or morally excluded from that system. This can lead to increased human insecurity in states, particularly if such individuals or groups resort to violent means to enhance their perceived security. We

now turn our attention to such individuals or groups who perceive themselves to be *outside* of the state system, although, sometimes they are physically located *inside* the state from which they feel removed.

Alienated Citizens and Terrorists

This section examines a very different category of individuals and groups outside of the state system – alienated citizens and terrorists. We include these groups in our analysis because they too occupy a position of statelessness, although this sometimes is a self-imposed statelessness. A citizen of a state can become alienated for a number of reasons. Taxation, domestic and foreign policies passed by the government, or building regulations are but a few examples of the types of things that can annoy the everyday citizens of a state from time to time. For most citizens, these types of issues will not cause them to turn to extreme measures. Instead, they will simply accept them as day-to-day matters, annoying but not threatening. Other citizens however, may see issues such as these to be a full frontal attack on their freedom, religion, culture, or their perceived national identity. Their concerns may lead them to a more extreme response as they become more marginalised from mainstream or centrist views on issues. They may become alienated from their family, friends and wider society, instead seeking out like-minded others. This can cause them to desire social and/or political change, even through the use of force or terrorist acts. These alienated citizens-turned-terrorists can then pose direct threats to their own state and its citizens, as well as to other states and citizens whom they regard as threats to their own interests and/or home state interests.

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7.3: Alienated Citizenship and Sub-state Terrorism

Timothy McVeigh and Anders Breivik

If we consider Timothy McVeigh, and the Oklahoma City bombing in 1995, we can see the extreme lengths some alienated citizens can go to in trying to get their message across. McVeigh was motivated and called to action by his involvement in the American militia movement, a movement which claims to be legitimate, constitutionally-backed, and acting in the best interests of the US and its citizens (Crothers, 2002). Militias have significant historical roots in the US, dating back to the American War of Independence (1775-1783). According to Crothers (2002), apart from the Ku Klux Klan (KKK) and the John Birch Society, both of which have a long and continuous history in the US, America's modern-day militia movement began around 1994, and was spearheaded by citizens who were concerned by the Ruby Ridge incident (1992) [9] and the Waco incident (1993) [10] For the modern day militias, these two incidents were seen as evidence of the corruption of the US government, and they, the 'sovereign citizens' Sovereign citizens are defined by Crothers (2002, p. 229) as "those whose forebears entered into the social contract that created the US Constitution." This classification excludes any Americans whose forbears were not present at the time of the American War of Independence, most Native Americans and African Americans, as well as those who have migrated to the US since that time, regardless of the length of time their families have lived in the US, which could be generations. According to the militias, only sovereign citizens have the right to evaluate, sanction or abolish actions/decisions made by the government. Therefore, there are many US citizens, who have long lived in the US and participated in its nation building process, who are excluded by this limited definition. [/footnote] of America, had a duty to all Americans to challenge the illegal actions of the government. Timothy McVeigh, a former US soldier and militia sympathiser, heeded this call to arms and on 19 April 1995, with earlier assistance from his accomplices Terry Nichols and Michael and Lori Fortier, McVeigh bombed the Alfred P. Murrah Building, a Federal government complex. The bombing killed 168 people, including 19 babies and children in attendance at the childcare centre housed within the building. In 2001, McVeigh was executed by lethal injection for his crime.

Until 9/11, the Oklahoma City bombing was the worst terrorist attack on US soil. McVeigh's attack represented sub-state terrorism or terrorism from below (Haynes et al., 2011). It was not an act of political violence committed by an 'outsider'. Instead, Americans were challenged when they learned that US citizens had planned and committed the bombing. The ultimate goal of sub-state terrorism is the formation of a new society and system of governance. It is believed this can be achieved by directly attacking the state, thereby bringing down existing governance systems. However, it can also be used to garner attention and sympathy to a particular cause. While McVeigh's act of terror was a direct attack on the US government for perceived suppression of far-right groups, it is unlikely that he believed his actions would bring about change. Rather, the act of terrorism would attract national and global attention to McVeigh's cause (D'Anieri, 2011). However, was McVeigh motivated purely by his involvement in the militia movement?

McVeigh has been characterised as an "angry young man…from a broken family" who found camaraderie in his membership of the fringe culture of "American Patriots" (Whittaker, 2004, p. 63). Prior to Ruby Ridge and Waco, McVeigh had already started to self-isolate by buying land and building a bunker-style complex on it when he was just 20 years old. According to Whittaker (2004), prior to Ruby Ridge and Waco, McVeigh's anger was already directed toward "the White House, Communist fellow-travellers, Jews and blacks" (p. 64) and after active service in the first Gulf War, his fellow soldiers became a target, with McVeigh labelling them "sickos" (p. 64) for their violence on the front line and at base. In a local paper, McVeigh vented his anti-government rage stating: "America is in serious decline and I am too. Do we have to shed blood to reform the present system? I hope not—but it might be so" (cited in Whittaker, 2004, p. 65).

Clearly, McVeigh was troubled by both his early home-life, his experiences in the military, and by what he felt America had become—a departure from his patriotic notions of the 'real America' he belonged to. If we compare McVeigh and Anders Behring Breivik, another sub-state terrorist, who confessed to committing the 22 July 2011 Oslo bombing and the massacre on the island of Utøya (Hewitt, 2011) we see striking similarities in their roads from alienation to sub-state terrorism.

Like McVeigh, Breivik's bombing target was a government building, driven by his anger towards government policies on multiculturalism, which he felt made him 'alienated' from Norway and threatened his identity. He also had connections to far-right extremist groups, who shared similar views as his own. Under the pen name of Andrew Berwick, Breivik compiled a 1,518 page manifesto detailing his alienation and path to terrorism. He mentions McVeigh in two separate entries, demonstrating his

understanding of McVeigh's motives, how he carried out the attack, and the cost of the attack in a dollar sum (Berwick, 2011, pp. 950, 967). His ideas on immigration and his lack of compassion for asylum seekers are clearly communicated when Breivik praises Australia's tough stance against asylum seekers, concluding that former Australian Prime Minister John Howard 'has repeatedly proven to be one of the most sensible leaders in the western world' for his border control policies (Berwick, 2011, p. 680).

Another commonality with McVeigh is that Breivik could also be described as an 'angry young man'. His father divorced his mother when Breivik was one year of age, and moved to Paris where he remarried. His father sought custody of Breivik, but he lost the case and Breivik was raised by his mother. Breivik became estranged from his father when he was a teenager and their estrangement continued throughout his adult life (Allen, 2011; BBC, 2012). Breivik's personal life then, is significant when we examine much of what he included in his manifesto. In it Breivik includes his own, and others' thoughts, on a range of issues including abortion, custody rights, divorce, eugenics, "servant classes," feminism, traditional sexual morality, patriarchal societal structures, marriage, and sexually transmitted diseases being endemic across Europe due to "cultural Marxism" (Berwick, 2011). When discussing custody rights, Breivik's past torment becomes clear. He stated:

Fathers should be favoured (prerogative rights) when child custody cases are decided in courts… The goal is to re-introduce the father as the authority figure and family head and will therefore strengthen the nuclear family. It is estimated that these changes will result in a decline of the divorce rate/broken families by approximately 50%. Furthermore, the father can without fear of being punished by the law, reassert an authority role in the family. Physical disciplinary methods will once again be a factor in the upbringing of children. (Berwick, 2011, p. 1145)

However, these writings provide only part of the story behind Breivik's alienation. He was also strongly alienated by multiculturalism. In his manifesto, Breivik strongly criticised Europe's multicultural policies, which he believed had led to "Islamisation" of Europe. He further believed that this would ultimately lead to "Islamic colonisation of Europe" (Berwick, 2011, pp. 5, 8-9). This was a significant motivator for Breivik to commit acts of sub-state terrorism. According to Breivik:

It is not only our right but also our duty to contribute to preserve our identity, our culture and our national sovereignty by preventing the ongoing Islamisation. There is no Resistance Movement if individuals like us refuse to contribute… Multiculturalism (cultural Marxism/political correctness), as you might know, is the root cause of the ongoing Islamisation of Europe which has resulted in the ongoing Islamic colonisation of Europe through demographic warfare (facilitated by our own leaders). (Berwick, 2011, pp. 8-9)

This extract identifies the motives behind Breiviks's twin attack in Norway. The Oslo bombing killed eight people. The massacre on Utøya killed 69 people, 33 of whom were children below the age of 18, 29 of whom were young people aged between 18 to 25 years of age. The twin attacks by Breivik were aimed at attacking the Norwegian government. Both attacks attest to his alienation, not only personal, but also his strong responses to government policies on multiculturalism and social policy, even referring to the European Union (EU) as the "Eurabian Empire" (Berwick, 2011, p. 311), signalling his belief that the EU was a bedfellow to the Arabian states in the process of 'Islamisation'. The massacre at Utøya however, demonstrated the lengths to which Breivik's alienation extended. His intentions on Utøya were to kill the next generation of left-leaning leaders, due to his strong beliefs and convictions about ending multiculturalism and Norway's social policies. The Utøya camp was hosting the Worker's Youth League (AUF) of the Labour Party, and Breivik regarded these youth as a political threat to Norway due to their party's support for multiculturalism and the social policies that Breivik opposed.

Like McVeigh's attack in Oklahoma City, there have been no noticeable changes to Norway's immigration or social policies in response to Breivik's attacks. However, the attacks have seen significant media and political attention on multiculturalism and questions have been raised as to the long term effects and sustainability of multiculturalism. However, rather than leading to Breivik's goal of ending and even reversing multiculturalism, greater attention has been paid to the intensification of the social inclusion dimensions of multicultural policies, to avoid this kind of racially-motivated attack from re-occurring.

Statelessness and Terrorism: Wafa Idris

As with McVeigh and Breivik, Wafa Idris, an ambulance volunteer and the first female suicide terrorist of the Second Intifada, probably also believed in the righteousness of her actions when she detonated a bomb outside of a shoe store in downtown Jerusalem on 27 January 2002 (Dunn, 2010; Hasso, 2005). In addition to killing herself, the bomb blast killed an Israeli man and injured over 100 people. Idris did not leave behind any writings or videos on her intentions to commit the attack, so we can only

speculate on her motivations. She was an active member of Fatah-aligned nationalist *Al Aqsa Martyrs' Brigade*, however, so her detonation of the bomb can reasonably be viewed as an act of Palestinian militancy, and her attack was followed by a series of female suicide attacks in Israel (Hasso, 2005; Bokhari, 2007). Unlike McVeigh and Breivik however, Wafa Idris was not a citizen of the state she sought to attack – Israel. Instead, she was a Palestinian living in the al-Amri refugee camp. Therefore, the alienation that drove her to commit a terrorist act was one of statelessness, which was compounded by the human rights violations and human insecurity that she and other Palestinians around her experienced.

For Idris, and the 5.4 million other Palestinian refugees registered with the UN at the close of 2017 (UNHCR, 2018a), citizenship remains the issue, along with dispossession and statelessness. The Arabic-speaking Palestinians, who were forced to flee or were expelled from their homes during the 1948 Palestine War, and those who have been expelled or forced to flee since then, have maintained their right of return to the traditional homelands from whence they came. The right of return for Palestinian refugees is articulated in the United Nations UN General Assembly Resolution 194 (11), passed on 11 December 1948. This resolution states:

[T]hat refugees wishing to return to their homes and live at peace with their neighbours should be permitted to do so at the earliest predictable date, and that compensation should be paid for the property of those choosing not to return and for loss or damage to property which, under principles of international law or in equity, should be made good by the Governments or authorities responsible.

Therefore, the terrorist act committed by Idris can also be conceived as an act committed by an individual outside of the state system. Idris was truly a stateless person, born a second generation refugee to refugee parents in the al-Amari refugee camp. Her brother, Khalil Idris, had the following to say about his sister and her actions in Jerusalem:

Wafa was my sister. We were close friends. What she did was a real surprise to us. She'd tell us that someone had been killed and she'd seen his brains splattered all over the place or the inside of someone's stomach shot out or someone else who'd lost his leg. She was also upset by pregnant women forced to give birth at the checkpoints and then see their babies die there. She was also injured by rubber bullets. These were powerful incentives for her to avenge her people. (cited in Pilger, 2002, n.p.)

It is very likely that Idris was motivated by her own, and 'her people's', the Palestinians', statelessness and constant human insecurity. She may also have been motivated by the violence and death she witnessed as an ambulance volunteer. Bokhari (2007) believes Idris' act of terrorism "was arguably prompted by a sense of hopelessness under occupation and rage" (pp. 60-61). Whatever her motivation, Idris' act of terrorism inspired other women to follow suit, and the 'Wafa Idris Group' a martyrdom cell for Palestinian women was formed after her death, and resulted in a wave of female suicide attacks throughout Israel (Hasso, 2005).

The suicide attack by Idris is also noteworthy because it challenged the gender narrative of women needing male protection in times of conflict, and represented a significant call to arms for both Palestinian men and women. As Hasso (2005) has argued, Idris' act of terrorism also challenged gender assumptions held by Israeli forces that it was male bodies, not Palestinian female bodies, which threatened their security. Furthermore, there was fierce debate among fundamentalist Islamic organisations as to whether or not women could participate in the Palestinian struggle in such a militant way due to the religious principles and traditional Islamic social norms that prevented unmarried men and women from having such close contact with each other, as would be the case in planning and carrying out a suicide attack (Bokhari, 2007; Dunn, 2010). Therefore, the entry of women into what had largely been a male dominated arena, conflict and terrorism, was challenging and confronting to some political and religious leaders.

By targeting civilians who were going about their shopping, Idris' actions also received a great deal of attention largely focused around the question 'why.' Why would a young *female* ambulance volunteer commit such a brutal act and deliberately try to kill innocent civilians? Separating the Utøya Massacre from the Oslo bombing, McVeigh's and Breivik's choices of bombing locations signalled attacks against the government, as they targeted government employees, [11] still innocent civilians, but people who represented the government they were attacking. Idris targeted regular citizens in an indiscriminate fashion (like Breivik did on Utøya), as well as taking her own life in the process. The act of killing people was the statement, albeit linked to Palestinian statehood and to ending the Israeli occupation. This reinforces the findings by Callaway and Harrelson-Stephens (2006) who argue that:

[w]hen looking at the genesis of terrorism around the world it always occurs in conjunction with the denial of basic human rights… the basis for terrorism is found in the deprivation of political, subsistence, and security rights, and therefore any policy designed to decrease terrorism necessarily implies addressing these rights.' (p. 774)

The recruitment of women into suicide terrorism has proven to be an innovative, inexpensive and effective political tool. However, female suicide attacks remain a rare occurrence globally, with estimates suggesting that between 1982 and 2015, only nine percent of suicide attacks were carried out by female suicide terrorists, and they were mostly located in the Middle East (Thomas, 2018, p. 513). The recruitment of women is innovative and inexpensive in the sense that women are not generally viewed as threats due to the gender roles ascribed to women, which regard them as passive, weak and nurturers. Therefore, women can pass more easily through checkpoints than their male counterparts, allowing them to get closer to their intended targets and increasing the success of their suicide attack (Thomas, 2018, p. 514). Therefore, by simply recruiting women, terrorist groups can increase their chances of success and potentially, the lethality of their attacks without any significant outlay on equipment or deflection techniques.

Female suicide terrorists are an effective political tool in the sense that they draw greater attention to 'the cause' compared to their male counterparts. For example, because Idris was a woman, her act of terrorism drew more attention to the human insecurity and persecution of the Palestinians than may have resulted had the act of suicide terrorism been committed by a male suicide terrorist. Due to the identified gender stereotypes, when a woman commits a suicide terrorist act, attempts to rationalise the act sees much focus drawn to the social context – Why did she commit such an act? What drove her to such a decision? As part of this attempt at rationalising the act, death tolls become a secondary concern. Instead, the focus centres on an attempt to understand what could have caused, in Idris' case, an attractive, educated, young *woman* to take her own life and the lives of others (Bokhari, 2007). If we consider Bueno de Mesquita's (2000) definition that terrorism is aimed at the "spread of fear and anxiety (terror) through a population so that it will, in turn, put pressure on its leaders to change policies in a way favoured by terrorists" (p. 339), female terrorists are very effective in achieving these goals. By committing terrorist acts, they draw attention to the problems, human insecurities and prolonged conflict situations that lead to such extreme acts in the first instance. This point was reflected in media reports about Idris following the attack. They reported on her life under Israeli occupation and on the Palestinian struggle, drawing considerable attention and some sympathy to Idris' cause.[12]

Although it is not a new phenomenon, terrorism has become a serious threat to human and state security in the 21st century. Increasingly, states are grappling with how best to respond to terrorists and how to prevent future attacks from occurring. We now turn our attention to counter terrorism, in particular, the impact of counter terrorism measures on individuals and groups.

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7.4: Counter Terrorism, Human Rights and Human Security

There is no single definition of terrorism in existence. It is a contentious term that has different meanings for different people. For the purposes of this chapter, terrorism can be defined as "a premeditated, politically [socially, ideologically or religiously] motivated use of violence or its threat to intimidate or coerce a government or the general public" (Whittaker, 2004, p. 1). If we compare this definition, to the above definition by de Mesquita, we see they both convey the same basic principles, they are just phrased differently. Therefore, these definitions are fairly representative of mainstream definitions on terrorism (in the absence of an official, universal definition of terrorism). Terrorists use force, or the threat of force, to push their particular agenda, targeting civilians and other non-combatants for maximum media, political and domestic attention and flow on results. Terrorism is also a means whereby a significantly weaker party can close the power gap with a stronger force, by virtue of surprise attacks that are unexpected and indefensible. Sovereign borders do not contain terrorism and over the past few decades, globalisation and its associated communications technologies have helped terrorists to recruit members, finance operations and carry out terrorist attacks. Terrorism experts are concerned that by 'going global', future incidents of terrorism will be more lethal, particularly if terrorist organisations are able to access and use nuclear, chemical and biological weapons (Crenshaw & Cusimano Love, 2011).

While terrorists and terrorism increasingly cross state borders, states still need to respect sovereign borders when countering terrorism. As terrorists constitute non-state actors, one of the difficulties faced by states in countering terrorism has been how they respond to an enemy that is not a state. Counter terrorism has been developed to aid national defence against terrorism, as governments have increasingly scrutinised who enters their borders as well as monitoring the activities of their citizens, or others, residing within their borders. However, this defence has sometimes incurred significant costs to human rights and human security, and some consider it aptly named.

Tsoukala (2006) warns that post 9/11, many EU countries have adopted counter terrorism policies that negatively impact on human rights, in the interests of state security and the war on terror. These changes have increased police powers, enabled trials on terrorism charges to take extraordinary forms, and there are pathways for unusual terms and conditions of detention for terror suspects and those convicted of terrorism (Tsoukala, 2006). Similar changes have occurred in the US and the UK, where human rights activists and lawyers have been increasingly concerned about the erosion of human rights in the face of counter terrorism measures. Gearty (2005) concluded that in the US, human rights appear to have "little or no place at all" (p. 31) in the fight against terror. If we re-visit the earlier quote from Callaway and Harrelson-Stephens (2006) that "the genesis of terrorism around the world…always occurs in conjunction with the denial of basic human rights" (p. 774), it would seem that counter terrorism measures that deny or infringe upon human rights are counter-productive and may actually result in a self-fulfilling prophecy.[13] Gearty (2005) concurred with these sentiments, believing that the war on terror and the curtailing of human rights that has been a part of the war, would likely lead to future attacks by virtue of people's experiences of the war.

In their assessment of home grown terrorism in the US, Reveron and Mahoney-Norris (2019) examined the links between counter terrorism operations and the role it plays in indoctrinating US citizens to commit terrorist acts. They identified the 2009 Fort Hood shooting (which killed 13 people), the 2013 Boston Marathon bombing (which killed three people), the 2015 Chattanooga shootings (which killed five people), and the 2015 San Bernardino attack (which killed 14 people) as examples that have led to debates over whether such acts have resulted, in part, from the US's continued military involvement in predominantly Muslim countries as part of the ongoing war on terror. Their discussion identifies the role of cyberspace as a recruitment tool for extremism, meaning citizens no longer have to leave their home state but rather they can connect with other alienated peoples across the world within their own homes via the internet.

On the flipside, Reveron and Mahoney-Norris also identified how counter terrorism operations and exclusionary rhetoric have also led to the rise of anti-Islamic and white nationalist hate groups online and domestically within the US. Furthermore, they identified a 91% increase in the rise of hate crimes against Muslims in the US in just the first half of 2017 (Reveron & Mahoney-Norris, 2019, pp. 53-54). Examples of such hate crimes ranged from mosques being vandalised or bombed (numerous examples across the country), the 2017 stabbing deaths of two bystanders who intervened to assist a Muslim girl in Portland who was being harassed by a white nationalist, the shooting murders of nine African-American parishioners by a white nationalist at a church in Charleston in 2015, and the 2017 vehicular attack on peaceful protestors in Charlottesville, which lead to the death of one person and left 19 others injured (Reveron & Mahoney-Norris, 2019). Both forms of extremism are concerning and both threaten human and national security within the US.

The introduction of special powers or measures to counter terrorism is not a new occurrence, however. Tsoukala (2006) stated that these types of measures have been used by various states across Europe since World War Two when countering terrorism. Conversely, the post-9/11 counter terrorism measures and the intensity and applicability of these measures have had significant ramifications for human rights and human security worldwide because they are so all-encompassing and far reaching. As we discussed earlier, states like the US, the UK and Australia have been less open to receiving refugees and asylum seekers since 9/11 and the onset of the war on terror. Restricting entry to refugees and asylum seekers is but one example of a state trying to counter terrorism by controlling who enters their borders. However, the linking of refugees with terrorism, or militancy, represents seriously flawed logic and reflects an intersection of racism or other ideological bias with extreme security measures. Whittaker (2004) describes such an approach as being marked by "suspicion and over-zealous security measures [which] easily exploit[s] divisions between people of different origins and faiths and breed[s] xenophobia" (p. 140).

In his evaluation of US counterinsurgency in Iraq and Afghanistan, including the 2007 troop surge, Gilmore (2011) concluded that the war on terror has continued to be a high-impact war, despite US claims of adopting a more restrained and empathic approach, one that incorporated principles of human security. In addition, Gilmore (2011) concluded that rather than pursuing a human security approach, "US counterinsurgency represents an oppressive instrument of the global War on Terror—one that is likely to result in the disempowerment of local populations" (p. 34). This is confirmed when we consider torture. Throughout the war on terror, torture has been used in efforts to extract information from suspected terrorists in military policing facilities such as Guantanamo Bay and Abu Ghraib prison. In fact, US Attorney General Alberto Gonzales has been cited as advising President George W. Bush on 25 January 2005 that "[t]his new paradigm [the war on terror] renders obsolete Geneva's [the 1949 Geneva Protocol on the Treatment of Prisoners of War] strict limitations on questioning of enemy prisoners" (cited in Bellamy, 2006, p. 123). It would appear that in the war on terror, human rights and human security have been among the first casualties of war as states have been prepared to contravene basic principles of human rights that have been the foundation of modern democracies.

So how then can states counter terrorism while maintaining human rights and human security? Callaway and Harrelson-Stephens (2006) have demonstrated that when it comes to the root causes of terrorism, 'the human condition' (p. 776) is at the heart of the matter. They identified political, civil, security, and subsistence rights, international factors such as past experiences of colonisation and imperialism, as well as present day political and economic development, all to be fundamental elements in causing terrorism. These factors can alienate citizens against their own state, or states they see as being responsible for the lack of human, political or economic rights to be found in their own society or state. Therefore, in order to successfully counter terrorism, one needs to go to the source. This would require more active commitment by states to promote and uphold human rights and human security worldwide, not just in pockets that hold specific national interest to selected states. Whittaker (2004) confirmed this position when he stated:

Real security can only be achieved through full respect for human rights. Nobody should be able to pick and choose their obligations under international law. A combination of forces is seeking to roll back the human rights gains of the last five decades in the name of security and counter terrorism. These restrictions on liberty have not necessarily led to increased dividends on safety. (p. 141)

Obviously, states need to be able to defend themselves and their populace from acts of terror. However, the aforementioned counter terrorism measures are really only band-aid solutions, if they are in fact even that, and they are almost certain to contribute to more acts of terror in the future. The key to effective and long-term counter terrorism is to strike at the core of the issues and human insecurities that lead people to commit acts of terror in the first instance. If we reflect on Wafa Idris for a moment, if she had been born a citizen of Palestine, and not a stateless Palestinian in a refugee camp, do you think her life would have turned out differently? If she had not been witness to the daily violence and conflict resulting from ongoing occupation of Palestinian lands by Israeli authorities, do you think she still would have committed such a gross act of terror – the taking of life and the injuring of others? While we can never know the definite answer to these questions, after what we have examined in this chapter we can probably answer the first question with a confident 'yes' – her life could have been different, and 'no' to the second question – she would not have turned to terror to try to reclaim human rights and human security for 'her people'. This demonstrates the links between human insecurity and disempowerment to terrorism. Therefore, by adopting human security approaches rather than current state-centric approaches to counter terrorism, states will be able to prevent lives being lost through acts of terror. This will require more long-term thinking and planning by states, involving state focus on the human condition, and ensuring human rights and

human security are never compromised for state interest and state security, in both peace time and in times of conflict. In short, it will involve a marked difference to how states are currently attempting to tackle terrorism.

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7.5: Conclusion

Throughout this chapter we have explored the experiences of individuals and groups outside of the state system. Being outside of the state system has many forms. People can be ‘stateless’; they can be fleeing persecution as refugees, they can be escaping from an environmental calamity with no hope of help from their native government, or they can be so alienated by what they perceive to be an unjust and unfair society or political structure that they turn to acts of terror. In all instances, being outside of the state system often involves a real, or perceived (in the case of McVeigh and Breivik), lack of human rights and human security. The human condition is a precursor for people to find themselves outside of the state system. Therefore, when responding to refugee flows, or when implementing counter terrorism measures it is important that the human condition, human rights and human security are at the forefront of policy decisions and the implementation of such policies. Violations of human rights and continued human insecurity are not acceptable under international law, and they run counter to logical and long-term considerations on how to best address and resolve the issues we have examined in this chapter. Current responses fall far short of meeting appropriate human security responses to these issues. However, human security and thinking about its practical implementations in world politics and models of state security provides hope. Perhaps we will see more appropriate human security based measures in future responses to individuals and groups outside of the state system.

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7.6: Resources and References

Review

Key Points

- Statelessness refers to an individual or group of individuals lacking official recognition as a national (or a citizen) of any state in the world.
- Stateless individuals experience heightened human insecurity.
- Refugees and asylum seekers are stateless peoples, often having fled persecution in their former homelands. However, their statelessness does not abolish their human rights and states must uphold those rights and protect refugees, regardless of their statelessness.
- The *Convention Relating to the Status of Refugees* (1951) and the *Protocol Relating to the Status of Refugees* (1967) are important as they identified that foreign nationals seeking asylum must be granted the same types of human rights as those normally experienced by citizens of a state.
- By ratifying the Convention and/or Protocol, signatory governments have indicated their willingness to provide sanctuary to those fleeing persecution and disaster to honour and uphold their human rights.
- It is predicted that climate change could cause increasingly large numbers of environmental refugees to flee their homes.
- The UNHCR does not currently include environmental refugees into its mandate or definition of refugees.
- It is logical that environmental refugees should be included in the UNHCR mandate and a protocol should be passed to secure such an outcome.
- If their former homeland has transitioned to peace and security, refugees should be offered the option of voluntary repatriation and resettlement. In areas where this cannot be achieved, resettlement in a new state should be pursued.
- Alienated citizens can also occupy a position of statelessness, although this is usually a self-imposed statelessness. Some alienated citizens turn to sub-state terrorism to draw attention to their 'cause' or to force changes in governance and social policy.
- While terrorism has become a serious threat to human and state security in the 21st century, many countries have adopted counter terrorism policies that negatively impact on human rights and human security, in the interests of state security and the so-called 'war on terror.'
- Perceived violations of political, civil, security, and subsistence rights, as well as international factors such as past experiences of colonisation and imperialism, and the undesirable outcomes of present day political and economic development, have all been identified as fundamental elements that contribute to displacement and can foster terrorism.
- In order to successfully counter terrorism, there needs to be a stronger state commitment to promote and uphold human rights and human security worldwide, not just in pockets that hold specific national interest to selected states.
- The key to effective and long-term counter terrorism is to strike at the core of the issues and human insecurities that lead people to commit acts of terror in the first instance.

Extension Activities & Further Research

1. Explore the immigration statistics for your own country. How many refugees does your country accept? Compare your country's statistics to a country you believe is comparable to your own. Do you think the figures reflect a reasonable intake of refugees? Why or why not?
2. What is meant by the term 'war on terror'? How does this conflict differ from previous wars or conflicts? Has the war increased or decreased the threats posed by global terror networks?
3. Do a search for newspaper articles on the suicide attacks by Wafa Idris or another female suicide terrorist. Analyse the content of the news articles. Was the article focused on death toll, or did it focus on the reasons behind the attacks and the human condition of Palestinians? What do you conclude about the attack by Wafa Idris, or others, and how it was reported?
4. Examine Case Study 7.1. What factors contributed to the statelessness of the Rohingya people? How significant might the link between the 1982 Burma Citizenship Law and the leader at the time being a military dictator who came to power through a coup d'état? How have these changes heightened the human insecurity of the Rohingya people? What could the international community have done to prevent the ongoing abuse of the Rohingyas and the 2017 ethnic cleansing?

5. What have been the key areas of progress in addressing the needs of individuals and groups outside of the state system over the past decade? What areas can you identify that need further improvement?
6. Examine Case Study 7.2. What motivations might have contributed to the Australian government's actions? How might those actions have been different had the refugee hailed from drought and famine-stricken Somalia? Are you in favour of the *non-refoulement* policy being expanded to include environmental refugees? Explain.
7. Consider additional areas in the world where environmental change may cause displacement and forced migration. How does planned migration mitigate some of the risks of unplanned statelessness due to environmental change? What risks still exist even when the migration is planned?

List of Terms

See Glossary for full list of terms and definitions.

- asylum seeker
- environmental refugee
- internally displaced person (IDP)
- realism
- refugee
- stateless

Suggested Reading

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Footnote

1. Data sources: UNHCR, 2018a; UNHCR, 2018b
2. In June 2018 Paul Ryan introduced a bill to US Congress seeking an amnesty for an estimated 2.2 million people, the largest amnesty in the US for over three decades. However, the bill also contained problematic border security provisions, which made it unpopular to many Democrats and it was defeated by a 193 to 231 vote in the House (Centre for Immigration Studies, 2018).
3. Data source: UNHCR, 2018a
4. Data source: UNHCR, 2018a

5. Data sources: UNHCR, 2018a; UNHCR, 2018b. Number of refugees in this table include Palestinian refugees who are cared for by United Nations Refugee and Works Agency for Palestinian Refugees in the Near East.
6. In 2016, the US accepted 84,994 refugees, in 2017 the number of refugee admissions dropped to 53,716, and by 2018, it had dropped even further to 22,491. In 2018, the region most represented among admissions was Africa whereas in 2016 and 2017, the 'Near East and South Asia' region was the largest region for admissions (Refugee Processing Centre, 2019).
7. In 2017, the United Kingdom accepted 34,435 refugees. In 2018, the number of refugees accepted was 37,453. Iran was the largest country of origin for asylum seeker applications in 2018 (Refugee Council, 2019).
8. Australia granted 17,555 visas under the Humanitarian Programme in 2015-2016. This figure includes 8,284 visas granted to refugees, 7,268 offshore Special Humanitarian visas and 2,003 onshore visas (Commonwealth of Australia, 2018).
9. In 1992, Randy Weaver and his family were involved in a standoff with FBI agents and US marshals on their property at Ruby Ridge, Idaho. A gun battle ensued and Weaver's wife, son and a Marshal were killed. Weaver later surrendered to authorities. He went to trial for weapons charges but was acquitted by a jury (Crothers, 2002).
10. The Waco incident occurred just six months after the Ruby Ridge incident in 1993. Federal agents amassed at the Branch Davidian compound to serve a warrant on the cult's leader, David Koresh. The agents were fired upon, a gun battle broke out, and several agents and members of the Branch Davidians were killed. Fifty-one days later, agents stormed the compound using tear gas and tanks. The compound caught on fire, and almost all of the remaining members of the group were killed in the blaze. Questions have remained as to how the fire started and the government's role in the incident (Crothers, 2002). Timothy McVeigh was a frequent observer of the standoff at Waco, even selling anti-government and pro-gun bumper stickers to those who joined the throng of observers at a hill, three miles away from the Mount Carmel compound, which allowed visualisation of the standoff as it unfolded (Goodman, 2017).
11. Again, it is noted by the author that bystanders and other civilians, including children, were also killed in both attacks.
12. For example see: ("Suicide girl shot 3 times," 2002, January 31). The Sun. p. 2; Bennett, J. (2002, January 31). Arab Woman's Path to Unlikely 'Martyrdom'. The New York Times. p. 1; and Walker, C. (2002, February 1). Sight of her people's blood fired bomber – War on Terror. The Australian. p. 7.
13. This effect was actually an express goal of the terrorist organisations that operated in Europe during the 1970s, such as the Baader-Meinhof group in Germany and the Red Brigades in Italy.

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CHAPTER OVERVIEW

8: Political Hybridity and Human Security in Post-colonial and Post-conflict State Building / Rebuilding

Learning Objectives

By the end of this chapter the reader should be able to:

- Critique how the literature conceptualises fragile post-colonial states.
- Understand how colonialism fractured indigenous sources of legitimacy and did not replace these with meaningful systems that made sense to local peoples.
- Think about what hybrid political institutions might look like, using case examples.
- Locate the arguments for and against the hybrid approach in the context of the human security debate.

Big ideas gained from this chapter include:

- Political hybridity is a combination of modern and customary-traditional norms, values and institutions, as well as international regimes.
- Fragile states are characterized by a sovereignty gap that results in large portions of the population remaining insecure, ungoverned, and ungovernable.
- In some regions with fragile states human security is best ensured through hybrid political systems.
- An important component of sustainable development is ensuring that governing structures are considered legitimate by the governed.
- Many developing countries are hampered by limitations in the capacity, the effectiveness, and the legitimacy of the state.
- In those cases, rational legal sources of power and authority should be balanced by traditional sources in order to maximise human security.

Kevin P. Clements

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One of the cornerstones of development aid to developing countries consists of efforts to strengthen central government authority. These efforts are not often as successful as their designers envision. Apart from structural explanations, the reasons lie in the lack of legitimacy that compromises the ability of state authorities to govern outlying areas. Legitimacy is lacking in the eyes of the populace because the central state authority is usually modelled after the Western Weberian pattern and thus foreign to many cultures, whereas traditional sources of authority and customary norms receive much greater respect. The result is often a fragile state in danger of ‘failing’ and poor human security. The most promising way to mitigate this situation is to aim for a ‘hybrid’ approach to governance that makes use of both sources of authority.

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8.1: Introduction

The international donor community has committed itself to assist in “building effective, legitimate and resilient state institutions, capable of engaging productively with their people to promote sustained development” and human security (OECD-DAC, 2007, Preamble). The Paris Declaration of March 2005 in particular addresses the need to deliver effective aid in fragile states and declares as the “long-term vision for international engagement in fragile states (…) to build legitimate, effective and resilient state and other country institutions” (OECD, 2005, point 37).[1] State-building is seen by major donors as a central dimension of development assistance, and functioning, effective and legitimate state and society institutions are seen as a prerequisite for sustainable development.

In this context, practical policies and assistance have very much focussed on capacity and institution-building as a means for generating political effectiveness. In comparison, legitimacy, which many would argue is a prerequisite for capacity and effectiveness has been relegated to a somewhat secondary position. The underlying assumption is that legitimacy somehow automatically result from effectiveness. Only recently, have issues of legitimacy gained more prominence in their own right. Importantly, the OECD-DAC’s Fragile States Group State Building Task Team has given legitimacy prominence in its deliberations and initial findings on state-building. This provides an excellent starting point for further conceptual and practical work on this topic in the context of the necessities of state formation under conditions of fragility.

My proposition in this chapter is that external actors working in fragile post-colonial environments need to focus much more attention on legitimacy issues than has been the case so far and to do so they have to widen their understanding of legitimacy considerably. The hypothesis underlying this paper, is that legal-rational legitimacy as found in the developed Western OECD states is only one type of legitimacy applicable to fragile states and situations, and it is important to engage with other types of legitimacy in order to help build effective, resilient and sustainable states in fragile situations. The chapter argues that it is important to blend/hybridise rational legal sources of legitimacy with traditional and charismatic legitimacy, and the processes and the contexts that constitute their sources. This is the only way of ensuring higher levels of support for state institutions and is critical to the promotion of human security. In fragile situations traditional (and to a lesser extent, charismatic) legitimacy matter and have to be taken into account in state-building endeavours in relation to state formation, peace-building and development. This is not to say that this is an easy task, quite the contrary. It is extraordinarily challenging to understand exactly what legitimacy is in fragile situations and even more difficult to design internal and external intervention strategies capable of generating higher levels of political legitimacy that support state-building, peace-building and development. It is complicated because there is often confusion about the different types of legitimacy and their relation and interaction, and about what legitimacy resides in the state as a set of legislative, executive and judicial institutions and what legitimacy resides in particular governments or regimes. They are mutually reinforcing. Legitimate state institutions are conducive to the emergence of legitimate regimes and governments and vice versa. But sometimes there are odious regimes in legitimate states and states which lack legitimacy hosting quite positive regimes. My focus is on the legitimacy of state institutions and their interaction with non-state societal institutions and actors who enjoy legitimacy, not on the legitimacy of specific governments or regimes. In the context of state-building in fragile situations in the developing world, it is the institutions of states that are modelled along the Western Weberian template (which is the OECD model state) that have legitimacy problems; it is the state institutions as such, and not only specific governments, that have had to struggle with the lack of legitimacy.

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8.2: Enhancing State Resilience and Promoting Human Security

The problem of how to build or rebuild state systems continues to challenge bilateral, regional and multilateral development agencies in most parts of the world. State systems should:

- Do ‘justice’ to indigenous cultures
- Facilitate high levels of ‘democratic’ participation
- Ensure effective delivery of government services
- Have high levels of grounded legitimacy.

Much insecurity is generated by political systems threatening indigenous peoples and marginalized groups, acting oppressively and corruptly and not having either the will or resources to deliver effective, capable and legitimate governance.

The dilemma is how ‘stable and well established democracies’ can work with less democratic regimes in order to build capable, effective, legitimate and relatively uncorrupt state institutions in situations of poverty, inequality, corruption and structural instability. Frank Fukuyama framed the problem as follows, “Can informal institutions embedded within social norms [or ‘hybrid institutions’] be made to work more effectively for development outcomes in the absence of a functioning Weberian state system?” [2]

It is probably more useful, for both analytical and policy purposes, to direct Fukuyama’s question to focus attention on whether new kinds of ‘hybrid’ political institutions can evolve that will combine the comparative advantages of both the classic Weberian system and traditional or customary institutions.

In most countries in Melanesia, Polynesia and Micronesia, for example, the modern OECD model of the state has not evolved as predicted and what state institutions exist are largely incapable of meeting the specific political, economic and social needs of different countries and cultures within the region. Similarly, customary and traditional forms of order have been challenged and in many cases severely undermined by colonial rule and market capitalism and have often been usurped by individuals and groups for specific partisan interest rather than the common good of a village, community or province.

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8.3: The Quest for Human Security in Insecure and Fragile States

In many if not most post-colonial states, individual security is neither guaranteed by the state nor by traditional mechanisms and individuals, and groups find themselves caught between tradition and modernity without conventions or institutions to guide appropriate economic, political or social behaviour with kin groups shouldering most responsibility for the care and security of members. The challenge facing analysts and policy makers, therefore, is how to think about this problem in non-dualistic ways so that the Weberian State does not trump traditional order or vice versa. In other words how can we think about this problem in a way that combines the strengths of both modern and customary systems in a new form of political organisation? The particular challenge of this is how to do this without wittingly or unwittingly reinforcing patrimonial/neo-patrimonial systems that are often corrupt and predatory.

Socio-cultural evolutionary theorists such as Ferdinand Toennies (1957), Max Weber (1949) and Talcott Parsons (1966), proposed that change processes are irresistible and universal. Modern evolutionary theory argues that societies move in a more or less linear direction from traditional to modern forms of economic, social and political forms of organization. In the process of evolution, state institutions become differentiated and acquire a measure of autonomy from traditional economic and social systems. In Max Weber's view, the mark of a 'developed' state is that it has separate administrative, representative and executive capacities and has a 'monopoly of coercive force' so that it is able to control the territory under its sovereign jurisdiction. At minimum, states should be able to counter any resistance to legitimate authority and (more optimally) provide basic services in order to 'win' popular legitimacy. In this evolutionary process from traditional to modern, it is assumed that modernity will trump tradition. It will do so because market forces and industrialization will generate irresistible dynamics in favor of possessive individualism justified by ideologies or myths such as consumer sovereignty in the economy and citizen sovereignty in the polity. What evolutionary theory seems to have ignored, however, is the strength, resilience and persistence of custom and tradition both as a source of identity and as a means of organizing social, economic and political systems in a modern, globalised world system. Persistent and intractable conflicts in Africa, for example, often take place in post-colonial states where little or no effort has been made to attend to locality, customs or traditions with the result that political institutions sit uncomfortably in relation to traditional economic, social and religious orders. They are ineffective in terms of the delivery of services, lack any organic connection to locality and have difficulty ruling by persuasion. They thus tend to revert to colonial methods, dominating by divide and rule and by specific processes of inclusion and exclusion.

National and global capitalism, despite its dominance, has not succeeded in trumping all traditional economies and representative democratic institutions have not completely replaced customary or traditional rules and rulers. On the contrary there has been a 'radical' reassertion of tradition and the importance of a relatively undifferentiated approach to social, economic and political organization in a variety of high and low context cultures.[3] This can be viewed both positively and negatively. The articulation of tradition and custom can generate a strong sense of continuity, trust, and order in complex social systems. Negatively, tradition can also be used as a justification for practices which are patrimonial, reactionary and unjust for groups such as women and youth. Custom is sometimes used to justify patriarchy and patterns of domestic violence, for example, and also to negate the positive contribution of youth in cultures which venerate age. The challenge confronting development specialists, policy makers and agents of change, therefore, is how to work with traditional 'authority' to reinforce its progressive role and to diminish its more negative influence. This is particularly important in relation to the role of the state in promoting human security. How can states do this without a deep acknowledgement of the long continuities that exist in every social system and without some effort to give these customs a place in new state formations or their reformation in the wake of conflict?

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8.4: Diagnosing Vulnerability and Preventing State Failure

Nowhere is this more important than in relation to the development of appropriate mechanisms for ensuring the security of individuals and groups, of appropriate forms of 'community governance' and of effective machinery for the peaceful settlement of individual and collective grievances. These issues are normally assumed to be the preserve of the State (at both local and national government levels). In many conflict zones, however, state systems fail in their duty of care and are a primary source of insecurity for citizens. They are incapable of delivering security, order, predictability and essential services such as education and health. Far from creating environments, therefore, within which robust markets can emerge, the state system is often a primary source of predation and an impediment to economic growth or what might be called 'affluent subsistence.'

This has given rise to the 'Fragile, Failed and Failing State' literature which focuses attention on the problems that generate failed and failing states, e.g rampant corruption, predatory elites, an absence of the rule of law and severe ethnic and religious divisions. The fragile state literature argues that there will be no development without security and there will be no security without strong and legitimate state systems capable of imposing their will on potentially recalcitrant citizens (Foreign Policy and Fund for Peace, 2007).

The solution to vulnerability, therefore, is often seen as the development of an effective military, police and penal capacity as the first and most pressing imperative confronting modern state systems. The Failed and Failing State perspective has been quite influential with policy makers in the last five years with the result that much attention has been dedicated to enhancing state effectiveness (normally seen in terms of the state's monopoly of force and coercive capacity) so that state systems can dominate and control their populations and territory, in order to reduce their vulnerability to and capacity to do violence to each other.

While the diagnosis might be correct, the prescriptions thus far have not been particularly successful and in some instances have enhanced the repressive capacities of the state without increasing the security of citizens. These initiatives have by and large reasserted the centrality of a strong state system based on classic 'Westphalian principles' in the absence of either the historic, economic or geographical conditions that make such systems possible. They have emphasised respect for the sovereign equality of nation states externally without, in many instances, a corresponding respect for the dignity and basic rights of all people within the state. A good case could be made that much of this literature has focused too much attention on state entitlements without paying the same attention to state responsibilities both internally and externally.

Ashraf Ghani and others (2005) have responded to some of these criticisms in their analysis of what they call the sovereignty gap. This refers to the incapacity of many states in the developing world to protect citizens and to extend basic services to the whole population. Ghani et al, reiterate the mantra that most developing states have limited internal accountability and responsibility and do not possess a monopoly of force. Their solutions, however, still direct most attention toward the approach of enhancing 'good' governance and the central functions of the state in the hope that this will generate the conditions within which development can take place. 'Trickle down' will only occur once development assistance has 'trickled up' to reinforce central state functions! They propose that the underlying concept of the State remains some variation on the European OECD model, without much practical appreciation of other non-state sources of order, stability and development. In fact it is somewhat surprising how little of this literature considers state-civil society relationships and more surprising still how almost no-one considers the relationships between state systems, civil society and customary orders. It is simply assumed that if state systems can be made capable, effective and legitimate they will fulfill something akin to the traditional Weberian functions of the state.

The challenge facing policy makers is not so much the goals of state capability, effectiveness and legitimacy as what constitutes appropriate means to achieve these ends. My argument here is that until customary norms, values and institutions are taken seriously and incorporated directly into state building dynamics and vice versa these goals will remain elusive.

OECD style states are in the minority rather than a majority within the United Nations. Most states in developing parts of the world, and particularly within much of Africa and in Oceania represent what can be called *hybrid* political orders. The locus of much social order and effective governance in these states resides in non-state forms of customary rule rather than in government institutions. This does not mean that these states should be regarded as 'incomplete,' or 'not yet' properly built, or 'already' failed. Rather than thinking in terms of fragile states, it is theoretically more appropriate and practically more fruitful to think in terms of hybrid political orders. Instead of assuming that the complete adoption of western state models is the most appropriate avenue for conflict prevention, security, development and good governance, therefore, it might be more appropriate to focus on models of

governance which draw on the strengths of social order and resilience embedded in community life. Without wishing to idealise custom and tradition I hypothesize that this hybrid model holds particularly true for societies in Africa and the Pacific. Hybrid models which genuinely blend or combine traditional and modern norms and practices are more likely to deliver effective, functioning and legitimate governance precisely because they build on the hybridity and multiplicities of existing political orders. This is not to imply that they will always or consistently generate such governance. It is possible for hybrid political orders to generate insecurity, be predatory and patrimonial as well, in which case hybrid forms will have negative rather than positive consequences. In the main, however, I would argue that hybrid models—in post-colonial environments—have a better chance of generating capable and effective governance than non-hybrid models.

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8.5: Promoting Human Security in Weak States

The current political and scholarly debate about state fragility and state-building frames the issues at stake too narrowly. It sometimes sees only the problems (real though they are) without also taking into account the strengths of the societies in question, acknowledging their resilience and encouraging indigenous creative responses to the problems and strengthening their own capacities for endurance.[4]

Talking about 'weak' states, for example, implies that there are other actors on the domestic socio-political stage that are strong in relation to the state. In the countries of the Pacific 'The state' is only one actor among others, the state order is only one of a number of orders claiming to provide security, frameworks for conflict regulation and social services. In Melanesia, neither colonial rulers nor post-colonial governments have been capable of establishing a legitimate state monopoly of violence in the territories that became independent 'nation states.' In particular they have not been able to impose effective control over the peripheral outlying areas of their own state territory. There is a considerable sovereignty gap in these systems. Effective control cannot be exerted over the whole state and services cannot be provided by central state institutions. Although state institutions claim authority within the boundaries of a given 'state territory', only 'outposts' of 'the state' can be found in large parts of that very territory. It is a societal environment that is to a large extent 'stateless.' 'The state' has not (yet) permeated the whole of society.

Having no state institutions, however, does not mean no institutions at all. Rather, traditional non-state societal institutions are of major importance. Traditional societal structures—extended families, clans, religious brotherhoods, village communities—and traditional authorities such as village elders, headmen, clan chiefs, healers, religious leaders (and the belief structures they stand for), etc. determine the everyday social reality of large parts of the population in developing countries even today, particularly in remote peripheral areas. Legitimacy rests with these actors, and not with state institutions – and this lack of formal political legitimacy is a decisive feature of a state's fragility. Thus state fragility is not only a problem of political will, functions, institutions and powers of enforcement and implementation, but also a problem of preferences, perceptions and indigenous legitimacy.

State fragility, therefore, has two sides: fragility with regard to functions and effectiveness, and fragility of legitimacy. People on the ground do not perceive themselves as 'citizens of the state' (at least not in the first place). They identify themselves instead as members of some sub-or trans-national, non-state societal entity (kin group, tribe, village). For them it is the community that provides the nexus of order, security and social safety, not the state.

This has extraordinary consequences for their loyalty or disloyalty to the state. People are loyal to 'their' group (whatever that may be); legitimacy and authority rests with the leaders of that group, not with the state authorities. 'The state' is perceived as an alien external force, 'far away' not only physically (in the capital city), but also mentally. This of course significantly reduces the capacity of state institutions to fulfil core state functions effectively. [5]

The fragile states discourse with its focus on a functioning and effective state organisation is in danger of missing a critical point: the relative disengagement of the people on the ground from the introduced state.[6]

We are seeing in countries as diverse as Aotearoa/New Zealand, Australia and most of Melanesia and Polynesia that traditional actors and institutions, customary law and indigenous knowledge have shown considerable resilience and in many places are enjoying a resurgence that defies 'modernisation' theory. It is the indigenous actors and institutions that provide what order there is in the peripheral territories of each state. They form an integral and important dimension of local governance – all the more so as the state's 'outposts' are mediated by 'informal' indigenous societal institutions that implement their own logic and their own rules within the (incomplete) state structures.

The infiltration of the outposts of the state distracts them from the ideal type of 'proper' state institutions; for example, clientelistic networks penetrate state institutions, and kinship ties determine who is in charge and how the outposts actually operate. State institutions are captured by social forces who make use of them not in the interest of the state and its citizenry, but in the interest of traditional kinship-based entities. This has caused complaints about clientelism and nepotism (*wantokism* in the Melanesian context), parochialism, corruption and inefficiency with regard to state authorities and the public service (e.g. Turnbull 2002). On the other hand, the intrusion of state agencies impacts on the local societal orders as well. Customary systems of power and rule are subjected to deconstruction and re-formation as they are incorporated into modern state structures and processes.

An additional important dimension of societal and political life in fragile states is the emergence and growing importance of new non-state institutions, movements and formations. This is a consequence of poor state performance, and their activities contribute to the further weakening of state structures. In situations where state agencies are incapable of or unwilling to deliver security and other basic services, people not only rely on their traditional societal structures, but also increasingly turn to other social entities for support since those are perceived as more powerful and effective: warlords and their militias in outlying regions, gang leaders in townships and squatter settlements, ethnically based protection rackets, millenarian religious movements, transnational networks of extended family relations or organized crime, new forms of tribalism — but also NGOs, collectives, and other elements of civil society and local or global social movements. These new formations often are linked to traditional societal entities and try to instrumentalise them for their own goals (power, profit, etc.).

Finally, developments at the international level, induced by the various aspects of globalisation, also put pressure on the state in its conventional form as a nation-state. The state-building approach hence is not only at odds with local traditional forms of social and political order in the Pacific and other regions of the Global South, but it also has to cope with the fact that certain functions of the state are challenged by international developments such as the evolution of international regimes, the emergence of an international civil society, the growing importance of a global capitalist economy, the World Trade Organization and other international organisations.

Regions of fragile statehood thus are places in which diverse and competing claims to power and logics of order and behaviour co-exist, overlap and intertwine: the logic of the ‘formal’ state, the logic of traditional, informal societal order, and the logic of globalisation and international civil society as well as societal fragmentation in various forms (ethnic, tribal, religious). Thus what we call hybrid political orders combine elements of the introduced western model and elements stemming from the local autochthonous traditions of governance and politics.

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8.6: Hybrid Political Orders

Hybrid political orders differ considerably from the modern Western model state. Governance is carried out by a collection of local, national and international actors and agencies. In this environment, state institutions are dependent on the other actors – and at the same time restricted by them. Hybrid political orders can also be perceived as or can become 'emerging states.' Prudent policies could assist the emergence of new types of states – drawing on the western state model, but acknowledging and working with the hybridity of particular political orders. This might be of particular significance in the Pacific Islands, where small populations and narrow economic bases can weaken the potential for generating state revenue. Attempts at state-building, therefore, which ignore or fight hybridity are likely to experience considerable difficulty in generating functioning, effective and legitimate systems.

Recognising the hybridity of political order should be the starting point for any endeavours that aim at conflict prevention, development and security. One has to search for ways and means of constructive interaction and positive mutual accommodation of modern state and traditional, local, as well as civil society mechanisms and institutions. A central question is how to articulate formal state-based institutions, informal traditional institutions and civil society institutions so that new forms of statehood emerge which are more capable and effective in local circumstances than strictly Western models of the state.

Pursuing such an approach means stressing the positive potential rather than the negative features of the current situation: not to stress weakness, fragility, failure and collapse, but hybridity, generative processes, innovative adaptation, opportunity and ingenuity. This also means treating community resilience and customary institutions as assets that can be drawn upon in order to forge constructive relationships between communities and governments, between customary and introduced political and social institutions. An approach to state-building that takes account of and supports the constructive potential of local community, including customary mechanisms where relevant, is a necessary complement to strengthening central state functions and the political will of state representatives. The main problem is not the fragility of state institutions as such, but the lack of constructive linkages between the institutions of the state and society. The organic rootedness of the state in society is decisive for its strength and effectiveness. Hence engaging with communities in relation to governance and human security is as important as working with governments and central state institutions on the same issues.

Given the importance of legitimacy for state stability or fragility, the development of a sense of citizenship is an essential component of state-building, at least as important as functioning and effective state capacities.[7] Institutions of governance can only be effective and legitimate if the people have a sense of ownership and accountability. Citizenship and the interface between state and society, rather than only the quality of state institutions in themselves are therefore critically important to enhancing state function in emerging states. Unfortunately, building concepts of citizenship that can be understood in traditional environments has so far received much less support than building central government institutions.

There are often real frictions between people's customary identity as members of traditional communities and their identity as citizens of modern (nation-) states and society. Nevertheless, a broadly constructive interaction of these identities is essential for building citizenship and state under conditions of hybrid political order. Engagement with, not rejection of, customary community-based identities is a necessary part of citizenship formation.

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8.7: Community Sources of Legitimacy

It is important, therefore, that agencies working on enhancing state effectiveness should not just focus on the core functions of the state but also on the fundamental 'community' sources of legitimacy as well. State functions are not an end in themselves, but a means to provide citizens with development, internal and external peace and human security. Under conditions of political hybridity these goals may be better served by supporting positive mutual accommodation than by concentrating solely on the institutions of the state. The relationship between state institutions and other sources of social order may be constructive, but it might also be destructive or neutral. The challenge is to find ways of supporting constructive interaction. In order to assess the potential for new types of exchange between state and society it is useful to address three core dimensions of the relationship between the state and the other elements of hybrid political orders, namely:

- *Substitution*: That is, the identification of functional equivalents of the state outside state institutions. The relation between these functional equivalents and state functions needs more thorough investigation which might lead to the next category, namely,
- *Complementarity*: The identification of areas of overlap between modern state approaches and customary approaches; this will lead to the investigation of potential for or actual articulation with state institutions; and finally
- *Incompatibility*: The identification of customary approaches that conflict with modern state approaches.

Assessing core state functions in the light of the three dimensions of substitution, complementarity and incompatibility facilitates a richer and more realistic analysis of the strengths and weaknesses of different states. It underpins a broader understanding of what a functioning and effective state might look like and also helps identify ways to support the emergence of such states.

The development of more fully legitimate state processes grounded in community life will necessitate a sophisticated, ongoing, flexible process of exchange between the local-endogenous and the introduced-exogenous systems. There is no guarantee that this process of exchange will always be successful and it is an open question whether societal and political life in the so-called fragile states can sustain this – not least depending on the political will of the main actors. In any event, what we discovered in work done in Bougainville, the Solomons, Timor Leste, Tonga and Vanuatu, was that societies in the Pacific region have – compared to other regions in the Global South—specific advantages that give reasons for optimism.

To summarize: functioning and effective statehood means that internal and external actors need to focus as much attention on the dimensions of legitimacy and citizenship as they do on strengthening the core functions of the state. It is our contention, based on working in Vanuatu, the Solomons and Timor Leste, that building new forms of state and citizenship that are based on a positive mutual accommodation between the Weberian State and Customary Order will transform hybrid political orders into emerging states that – in the long run – will generate new forms of governance beyond the model western state. Thus in addition to enhancing the state through reinforcing its core functions, a model of governance that is more sensitive to the multi-stranded character of political order in the Pacific will produce more realistic assessments of social and political resilience and the potential for serious violent conflict. In order to develop this new thinking it is important to communicate it through schematic representation of the model, encompassing ideal types and realistic possibilities. The schema represented in Figure 8.1 highlights how political leadership, political responsibility and new concepts of citizenship might be able to generate higher levels of accountability, legitimacy and effectiveness. It does this by focussing attention on ways that generate a more intentional blend between traditional and modern forms of governance – with neither having either a theoretical or practical primacy. By applying the concepts of substitution, complementarity and incompatibility it should be possible to begin mapping where the Weberian state and traditional conventions and institutions have a comparative advantage. Where no obvious advantage can be identified a case can be made for developing hybrid forms that build on the strengths of both systems. In all of this, the aim is to build on the strengths of community, to highlight how kin and other relationships can be made resilient and adaptable and how security might be guaranteed by both traditional and modern institutions. Policy makers need to ensure that the Weberian model possesses a legitimate monopoly of violence and that communities are able to generate high degrees of social resilience. This is best achieved by attending to the positive features of the spheres of state, civil society and customary rule.

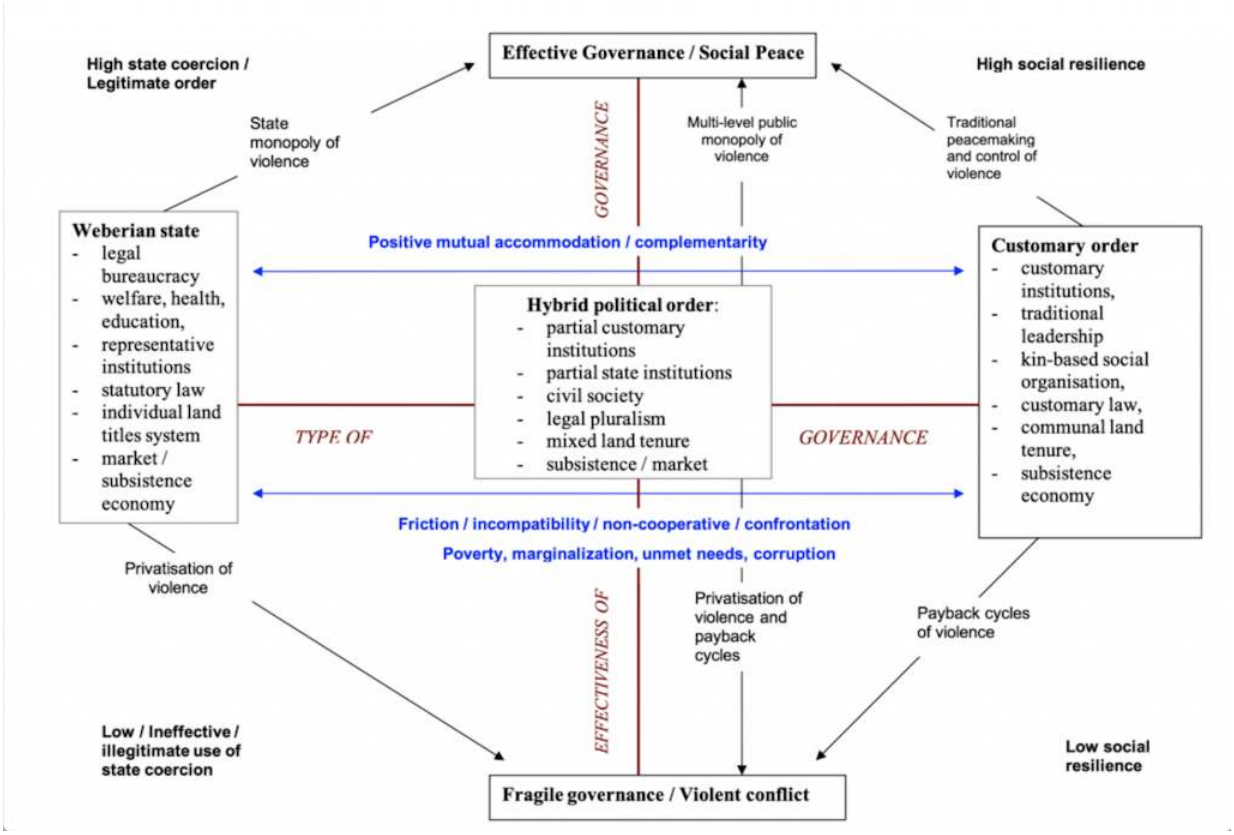


Figure 8.1: Schematic representation of the interactions between political leadership, political responsibility and new concepts of citizenship and their contributions towards hybrid systems of governance with higher levels of accountability, legitimacy and effectiveness. [Long Description]

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8.8: Centrality of Context

The pursuit of positive synergies between modern and traditional orders (although this is a problematic dichotomy because of the bias towards modernism) always takes place within specific economic and socio-cultural environments. In most parts of Polynesia and Melanesia, for example, the economic environments are stressed by high levels of poverty, hardship and inequality. They are also biased towards urban rather than rural areas. The schema presented above is aimed at developing some research hypotheses on factors that advance or impede functioning, effective and legitimate political order. This schema is a heuristic device and should not be reified.

In this schema there are three ideal types of political order and governance, namely the ideal type of the Weberian state on the one pole and the ideal type of non-state customary order on the other pole, with hybrid political order in between the two. The Western OECD states come closest to the Weberian state in reality, while traditional Melanesian and Polynesian societies were forms of customary order (this type, however, can hardly be found in pure form in today's world any more). In the Pacific region as well as in other parts of the Global South the hybrid type of political order dominates; it combines elements of both the Weberian and the customary ideal type but normally in an unintentional and ad hoc fashion.

The three types can provide pathways to effective and legitimate governance and hence social peace, and all three types are susceptible to fragility or even collapse and violent conflict. Hybrid political orders, however, seem to be particularly vulnerable. The co-existence of state and customary institutions can be non-cooperative, incompatible or even confrontational and hence lead to frictions that cause fragility, failure and collapse.

Given the ubiquity of hybrid political orders in the Pacific and the Global South the challenge therefore, is to take hybridity as a starting point for endeavours of state-building by means of positive mutual accommodation of state and customary institutions. This might lead to the emergence of new forms of the state that do not simply emulate the western Weberian model but reflect high context cultures, strong social relationships, high social resilience and effective and legitimate political institutions. Hybrid political orders need to be analysed and dissected in order to identify the dynamics that strengthen resilience and diminish fragility.

In order to do so it is useful to focus on the actors and institutions of the hybrid political order and ask who is doing what and how effective their efforts are. In this way it should be possible to develop a political map that will generate a more self-conscious division of labour between the state, civil society and custom. Some of the questions that need to be addressed include who is performing crucial tasks, who is:

- Providing internal (and external) security
- Organising the legal system(s), rule of law
- Providing basic social services
- Organising political representation and decision-making
- Organising leadership
- Generating political will and commitment of leaders
- Included and who is excluded in socio-political networks
- Organising accountability
- Claiming legitimacy, and on what basis
- Defining citizenship/social belonging, and on what basis
- Perceiving the institutions of political order, and in what ways
- Organising economic activities, gaining and providing access to and distributing resources
- Allocating and managing revenues for the fulfilment of political tasks
- Organising personnel for the fulfilment of political tasks.

These factors can then be analysed and rated according to their contribution to an effective and legitimate form of governance (or the lack thereof). Following this methodology will, for example, show which (combination of) institutions and actors actually provide internal security: Is it an institution of the state (the police) or a customary non-state institution (the elders)—or both? And what is the relation between the two—complementarity, substitution or incompatibility?

The rating then will indicate how effectively or ineffectively the function is fulfilled. The overall assessment of the sum of the factors will finally allow a positioning of the given political order in the diagram along the axes of the type of governance and the

effectiveness of governance. This allows for a comparison of various countries. On the basis of such an analysis and comparison a reassessment and eventually a revision of the current analytical approaches as well as the current state-building approaches can be conducted.

In this context it is again useful to focus on Pacific Island states and societies. Vanuatu, Papua New Guinea, Bougainville, the Solomon Islands and Tonga for example all provide different illustrations of hybridity in action. Over the past thirty years Vanuatu has been spared violent conflict and a disruption of state functions on a larger scale. However, there is considerable conflict potential that could lead to conflict escalation. Hence one might perceive the situation in Vanuatu as pre-conflict, with conflict prevention and state-building an urgent task. On the other hand, *kastom*—the traditional social, cultural and political order—is still very strong in Vanuatu and very much determines the everyday life of the majority of Ni-Vanuatu people. The country is in a critical stage of its history as an emerging state, and the prospects for development, security and peace very much hinge on the establishment of functioning, effective and legitimate forms of governance.

The situation in Papua New Guinea is highly volatile, particularly in view of recent political instability. The country has to struggle with its immense diversity and the stark differences in life-worlds within its boundaries. Both the political elite and the ordinary 'citizens' are confronted with the challenges of harmonising customary ways of life and the needs and opportunities of modern society in an era of rapid change and globalisation. Violence in parts of the country is endemic, impeding developmental progress. Shortcomings and deficiencies of formal state institutions are obvious. On the other hand, as in Vanuatu, kastom in large parts of the country still provides cultural orientation, social security and political order to some extent. Papua New Guinea is also in a critical stage of its history as an emerging state. Both paths seem possible: further deterioration or stabilisation. The latter, again, depends on the implementation of good governance.

Bougainville is a highly interesting case. After almost a decade of war, Bougainville has over the last few years gone through a comprehensive process of post conflict peace-building which is one of the rare success stories of peace-building in today's world, and it seems to have a good chance of becoming one of the equally rare success stories of state-building (be it in the context of Papua New Guinea or be it as an independent state). The reasons for this are that people on Bougainville are pursuing a new form of state-building that does not simply copy the Western model of the state. Rather, a home-grown variety of political order is in the making, utilizing customary institutions that already have proven to be effective and efficient in peace-building. If things go well on Bougainville, a positive accommodation of traditional non-state societal institutions and introduced state-based institutions will lead to a new political order that will provide a sound framework for peace, security and development. A more detailed analysis of the Bougainville case might provide insights in culturally contextualised forms of state-building that might also be useful for other emerging states.

The Solomon Islands find themselves in a critical phase of peace-building and state-building. Compared to Bougainville successes seem more tenuous, in spite of intensive external intervention to promote the process. After years of turmoil, violence was terminated and order restored by RAMSI (The Regional Assistance Mission to Solomon Islands). These are important achievements. However, building sustainable peace and political order remains profoundly challenging. To what extent are difficulties encountered due to a too narrow focus on 'rebuilding' state institutions, ignoring the hybrid character of political order and the resilience of communities on the ground? A sense of lack of local ownership could also be the source of problems. Although RAMSI is presented as a 'regional' endeavour, it is very much perceived (both within the Solomons and the international arena) as an Australian project. Success or failure in the Solomons hence will very much impact on Australia's future stance in the region. An analysis of the situation on the ground in the light of the approach outlined in this chapter could contribute to fresh thinking about prospects in the Solomons.

Timor Leste (formerly East Timor) represents a somewhat different case than the others considered here, having a long history of embedded violence and occupation and an associated legacy of distrust and fractured political community. Despite the complex international dimensions to its current state of low intensity conflict it also provides many fascinating insights into the ways in which custom persists within the judicial and governmental sectors. Following the Indonesian withdrawal, Timor Leste has been the recipient of an extensive international state-building effort, with the early processes of institutional transfer occurring under the direct supervision of the UN. Sadly, just over eight years after the Indonesian withdrawal, the political, legal and security structures and systems at the heart of the new state have fractured, the capital has to rely on international security forces to maintain order, and an unexpected regional antagonism has emerged and hardened, splitting the capital and to some extent the country. Better understanding of the relationship between state-building efforts and how local people seek restoration of political community could

contribute to better practice supporting the emergence of a state in the context of post-conflict peace-building and to what is likely to be a slow process of recovery in Timor Leste.

In Tonga, a Polynesian chieftain system developed into a constitutional monarchy in the 19th century, with the contemporary political arena still dominated by the royal family and the nobility. The country (which was not directly colonised) has thus taken a different route in the interaction between indigenous and liberal political governance than its Pacific Island neighbours and it has been associated with “not the weakness of authority or the threat of anarchy, but an excess of authority” (Campbell, 2006, p. 274). Over the past decade, however, Tonga has been making very slow moves towards greater democratisation. Democratic transitions are dangerous; Tongan democratisation had been proceeding relatively peacefully until a riot in the capital city in November 2006 destroyed large parts of the city and left several people dead. These events of 16 November 2006 were a traumatic experience for Tongan society, and the effects will be felt for a long time, both in the economic sphere (with a severe economic downturn) and in politics: the process of democratisation will become much more difficult. A case study of Tonga provides an important counterpoint to the other studies, since the state system has survived more or less in the same form for over 150 years. However, today different change dynamics are in place, and the impact they will have on traditional patterns of hierarchy, power and control are likely to yield different insights into state fragility and state effectiveness.

These six cases provide different combinations of Weberian-Traditional and Hybrid orders and each requires further research and analysis to determine precisely how it might be possible to blend, separate, combine different kinds of political order in order to strengthen social resilience, satisfy basic human needs and generate peace, order and security. Most political analyses have endeavoured to reinforce/impose a particular Weberian model of the state without any real recognition of the ways in which traditional and hybrid forms are or could generate different kinds of political behaviour, social and economic resilience and long term sustainable structural stability. What is very clear is that unless political hybridity is accorded more importance, the Weberian state systems will continue to be deficient and vulnerable; customary order will have difficulty generating the security it used to provide pre-colonisation and incorporation into the global capitalist economy, and situation of the Melanesian and Polynesian states of the Pacific will become increasingly precarious. A focus on hybridity will certainly allow more rapid movement towards the New Zealand government’s concept of Good Governance in the Pacific. Without it the prospects for achieving more capable, effective and legitimate governance will be problematic. [8]

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8.9: Conclusions

So what does all of this have to do with the role of the state in promoting human security? In the first place, taking customary institutions, leadership and traditions seriously in thinking through ways of responding to and overcoming state fragility reflects the human security priority of putting the people and their needs first and developing institutions appropriate to these tasks. Second, focusing on political hybridity provides an excellent way of transcending simplistic dualisms in relation to thinking through the specific role of the state in post-colonial situations. Hybrid systems, for example, can be traditional and modern; Western and indigenous; formal democratic and informal customary; hierarchical and egalitarian. Third, it will ensure that more attention is paid to bringing state and community into closer liaison and developing more organic connections between both spheres of activity. This is critical to what I think about as 'Grounded Legitimacy' (Clements, 2008). This is the capacity of local peoples and communities to reconnect with those customs, values and traditions that have been subverted or destroyed by colonialism or war. Fourth, if there is any justification for thinking that indigenous peoples and/or those living in subsistence with nature are going to be good conservers of resources then focusing on political hybridity is one way of ensuring higher levels of sustainability to any political economy. Excluding customary custodians of fishing, agricultural and other resources from governance decisions is likely to result in rapid depletion of scarce resources. Finally, a good argument can be made for thinking that hybrid political institutions are likely to be more peaceable because efforts will be made to combine and blend customary methods of dispute and conflict resolution with more modern strategies. Thus it could be argued that hybrid political orders are more likely to generate more peaceable and harmonious communities than those which are built solely or exclusively on Westphalian principles. Having said this, however, political hybridity is no panacea for every political malady. It requires time, energy and effort to breathe life into both customary forms of governance and modern political systems. Whether one is talking about a Weberian model, a traditional model, or a hybrid , their successfulness will still hinge on ensuring maximal levels of societal participation in and engagement with the decisions that will determine whether emergent political systems will be capable, effective and legitimate in satisfying the basic human needs of citizens in post-colonial and post-conflict environments.

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8.10: Resources and References

Review

Key Points

- Functional and effective statehood means that internal and external actors need to focus as much on the dimensions of legitimacy and citizenship as they do on strengthening the core functions of the state.
- Building new forms of state and citizenship that are based on a positive mutual accommodation between the Weberian State and Customary Order will transform hybrid political orders into emerging states that – in the long run – will generate new forms of governance beyond the model western state.
- Thus, in addition to enhancing the state's capacity to generate security through reinforcing its core functions, a model of governance that is more sensitive to the multi-stranded character of political order in the Pacific will produce more resilient social and political systems, better equipped to deal with grievances and prevent the eruption of serious violent conflict.

Extension Activities & Further Research

1. This chapter has focused on the necessity for more practical and academic attention on the social and communitarian sources of order, governance and legitimacy. This suggests that official and non-official development agencies need to direct more attention towards what might be called strength rather than vulnerability assessments in their analysis of the relationships between states and societies. Think of what difference it would make to your understanding of fragile states if you were to focus on sources of strength rather than weakness.
2. Where states are lacking in capacity and effectiveness it ought to be possible to substitute community action for state action and vice versa. In all of this work it is important that more recognition be given to 'connectors,' i.e. individuals, groups and organisations capable of linking across boundaries of political, ethnic, linguistic and class differences. These connectors are critical to an adequate articulation between state and civil society and to the realisation of new concepts of grounded legitimacy in a post-colonial environment. What actors could be considered 'connectors' in your own environments? Are they strong enough to deal with those who might choose to divide rather than unite fragile social systems?

List of Terms

See Glossary for full list of terms and definitions.

- autochthonous traditions
- clientelistic state
- fragile state
- grounded legitimacy
- human security
- *kastom*
- political hybridity
- RAMSI
- sovereignty gap
- state capacity and effectiveness
- sustainable development
- Weberian state

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Long Descriptions

Figure 8.1 long description: A complex chart depicting the relationship between political leadership and citizens.

[Return to Figure 8.1]

Footnote

1. Interestingly though the important strategic document on development policy, the Accra Declaration for Action from September 2008 does not mention the issue of legitimacy in the context of aid policies for countries in fragile situations.
2. Lecture to Ausaid February 2006 (publication unknown [ed.])
3. In a high context culture like Vanuatu, for example, there has been a strong and robust reassertion of the importance of ‘Kustom’ and the power of traditional chiefs. In a low context culture like the Vatican, the current Pope has revived the tridentine Latin Mass and reasserted the primacy of traditional Catholicism over all other branches of Christianity. Both of these examples illustrate how traditional behaviour can reassert itself even in modern and post-modern time.
4. Editor’s note: This narrow conception of political strength represents another facet in the conventional development paradigm, the economic misconceptions of which were discussed in Chapter 1.
5. Editor’s note: However, in situations where the state authorities (or other authorities with the collusion of the state) mainly seek to exploit and dominate peripheral regions with little regard to their welfare this unwitting civil disobedience can be rather beneficial to human security. Examples include czarist Russia and corporate hegemony in Latin America.
6. For instance, in their presentation of the functions of the modern sovereign state Ghani et al. do not address these important issues of state—civil society relationships and legitimacy (See Ashraf et al., 2005).
7. Of course, both tasks are closely linked: effective state institutions will enhance the legitimacy of the state; and a notion of citizenship will make the establishment and the functioning of state institutions easier. However, both are separate tasks that deserve specific approaches.
8. The New Zealand International Aid and Development Agency (NZAID) defines good governance as the exercise of economic, political and administrative authority to manage a country’s affairs at all levels, in a manner that is participatory, transparent and accountable. It is also effective and equitable and promotes the rule of law. Good governance ensures that political, social and economic priorities are based on broad consensus in society and the voices of the poorest and most vulnerable are heard in decision making over the allocation of development resources. It includes essential elements such as political accountability, reliable and equitable legal frameworks, respect for the rule of law and judicial independence, bureaucratic transparency, effective and efficient public sector management, participatory development and the promotion and protection of human rights. (NZAID, 2005)

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CHAPTER OVERVIEW

9: Climate Change and Human Security

Learning Objectives

- Understand the effects that impacts of climate change have on the Earth's ecosystems, and on human society
- Explain the mechanics of the greenhouse effect, global warming and climate change.
- Identify the origins of major emissions, who the major drivers are and what populations are most affected by climate change impacts.
- Describe examples how climate change affects ecological structures and relationships.
- Explain how climate change poses a serious risk to human security now and in the future.
- Define the concept of climate justice, and explain how it supports the ethical imperative of fighting climate change; differentiate between equity and equality in the context of climate justice.
- Describe examples how fighting climate change can include prevention, mitigation and adaptation.
- Identify personal opportunities to contribute towards addressing the challenges of climate change.

Cherry Tsoi

Since the mid-20th century the Earth has warmed gradually at an increasing rate, largely as a result of greenhouse gas emissions from human activities. The most prominent greenhouse gas is carbon dioxide, the levels of which have been closely monitored and reliably documented. The increased retention of heat is affecting the climate of different regions in different ways, including heat waves, droughts, severe weather events, the loss of polar ice and glaciers, as well as the disruption of regional weather cycles. Additional global effects include the acidification of the oceans, the rise of sea levels, the melting of arctic permafrost and the unpredictable response of major ocean currents. Ecosystems respond to those changes in complex and unpredictable ways, affecting the distribution of species and their interrelationships, as will be explained on examples. Human societies are affected in ways that compromise human security across the four pillars. Sources of insecurity in different pillars can reinforce each other and lead to major regional crises, as in the case of Syria. A major catastrophe is expected for South Asia as their sources of freshwater in the Himalayas are disappearing.

The global distribution of emission levels is very uneven, with per capita levels among the most affluent exceeding those of the poorest by two orders of magnitude. The impacts of climate change on individuals follow an inverse distribution, with the highest impacts disproportionately affecting the world's poorest. The underlying injustice has incited protests and calls for reform worldwide. However, industrial greenhouse gas emissions are clustered in private and state-run industries that are slow to respond to arguments of climate justice. Major reform strategies involve governments and civil society and focus on mitigation and adaptation. Although they are facing some technological barriers, the most insurmountable obstacles are cultural and political.

9.1: Introduction
9.2: Current and Future Risks to Human Security
9.3: Major Culprits and Victims of Climate Change
9.4: Barriers to Counteracting Climate Change
9.5: Achieving Climate Justice as the Way Forward
9.6: Resources and References

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9.1: Introduction

The Earth's climate is changing, and it is changing at a rate that has not been seen in millions of years. The cause of this change is the production of anthropogenic greenhouse gas [1] emissions that can be traced back to the mid-20th century and the Industrial Revolution, that brought with it the invention of technology that allowed humans to burn fossil fuels for energy. Since that time, the rate of fossil fuel use has increased, and has allowed great leaps forward in public health, food production, science, and urbanization, in turn contributing to exponential population growth in countries all over the world. Unfortunately, the greenhouse gases (GHGs) produced from burning fossil fuels are disturbing fragile ecological relationships that have evolved over millennia. Part of the solar energy absorbed by the Earth is normally emitted back into space as infrared radiation; now, GHGs in the atmosphere absorb much of that infrared radiation which causes warming. The resulting climate change disturbs the ecology of the planet in manifold ways.

Climate change, or global warming, is a phenomenon that scientists were studying as far back as 1960, when the first models of global climate supported the theory that increasing greenhouse gases were warming the Earth's climate (Robinson & Robbins, 1968). The causes and impact of global warming were known to scientists, news reporters, and policymakers alike. However, it wasn't until 1995 that the global community came together to identify strategies to mitigate and adapt to climate change at the first United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties (COP). Fast forward 19 years later, the 21st Conference of Parties finally achieved a landmark agreement signed by 195 countries to limit the Earth's warming to "well below 2 degrees Celsius above pre-industrial levels, and to limit the increase to 1.5 degrees Celsius to substantially reduce the risks and effects of climate change" (Rogelj et al., 2016, p. 631). This prescribed limit to warming is based on extensively peer-reviewed climate science by the Intergovernmental Panel for Climate Change (IPCC).

The IPCC is an intergovernmental branch of the United Nations that is responsible for assessing the science of climate change. Its mandate is to provide periodic updates on the science of climate change to help policymakers tackle this multi-sector issue. In 2018, the IPCC published a special report on the impacts of global warming of 1.5° C above pre-industrial levels. Currently, human activities are estimated to have already increased the temperature of the earth 0.8 to 1.2° C above pre-industrial levels. If humans continue to conduct business as usual, the IPCC estimates that we will reach 1.5° C sometime in the next 11 to 33 years (Hoegh-Guldberg et al., 2018). The report's sobering bottom line tells us that there is a big difference in limiting global warming to 1.5° C compared to 2° C.

Table 9.1 Comparison of global warming by 1.5 and 2 degrees Celsius (° C) of warming past industrial levels (Data sources: Ge & Friedrich, 2020; Levin, 2018).

IMPACT	1.5° C	2° C	MAGNITUDE of 2 vs. 1° C
Extreme heat: percentage of global population that will be exposed to severe heat at least once every five years	14%	37%	2.6 times worse
Sea-ice-free arctic: the minimum number of ice-free summers	once every 100 years	once every 10 years	10 times worse
Sea-level rise: amount of sea level rise by 2100	0.04 metres	0.46 metres	11.5 times worse
Loss of plants: species that lose at least half their range	8%	16%	2 times worse
Loss of insects: insects that lose at least half of their range	6%	18%	3 times worse
Ecosystems: amount of Earth's land area where ecosystems will shift to a new biome	7%	13%	1.86 times worse
Permafrost: amount of Arctic permafrost that will thaw	4.8 million km^2	6.6 million km^2	1.38 times worse
Crop yields: reduction in maize harvests in the tropics	3%	7%	2.3 times worse
Coral reefs: further decline	70 to 90%	99%	about 1.2 times worse
Fisheries: decline in fish stock	1.5 million tonnes	3 million tonnes	2 times worse

As Table 9.1 shows, global warming has impacts on everything from nutrient and geological cycles, to oceanic currents and atmospheric jet streams, to biodiversity and food production and supply. These multiple impacts present a great threat to human security.

This chapter first explores the primary impacts of climate change on the natural world. Next, the chapter explores the continuous drivers of climate change and frames climate change, in both its causes and its impacts, as an issue of social injustice and inequity. Further, this chapter will look at the climate justice social movement and its aims, and how the various climate justice campaigns around the world are at once targeting the reduction of greenhouse gas emissions as well as the underlying political systems that enable fossil fuel extraction and use and championing the just representation and consideration of those underrepresented communities on the front lines of climate disasters. We will end the chapter by drawing on the connections between the need for climate justice in reducing present and future risks to human security, in upholding democracy, a secure food supply and maintaining public health.

Climate Change Impacts on Natural Systems

The effects of climate change on natural systems include major changes in regional weather patterns, ocean acidification, sea level rise, and melting of glaciers and polar ice caps. Within and besides these major categories of impacts, there are many other effects on our natural world and the organisms that live in it. This section will look at the major climate change effects on Earth, and give brief examples of the impacts seen on humans and 'nature.' The next section will delve deeper into climate change impacts on ecosystems, giving an example of how one climate change impact can cause a domino effect that will be felt by the intimately

interconnected species, nutrients, and habitats in a biome. Following this, detailed examples of impacts on human society will be discussed.

Climate change has major effects on the Earth's overall temperature, the ocean, Earth's biogeochemical cycles, and cloud formation. These effects translate further into major changes in weather such as increased variability and unpredictability of rainfall, increased intensity and frequency of heat waves, droughts, and extreme events such as hurricanes. Further, the increased overall temperature of the Earth induces accelerated melting of the polar ice caps and other large bodies of ice, creating sea level rise and threatening fresh water supplies. Finally, the increased levels of carbon dioxide in Earth's atmosphere and oceans mean that there are greater levels of hydrogen ions in the ocean, causing ocean acidification.

Sometimes climate change can reinforce itself, which manifests as accelerating change. This is dangerous as it reduces our response time. For example, the albedo effect describes the accelerating warming of polar regions; as their cover of snow and ice disappears those regions no longer reflect sunlight but absorb more of it, warming up even more. To accelerate the process even more, the warming of arctic climates causes the melting and breakdown of permafrost soil, which liberates methane (a very potent GHG), and causes even more warming.

Heat Waves and Droughts

The rising temperature caused by climate change increases evaporation in some areas, which results in more storms and higher precipitation in other areas. This intensified water cycle means certain parts of the world are experiencing greater than average rainfall while other areas are experiencing greater than average periods of drought. On average, dry areas will become drier, while wet areas will become wetter (Field, 2014).

In those areas that are already dry, heat waves and droughts are occurring more frequently and with greater intensity. Seasonal temperature averages are breaking records in cities, states, and countries all over the world. Along with the increase in average temperature, prolonged periods of heat are impacting ecosystems and humans. Sustained levels of heat waves in the ocean can have negative consequences such as loss of kelp forests, coral reef decimation, and loss of marine invertebrates (Smale et. al., 2019). In cities, the consequences of increased intensity and frequency of heat waves include greater number of hospitalizations due to heat stress, and a greater number of deaths due to heat exhaustion and heat stroke. The IPCC Special Report on an increase of 1.5° C states that there are "lower risks projected at 1.5 degrees Celsius than at 2 degrees Celsius for heat-related morbidity and mortality." (Hoegh-Guldberg et al., 2018, p. 11) Heat waves are particularly hard on the senior population, and the effects of heat waves are exacerbated in urban centers, where average temperatures are several degrees higher than in the rural areas surrounding cities (Hoegh-Guldberg et al., 2018).

An increase in global temperature can disturb fragile biological relationships that are much older than the human species. Studies showed that the mountain pine beetle's range in the Pacific Northwest of Canada has grown considerably as temperatures warm, as the beetle can now survive in a hospitable environment that was previously inhabitable (Sambaraju et al., 2019). In addition, a longer summer season in the Pacific Northwest has made it easier for the mountain pine beetle to cause damage to larger swaths of forest. Making matters worse, the frequency and intensity of droughts are a stressor to trees' defensive mechanisms, allowing the pine beetle to be more successful in its attack, decreasing the tree's chances at survival. Further, greater swaths of damaged trees can act as kindling to wildfires, adding dangerous fodder to a dry, hot environment that is already ideal for the spread of fires.

Another ecological effect of increased surface temperatures in world oceans is the bleaching of coral reefs. Australia's Great Barrier Reef, purported as the largest living organism in the world, (2,2500 km long) is dying from the effects of climate change and industrial sediments. [2]

Precipitation and Storms

As noted above, recent years have seen a major increase in frequency and intensity of rainfall and storms in certain parts of the world (Hoegh-Guldberg et al., 2018). The warmer temperatures caused by climate change increased the intensity of the water cycle, and generally, rainfall will increase in areas that are already experiencing higher than average levels of rainfall, but precipitation will generally decline in subtropical regions.

The melting of ice caps and the warming of surface water are likely to affect the major ocean currents that determine regional weather cycles. All of the major currents are connected into a coherent global system (the 'Global Conveyor Belt'), which means

that changes to currents in one region could affect other regions far away (World Ocean Review, 2010). Evidence is mounting that such changes are imminent (Editor, 2018)). Examples that raise particular concerns are:

- The climate of Europe is determined by the Gulf Stream delivering warm waters from the Caribbean. Increased input of freshwater from the melting of the Greenland Ice Shelf could disrupt this mechanism which would change the climate of Europe to resemble that of Labrador.
- Agriculture in the Indian subcontinent and parts of South East Asia depends largely on the annual Monsoon rains. Those depend in turn on ocean currents and prevailing winds, which are interdependent. A failure of the Monsoon would amount to a catastrophe of unprecedented proportions.
- Of similar importance to the climate of Mesoamerica is the El Ninjo-La Ninja system.

In addition, most climate models predict increased intensity of rainfall nearly everywhere when it does occur (Pfahl et al., 2017). Scientists are still in the process of analyzing the complicated relationship between climate change and precipitation in order to better understand patterns and gather forecasts, but there is consensus that "risks from heavy precipitation events are projected to be higher at 2 degrees Celsius compared to 1.5 degrees Celsius of global warming … in regions including several northern hemisphere high-latitude and high-elevation regions, eastern Asia, and eastern North America" (Hoegh-Guldberg et al., 2018). Table 9.1 showed the overall extent of the differences.

Recent modeled projections show a likely increase in occurrence of high intensity tropical storm hurricanes, with a possible decrease in overall frequency of storms (Pachauri et al., 2014). These more intense storms are very likely to be accompanied by higher than usual volumes of rain. In addition, climate models predict an increase of 2-11% in wind speed by the year 2100 (Knutson et al., 2010). In 2017, Hurricane Harvey broke the record for most rainfall in any tropical hurricane system, with some areas receiving 91 or more centimetres of rain, totalling over 152 centimetres of rain over the duration of the storm. Its highest wind intensity on land was 177 km per hour. At least 68 people died from the direct effect of the storm, and the economic devastation to homes and infrastructure was second only to Hurricane Katrina (National Oceanic and Atmospheric Centre, 2018).

Sea Level Rise

Another major impact of the increased global temperature of climate change is sea level rise. It is caused by a combination of the melting of the polar ice caps, the warming of the ocean causing thermal expansion, and a reduced amount of liquid water storage on land (Hoegh-Guldberg et al., 2018). Global mean sea level rise (GMSLR) has occurred naturally in the past but it was slower. The rate of GMSLR has more than doubled from the period of 1901-1990, to 1993-2010 (Church et al., 2013) from 1.5 mm per year to 3.2 mm per year. The GMSLR rate of increase in the 21st century is projected to exceed that of 3.2 mm, in all Representative Concentration Pathways (RCP). RCPs represent possible future scenarios of anthropogenic greenhouse gas emissions of varying concentrations in the atmosphere (Van Vurren et al., 2011). The pathways show different rates and magnitudes of climate change, and is a standard set of scenarios that allows scientists to assess risks associated with each. "The goal of working with scenarios is not to predict the future but to better understand uncertainties and alternative futures, in order to consider how robust different decisions or options may be under a wide range of possible futures." (IPCC, 2019).

For RCP 2.6, considered the world's best case scenario for limiting greenhouse gas emissions, projected GMSLR is between 0.28 to 0.61 meters by 2100. For RCP 8.5, the "worst case" scenario for limiting anthropogenic climate change, GMSLR could be between 0.53 meters to 0.98 meters by 2100 (Church et al., 2013). Almost all major coastal cities would be affected, with over 570 low-lying coastal cities inundated by at least half a meter in sea level rise by 2050 (C40 Network, 2019). The impact on megacities will be discussed in section 9.1.3. If crucial 'tipping points' in emissions are transgressed, a self-reinforcing 'runaway' greenhouse effect might ensue. The consequence would be a scenario called Hothouse Earth, which involves all ice disappearing and sea levels rising by 10-60 metres (Steffen et al., 2018).

Ocean Acidification

The increased concentration of carbon dioxide in our atmosphere translates to an increase in carbon dioxide concentration in our oceans (as approximately a third of atmospheric CO_2 is absorbed by the ocean) (Gruber et al., 2019), leading to a lower pH of the ocean. Ocean acidity as expressed by hydrogen ion concentration, has increased by 26% since 1850, a rate of change that is tenfold the rate of change from any time in the last 55 million years (Doney et al., 2009). As the oceans become more acidic, carbonate ions are not as freely available, making it difficult for organisms to produce calcium carbonate that make up shells and skeletons. This can have a cascading effect of other unwanted impacts on marine ecosystems, fisheries, aquaculture, and tourism. There is

also a possibility that higher levels of carbon dioxide in the oceans may benefit photosynthetic organisms like algae and kelp (Britton et al., 2016), which could be desirable with kelp forests but disastrous with algal blooms. The impacts of ocean acidification are explained in closer detail in the next section.

Delving Deeper: Climate Change Impacts on Ecosystems

The primary driver of climate change is the emission of greenhouse gases, which can have many unintended impacts on the Earth's natural processes, as detailed in the previous section. This section will delve deeper into climate change impacts, and look at how the changes in Earth's natural processes can impact an ecosystem by threatening the species that call it home, and interrupting fragile ecosystem services.

Ecosystems encompass all living organisms within a particular area, and the non-living things with which they interact. For example, a forest ecosystem includes the living trees, mosses, microbes, deer, birds, and insects that call it home, as well as the air, soil, lakes, rocks, and sunlight within it. Together, each organism and non-living substance are part of a coexisting community that is itself made of countless interdependent relationships. Many of these relationships are developed over such long periods of time, that they have come to rely on the specific habits of species, or the specific timeline and pattern of a nutrient cycle.

For example, the Pacific Northwest coastal ecosystem is home to oysters of many different species. Each species has adapted to thrive in the cold waters off the western coast of North America, which welcome a periodic upwelling of nutrient-dense waters from the deep ocean (Kämpf & Chapman, 2016). However, ocean acidification due to climate change is threatening the continued survival of oyster species. The increased acidity of the ocean affects the Pacific Northwest oyster species in two major ways. First, the lower pH wears at a young oyster's shell, which is made up of calcium carbonate. Calcium carbonate, when interacting with a low pH solution, slowly dissolves as free hydrogen ions work to break calcium carbonate molecules apart. Another way a low pH ocean can interfere with oyster shells is by binding with free carbonate ions in the ocean, and making them less abundant in the environment for an oyster to use to build its shell. This is particularly stressful for young oysters, as their life cycle *requires* them to build up 90% of their body weight as shell within the first few days of life. Further, more carbon dioxide in the oceans can spell trouble for oyster reproduction. A recent study on Sydney rock oysters found the ratio of females to males in oyster populations could be affected by increased levels of carbon dioxide in the ocean (Boulais et al., 2017**)**, where ocean acidification was found to increase the ratio of females to males by 16%. This could have negative implications for successful reproduction of oyster populations in light of an increasingly acidic ocean.

Oysters also provide important ecosystem services to their surrounding environment and the organisms living in it. Oysters feed by filtering their surrounding water and taking up phytoplankton or algae biomass through their gills. Inadvertently, this process helps improve the water quality by removing organic and inorganic particles. The inorganic particles that the oysters are unable to absorb are packaged into bundles and released as pseudofeces, which are then deposited into the lowest level of the ocean substrate, where it poses little to no harm to the ocean ecosystem. The loss of oyster reefs from ocean acidification could impact the quality of water in these coastal marine ecosystems, the effects of which are not yet fully understood.

Oyster reefs also provide a habitat for other organisms such as barnacles, mussels, and anemones. The hard reefs formed by oysters' shells and the surrounding substrate allows these animals to attach to a secure and sheltered structure. Oyster reefs also provide hiding spots for prey seeking refuge, which in turn draw larger predators to reefs, creating a dynamic, thriving environment. Other oyster reef ecosystem services include the provision of a spawning area for species of fish such as oyster gobies and blennies, who lay their eggs in dead oyster shells. A reduction in oyster reef substrate would pose a problem to species that rely on reefs for habitat, reproduction, and shelter. As a keystone species, fluctuation in oyster populations will have a substantial effect on a large number of other organisms.

Finally, oyster reefs serve as breakwaters that can protect nearby shorelines from erosion, and are being used and considered as a tool in adapting to sea level rise. New York City's Billion Oyster Project is an oyster reef restoration project, that aims to educate the public on the importance of oysters as a keystone species, an "ecosystem engineer," and collects oyster shells from restaurants to return to the ocean as a building block of new oyster shells, and reefs (Billion Oyster Project, 2019).

We have used the example of the coastal marine ecosystem of oyster reefs as an example of how the impacts climate change can wreak havoc on ecology, and, in turn, the disrupt the role that ecology plays in bolstering resilience to climate impacts. This is only one example, and there are many other climate change impacts that can have trickle down effects through Earth's ecosystems.

Impacts on Human Society

Climate change impacts, including the impacts on ecosystems, threaten human society in many ways. This section will broadly review the effects of climate change on human society. Human societies are deeply embedded into natural ecosystems and are dependent on them for sources of food, potable water, shelter, waste processing, raw materials and more. Humans are undeniably reliant on these 'ecosystem services' provided by nature, but for the greater part of modern society's existence, there has been little to no thought on ensuring these ecosystem services can be sustained for future generations. Our rate of resource extraction has exacted an insurmountable cost to the planet (further discussed in Chapter 12).

We will use the example of Mumbai, India, as a case study of climate change impact on human society, and how one climate change impact can create another unexpected, and often undesired, consequence. (See Figure 9.1.)



Figure 9.1: Map of Mumbai.

While climate change impacts will be felt all over the world, some areas will feel the impacts more severely in terms of intensity, frequency, and number of people affected. The climate change impact of sea level rise incurs major economic costs. One study projects the accumulated total cost of global sea level rise to be $14 trillion USD by 2100 (Jevrejeva et al., 2018). While some areas are more affected than others, cities in Asia will disproportionately bear a greater burden of impact, with 38% of the cities most at risk for sea level rise located on the Asian continent. Scientists estimate that the ten cities with the highest proportion of population exposed to sea level rise impact will be Mumbai, Guangzhou, Shanghai, Miami, Ho Chi Minh City, Kolkata, Greater New York,

Osaka-Kobe, Alexandria, and New Orleans (Nicholls et al., 2008). These cities have high exposure levels because they are densely populated, situated close to sea level and represent major industrial and financial hubs.

Climate change is expected to wreak havoc on human society in many ways. Major costs are associated with the displacement of communities, building degradation, flood damage, loss of tourism, and increased mortality. Table 9.2 below depicts estimated costs of various impacts on human society from climate change in Mumbai.

Table 9.2 Estimated economic losses due to the impact of climate change in Mumbai (Data source: Kumar et al., 2008).

TYPE OF IMPACT	TYPE OF COSTS/PERIOD OF IMPACT	COST (millions of US$)
Dislocation due to extreme events of flooding of low-lying areas every five years until 2050[3]	Cumulative costs from 2005-2050	0.57
Material damage to low-lying areas due to extreme evemts every five years until 2050[4]	Cumulative costs from 2005-2050	8.962
Mortality costs due to extreme events of flooding every five years until 2020[5]	Cumulative costs from 2005-2050	4.263
Disability-adjusted life years (DALYs) lost due to diseases like marlaria, diarrhoea and leptospirosis[6]	Cumulative costs from 2005-2050	4.406
Building foundation damages due to sea-level rise for 2050[7]	Cost estimate for the year 2050	2,097.917
Tourism loss resulting from fewer tourists visiting Mumbai[8]	Cost estimate for the year 2050, as compared with the base year 2005	2,743.101

The impacts of global warming will cause great disruptions to society, and some foreseeable consequences of these impacts include forced migrations and displacement of populations. Though the UNHCR does not formally recognize environmental refugees, the number of persons that are forcibly displaced due to climate change impacts will soon become too great to ignore, and will exert effects on states and human security.

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9.2: Current and Future Risks to Human Security

Having reviewed in depth climate change impacts on natural systems and human systems, this section now links them to the four pillars of human security: military/strategic security of the state, economic security, population health, and environmental integrity.

All four pillars define risks to human security that are related to climate change and its impacts. In fact, specific climate change impacts often exacerbate more than one of these pillars. The IPCC AR5 Scenario (IPCC, 2019, Chapter 12, p. 758) states, “human insecurity almost never has single causes, but instead emerges from the interaction of multiple factors. Climate change is an important factor threatening human security through: 1. undermining livelihoods; 2. compromising culture and identity; 3. increasing migration that people would have rather avoided; and 4. challenging the ability of states to provide the conditions necessary for human security.” These four links between human security and climate change identified by the IPCC fit into the domains outlined by the four pillar model.

The World Health Organization published a report in 2017 that explains how the marginal, often unsanitary living conditions of those displaced, are causing increases in diseases such as acute watery diarrhea, measles outbreaks, and noncommunicable diseases. Other major health impacts include severe depression and anxiety, malnutrition in children and infants, and increased deaths from lack of proper treatment and medicine (WHO, 2017). Such adverse effects on health affect civil society, people’s day-to-day lives, the rule of law, social stability and peace, and the financial security of families. Lately, descriptions of climate trauma have appeared in the literature (Richardson, 2018; Woodbury, 2019) – socio-emotional changes in a person’s psychological health that could have severe consequences for social groups.

An event that figures prominently in recent world history is the Syrian Civil War, which began in 2011 and is ongoing at the time of writing, and the Syrian refugee crisis that followed, which had displaced 5.6 million people by September 2018. This example clearly shows how climate change can pose a threat to human security through undermining livelihoods, compromising culture and identity, increasing migration, and challenging the ability of the state to provide security. It is important to note that the Syrian civil war is an extremely complicated political conflict, and the facts presented here serve only to demonstrate the role that climate change played in exacerbating the situation, not in causing the war.

Many scholars saw Syria’s water shortage as a major tipping point in the war, due to the climate change impact of intense drought. Water has always been a sought after resource in Syria, a country considered to be highly water scarce (Guppy & Anderson, 2017). Its water sources such as the Euphrates River and the Yarmouk River, are sources of tension due to management disputes between the countries that share them (Gleick, 2014). From 2006 to 2011, the country experienced a period of extreme drought that made a precarious situation more dire. Agricultural yields dropped, prompting analysts to call it an agricultural failure. Between 2006 and 2011, the United Nations found 75% of farmers’ crops failed and 85% of livestock died from thirst or hunger. Syria’s current drought situation is even more dire than when the war began. In 2016, grain yields dropped to 50% of the yield in 2011. This caused major economic instability for millions of Syrians (FAO, 2016). The combination of water shortage, loss of crops and livestock, and financial hardship catalyzed a mass migration of people from rural areas to urban areas like Homs and Damascus. This put cities under greater stress, with people vying for jobs, food and shelter. This contributed to the social unrest and dissatisfaction with the Assad regime that was already present. While scholars are careful to attribute cause to effect, and still others posit that the Syrian civil war would have happened regardless of a drought, it is mostly agreed upon that the conditions of drought and water shortage, along with the resulting food shortages, exacerbated existing tensions. (Kelley et al., 2015).

The war has been raging since 2011, and over half a million citizens have died (Human Rights Watch, 2018), and over 13.5 million Syrians are in need of humanitarian assistance (UNHCR & Government of Turkey, 2019). The war has created tension between nation states that disagree on the proper action to be taken, and has created tension within nations that are divided on the acceptance of refugees into their societies.

Notwithstanding these breaches of state security and economic security, the Syrian civil war has had a major effect on population health. Many Syrians still living within the nation’s borders are food insecure. The UN Food and Agricultural Organization (FAO, 2016) reports that there are 6.5 million starving Syrians. The World Health Organization published a report in 2017 that explains how the marginal, often unsanitary living conditions of those displaced, are causing increases in diseases such as acute watery diarrhea, measles outbreaks, and noncommunicable diseases. Other major health impacts include severe depression and anxiety, malnutrition in children and infants, and increased deaths from lack of proper treatment and medicine (WHO, 2017).

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9.3: Major Culprits and Victims of Climate Change

We know greenhouse gas emissions cause climate change, and the major driver for carbon dioxide is the burning of fossil fuels. Other major activities that cause emissions include land use change, agriculture, construction, and the accumulation and production of waste, which also give off the lesser known greenhouse gases methane and nitrous oxide. Extraction and transport of liquefied natural gas causes significant methane emissions, which causes concern because methane is twenty times more powerful than CO_2 as a GHG. Emissions are not generated in equal parts from countries around the world. On a global scale, there is a correlation between wealth and higher emissions (Ritchie, 2018). This correlation, shown in Figure 9.2, is seen at the state and city level, as well as on a per capita basis.

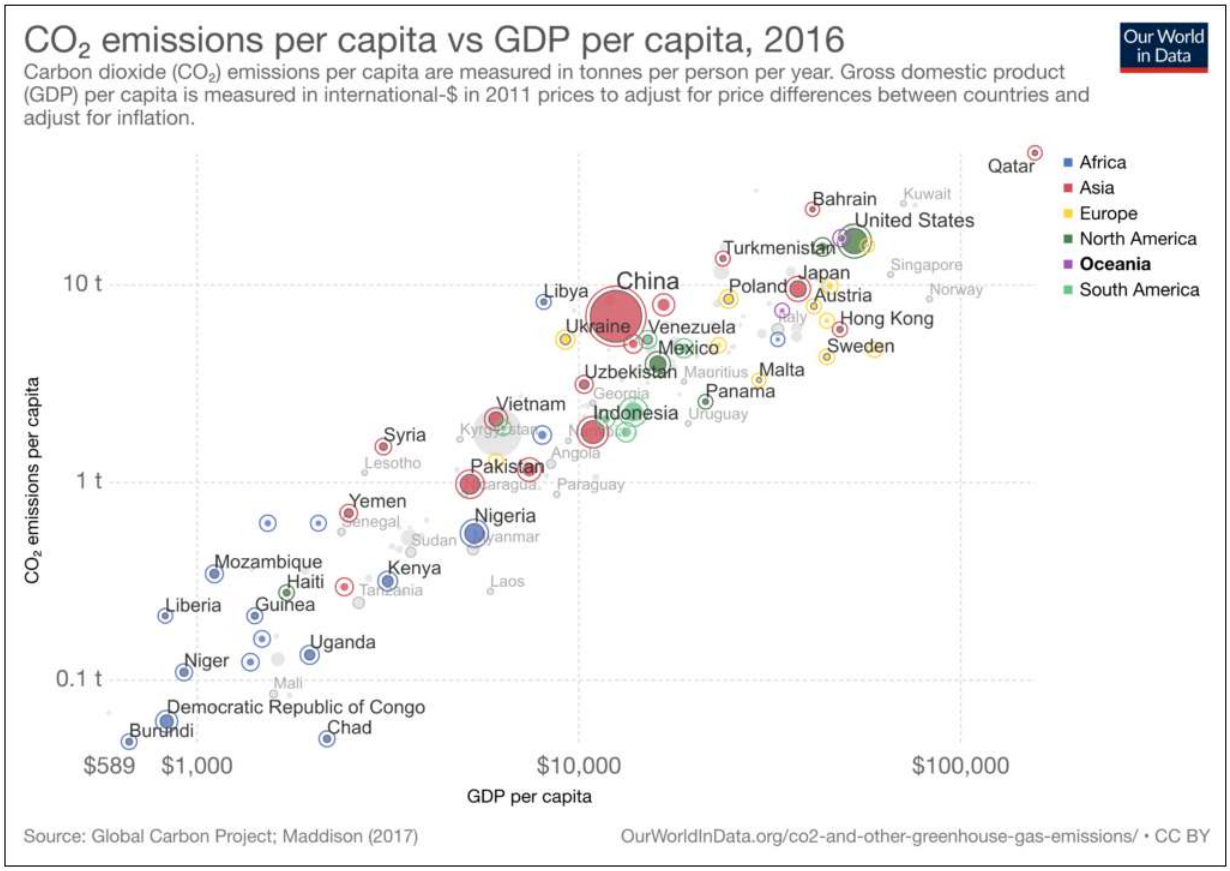


Figure 9.2: CO_2 emissions per capita vs. GDP per capita, 2016. Carbon dioxide emissions per capita measured in tonnes per person per year, and GDP is measured in international dollars in 2011 prices to adjust for price differences between countries. [Long Description]

In addition, wealthier and larger compagenerate a disproportionate amount of emissions. The Decolonial Atlas (Engel & Gross, 2019) published the names and locations of the Top 100 people "killing the planet" with the highest emissions of greenhouse gases in the world. To quote the source, "just 100 companies are responsible for more than 70% of the world's greenhouse gas emissions since 1nies also 988. The guys who run those companies – and they are mostly [men] – have gotten rich on the backs of literally all life on earth." A graphic representation is shown in Figure 9.3.



Figure 9.3: Top 100 companies 'killing the planet.' [Long Description]

The Carbon Disclosure Project reports on this disproportionality in great detail. In their 2017 report *The Carbon Majors Database*, its authors show that "over half of global industrial emissions since human-induced climate change was officially recognized can be traced to just 25 corporate and state producing entities" (Griffin, 2017, p. 8). This global corporate hegemony is shown in Figure 9.4. Some of the highest emitting companies include ExxonMobil, Shell, BP, Chevron, and Peabody Energy. Together, these companies made a profit of more than 69 billion dollars in 2018 alone. On the other hand, the world's poorest 50% of people are responsible for 10% of global emissions. (Oxfam, 2015).

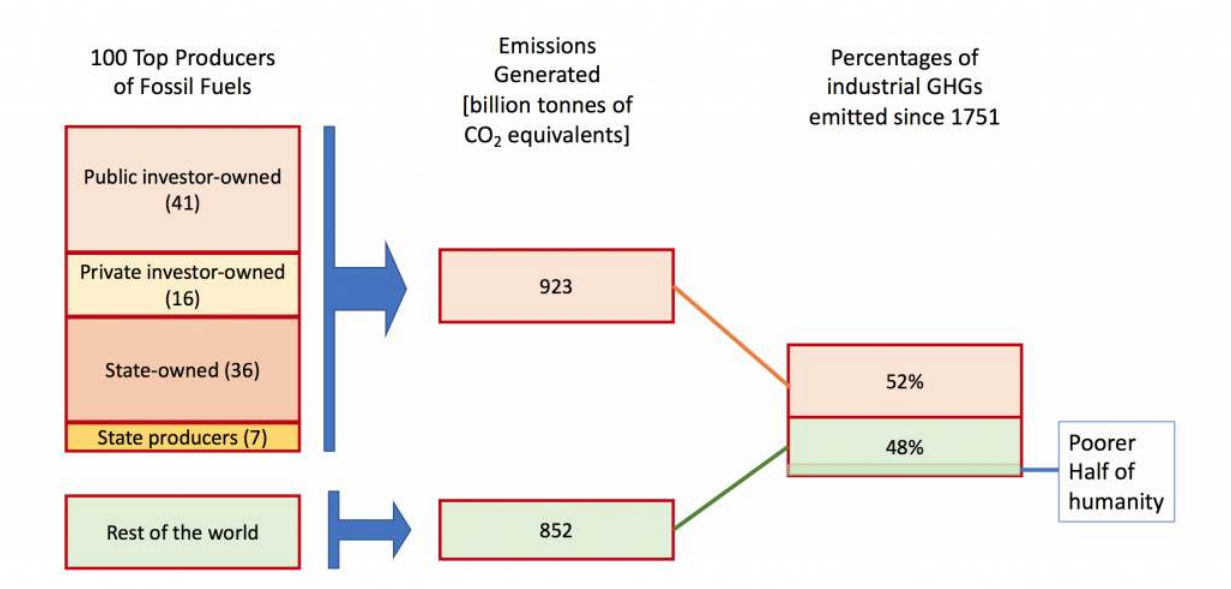


Figure 9.4: The worldwide distribution of GHG emissions reflects the global corporate hegemony. The world's top 100 corporate producers of fossil fuels are responsible for 52% of all GHGs emitted since the beginning of the industrial revolution. The narrow box at the bottom right represents the GHG emissions produced by the poorer half of humanity (Data sources: Griffin, 2017, p. 5; Ge & Friedrich, 2020; Oxfam, 2015). [Long Description]

In terms of felt impacts, the people and places that bear the greatest burden are those that are vulnerable, populations that are already at risk. It is well-documented that climate change affects all populations and communities across the world, but also that it

affects some groups more than others. Poorer populations are not as well equipped to respond to the impacts, and often cannot access the benefits of mitigation and adaptation measures. Other vulnerable populations include the elderly, immigrants, persons with disabilities, children, and people of color. Besides being socioeconomically disenfranchised, these communities tend to live and work in areas and homes that are more exposed to climate hazards. This lack of resilience renders them more exposed to hazards.[9] At-risk populations are also more sensitive to hazards, and have less capacity to adapt to or resist climate hazards. Studies show that these frontline communities are often at a disadvantage when facing climate change impacts because of a lack of resources, less access to benefits or information, as well as structural inequalities, such as racism that is written into legislation or laws. For example, when Hurricane Katrina hit New Orleans, communities of colour were at a disadvantage because the areas they lived in were more exposed to the storm and they had less resources to adapt and respond to the storm. One reason was because these areas had outdated infrastructure from a history of systematic public disinvestment, going all the way back to the practice of "redlining," the refusal of mortgage loans to communities of color (Mendez et al., 2013). Over time, this contributed to racial segregation where wealthy communities of white Americans live in well-kept neighbourhoods separate from Black communities, who live in less affluent areas that are more rundown and have less access to social services [10]

The major takeaways from this section are: (a) Greenhouse gas emissions that cause climate change are mostly created by wealthy countries and individuals and (b) the unwanted impacts of climate change are mostly felt by the poor and vulnerable. There is an inherent injustice in climate change, and it has not gone unnoticed by climate action and social justice advocates alike. The result is a global movement of people demanding real action on climate change that uplifts communities that are most vulnerable to climate change. The next section delves deeper into what this means and how people are trying to change it.

Climate Justice

Climate justice is a term coined by activists in the environmental and climate movement who purport that a true climate solution is one that also delivers social justice. Climate justice as a solution to the climate crisis acknowledges the need to deliver equitable measures that are fully accessible by frontline communities and at-risk populations, ensures these vulnerable populations are heard and have a seat at the negotiation table – in that their interests are equally represented, and that these communities can participate in the decision-making processes. Finally, a tenet of climate justice includes the restoration of social and natural systems to the benefit of all populations and future generations. (Parks & Roberts, 2010).

The difference between equity and equality is an important distinction to make when defining climate justice. Both are principles of fairness, but differ in that equity refers to equal access to opportunity and services, whereas equality is the process of treating every person the same. While equality aims to promote fairness, the end result is only 'fair' if each person starts from the same place of privilege. For example, a college entrance exam treats every exam taker the same, and allows any high school student to take the exam. However, while it treats every exam taker the same, it does not account for the fact that some students did not have access to a tutor, or a home environment that was conducive to studying, or the money to pay for top of the line high school education that predisposes certain students to a better score, and therefore better chances of doing well on the entrance exam. Further, the students that are primed to do well are then able to get into 'top' colleges, and go on to have high paying, desirable jobs. Some colleges are now beginning to understand this inequity in the education system, and are trying to address it through a number of strategies including setting aside a percentage of seats for people from marginalized communities (Bertrand et al., 2010) as well as providing services for these communities throughout their education programmes. In other words, they are trying to develop from the principle of equality towards equity. If the inequities within a system remain unaddressed, often the gap will continue to widen between those who are favoured and those who are not, entrenching those disparities.

Inequities in our education systems can build up over time through structural racism and prejudice. Similar to inequities in the education system, how we respond to climate change can affect whether structural inequities that face marginalized and at-risk communities are further entrenched and whether those who have and those don't are pushed further apart. In the case of climate change, the injustice is twofold: the wealthy live lives of privilege where increased consumption and frequent travel produce the bulk of greenhouse gases globally, and the poor bear the brunt of the climate change impacts. To further unpack this injustice, fossil fuel companies continue to make immense profits that benefit a small percentage of people in the world at the expense of the many, and at particular expense of vulnerable populations such as people of color and other marginalized communities. Moreover, in many countries fossil fuel production and consumption are still subsidised from public funds.

Climate justice theory posits that any transition to a post-carbon economy must be cognisant of the inherent inequities in climate change, aim to rectify these inequities and refrain from exacerbating them.

Climate Justice in Practice

While the concept of climate justice is relatively new, there are already concrete examples of policy and programmes designed with climate justice as a framework or objective. At the level of a municipality, the District of Columbia's clean energy plan outlines an entire chapter on "An Equitable Energy Transformation," and puts forth a framework that takes into account both an equitable process of policy development, as well as an analysis of each proposed policy against risks or barriers to equity in order to design an outcome that uplifts at-risk populations (DC Department of Energy & Environment, 2018). Other US cities such as Philadelphia and Seattle have also taken steps to integrate climate justice into their climate action plans. The United Nations Human Rights Office of the High Commissioner and the Mary Robinson Foundation co-hosted the Climate Justice Dialogue event in Geneva in 2015, which produced the Geneva Pledge for Human Rights in Climate Action, a voluntary initiative supported by 18 countries around the world to "facilitate the exchange of expertise and best practice between our human rights and climate experts to build our collective capacity to deliver responses to climate change that are good for people and the planet" (CIEL, 2015, p. 1). Currently, over 30 countries are signatories to this pledge.

In addition, the United Nations' 13th Sustainable Development Goal (SDG #13 includes a target to direct $100 billion dollars in funds annually from developed countries to developing countries to support climate change mitigation efforts (UN, n.d.). This redirection of wealth is a step in the right direction for climate justice.

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9.4: Barriers to Counteracting Climate Change

In principle, climate change and its consequences can be counteracted through prevention, mitigation and adaptation. As it stands, opportunities for prevention, although abundant throughout the 20th century, have been largely missed; at this stage we can only prevent the worst any more. This is sometimes included in the area of mitigation, which also means that the impact of climate change is lessened. In contrast, adaptation efforts focus on developing ways to live with the consequences as they occur. As the climate crisis unfolded, the spectrum of most effective countermeasures shifted from prevention towards mitigation and adaptation.

So what are the barriers to mitigating the climate crisis and to adapt to its outcomes? Scientists have shown that the many years of gathered and modeled data make the main answer uncompromisingly clear: stop burning fossil fuels, or anything else. The carbon dioxide that comes from burning fossil fuels makes up the majority of the greenhouse gases that are causing climate change. These emissions come from the major sectors of energy, waste, residential and commercial buildings, industry, transport, and agriculture, land use, and forestry (IPCC, 2014a). Curbing emissions from these sectors will require a mix of top-down governmental pressure, and bottom-up demand from citizens and civil society. Climate change is a problem that does not recognize political or geographical boundaries, and thus presents a unique situation in which cooperation from all sectors, all countries, and all people, is required. It also makes it that much harder to solve. In this section, the major barriers to a climate solution are examined.

Technological Barriers

In order to reduce emissions in all sectors, sources used for energy must be low in emissions, or have no emissions altogether. Thermonuclear energy is generally not considered among these options as it entails its own unique set of environmental problems. That leaves industries in the renewable sector. These renewable energy sources include solar, geothermal, wind, and hydroelectricity. Following this solution, mitigation of emissions from abatement technologies, land use change and agriculture should also be addressed. Because of the pressing nature of climate change, all solutions must be pursued, but solving the climate crisis inexorably requires a global transition to clean, renewable energy use.

The transition to the use of renewable energy will not be simple and will require a coordinated effort between many stakeholders. Take, for example, British Columbia's major source of heating fuel for residential and commercial properties. Natural gas is supplied by five natural gas thermal plants that extract from four fields (Whiticar, 2017). A transition to a renewable thermal energy supply would require an overhaul or redesign of the distribution infrastructure that is currently in place, whether that is geothermal heating, solar thermal energy, or using electric boilers or heat pumps (Boyle, 2004). In addition, a transition away from natural gas would affect those with a vested interest in the industry – including shareholders, workers, and policymakers. It will require a well thought-out, just, and equitable transition plan that takes into account training for workers in renewable energy jobs, assistance to natural gas companies in the transition, both financially and operationally, to renewable energy technology. The ongoing disputes about pipelines illustrate the difficulties.

The technology required to get the world to 100% renewable energy is already available – and is the focus of a few studies globally[11][12]. More funding and resources should be devoted to testing this model's capacity to serve a growing population. In addition, scientists and policymakers alike should continue to conduct research and development to advance to renewable energy infrastructure capabilities (i.e. number of people served, improved storage capacity, etc.)

While there is ample public support for renewable energy technology around the world, cultural resistance still exists in many communities. Many people feel resistant to a renewable energy transition because they fear it will change the way they live, or greatly affect an important socio-cultural practice in their lives. This reluctance is supported by conservative media and opinion engineers that tend to enjoy ample funding and political support. They pervade and partially shape our culture.

Culture and Society

While the environmental movement has certainly picked up steam over the last few years, it has not yet moved into the mainstream. Culturally, there are several reasons people have not integrated sustainable habits into their lifestyles. Culture refers to the socially accepted norms and behaviours people engage in, and differences are found from country to country, region to region – between neighbouring cities, and even down to the level of neighbourhoods. These behaviours and norms include the values, attitudes, beliefs, ideals and priorities that children acquire from an early age.

The most prominent reason humans do not opt to change their habits is the ease of retaining and using longstanding, well-established systems and modes of behaviour (status quo bias). To change that can often be time consuming or costly, and sometimes both. For example, sorting through your garbage bin to separate the various recyclable materials takes more time and energy than just throwing it all 'away' in the trash. It is more expensive to buy an electric vehicle than a regular gas-guzzling automobile, and it is costly to install a solar photovoltaic energy system onto the roof of a house. Most urban centers are organized around easy flow of traffic and consumer goods, and it is the path of least resistance for most people.

The infographic in Figure 9.5 depicts some other ways a person can reduce their own contribution to climate change.

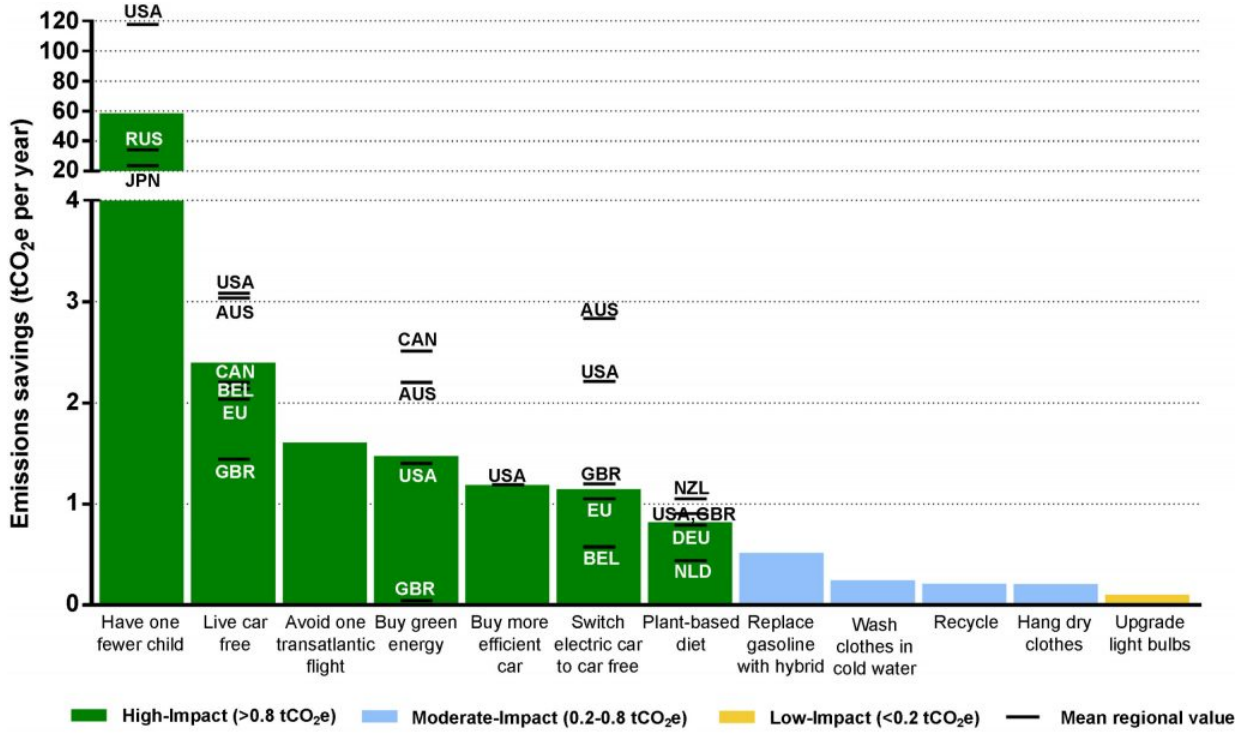


Figure 9.5: Personal choices to reduce your contribution to climate change. The heights of the bars indicate the personal contributions to climate change, or the savings incurred by foregoing the practices. The horizontal marks state average values by country. Note the actual height of the interrupted bar to the left, suggesting the inordinately high impact of an extra child (from Wynes & Nicholas, 2017, CC BY). [Long Description]

According to Figure 9.2, the top three ways to reduce personal contributions to climate change are: (a) have one fewer child, (b) live car free and (c) avoid one transatlantic flight. Having children is a social and cultural norm in most countries across the globe, and in some places, choosing not to have children can be met with incredulity and disbelief, or worse, criticism. For many, having children and starting a family are major life goals that are equated to success and happiness. Culturally, this is the accepted norm in many countries across the world. The choice to not achieve these normative goals can be alienating and difficult. The second personal choice of living car free is just not feasible for many, especially in North America. Vehicles are the primary mode of transportation for people to get to work or to go on vacation. Cars have, for years, been a symbol of wealth. To many, a car represents freedom and accessibility. Finally, the third choice of avoiding a transatlantic (or equivalent) flight means forgoing a chance to see a loved one across seas, or a sun-drenched vacation after months of hard work. These are choices that are hard to make, and it is much easier for an individual to place greater weight to their immediate enjoyment and pleasure (effectively promoted by ubiquitous advertisements) over the long-term goal of mitigating climate change, an achievement that is not promised or secure, and the rewards of which may never be reaped personally. The change of moral norms is hindered by the fact that 'carbon solutions' are still widely perceived as belonging into the domain of 'environmentalism'; the realisation that carbon mitigation will actually contribute to human security is not yet widespread. This extends even to UNHCR's refusal to recognise 'environmental refugees.'

Still, cultural and social norms may not always be the biggest barrier to a renewable energy transition. While these aforementioned barriers to change are real, there is still a strong environmental movement seen across the world advocating and pushing government and corporations for more action on climate change. The school strikes of 2019 and the 'Extinction Rebellion'

movement impressively demonstrated that. Civil society has a part to play in influencing the market toward greater supply of renewable energy and sustainable products as well as pressuring governments to introduce regulations and legislation that will institute new, sustainable ways of living, and usher in new sociocultural systems. So why has change not occurred to the point where global emissions of GHGs are reduced?

Is the biggest barrier economic? Will the renewable energy transition simply cost too much for the global economic system to bear? The answer, gleaned from many economic and scientific studies, is simply no. On the contrary—it will save us enormous costs down the track (IRENA, 2019).

The renewable energy transition is fundamentally, at its core, a political struggle between current dominant systems of power and privilege and those advocating for new energy systems and a more secure future for all. To understand this conflation of energy and power, the following section will deconstruct the relationship between fossil fuels, money, and political power.

Politics, Money and Power

The world primarily runs on fossil fuels, and it has done so since the Industrial Revolution from approximately 1760. This energy revolution allowed massive leaps forward in technological, economic, and social development. Since then, total global fossil fuel consumption has increased exponentially (see Chapter 3).

During the early age of the Industrial Revolution through to the early 2000s, developed countries like the United Kingdom produced vast amounts of fossil fuel energy, a rate that has slowed in recent years (Tiseo, 2018). The United Kingdom has amassed the wealth and ability to invest in renewable energy technology, and reduce its fossil fuel production as well as its consumption. On the other hand, developing countries like China have seen an explosive increase in rate fossil fuel energy production and consumption. In all, production of all types of fossil fuel energy including coal, oil, and natural gas, has continued to increase globally (Ritchie & Roser, 2019).

The lack of political will is the primary reason why fossil fuel production and consumption have not slowed. While the IPCC, UNEP, and other major world organizations, have called on governments from around the world to limit and decrease fossil fuel production, to place sanctions or a moratorium on explorative drilling for fossil fuels, many countries, states, and cities, are still subsidizing and incentivizing the continued production of fossil fuels. Regimes for emissions trading are taking hold but their benefits accrue too slowly. The failure of governments to act manifests in many ways, including the distortion and obfuscation of evidence that climate change is caused by humans, and the continued subsidization of fossil fuel industries and outright refusal to invest in renewable energy technology.

The fossil fuel industry's political ties are defined by the grassroots climate activism organization 350.org as a cultivation of "sponsorship relationships."[13] Fossil fuels have a long history of close political ties to capital, not in the least because of its inherent physical power as an energy resource, and also because it is a source of immense profit and political power. Aside from the often bloody battle for rights to ownership and extraction (Auzanneau, 2018), many human rights violations and atrocities have been supported by partnerships with or directly funded by oil companies (Silverstein, 2014). Often, the extraction of fossil fuels in developing countries profits the company and corrupt politicians while leaving the nation's citizens impoverished, and decimating the land and its ecosystems. The amassment of wealth in fossil fuel extraction and production over many decades has allowed some people to become very powerful. Jane Mayer documents clearly in her 2016 book "Dark Money," the rise of the conservative Tea Party in the United States of America, with the systematic funding by billionaires with fortunes steeped in oil, coal, and gas. In this book, Mayer (2016) documents the funding of neoliberal, free market economic ideology in the political arena by billionaires like the Koch brothers and other oil magnates. These powerhouse businessmen have for years set up right wing think tanks, schools and non-profit foundations that either directly preach neoliberal thought or fund its dissemination. This co-option of education, media, and popular culture, makes its way into policy in the form of deregulation. This term is misleading because it does not mean a complete lack of government regulation, but rather it is a set of policies that protect the rights of big business and give free rein to corporations and businesses, leaving little protection for citizens. It is co-option of government by big business, big money, and big oil, to have social and political license to continue to profit from fossil fuel extraction and production. It proceeded in the shadow created by a massive and well-coordinated public relations campaign that obfuscated scientific findings about climate change and financed deceptive efforts to promote false 'skepticism', using the same tactics (and specialists) that were employed by the tobacco lobby before (Oreskes & Conway, 2010). A recent analysis indicated that climate 'contrarians' (i.e. deniers) enjoy a 49% higher media visibility compared to expert scientists (Petersen et al., 2019).

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9.5: Achieving Climate Justice as the Way Forward

This chapter delved into the main drivers of climate change, its impacts, and the primary victims of these impacts. Getting to the heart of why there is still no real progress made in tackling climate change reveals a power imbalance, perpetuated by the wealthy who have made fortunes in dealing fossil fuel energy, and who still hold immense power over politicians, the media and public opinion, and even some science and academic institutions. This power imbalance allows a wealthy few the ability to sow seeds of doubt that pit conservatives against progressives, and to sway government officials in their favour—to perpetuate the status quo. In this imbalance of power that gives corporations more space than citizens at the table to negotiate on behalf of their own profit creates a political system that is no longer democratic. It is often aggravated by undemocratic electoral systems.

Invoking arguments of justice as a way forward to achieve climate security frames the conversation in a way that recognizes that there is inequity in the drivers of climate change, and so any solution should address that inequity and attempt to rectify it. In the allocation of burden as well as benefits, climate justice in practice will aim to uplift the marginalized and make the worst polluters pay their fair share in the transition to renewable energy infrastructure. The restoration of a just process is also necessary, so that corporations with huge pockets cannot co-opt the media and spin a self-serving public narrative nor lobby or bribe the government over the best interests of the public and nature. Finally, framing the climate change conversation in terms of justice acknowledges that a harm to vulnerable and frontline populations, and to the human species at large, has been committed and should be rectified.

The IPCC's report published in 2018 gives the global community just short of 11 years to limit global warming to 1.5° C (Hoegh-Guldberg et al., 2018). It is unlikely that a consensus will be reached within this short period of time on which effective precautionary measures should be taken. In fact, no matter what mitigation strategies are taken, climate change is already happening, and the current changes to global natural processes could activate feedback processes that accelerate warming far into the future and push Earth into a 'hothouse' state—where glaciers are all gone and the Earth's sea level has risen 100 metres, and extreme conditions are pervasive all over the world.

Continued inaction at this late stage cannot be condoned. The movement advocating for climate justice now spans the globe, with climate rallies and school strikes becoming commonplace and occurring frequently, led by the young Greta Thunberg. Divestment from fossil fuel is steadily increasing. Even some politicians are embracing ideas that were once considered fringe, such as US Representative Alexandria Ocasio-Cortez's inclusion of an ambitious stimulus package that at once addresses climate change as well as economic inequality in her platform—in other words, it strives to achieve climate justice. [14] While the world has a long way to go, these steps toward real action are promising.

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9.6: Resources and References

Review

Key Points

- Greenhouse gases have played an important role in the regulation of the Earth's climate since the planet developed an atmosphere. However, the sudden increase of anthropogenic emissions during the Anthropocene is disrupting that regulation.
- Besides the general increase of average surface temperatures, global warming is causing complex patterns of climate change that vary among regions and latitudes. In addition, the world's oceans are becoming more acidic, sea levels are rising, permafrost is melting and ocean currents may change.
- The effects of climate change on natural systems affects the ranges of species and generally reduces biodiversity. The changes are occurring faster than natural systems could adapt.
- The effects of climate change on human security operate partly through those biotic effects and partly they arise from severe weather, droughts, crop failures and the displacement of ever larger populations. Especially threatening are the inundation of densely populated coastal plains and shortages of fresh water.
- Those impacts are affecting the world's poorest most severely, while the levels of GHG emissions are highest with developed countries.
- Climate change can be addressed in principle by prevention, mitigation and adaptation. Apart from preventing the worst outcomes, the emphasis now lies on mitigating its impacts and adapting to those impacts that have become inevitable. The goal is to maximize human security in equitable and just ways.
- Barriers to effective countermeasures are technological, cultural and political. Other sources of human insecurity such as overconsumption, overpopulation, industrial growth, militarization and economic inequity render those countermeasures more difficult to achieve.

Extension Activities & Further Research

1. Who are the victims of climate change? While this chapter focused on human inequities, can you think of others?
2. While the harm of climate change is undeniable, whether it constitutes an injustice is a matter of personal ethics. Where do you stand on that? Would you extend your interpretation of justice to include nonhumans, ecosystems and the biosphere?
3. Identify the major issues and challenges that characterise British Columbia's transition towards climate neutrality. In what ways are you contributing personally to the problems and to the solutions?
4. Explore the interactive presentation of the 'Global Conveyor Belt.' Speculate how it is likely to affect the climate of your home region, and how that climate might change if the currents change.

List of Terms

See Glossary for full list of terms and definitions.

- abatement technologies
- climate justice
- divestment
- equity and equality
- Hothouse Earth scenario
- keystone species
- marginalized communities
- mitigation and adaptation
- resilience
- SDG #13
- status quo bias

Suggested Reading

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Long Descriptions

Figure 9.2 long description: Scatter plot of CO_2 emissions per capita versus GDP per capita in 2016. The subtitle says, “Carbon dioxide (CO_2) emissions per capita are measured in tonnes per person per year. Gross domestic product (GDP) per capita is measured in international dollars in 2011 prices to adjust for price differences between countries and adjust for inflation.” On the x-axis is GDP per capita, and on the y-axis is CO_2 emissions per capita.

The scatter plot shows the general trend that a country with a larger GDP per capita also has greater CO_2 emissions per capita. Most points are bunched closely together on a diagonal that goes from the bottom-left corner to the top-right corner. Data points differ in size, most likely because of population.

Here are some individual data points, with exact figures taken from this interactive version of the CO_2 emissions per capita versus GDP per capita scatter plot:

- In the bottom-left corner is Burundi, with a tiny dot representing GDP per capita of 665 international dollars and 0.05 tonnes of CO_2 emissions per capita.
- In the middle of the lower end of the pack is Kenya, with a small dot representing a GDP per capita of 3,169 international dollars and 0.35 tonnes of CO_2 emissions per capita.
- Closer to the centre is Indonesia, with a mid-sized dot representing a GDP per capita of 10,911 international dollars and 2.14 tonnes of CO_2 emissions per capita.
- China, near the centre and above Indonesia, has the largest dot, representing a GDP per capita of 12,569 international dollars and 6.86 tonnes of CO_2 emissions per capita.
- The United States, with a relatively large dot close to the top-right corner, has a GDP per capita of 53,015 international dollars and 16.43 tonnes of CO_2 emissions per capita.
- Qatar is closest to the top-right corner, with a tiny dot representing a GDP per capita of 156,029 international dollars and 41.23 tonnes of CO_2 emissions per capita.

[Return to Figure 9.2]

Figure 9.3 long description: Cartogram of carbon emissions with many cities labelled. The caption says, “100 companies are responsible for most of the world’s greenhouse gas emissions. These are the names and locations of their executives. Country sizes depict cumulative CO_2 emissions from 1850–2011.” Beneath each labelled city are the names and companies of the executives who live there.

The cities with the most executives from top-polluting companies are Houston (seven), Jakarta (five), Calgary (four), Moscow (four), Beijing (four), and Johannesburg-Pretoria (three). Many of the companies whose executives are shown on the map produce oil or energy. Executives are depicted in every corner of the world. Some of the most distorted countries are the United States, Germany, the United Kingdom, South Africa, Japan, and South Korea.

[Return to Figure 9.3]

Figure 9.4 long description: Breakdown of the sources of greenhouse gas emissions since 1751.

This chart shows that 52 per cent of industrial green house gases emitted since 1751 have come from 100 producers of fossil fuels. Out of those 100 top producers, 41 are public investor–owned, 16 are private investor–owned, 36 are state-owned, and seven are state producers. Those 100 entities have generated 923 billion tonnes of CO_2 equivalents.

The other 48 per cent of industrial greenhouse gases emitted since 1751 have come from the rest of the world, totalling 852 billion tonnes of CO_2 equivalents. Just a sliver of that 48 per cent (perhaps 5 per cent) of emissions have come from the poorer half of humanity.

[Return to Figure 9.4]

Figure 9.5 long description: Bar graph depicting the emissions savings of certain personal choices, measured in tonnes of carbon dioxide equivalents (tCO_2e) per year. Actions are coded as high impact (saving more than 0.8 tCO_2e), moderate impact (saving 0.2 to 0.8 tCO_2e), and low impact (saving less than 0.2 tCO_2e). Where information is available, the average impact of personal choices in particular countries is indicated.

The action with the highest impact by far is choosing to have one fewer child, which saves an average of 58.6 tCO_2e per year and an average of 117.7 tCO_2e per year in the United States. Other high-impact personal choices include the choice to live car free, avoid one transatlantic flight, buy green energy, buy a more efficient car, switch from an electric car to a car-free lifestyle, and to adopt a plant-based diet, all of which save between 0.8 and 2.4 tCO_2e per year on average.

Some actions have greater impact in particular countries. For example, living car free saves an average of 3.08 and 3.04 tCO_2e per year in the United States and Australia, respectively, compared to 2.4 tCO_2e per year on average around the world. Buying green energy in Canada and Australia saves an average of 2.51 and 2.2 tCO_2e per year, respectively, compared to 1.5 tCO_2e per year on average around the world.

Moderate-impact actions include the choice to replace a gasoline-powered car with a hybrid, wash clothes in cold water, recycle, and hang clothes to dry, all of which save between 0.2 and 0.8 tCO_2e per year on average.

The one low-impact action depicted is the choice to upgrade light bulbs, which saves an average of 0.10 tCO_2e per year.

[Return to Figure 9.5]

Footnote

1. The major greenhouse gases include water vapour, carbon dioxide, methane, nitrous oxide and ozone. Problematic is not their natural production (which has long kept our planet hospitable) but their excessive, anthropogenic emission in recent decades, including synthetic GHGs such as chlorofluorocarbons and hydrofluorocarbons.
2. (See Climate change has caused an 89% decrease in new coral in the Great Barrier Reef, study finds.)
3. The costs of work disruption and material damage, as well as mortality costs (loss of earnings) have been computed on the basis of a conservative approach wherein it has been assumed that flooding would be limited to five days in a year and also that the frequency of such extreme occurrences shall be once every five years. The computation has been limited to the year 2050. It also conservatively assumes that the population in these areas will not change, though it would change depending upon the local government policy of development relevant to the time frame up to 2050. Population figures have been taken from the census for locations shown in Figure 9.1 based on the area and density of population.
4. See Footnote #3.
5. See Footnote #3.
6. Increase in the incidence of malaria, diarrhoea and leptospirosis would result in loss of income due to non-working days and deaths. Losses have been computed using Disability-adjusted life years (DALYs) for all the major illnesses likely to impact the population. Incidence of all these illnessses will increase steadily with increase in income loss; a sharp increase is likely from

2045 to 2055. By 2050 the cumulative income loss due to malaria, diarrhoea and leptospirosis, calculated on the basis of DALYs will be 155 597 and 2401 crores [1 crore = 100,000], respectively. The calculation of DALYs is based on the World Health Organization (WHO) guidelines 8 and 9, and income levels prevalent for Mumbai.

7. Due to sea-level rise there will be loss of coastal area and ingress of sea water. Assuming that sea water penetrates 200 m inland, calculations have been made showing the monetary loss due to buildings getting affected in the region near the shore. The current loss has been computed on the basis of the present value of buildings. This is based on the assumption that buildings along the coastline located within 200 m from the shore will get affected due to rise in the sea level and ingress of sea water.
8. Calculations are based on Tourism Statistics of India10. Future costs have been calculated using the average gross domestic product (GDP) growth rate of India. It also takes the current rates of 6% and 13% increase respectively in domestic and foreign tourism per year into account.
9. In the context of environmental challenges to social-ecological systems, resilience is defined by the Stockholm Resilience Centre as “the capacity of a system, be it an individual, a forest, a city or an economy, to deal with change and continue to develop. It is about how humans and nature can use shocks and disturbances like a financial crisis or climate change to spur renewal and innovative thinking.” (https://www.stockholmresilience.org/research/research-news/2015-02-19-what-is-resilience.html accessed 2 Aug 2019; See also Simonsen et al., 2014)
10. See also Giroux, H.A., 2010. “The Media and Hurricane Katrina: Floating Bodies and Disposable Populations”, pp. 29-51.
11. See Ram M., D. Bogdanov, A. Aghahosseini, A.S. Oyewo, A. Gulagi, M. Child, H-J. Fell & C. Breyer. Global Energy System Based on 100% Renewable Energy – Power Sector. Study by Lappeenranta University of Technology and Energy Watch Group, Lappeenranta, Berlin, November 2017.
12. See Jacobson, M.Z., M.A. Delucchi, Z.A. Bauer, S.C. Goodman, W.E. Chapman, M.A. Cameron, … & J.R. Erwin. 2017. 100% clean and renewable wind, water, and sunlight all-sector energy roadmaps for 139 countries of the world. Joule 1(1): 108-121.
13. See About fossil free divestment by the 350.org website.
14. See and download the US Congress resolution Recognizing the duty of the Federal Government to create a Green New Deal.

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CHAPTER OVERVIEW

10: Human Security and Resource Scarcity

Learning Objectives

- Explain traditional responses to resource scarcity, using your own examples.
- Critique the assumption of infinite substitutability.
- Explain how the tragedy of the commons works, using an example from your own experience.
- Describe how the different types of social traps (ignorance, externality, time delay) conspire to prevent proactive policies to address resource scarcity.
- Explain how complex systems differ from static or linear systems and what problems that difference causes for resource management.
- Explain how resource capture and environmental marginalisation can give rise to violent conflict.
- Describe how effective systems of governance can mange the drama of the commons and minimise the harm caused by social traps.

Richard Plate

In this chapter we will examine the relationship between societies and the resources that support them from both an ecological and economic perspective. Societies tend not to address natural resource challenges until those challenges have evoked a crisis of some sort and here we will explore why people are not more proactive in the ways that they address matters of resource scarcity. These reasons include social dynamics, common psychological weaknesses, and a fundamental misunderstanding of the environmental systems that support us. We will explore how each of these reasons can be addressed so that societies are able to address resource challenges before human security is threatened. Perhaps most importantly, we will see that as a result of the social, economic, and ecological connections that now span the globe, failing to address resource challenges proactively will have significant global impacts on human security.

10.1: Introduction
10.2: Resource Scarcity Through the Ages
10.3: Understanding Resource Scarcity
10.4: Tragedy of the Commons
10.5: Social Traps
10.6: Understanding Complex Systems
10.7: Resource Scarcity and Conflict
10.8: Human Security in the Face of Resource Scarcity
10.9: Case Studies in Water Scarcity
10.10: Resources and References

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10.1: Introduction

From the early 1900s, ecologists have understood the population of a species as typically developing according to the S-curve shown in Figure 10.1. Consider a population that, with abundant resources, can double in one reproduction cycle. Two individuals become four over the first cycle. Those four become eight over the second cycle. Note that in the first cycle only two individuals were added, while four were added in the same amount of time in the second cycle. As the doubling continues, the population will reach 16, 32, 64, 128 and so on. This rapid increase explains the first half of the S-curve in Figure 10.1, as it moves from very shallow to very steep increases. This rapid increase in population is called exponential growth.

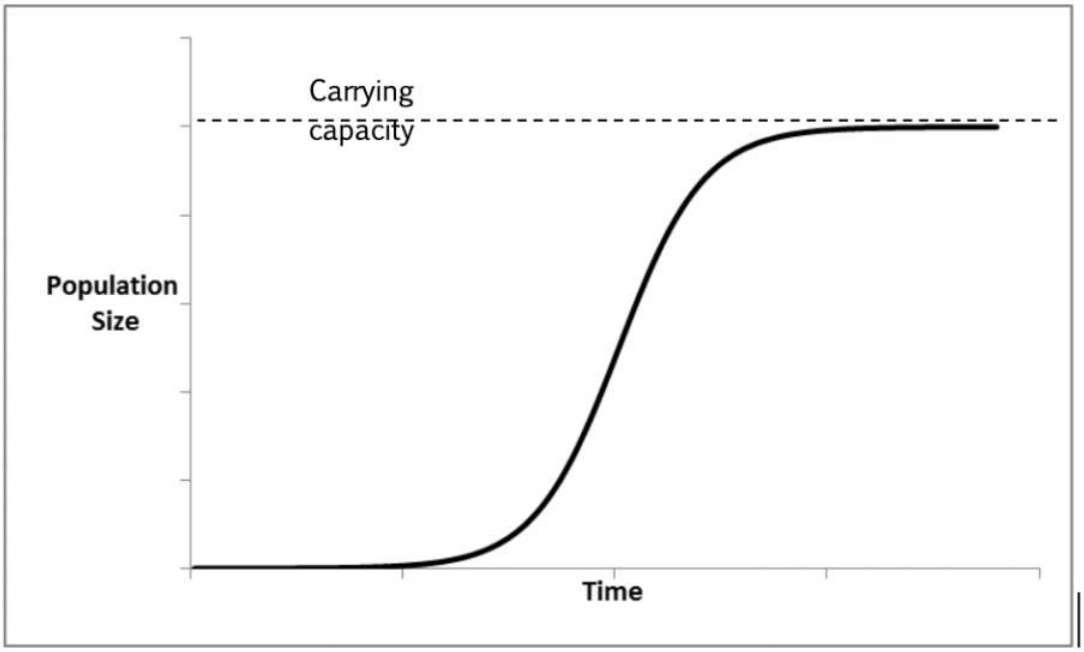


Figure 10.1: Carrying capacity. S-curve model for growth of population.

According to this model, the population will continue to grow exponentially until it reaches the limits dictated by available resources (food, space, etc.). As the amount of available resources per individual declines—in other words, as resources become scarce—mortality rates increase and reproductive rates decrease, causing the population to level off at what ecologists call the "carrying capacity" of an ecosystem—the maximum population size that an ecosystem can support sustainably. Many have applied this same basic model to humans as well, pointing toward localized examples of resource scarcity as evidence that humans are subject to the same ecological realities observed in other species. This claim has proven controversial in part because of people's general aversion to being lumped in with other species. Some argue that our ingenuity and adaptability as a species allows us to transcend ecological barriers that constrain other species. Indeed, human population dynamics have shown that the carrying capacity of an ecosystem (or of the global system) may not be as fixed as ecologists once assumed. We will return to this topic later, but first, let's take a look at how earlier societies have addressed resource challenges.

Incidentally, the same S-shaped curve (or part of it, as of yet) is observed in plots of resource use over time, economic production, energy use, fertiliser consumption, transportation, communication, tourism, pollution, deforestation and other forms of land degradation. Those plots gave rise to the concept of the Great Acceleration (Steffen et al., 2015) that introduced the Anthropocene. The point is that while the population is growing exponentially, many of its activities do so as well. This even goes for plots per capita, at least temporarily! Sooner or later, however, limiting factors become operative, slowing the increase until an inflection point is passed and further slowing results in a plateau – or even a crash. Quite often those 'limiting factors' amount to resource scarcity.

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https://socialsci.libretexts.org/@go/page/77000

10.2: Resource Scarcity Through the Ages

Dealing with the challenge of resource scarcity is nothing new in human history. Indeed, the history of humans can be seen largely as a series of responses to resource needs. Conventional methods for addressing these needs can be grouped into three major categories: geographical expansion, increased procuring efficiency and substitution.

Geographical Expansion

Of these three categories, geographical expansion is perhaps the easiest to visualize. If we are running out of resource 'X' *here*, then perhaps more 'X' is available *over there*. This logic sits at the heart of numerous wars and exploratory expeditions into uncharted areas. While expansion into new resource-rich areas can be observed in a number of different contexts, I will use the example of global fisheries. Archaeological evidence from Europe on the topic suggests that a shift in diet occurred around 1000 years ago from freshwater fish to marine species. In his book *An Unnatural History of the Sea*, Callum Roberts (2007) suggests this shift was due to a combination of a decrease in supply of freshwater fish due to declining environmental conditions of European rivers and the increased demand for fish.

Having significantly depleted stocks of freshwater fish, Europeans looked to the sea, and the sea provided. For example, early accounts of the Newfoundland cod fishery describe a sea "swarming with fish, which can be taken not only with the net, but in baskets let down with a stone, so that it sinks in the water" (quoted in Roberts, 2007, p. 33). Fish, however, were not the only plentiful source of meat. In the Caribbean Christopher Columbus and his crew saw sea turtle populations so large "that it seemed that the ships would run aground on them and were as if bathing in them" (quoted in Roberts, 2007, p. 63). Often these types of accounts are accompanied by statements regarding the impossibility of exhausting such abundant resources, but human appetites continually proved to be more than a match for the sea's abundance. The Newfoundland cod fishery, which fuelled that region's growth for centuries, collapsed in the 1990s and is still closed to commercial fishing. Sea turtles are now an uncommon sight in the Caribbean and most other places, as all species of sea turtles are listed as threatened, endangered, or critically endangered.

However, as each fishery collapsed, another was there to take its place. Ransom Myer and Boris Worm (2003) illustrated this pattern in modern times using commercial fishing catch data. They show that starting from the 1950s, periods of intensive fishing were followed by lower catch-per-unit-effort numbers (abbreviated CPUE, a common measure for the health of a fishery). As those numbers dropped, commercial fleets shifted to new fishing grounds, where CPUE figures were initially high. In time, the CPUE would decrease again, prompting commercial fleets again to shift to new richer waters. By the end of the Myer and Worms data set in the 1980s, commercial fishing fleets spanned the globe with no fisheries achieving the high yields seen in the 1950s.

Increased Procuring Efficiency

When a resource becomes harder to get, the typical response is to try to become better at getting it. In the second category of responses—increased procuring efficiency—decrease in a resource is met with improvements being made to methods used for acquiring those resources. Here again, fishing provides an excellent example. Fishing technology has seen many improvements since the days of rudimentary hooks at the ends of flaxen strings. Each technological advance—including the modern use of spotting planes and sonar for finding fish and mile-long lines baited with thousands of hooks for catching them—have enabled fishers to increase their fishing success even in the face of decreasing fish populations.

The same pattern can be seen in better detection and drilling capabilities of the oil industry. Estimates of available oil reserves increased from 635 billion barrels in 1973 to 1,148 billion barrels in 2003 (Watkins, 2006). These increases did not represent an actual increase of oil deposits within the Earth's crust, but rather our increased ability to locate and access those deposits. In other words, an apparent scarcity of a resource can be addressed (at least temporarily) by improving our ability to find and obtain that resource.

Substitution

The last category of responses to scarcity is substitution. If we run out of a resource, we can often find a different resource that satisfies the same need. In a sense, we can view the early European shift from freshwater fish to marine species as an example of substitution. As freshwater species became unable to meet demand, fishers began to provide marine species, which could serve the same purpose. Modern fish substitutions make for some interesting marketing campaigns. For example, the spiny dogfish—a

bottom-dwelling species of shark—was once considered a nuisance by fishers. Not only were they undesirable commercially, but they tore nets, stole bait, and even pilfered caught fish that were still on the hook. As populations of more valuable species declined, however, the spiny dogfish itself became the focus of a new commercial fishery, but since people might be reluctant to eat something called dogfish, the name was changed to the more palatable moniker, rock salmon.

These methods for dealing with scarcity have taken us far as a clever and adaptable species. However, there is a limit to their effectiveness. Eventually, we run out of new geographical areas to provide untapped resources and at some point the amount of available resources meet their physical limits. There are no more uncharted fisheries to be found and by most accounts the days of plentiful, low-cost oil are behind us (e.g. Campbell & Laherre, 1998; Hirsch, 2005; Owen et al., 2010). This leaves substitution, but as we shall see, there are some resources for which there are no adequate substitutes.

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10.3: Understanding Resource Scarcity

So far, I have been using fishery and petroleum examples as if they were the same type of resource, but they actually represent two very different types: renewable and non-renewable, respectively. The petroleum that we take from the ground is not being replaced (at least not in a time scale relevant to human aspirations), and non-renewable resources like petroleum, no matter how slowly we use them, will eventually run out. [1] Thus renewable resources are resources that can be consumed at a rate that allows them to be replenished as quickly as they are consumed. For example, as long as people do not catch fish at a rate faster than the fish can reproduce, then the fishery is renewable and can be sustained indefinitely. Therefore, sustainably managing one's natural resources requires reducing one's dependence on non-renewable resources and limiting the exploitation of renewable resources to a level correspondent to the resource's ability to replenish itself.

However, many economists argue that the scarcity of a resource should not be defined in material terms. Within neoclassical economics, still the dominant model among economists today, one views scarcity in terms of prices and costs. Material scarcity is only one of many factors affecting price. For example, if a natural resource becomes materially scarce, it becomes more difficult to obtain. One must drill deeper for less oil or fish longer for fewer fish. As a result, the costs associated with obtaining the resource (time, fuel, etc.) will increase, which will lead to an increase in the price of that resource. As that price increases, new economic possibilities emerge. For example, substitution of other, relatively cheaper resources becomes more attractive. From this perspective, as available petroleum deposits decline, the increased price of oil should simply provide a greater incentive to pursue other energy sources more aggressively. [2] Therefore, in a neoclassical economic sense, the material scarcity of a resource simply indicates a transition to something newer and perhaps better.

This traditional economic view of scarcity assumes infinite substitutability. That is, for material scarcity to have the rather minor effect on an economic system that many economists suggest, an alternative resource must always be available as a substitute for a materially scarce resource. Neoclassical economists place much confidence in the ability of future technological innovations to ensure that alternative resources are indeed always available when needed. Ecological economists do not view infinite substitutability as a valid assumption. More specifically, ecological economists argue that the limited supply of natural resources will and should place constraints on economic systems.

Neoclassical economists can indeed point to numerous technological innovations that have helped us to address potential resource shortages. The 'green revolution' in the mid-20th century has often been cited as a quintessential example of how preconceived limits can dissolve in the face of new technology. In the 1960s many believed that Thomas Malthus' prediction (150 years earlier) that human population would eventually grow beyond its ability to feed itself was finally coming true. These fears, however, subsided as new agricultural techniques (including use of pesticides, irrigation, inorganic fertilizers, and new varieties of grains) greatly increased agricultural output. By the 1970s, instead of the predicted famine, food prices remained stable or even decreased.

Now, however, we can see that these agricultural gains came with a price. First, agricultural biodiversity decreased significantly. High agricultural diversity is seen by many as an effective hedge against agricultural collapse for the same reasons that bankers recommend a diversified investment portfolio. In a diverse agro-industry, if something happens to one crop (e.g. disease), other strains are still available. With the green revolution, however, farmers favoured the new varieties that responded best to heavy fertilizer loads. The fertilizer itself became a non-renewable resource, produced using an energy intensive process that requires natural gas as a raw material. Water demands by agriculture also increased greatly, creating a strain on water resources, and given the projected shortages of both fossil fuels and water, many are already calling for more sustainable agricultural methods. And finally, pesticides, while useful for increasing crop production, have in many cases resulted in environmental degradation and ecosystem failure, and have become a threat to human health.

In short, while the green revolution successfully staved off the impending food shortages of the 1960s, it led to a number of unsustainable practices that continue to today. Moreover, the high rates of population growth mean that we will once again be faced with a need for a green revolution, and this time it cannot depend upon fossil fuels. Certainly, technical innovation will play a major role in how we address contemporary resource challenges, but technical innovation does not imply a world without limits and learning to live within those limits will require far more than a technical solution. Managing limited resources requires managing our own behaviour, but as we shall see, living within our limits has proven to be an extraordinarily difficult task. [3]

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10.4: Tragedy of the Commons

It is perhaps a sad sign that the most cited article in natural resource literature is one describing immanent failure at managing limited resources. Garret Hardin's 1968 article "Tragedy of the commons" has become part of the parlance of our times, and the points Hardin raised are still the focal point of much discussion among academics and resource managers. In the article, Hardin describes how economically rational [4] behaviour, at the individual level, can lead to the collapse of common pool resources, that is, resources that are open to exploitation by multiple users. Contemporary examples include fisheries, forests, and the Earth's atmosphere (in the context of greenhouse gases).

Hardin uses the illustration of cattle grazing on an open prairie to illustrate his point. Consider five herders, each with his own herd of cattle, sharing a common area for grazing. Since the grass is a renewable resource this situation can continue indefinitely as long as the rate of grazing does not exceed the grass's growth rate. And naturally, if a rancher were to add an animal to his herd, the added animal would mean added pressure on the pasture, but since the pasture is shared by five herders the added costs (i.e. negative effects on the pasture) are split five ways, while the rancher who added the animal reaps all the added benefits (e.g. additional milk or meat). Thus, simple arithmetic tells the herder to add to his herd. Since each herder follows this same line of reasoning, each herder adds animals, and each added animal results in more pressure on the pasture. Eventually, the pasture becomes so damaged that it can provide only a small fraction of the benefits seen before the pressure increased.

This pattern, argued Hardin, will be followed in the context of any common pool resource. Even when the resource users are aware of this dynamic, avoiding a collapse is difficult. If one or two of the herders decides to forego extra animals in an effort to save the pasture, the life of the pasture might be extended, but as long as any of the herders continue to increase their herds, then eventual collapse is inevitable. Thus, a herder who is perfectly aware of the dynamics of the tragedy of the commons might not unreasonably decide to increase his herd while possible, taking what benefits he can before the resource collapses. This attitude has been seen in fishers who, knowing the fishery to be near collapse, continue to fish to draw as much income as they can before the end (see Carey, 1999).

It is worth dwelling on Hardin's title for a moment. Hardin explained that he does not use the term *tragedy* to refer to how sad this situation is. Rather, he uses it in the context of what he calls (quoting Alfred Whitehead) "the remorseless working of things" (Hardin, 1968, p. 1244). In other words, the resource users are destined to collapse the resource, not because they are malicious or irrational, but because this is simply how common pool resources work. Others disagree with this conclusion, and we will discuss some additions and amendments scholars have made to these ideas. First, however, we will look at other barriers to the sustainable use of resources.

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10.5: Social Traps

Shortly after Hardin's article was published, John Platt published another more general look at collective behaviour with undesirable results. He titled the article "Social traps," defining the term as situations "where men or organizations get themselves started in some direction or some set of relationships that later prove to be unpleasant or lethal and that they see no easy way to back out of or to avoid" (1973, p. 641). The common pattern here involves a lack of connection between the short-term or local effects of an action and its long-term, broad consequences. In much the way that a mouse falls victim to a trap due to its failure to look beyond the hunk of cheese toward the metal spring set to snap its spine, people often fail to look past immediate and local gain. Economist Robert Costanza has explored how these social traps work in the context of natural resources, and has identified several different types (1997), each of which will be discussed in turn.

Ignorance

The most straightforward of these traps is simple ignorance [5], and early fishers might very reasonably have pled ignorance regarding the effect that their actions would have on the fisheries that they caused to collapse. In modern times, however, the ignorance trap is more commonly associated with the broad or long-term effects of industrial chemicals. For example, when chlorofluorocarbons were developed in the early 1900s, they were celebrated because they were useful as a refrigerant, as well as non-flammable and non-toxic to humans and decades passed before scientists realized the damage CFCs were doing to the ozone layer. In the context of resource use, however, the ignorance trap is less relevant and in most cases, scientists can predict the scarcity of a resource long before it occurs. Other traps, on the other hand, are less easily dispelled than the ignorance trap.

Externality

Externality is an economic term, referring to a cost or benefit of an action that is not felt by the actor. For example, an individual living on a river might be inclined to view that river as a convenient tool for disposing of waste. One could simply dump their waste in the river, and need not worry about it anymore. However, the waste is not truly gone. The dumper may not experience the negative effects of the waste in the river, but people living downstream from the dumping will. The Mississippi River, which flows over 2,500 miles through much of the United States including several large farming states, provides a useful example of the effects of externality traps. Over its long course, the Mississippi picks up nutrient runoff (from excessive fertilizer use) and carries those nutrients downstream. By the time the waters reach the Gulf of Mexico, the nutrient levels are high enough to cause a *dead zone* roughly the size of New Jersey. The term dead zone refers to an area in which oxygen levels in the water are too low to support most marine life. The Gulf of Mexico dead zone, one of the biggest in the world, now encompasses what was once a habitat that supported a productive shrimp fishery.

The term externality indicates that the effects of an action are not accounted for within the marketplace. In theory, if Person A was dumping waste into a river and negatively affecting Person B downstream, then the two parties might reach an agreement by which Person A compensate Person B. In reality, however, such agreements are quite complicated due both to the number of people involved (e.g. thousands living along the Mississippi River and near the dead zone) and the difficulty in placing an economic value on the damage done to the resources in question.

In the Mississippi River example, environmental degradation in the form of the dead zone has, among other things, decreased the supply of a natural resource. In other words, the externality trap plays an indirect role in resource scarcity. But this trap can play a direct role as well. The most common type of example points to the disparity between the rich and the poor and the resulting disparity between their ability to respond to resource scarcity. Put simply, those with more resources are better able to respond to resource scarcity than those with fewer resources. Consider the rise in the average price of gasoline in the United States. In 1999 the average price per gallon was $1.34. By 2008, the average had increased to $3.01 per gallon. [6] While still relatively low by global comparisons, the steep price increase was a shock for many. Those individuals with more expendable income, however, were better able to either absorb the higher fuel costs or to purchase more fuel efficient cars. For those individuals without expendable income, these options were not available.

A similar pattern can be seen globally. Karen Lock and co-workers observe that, "Between January 2006 and July 2008, global food prices rose by an average of 75%, causing an estimated 75 million additional people to become undernourished worldwide" (Lock et al., 2009, p. 269). As one might imagine, the wealthy were not among the 75 million additional undernourished people. In

fact one of the factors contributing to the increase in food prices is the shift in diet in nations with growing economies. New wealth in places such as Brazil, India and China has caused a shift from plant-based diets to ones based on meat and dairy products, more resource intensive food sources. As a result, the demand for grains increased to support the meat industry. While those individuals still depending directly on grains for their diet were not a part of this shift, they were still affected by increased grain prices. Approximately three billion people spend over half of their income on food. For these people, “any price increase will at best lead to poorer quality diets and, at worst, increase rates of malnutrition” (Lock et al., 2009, p. 270).

This discussion has focused on individual behaviour, but the same patterns hold at broader scales as well. Developing countries are more susceptible to the stresses brought on by resource scarcity than industrial countries (Jonsson et al., 2019). In fact, often the measures taken by the wealthy to adapt to scarcity exacerbate the problem for the poor. When the wealthy perceive an immanent scarcity of a resource, the common response is to increase one’s own stocks, meaning that even less of that resource is available for others. Anyone who has prepared for a hurricane has likely witnessed the mad rush for bottled water and plywood that takes place due to the fears of an impending shortage of these resources. The conflicts that take place at local hardware stores or supermarkets during those times point to the types of conflicts than can occur between classes and even countries in the face of resource scarcity. Such hoarding behaviour is deeply ingrained in human behaviour. We will discuss these dynamics later in the chapter. For now, we will continue with the survey of social traps.

Time Delay

To understand the next social trap, ask yourself which of these you would rather have: a one hundred dollar bill, or a check for one hundred dollars post-dated one year from today. You would likely prefer the cash. In fact, you can carry the exercise further and ask whether your answer would change if the check were for $105? How about $120? By identifying the exact amount that would lead you to choose the check, you can find what economists call your discount rate. That is, your level of preference for immediate benefits over future ones.

We have good reasons for preferring immediate benefits. First, we cannot know what is going to happen in a year. You might lose the check, or the account might be closed. The safer choice is to take the immediate gain. However, our penchant for immediate gains goes far beyond what is reasonable. Most of us exhibit behaviour that can be rationalized only because of the time delay between the behaviour and its consequences. For example, excessive drinking would likely not be nearly as widespread among college students if the hangover were felt immediately upon drinking alcohol rather than the next day. Procrastinating with homework so that an entire paper must be written in one stress-filled night is another example. The benefits of not doing the work in a timely fashion seem to trump the stress and potentially decreased quality of work that are bound to come from rushing at the last minute.

In terms of natural resources, the benefits we receive now from unsustainable use of resources today means that those resources will not be available tomorrow for use by us or by future generations. Consider for a moment the ethics involved in caring for future generations. Most would agree that one’s access to resources should not be dictated by one’s race or gender, and in the same vein one might argue that access to resources should not be based on what period in time a person is born. Sustainable use of resources implies an ethical responsibility (intergenerational justice) to ensure that future generations have access to the same quality of life that we have today. If we accept the argument by environmental scientists and ecological economists—that human innovation will not be able to substitute for all the services currently provided by our natural resources and environmental systems—then our commitment to future generations will require learning to live within the limits set by the Earth’s environmental systems.

The time-delay trap, however, often causes logic like this to land on deaf ears. We have heard the adages about taking precautions in order to avoid future hardship. A stitch in time saves nine. An ounce of prevention is worth a pound of cure. Still, our preference for immediate payoffs causes us to ignore such wisdom, and blind faith in future technological solutions represents a convenient way to rationalize such behaviour. As a result, we tend to address environmental challenges only after they have reached catastrophic proportions. Strict environmental regulations are rarely enacted proactively. Rather, they come after a fishery has collapsed or the majority of an area has become deforested.

Some see this behaviour as having deep psychological roots and B.F. Skinner (1904-1990) tried to explain why people exhibit unsustainable behaviour by making the distinction between knowing by acquaintance (i.e. learning through our own experience) and knowing by description (i.e. learning through someone else’s advice). [7] The former is far more powerful, and since we cannot

know the future through experience, we tend not to focus on it. This is particularly true when predictions—including sound, scientifically-based predictions—involve information that we do not want to hear.

Case Study 10.1

Fishing for Today, Not Tomorrow

A fishery is a renewable resource because the fish are able to replenish their numbers through reproduction. The rate of reproduction is dictated largely by the size of the population (Figure 10.2). When the population is relatively small, its growth rate is based on a percentage of its population. For example, a species might exhibit a growth rate of 10%, meaning that 100 individuals in the first year would grow to 110 individuals in the next, providing a net gain of ten individuals. A larger population, say 1000 individuals, would be able to produce a net gain of 100 individuals in that same period. In other words, the larger the population, the more individuals it is able to produce. This explains the shape of the left side of Figure 10.2. When a fish population is so large that its numbers are close to the maximum that can be supported by the environmental system, mortality increases due to lack of resources and the growth rate decreases as shown on the right side of Figure 10.2.

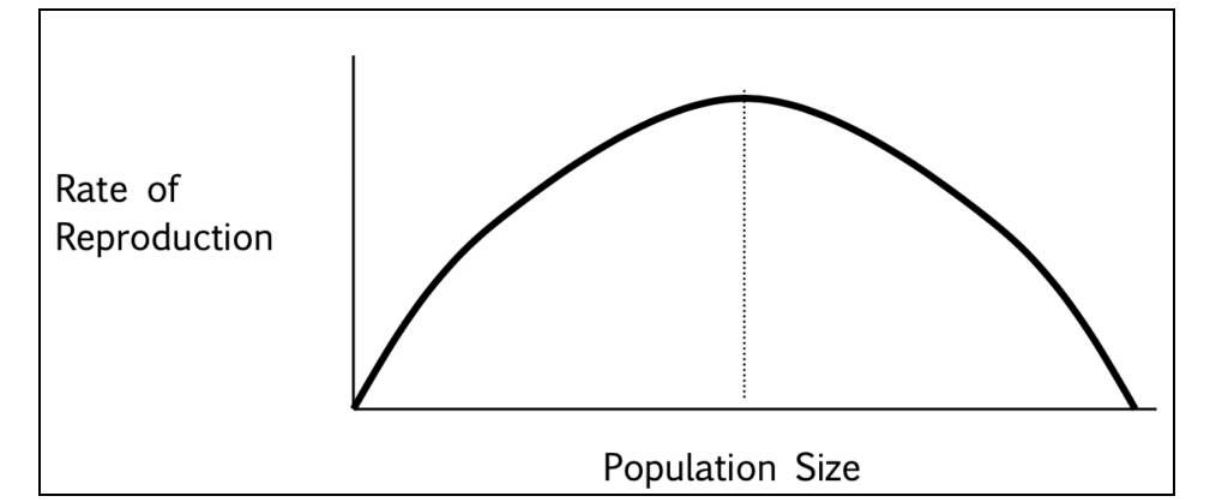


Figure 10.2: Population dynamics in fisheries.

Most commercial fisheries are currently on the left side of this graph, meaning that a reduction in population size decrease the amount of fish that can be sustainably taken the following year.[a] Each year in which catch rates exceed sustainable limits further reduces the population's ability to reproduce. If overfishing continues, then the population will eventually become too small to support any industry at all. Conversely, limiting current catch rates leads to greater sustainable catch rates in the future. Sustainable fishing requires restraint, taking fewer fish than we are able to take. However, as a result of the obstacles to sustainable behaviour discussed in this chapter, there is a strong tendency to catch fish at unsustainable rates, leaving little for future generations.

The UNFAO estimates that 52% of the world's fisheries are fully exploited; 17% are over-exploited, meaning that the fish are being caught faster than they are reproducing; and seven percent are depleted, meaning that they can no longer support a commercial industry (FAO, 2006).

Psychologists use the term cognitive dissonance to explain the discomfort we feel when we hold contradicting beliefs (see Festinger, 1957). When we act in what we know to be an unsustainable manner, we may feel a sense of fear or guilt. To reduce the cognitive dissonance—and the accompanying emotional discomfort—we have two options: change the behaviour or change the belief that the behaviour is harmful to ourselves or others in the future. Often the first choice is taken, and people choose to behave in more sustainable ways (e.g. Aitken et al., 1994; Kollmuss & Agyeman, 2002). However, changing one's beliefs to fit one's unsustainable behaviour is not uncommon. We often seek information that supports our behaviour and dismiss information that does not (e.g. Stoll-Kleemann et al., 2001; Kilbourne & Pickett, 2008). Indeed, psychologists have shown that we will even change the way we perceive physical reality in order to reduce cognitive dissonance (Balcetis & Dunning, 2007). [8] Nonetheless, we shall see that this strong psychological focus on the present can be overcome under the right circumstances.

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10.6: Understanding Complex Systems

Social traps, such as the tragedy of the commons or time-delay, help to explain much of the unsustainable resource use currently taking place. Yet even without these traps, our fundamental misunderstanding of social, economic, and ecological systems tends to promote poor decision making and complacency regarding the natural systems that support us. The term social-ecological system is used to indicate the interactions between social, economic, and ecological systems. These systems are complex, meaning they are dynamic (rather than static) and characterized by web-like causal connections (rather than linear causal chains). Our failure to acknowledge and understand these characteristics causes us to be surprised by their unexpected behaviours. In this section, we will look at each of these characteristics of complexity.

Dynamic Systems

We tend to think of social-ecological systems as static systems that exhibit linear behaviour. A bicycle exhibits this behaviour. If you pedal at a certain rate, the bicycle will move at a corresponding speed. If you double your rate of pedalling, the bicycle will move at roughly twice the original speed. This is called a linear response. Now imagine a bicycle that would take off like a rocket if you doubled your pedalling rate or one that would some days barely respond to pedalling at all. This is closer to how complex systems behave. With a basic understanding of complex systems this behaviour can be explained and to a certain extent even predicted.

Erling Moxnes (2000) performed an interesting experiment to show how our inability to understand the dynamics of complex systems can contribute to the collapse of a resource. Moxnes designed a model of a fishery based on the population dynamics described in the textbox above. He then had study participants (including fishers and fishery managers) manage this simulated fishery. Each year a participant could decide whether or not to add a ship to the fishing fleet. The participant would then receive data regarding the number of fish caught that year and, based on that information, make a decision about adding another ship the following year.

Two characteristics about this exercise are relevant to our discussion of social traps. First, the simulated fishery was privately owned. Participants did not have to worry about someone else catching the fish that they left to reproduce. Second, the participants themselves were rewarded (i.e. paid) based on their success in running a sustainable fishery based on an infinite time horizon. In other words, the higher immediate payoff to the participants came if they were able to maintain a high reproductive rate in the fishery far into the future. By setting the game up this way, Moxnes effectively eliminated the potential for tragedy of the commons or time-delay traps, presumably taking away the most difficult aspects of managing real-world fisheries.

Despite these advantages, the median fleet size built by Moxnes' participants was almost double the size required to maximize sustainable yield. Even without the social traps described above, the participants overfished their fisheries. Perhaps even more interesting than the participants' poor performances were their responses to this and other similar simulations. Many were dubious of the results, suggesting an error in the model itself or attributing their performance to factors outside the parameters of the model (e.g. disease).

The difficulty for these participants stemmed from their assumption that the fishery was a static, rather than a dynamic system. Moxnes explains that the participants assumed there was a set rate of growth, say 1000 fish per year. They proceeded to increase their fleet size, assuming that a decrease in catch would indicate that they had found the growth rate. They did not realize that growth rate is a moving target, which decreases as the population size becomes smaller. By the time participants observed a decrease in catch, they had already decreased the population significantly, causing a severe reduction in the population's ability to make more fish.

Moxnes' findings apply to far more than fisheries. Social, economic, and ecological systems are all complex, dynamic systems. Because of our tendency to view these systems as static, we are consistently surprised by their behaviour in the same way that Moxnes' participants were surprised by the response of the model. Consider, for example, the phenomenon of positive or reinforcing feedback, where a small change leads to bigger and bigger change. The build-up of nuclear arms during the Cold War is an oft-cited example. The United States developed a small arsenal of nuclear weapons. The Soviet Union, viewing this as a threat, developed their own arsenal in response. The United States viewed this response as a threat and added to their arsenal, and the Soviet Union behaved likewise. This cycle continued until the two countries had enough nuclear arms to blow up the Earth many times over—a situation that was costly and dangerous to both countries.

To see how reinforcing feedback works in the context of natural resources, we can return to the example of the green revolution. Scientists responded to the perceived threat of the human population becoming too large to feed by increasing our ability to produce food. Forgetting for the moment the objections raised regarding the agricultural methods used to increase food production, we can focus on the problem with the logic of this solution in a dynamic system. If the amount of food needed to feed the world population were a static figure (as is assumed in the slogan 'feeding the world'), then increasing food supply alone would have indeed solved the problem. However, as we have seen with fish populations, population growth involves a complex and dynamic system.

The reinforcing loop that illustrates this pattern is shown in Figure 10.3. To understand the dynamics of the system, one must simply follow the arrows in the loop. Reproduction leads to an increase in population size, which leads to an increase in reproduction, which leads to an increase in population size. And on it goes round and round the loop. The result of this feedback loop in populations is the exponential growth described earlier in the chapter (Figure 10.4). This pattern of growth can be seen in populations of many species. However, reinforcing loops are constrained by a balancing loop. The growth of populations is typically constrained by available resources, as shown in the fishery example in Figure 10.2.

This pattern is basic ecology, but it was not a part of the solution offered by the green revolution. Increasing the global food supply further increased the global population. In the 1960s, people were worried about feeding a population of four billion. In the next few decades, we will be concerned about feeding a population of nine to 10 billion. In short, increasing food production made it possible to go around the reinforcing feedback loop of Figure 10.3 several more times, but it did not address the fundamental problem. A more holistic approach to the problem might have included measures for addressing population growth (e.g. family planning programmes). By choosing to limit our reproduction rates before we are forced to by resource constraints, we can address the root of the famine and suffering that the scientists of the green revolution intended to address.

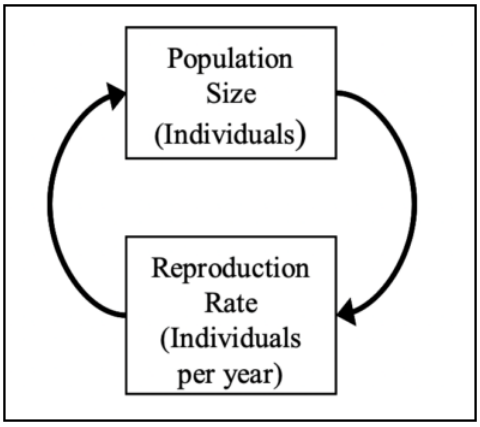


Figure 10.3: Reinforcing feedback. Population size (individuals) and reproduction rate (individuals per year).

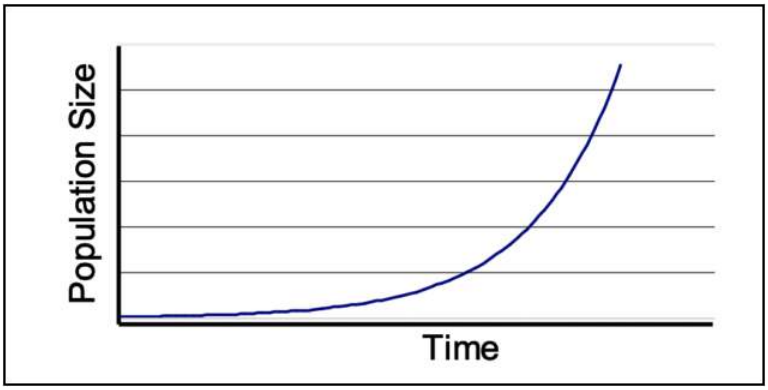


Figure 10.4: Exponential growth. Population size over time.

Interconnectedness

In addition to being dynamic, complex systems are characterized by a high level of interdependence between parts. When we analyse a process, we tend to think in linear terms with series of events making causal chains, but in complex systems one cause

can have many effects that move through a system. Ecologists often observe this type of behaviour, in which the loss of one species causes major changes to the entire system. For example, fishers, observing otters eating fish, used to view them as competitors for fish near a kelp forest. Now, however, scientists know that the absence of otters in a kelp forest system can lead to the loss of the entire forest, including the fish.

In terms of natural resources, particularly renewable resources, this interconnectivity can mean that activity regarding one resource leads to difficulties with others as well. We have already seen how activity in states along the Mississippi River affects resources in the Gulf of Mexico. Examples abound. One area that has received greater attention recently is the connection between coastal forests and marine systems. Each of these systems provides important resources and services. Only recently have resource managers looked closely at how these systems interact. For example, loss of coastal forests can significantly increase the amount of nutrients and sedimentation entering nearby coral reefs (Caddy & Bakun, 1994; Humborg et al., 2000). In short, scarcity in one resource can cause scarcity in others as well. In addition, environmental degradation taking place on a global scale (see Chapter 9 and Chapter 12) can cause severe reductions in available living resources.

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10.7: Resource Scarcity and Conflict

So far, this chapter has focused on the barriers to addressing resource scarcity issues before they become major problems. In this section, we will look more closely at behaviours that people exhibit once resource scarcity *has* become a major problem. There is still much debate over the relationship between resource scarcity and violent conflict. Thomas Homer-Dixon argued that resource scarcity can often be a significant contributor to violent conflict, particularly in developing countries, which face "increasingly complex, fast-moving, and interacting environmental scarcities" (1999, p. 5). He describes two patterns of interaction in the face of scarcity.

One of these, is that "powerful groups within society – anticipating future shortages – shift resource distribution in their favour, subjecting the remaining population to scarcity" (Percival & Homer-Dixon, 1998, p. 280). This interaction is called 'resource capture.' As a result of this distribution shift, weaker groups are forced to migrate to ecologically sensitive areas, thereby increasing scarcity. This Homer-Dixon calls ecological marginalization. These interactions can result in "a self-reinforcing spiral of violence, institutional dysfunction, and social fragmentation" (Homer-Dixon, 1999, p. 5). These dynamics, predicts Homer-Dixon, are likely to lead to a future increase in violence as resource scarcity challenges become severe, particularly in combination with social injustice (Homer-Dixon, 2006).

Describing processes not unlike what Homer-Dixon depicts above, scholars cite resource scarcity as the primary cause for many recent conflicts, including the Sudanese civil war (Suliman, 1999) and Rwandan genocide (Diamond 2005) and others (Finsterbusch, 2002; Parenti, 2011). Others, however, argue that resource scarcity has rarely been a major contributor to violent conflict. Several quantitative studies have found little correlation between factors such as population density, deforestation, water scarcity and violent conflict (Esty et al., 1998; Theisen, 2008). They point to what they see as more significant factors contributing to violent conflict, including lack of education, poverty, and instability. Indeed, some even see the potential for positive impacts. When scarcity is addressed early, the need to manage a resource can have a unifying effect, encouraging cooperation between institutions or nations. Recognising non-negotiable environmental limits and adapting to them is an important component of resilience in the Anthropocene (Pirages & Cousins, 2005).

Disentangling the various components of conflicts and identifying their specific roles is a difficult task and continues to be the focus of much debate. Whatever one's view is of the relationship between violent conflict and resource scarcity, experts agree that the resource challenges of the present and near future will test our systems of governance in new ways. The ability of these institutions to respond to new stresses plays a significant role, not only in the context of violent conflict, but also in the context of basic quality of life. In the next section, we will look at how to design institutions that can respond appropriately to contemporary resource challenges.

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10.8: Human Security in the Face of Resource Scarcity

Much of the debate regarding resource scarcity and conflict focuses on localized shortages. Future natural resource challenges are likely to be felt much more broadly (Bretthauer, 2016; Pirages & Cousins, 2005). Ecologist C.S. Holling describes the situation like this:

Nature, people, and economies are suddenly now co-evolving on a planetary scale. Each is affecting the others in such novel ways and on such large scales that large surprises are being detected and posited that challenge traditional human modes of governance and management and that threaten to overwhelm the adaptive and innovative capabilities of people. (Holling, 1994, p. 81)

Note the focus here on "adaptive and innovative capabilities." Holling's primary concern is not with scarcity of resources per se, but with scarcity of possible responses to new challenges. In an ecosystem, responses to new changes become limited by loss of biodiversity. In a social system, response to change becomes limited when individuals lose creativity and institutions become overly rigid.

I am using the term *institutions* broadly here, referring to systems of governance on multiple scales. This includes national and local governments as well as less formal systems, including social norms and habits of interaction. In his book, *Collapse: How Societies Choose to Fail or Succeed*, Jared Diamond (2005) describes several examples in which societies failed because they were unable to change their individual and/or collective behaviour in the face of changing environmental conditions. For example, he describes how Norse settlements in Greenland collapsed in the 15th century largely because of their reluctance to adopt foods and practices that better suited the resources and environmental conditions of Greenland. Of course, in today's globalized world of social, economic and ecological interconnectivity the stakes have risen. Repeating the failures that Diamond illustrated on a local level can have much broader costs today (Bretthauer, 2016; Dawson et al., 2018). Avoiding those failures will require addressing the social traps discussed earlier in the chapter.

Drama of the Commons

It is worth noting that many of the thousands of articles and books that cite Hardin's "Tragedy of the commons" disagree with his conclusions and suggest alternatives to the resource collapse that Hardin described. The dynamics of common pool resources that Hardin describes are indeed challenges, but they are not insurmountable obstacles. First, Hardin's scenario comes about because the herders are all focused ona narrowly defined self-interest. In reality, people are quite capable of focusing on the collective good, and adjusting their behaviour accordingly. Cultural contingencies add to the variability. Moreover, people, aware of their tendencies toward narrow self-interest, are capable of developing and accepting a set of rules designed for the greater good of society. If only one of Hardin's herders refrains from increasing his herd, then the resource will still collapse from the behaviour of the others acting in narrow self-interest. However, if all five herders agree to limit their herds, then the resource can be sustained.

Hardin's critics have also pointed out that resource users typically do develop rules governing use of common resources (e.g. Berkes, 1985). Indeed, many argue that the ability to cooperate plays a strong role in selection of communities (e.g. Boyd & Richerson, 2009). In other words, cooperation within a community increased the ability of members within that community to survive. When one includes this broader spectrum of behaviour, the management of a common resource need not be tragic at all. Ostrom and coworkers (2002) prefer the term "drama of the commons" since common resource management involves a mixture of tragedy, comedy, and history. The question then becomes, "What systems of governance are best suited for addressing the drama of the commons"?

The answer to this question depends largely on the specifics of the resource and community in question. What works well for one community may fail miserably in another. [9] However, scholars have identified several key aspects of governance systems that increase the likelihood of a community to manage its resources sustainably. A fuller discussion of these will be offered in Chapter 20, but four of the most important characteristics are listed below.

The system must be responsive to the whole range of resource users. Excluding certain resource users from discussion of management can create ethical problems as well as practical ones. Maintaining a diversity of voices involved in the discussion can provide useful insights and innovative ideas.

The system must include institutions working together across scales. This means that local institutions must be able to coordinate with regional, national and global ones. Local institutions are often important sources of creativity and innovation, but the larger

institutions are needed to coordinate efforts and implement new ideas. By working together, these institutions can combine their respective strengths (see Berkes, 2007).

The system must be adaptive. Environmental systems change continually. Governing systems must be able to perceive and respond to these changes. There are numerous examples where resource collapse came about largely due to the insistence of governing agencies to retain policies that no longer fit the circumstances (see Gunderson & Holling, 2001).

The system must earn the trust of the resource users. Resource decisions are often not win-win. They involve costly measures that can inflict hardships on resource users. Those sacrifices will be resisted unless the resource users are confident that the system of governance is fair and effective (Jonsson et al., 2019).

Overcoming Individual Traps

Of course, the tragedy of the commons is only one of the obstacles to sustainable use of resources discussed earlier in the chapter. Institutions with the characteristics described in the previous section will not succeed unless the other traps are addressed as well. For example, we must educate ourselves regarding natural resources. Scientific discoveries over the last several decades have illustrated numerous ways in which our actions affect the environmental systems that support us. We can no longer claim ignorance when fisheries collapse or vast areas become deforested. But to truly avoid the ignorance trap, the level of environmental literacy among the general public must increase.

A basic understanding of complex systems and of the intricate web of connections that now connect us globally must be considered part of environmental literacy. We can understand simple systems intuitively; when filling a glass of water, we know to stop pouring before the level reaches the top of the glass. The feedback of the increasing water level is clear, and we know the appropriate response. The behaviour of complex systems is not so straightforward. Imagine pouring that same glass of water blindfolded and without being able to control the flow from the pitcher. Such conditions would call for far more precaution if we still wish to avoid spilling. This latter scenario is closer to how complex systems behave. If more people understood this behaviour, or at least expected it, then policies that proactively address resource challenges would be more popular. [10]

Other traps, such as externality and time-delay, may require an ethical shift. Overcoming the externality trap requires taking responsibility for the effect of our actions on others. The fact that those others may be far away geographically does not relinquish us of those responsibilities. With time-delay, the ethical extension is not across space, but time. Supporting policies for sustainable use of resources requires overcoming our preference for immediate payoffs. Ensuring that our descendants have adequate access to resources often means using less for ourselves now. Whether we are concerned for our own future well-being, that of people living far away, of future generations, or even of other species, our decisions must go beyond immediate payoffs and incorporate a broader perspective. Our response to these types of personal challenges will in no small way shape the way that we respond collectively to the resource challenges of this century and beyond. Some directions for conducive ethical changes will be described in Chapter 11.

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10.9: Case Studies in Water Scarcity

Typically, when people think of water scarcity, they think of deserts. This perception is not without reason. Many armed conflicts over access to water have indeed taken place in arid regions. One of the factors for the Arab-Israeli 1967 War was access to the Jordan River. Israeli Premier Levi Eshkol proclaimed, “water is a question of life for Israel,” explaining that “Israel would act to ensure that the waters continue to flow” (quoted in Gleick, 1993, p. 85). Similarly, many scholars cite disputes over the Nile River as an important example of the central role that water can play in inter-state conflicts in northern Africa (e.g. Homer-Dixon, 1994; El-Fadel et al., 2003; Kameri-Mbote, 2006). While these violent, international conflicts garner much attention, they do not represent the norm. Conflicts over water resources typically occur on local or regional scales rather than international ones, they rarely result in violent conflict, and they often occur in places that receive substantial rainfall. In this section, we will look at two case studies of conflicts due to water scarcity that are more representative of typical scarcity issues.

Apalachicola-Chattahoochee-Flint River Basin

Our first case study illustrates howinstitutions can find themselves trapped in a situation that everyone agrees is unsustainable. In the United States, most people associate water scarcity conflicts with arid western states. However, Florida, Georgia and Alabama have found themselves in a hotly contested struggle over the waters of the Apalachicola-Chattahoochee-Flint (ACF) River Basin. The ACF basin, which covers 12 million acres from Atlanta to the Gulf Coast of Florida, provides drinking water for Atlanta, hydro-electric power for Alabama, and prime natural habitat in Florida’s panhandle. In the 1980s a series of droughts combined with Atlanta’s growth made the limits of the ACF basin a matter of concern. Note the potential for an externality trap here. More pumping in Atlanta would mean that less water was available to produce electricity in Alabama and to maintain the important riverine ecosystems in Florida.

The three states involved in this conflict have made numerous attempts to develop a management plan on which all can agree. These attempts, mixed with numerous law suits and appeals, have now spanned more than two decades, and the dispute has still not been resolved. Water Law expert Robert Abrams attributes this stalemate to a misguided effort among those involved to find a “static, presently articulable, final result that will adequately ensure and properly prioritize the region’s most vital interests” (Abrams, 2008, p. 682). In other words, those involved in negotiations want to find an answer that will resolve this issue permanently and without the need for later adjustments. Such an approach not only makes it difficult for institutions to respond to current changes, but may also hamper institutions’ abilities to respond to changing conditions in the future. Moreover, the negotiators are holding steadfastly to their own positions, taking what Abrams calls “aggressive, jingoistic public positions that prevent candid, open-ended negotiations” (Abrams, 2008, p. 683).

Recall that adaptability and coordination between institutions from multiple scales (local, regional, and national) are two key attributes for a system of governance that can successfully manage the challenges of resource scarcity. While the three states are mired in this conflict, residents from each state cite negative economic and environmental impacts as a result of the status quo. In their efforts not to lose the negotiations, the state and federal institutions involved have missed opportunities to coordinate conservation and research efforts to find practical ways to address the water scarcity. The next step will likely be intervention by Congress, but there is no clear end to the dispute.

Mekong River Basin

Our second case study presents a much different approach. The Mekong River flows through or borders six countries in Southeast Asia. Coordination between these countries began in the 1950s when the Mekong River Basin (MRB) became the focus of a United Nations study on river basin planning. The lower Mekong nations—Cambodia, Laos, South Vietnam, and Thailand—adopted the UN report as the basis for development in the region and formed the Mekong Committee in 1957 with financial support from the United States, France and Japan. National Mekong committees were quickly formed and studies initiated on both physical and socio-economic impacts of potential developments within the basin. The international committee coordinated this work to ensure consistency in research methods throughout the MRB.

The Committee’s progress slowed in the 1960s in part due to the same type of competing goals described in the previous case study, but also due to the outbreak of war in the region. It is worth noting, however, that even during wartime, Committee members continued to share data and information on water resources and development. Indeed, scholars suggest that the scientific work done

through the Committee contributed to regional security and positive international relations. An Interim Mekong Committee continued work after 1978, when Cambodia dropped out. In 1991 Cambodia was readmitted and negotiations began for the *Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin*. Adopted in 1995, this agreement lays out a set of rules guiding development in the MRB. It is considered a "milestone in international water resources management treaties due to its emphasis on joint development, ecological protection, and a dynamic process of water allocation" (Radosevich & Olson, 1999; quoted in Jacobs, 2002, p. 360).

Much of the success seen in the MRB management can be attributed to the factors described above. First, it represents coordination of efforts on local, national, and international scales. Projects are not considered individually, but as parts of a larger regional programme. This coordination includes assistance from the UN and international non-governmental organizations, providing expertise and support when needed. Second, the Mekong Agreement of 1995 provides enough flexibility for institutions to adapt to changing needs. It lays out guidelines for management rather than details regarding water allocation. And finally, as a result of the long history of cooperation in the management of the MRB, members can approach negotiations with a high level of trust and confidence in the long-term management of the region. Conflicts are not avoided, but they can be viewed in the context of this history, which creates an atmosphere more likely to produce open and fruitful discussion.

Challenges regarding water management like the ones described here are far from uncommon and are likely to become more prevalent as societies scramble to support growing populations. Physical evidence of water shortage—lower groundwater tables, dried up wetlands, reduced river flow—can already be seen all over the globe. Our responses to such challenges—as individuals and as societies—will shape our own futures and those of our descendants. Whether these challenges will be resolved in bitter struggles or with open cooperation depends largely on us.

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10.10: Resources and References

Review

Key Points

- At some point, all societies must address the challenges presented by the scarcity of resources.
- Historical ways of dealing with local resource scarcity are unlikely to be as effective now at addressing global resource scarcities.
- Understanding the assumptions that economists and ecologists make when discussing resource scarcity can help us to see how each field provides important insights to future resource challenges.
- Numerous factors, including social dynamics anda general lack of focus on the broad effects of our actions, make unsustainable use of resources more likely.
- By understanding those factors, we can address resource scarcity through better decision-making and the development of effective institutions for managing resource use.
- Better decision-making and effective institutions will be necessary in order to maintain human security in the face of contemporary resource challenges.

Extension Activities & Further Research

1. Play Oh Deer. This is a kids' game, but undergraduates tend to enjoy it at least as much as young children. It provides a lesson in population dynamics and resource scarcity.
2. Have students read the debates regarding resource scarcity and substitutability between neoclassical economists such as Julian Simon and ecological economist such a Herman Daly. They can then write a response paper expressing their own views on the debate.
3. Choose a conflict that scholars attribute to resource scarcity (e.g. Sudanese civil war). What role did resource scarcity play? What other factors led to violent conflict?
4. Identify an example where people misunderstand the behaviour of a complex social-ecological system and explain how that misunderstanding leads to unsustainable behaviour. See Meadows (2008) for more information on understanding complex systems.
5. Discuss what things are regarded as resources in your culture. Compare, e.g. a glass of juice: with a lake, with your parents, with the local church. Which of these four things are less like a resource and why? What does this difference depend on?

List of Terms

See Glossary for full list of terms and definitions.

- cognitive dissonance
- dead zone
- ecological marginalization
- exponential growth
- externality
- infinite substitutability
- intergenerational justice
- procuring efficiency

Suggested Reading

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Footnote

1. Editors' note: An interesting theoretical way to cope with this challenge was suggested by Bartlett (2012) under the term of 'sustained availability.' For example, assuming that the available reserves of a given non-renewable resource would last for 40 years at the present rate of consumption (as has been estimated for petroleum), it can be available indefinitely provided that its consumption is scaled back by 1/40 = 2.5% each year. The same recommendation was made independently in the Uppsala Protocol (Campbell & Aleklett, 2004).
2. Similarly, recycling could become an economically viable option for some resources as the costs associated with obtaining virgin resources increases.
3. Editor's note: The fact that the idea of infinite substitutability is still being discussed in some circles indicates that the political relevance of an idea is not necessarily affected by its scientific refutation; climate change denial is another example.
4. While we use the term 'rational' colloquially to imply the use of sound judgment and good sense, economists use it to refer specifically to behavior in which one assesses the costs and benefits of a decision and opts for the path that maximizes net gain.

As we can see in Hardin's example below, economically rational behavior (based on analysis at the individual level) often clashes with what we think of as sound judgment.

5. Editors' note: 'Simple' ignorance excludes in principle any kind of disingenuous ignorance, i.e. false claims of ignorance or deliberate attempts not to find out.
6. Values are reported in 1995 US dollars. Data were taken from the U.S. Energy Information Administration: https://www.eia.gov/petroleum/gasdiesel/ (accessed 26 July 2019)
7. See a summary of Skinner's accomplishments on the Harvard University's Department of Psychology web page.
8. Editor's note: A pathologically extreme variant of such behavior is known as anosognosia. It manifests as the inability of a patient to recognize his/her anatomical or physiological defect, such as paralysis. Catton (2009) discussed sociocultural equivalents to such behavior that support cornucopianism.
9. Editor's note: The international community seems to lag behind smaller communities in this capacity for cooperation; it even seems to be moving into the wrong direction.
10. Editor's note: The argument that ecosystems behave as complex systems whose responses are not easily predicted is often used to support the precautionary principle in environmental policy.
11. This work and the one by Pirages et al. provide a current evaluation of Homer-Dixon's model.
12. Herman Daly's review of the first edition of Simon's book, in which he challenges the neoclassical arguments. Daly published much about the concept of zero-growth economies.
13. This work and the one by Dawson et al. bring the reader up to date on the international situation.
14. This is a more recent version of Simon's neoclassical arguments. Both are being re-evaluated now in view of the Anthropocene.
15. This book provides a thorough introduction into the behaviour of complex systems.
16. Stuart Pimm and Jeff Harvey's scathing review of Lomborg's book in the journal *Nature*.
17. The website of the Population Reference Bureau offers numerous analyses on topics concerning population and resources.
18. This book lays out the neoclassical view of resources. Simon considers human ingenuity the ultimate resource, allowing humans to cope with scarcity in other resources.
19. Website on the debate between neoclassical economists (J. Simon) and ecological economists (H. Daly, P. Ehrlich).

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CHAPTER OVERVIEW

11: Our War Against Nature - Ontology, Cognition and a Constricting Paradigm

Learning Objectives

- Learning Outcomes & Big Ideas

NUMBER	BIG IDEAS	LEARNING OUTCOMES
1.	There is a real world out there, and science is the human endeavor that observes and investigates ‘how things are’ with that reality.	Integrate what humanity has learned recently, by way of science, into a new way of seeing the world, shifting our worldview, to lead us off our ecocidal track that threatens human security.
2.	Living organisms have been discovered to be immensely complex autopoietic systems. Ecosystems, the biosphere, and the biogeophysical Earth system as a whole, are successively larger complex systems; understanding their function requires taking into account the nonlinear interactions of many factors.	Think holistically using system thinking, not just linear thinking, in order to understand living organisms and those levels of organization.
3.	All living organisms have much in common, from their bodily composition and vital biochemical processes to their purposive activity, which is always aimed at maintaining and elaborating the lives that their individual genetic endowments make possible.	Accept that all living organisms have interests, and respect those.
4.	Life has been flowing into increasingly elaborate forms on the Earth over the last four billion years. In each period of time, life flows over space through patterns of dynamic interaction among innumerable living organisms, joined together by matter and energy exchange within ecosystems.	Learn to look at the Earth in evolutionary terms, including the history of life. Understand how human societies evolved into their present state, looking at certain aspects of that development through several different disciplinary lenses.
5.	Ecosystems are structured by the ways in which solar energy flows through the system, energy initially trapped by the photosynthetic activities of the ‘producers’ of living matter, and powering successive trophic layers of ‘consuming’ organisms, whose biomass diminishes moving upward toward the apex of the biotic pyramid.	Understand how energy flows through the trophic levels of an ecosystem.
6.	Humans are primates, not carnivores, and did not evolve as apex predators; our closest evolutionary relatives, with whom we share a basic physiology, are primarily vegetarian.	Place yourself, and your species, into the correct trophic level of an ecosystem that supports your existence.
7.	Since all living organisms must sense ‘how things are’ in their environment and respond appropriately to it if they are to stay alive, all living organisms have some sort of awareness. Many types of nonhuman animals have well-developed brains and manifest intelligent behavior; many have special senses and abilities that we humans don’t have.	Develop an awareness that all life forms have minds, and that some are comparable to human minds in complexity.
8.	Human beings are a part of nature, and therefore share in what all lifeforms have in common.	Accept that there is no empirically identifiable characteristic that makes humans metaphysically unique and superior to nonhuman beings. Accept that a ‘war on nature’ is a war against ourselves

		as well as the larger community of life on Earth, and therefore a threat to real human security.
9.	Early humans must have been highly social primates that developed group identities through shared symbols and ways of communicating meaning through sound and gesture.	Describe the evolutionary advantages of such skills.
10.	Language allowed us to divide up the nature around us into separate parts and name them, creating 're-presentations' of things. The ability to cut from context and name things in a particular way enabled us to 'grasp' parts of nature and use them in a coordinated way, giving us a great deal of power over the world around us. The kind of thinking that divides and separates also promoted group cohesion and conceptualizing 'other' groups as 'enemies,' threats to the security of our 'own' groups.	Describe some examples of those developments that describe how human societies evolved.
11.	Many vertebrates show a functional difference between the right and left hemispheres of their brains, the left focusing on parts and pieces of things to categorize them in terms of their usefulness, the right taking in the whole scene with an eye toward relationships with other beings, for good or for ill. In the majority of humans, our primary language centers are located in our left hemispheres.	Describe examples of how your left and right hemisphere interpret the world in different ways.
12.	The culture of Western Europe, more so than other human cultures, has emphasized the abstract world of our representations and valued them over and above the real world of nature, and has exalted the superiority of human beings because of their ability to speak and think 'rationally'. The mechanistic physics successfully applied by Newton to the solar system was projected onto the universe, envisioning it as a great machine, and all living beings (with the exception of the human being) as merely clockwork mechanisms. This image of an inanimate, 'dead' nature persists today as an implicit metaphor which still serves to justify treating the rest of the living world as nothing but a store of 'resources' and provider of 'services' for human beings.	Interpret those developments in terms what might have been gained by 'Western' cultures and what might have been lost – or benefits vs. harms, if you prefer. In the same way, evaluate Iain McGilchrist's interpretation of the history of the development of Western thought as evidence for the emergence of an increasingly left-hemisphere dominated, use-oriented approach to the world, an approach that is now manifesting in many parts of the globe with the spread of industrial society.
13.	John Searle maintains that we humans construct our 'social reality' by using shared symbols that allow us to organize and coordinate our collective behavior; he claims that our very complex social institutions are created through many iterations of the bestowal of this sort of functional symbolic status. Most people are not aware that our social institutions are human creations, and tend to take them for part of the 'ontologically objective' reality of the physical and biological world, when they are actually 'ontologically subjective,' being ultimately dependent on the beliefs of minded beings for their existence. Our economic and political institutions are ontologically subjective. As social	Name examples of ontologically objective and subjective objects in your everyday life. Suggest how you would prefer the latter to be revised and describe for what benefits.

	constructions, they are open to conscious revision as warranted.	
14.	Searle's theory holds that all human social institutions come into being through 'a single logico-linguistic operation,' and as such it is likely that McGilchrist would consider them products of left-hemisphere cognition. Most of us just grow up within a society and absorb a certain set of 'background' capacities that enable us to live within the institutional structure without thinking consciously about it. Zerubavel discusses our 'shared mindscapes' and our tendency toward conformity that may sometimes lead us to 'go along with the crowd' against the testimony of our own senses.	Follow Norgaard's application of Zerubavel's 'cognitive sociology' in her analysis of collective denial, 'conspiracy of silence,' and selective attention among those who benefit in various ways from the war against nature. Describe examples from your own social life where collective behaviour proceeds unexamined, in spite of individuals' contradictory sensory information.
15.	As we begin to get the picture, not only of the intricate workings of the Biosphere and the Earth System, but of our escalating human impact on these systems and its disastrous consequences for all life on Earth, we will realize the necessity for bringing 'our war against nature' to a close. Applying the insights of these several thinkers, some of the ways we can begin to 'reverse course' become clear.	Describe how you interpret the following suggestions for your own life decisions: (a) overcoming our denial of what's happening and our own role in it, (b) correcting the myths and metaphors in our culture that promote a mistaken view of how things are, (c) righting the 'ontological reversal' in thinking that the economy is what supports our lives, independently of the ecology, (d) reducing the dominance of left hemisphere cognition in our culture and in ourselves, (e) promoting a right-hemisphere approach of openness to others of both human and nonhuman form.
16.	Anthropocentrism signifies the belief in the centrality of the human, both insofar as human consciousness is taken as the exemplar of all consciousness, and with respect to the overtly normative judgment that humans are superior to all other life and thereby justified in taking nonhuman lives and habitats for their own use. The belief in human centrality and superiority is unwarranted on the basis of what we now know about life on Earth. At the end of this chapter and Chapter 12, the questions will be posed: Who are we? What kind of being is the human being going to choose to be? Will we continue to exalt our own species above all others, and "war" against them, or will we be the kind of being that accepts our place within nature, and calls off this misbegotten "war"?	Describe your own personal environmental ethic in terms of anthropocentrism or alternatives to it. Engage with those questions on the basis of your personal beliefs and hopes.

Ronnie Hawkins

With respect to human security, the scene at this point in time has us teetering on the brink of further escalating 'our war against nature,' as mega-projects are being planned and carried out all around the globe, while the product of our numbers times our per-person consumption reaches never-before-seen proportions. This 'war,' like many biological processes in nature, took quite a while

to build up steam, but ever since the 'Great Acceleration' of the mid-20th century—which will be discussed in the next chapter (Chapter 12)—we have been engaged in an all-out assault on nonhuman beings and natural systems. This chapter presents a brief outline of what *nature* is like, to the best of our current scientific knowledge, tracing the flow of *life* on Earth over time and space and the emergence of minds within it; after all, if we're going to continue engaging in a 'war,' we should at least know something about 'the enemy.' One thing that integrating current scientific knowledge into our worldview should give us is a vision of organisms and ecosystems as immensely complex, self-maintaining systems quite unlike anything the outdated myths, images and metaphors we have inherited from past ways of thinking have made them out to be. The simultaneous realization that we humans are equally biological organisms in continuity with and dependent on the larger biosphere and that we are currently destabilizing planetary systems in a major way (the latter point to be illustrated by examples in Chapter 12) should shock us into a species-wide bump-up in our collective awareness that might be sufficient to bring about a serious effort to 'scale down and pull back.' The several avenues for turning the tide explored here—revising misleading myths and metaphors, recognizing the differential ontological status of what actually supports our lives versus what currently channels our collective activities, dialing down the left-hemisphere dominance that has driven the transformation of living nature into that quantifiable abstraction we call 'money' by imposing upon it the image of a lifeless heap of resources to be 'used,' and—the necessary first step—getting over the collective denial that locks us into a 'conspiracy of silence' about this unacknowledged war—all might contribute to creating the kind of human being who finally makes peace with nature.

It is becoming clear that the relationship between our species and nature will be of critical importance to human security in the coming years, as we move ever further into this new geological epoch we have named after ourselves, the Anthropocene so named because there is evidence that our human activities, in the aggregate, have become so enormous that they are altering nature, changing the parameters of the biogeophysical systems of the Earth in measurable ways that bode no good for the continuation of human society. In order to understand how this relationship became so fraught with difficulties—which will be necessary if we are ever to repair it—it will be helpful to look into the problematic approach that has been taken up to now, which can be termed 'Our War Against Nature.'

The Anthropocene is a monumental security problem, yet we lack the conceptual resources to effectively deal with it. We cannot see it. We cannot think it. Even if we could, the conditions of the new human age are of such a magnitude that our interventions will never be able to fully meet its challenges. (Harrington & Shearing, 2017, p. 141)

11.1: Introduction - Defining Terms, Posing Questions
11.2: Reality, Science and Revolutions in Our Thinking
11.3: Seeing the Complexity of Nature
11.4: Seeing Ourselves in Life's Larger Context
11.5: The 'War Against Nature'
11.6: Understanding How and Why We Continue to Wage 'Our War Against Nature' and Reversing Course
11.7: Becoming Reflexive: Rethinking 'Who' We Are, Breaking Free of a Constricting Paradigm, Ending the 'War'
11.8: Resources and References

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11.1: Introduction - Defining Terms, Posing Questions

In order to understand what is meant by ‘Our War Against Nature,’ we must start by defining terms. What do we mean by ‘war’ and ‘nature’? War usually implies violence of some sort, inflicted with the intent to kill living beings, and it is usually the effort of one human grouping to subdue and possibly exterminate another human grouping; here it will need to be broadened to apply to the extermination of nonhuman beings as well, and the understanding of ‘intent’ will have to run the gamut from full conscious intent to an ‘unconscious’ going along with the crowd in a kind of psychological denial over the ultimate consequences of seemingly innocent actions. The word ‘nature’ will be used here to refer to the Biosphere, the sum total of living beings on the Earth, including ourselves as biological beings, organized as we all are into the interactive ecosystems that support our lives. Another important question that should arise upon reading the chapter title, however, is this: who are ‘we’ to be waging such a war, who are we that would claim violent acts against nature, so defined, as our own? Figuring out the identity of that ‘who,’ and realizing the difference between ‘its’ security and the security of real, live human beings who know they are not separate from, and who do not wish to act warlike toward, the nature on this planet, will mark a major step toward attaining real human security.

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11.2: Reality, Science and Revolutions in Our Thinking

Along the way to this goal, however, we must not only figure out who 'we' are, we must try to get a handle on reality in general, and in particular what 'nature,' understood as the larger biological world that includes us, is like and how we come to know what it is like. There are things that really exist, outside of ourselves—I think all of us must acknowledge this, as a fact of our own existence. There is, 'really,' a real world out there, one that we can see and hear and touch and smell. We know that something exists that is independent of our own private thoughts about it, and we humans share the knowledge of the existence of a common reality 'out there' in such a way that we can talk to one another about it, arrange to meet one another at certain times and places within it, and so on. All other living organisms share with us the ability to have knowledge of the existence of the fundamental reality, to the extent that all of us beings need to understand 'how things are' with that reality, in order to be able to deal with it so as to stay alive. All organisms have ways of sensing those aspects of reality that are important to them; we humans have our own types of sense organs that allow us to sense what is important to us. We also have brains that enable us to synthesize this information and take appropriate action, as do many other animals.

Long ago in our history, however, some of us humans started to look more closely at the world around us, to observe how parts of it seemed to behave by watching and listening and touching that reality, sometimes even poking around with it, and even measuring and recording things, and trying to explain how things happened and predict what was likely to happen next. Thus we started practicing 'science,' in many forms in many different cultures around the world—the wellsprings of science being the curiosity that propels one to seek out how things are, *really*, in the world, combined with the spirit of empiricism, the inner demand to come as close as possible to this knowledge through direct interaction with one's own senses, with as little as possible need for taking anyone else's word about how they are.

Because we humans are very social beings, however, we began sharing the things we were learning about the nature of our reality, building on what had been recorded by those that came before, and sometimes the common opinion about what's true of our underlying reality needed to be corrected when new information, empirically gathered, came to light. Shared beliefs are 'sticky' things—they can enlarge our understanding of the world, but they can also hold back our ability to incorporate new knowledge because of the powerful resonance created by everybody-believing-the-same-thing-together. The trade-off between these two consequences of our social nature has led to several recognized 'revolutions' in the history of science, times when the general outline of what is taken for reality—our beliefs about 'how things are'—has needed to shift significantly, first among scientists and eventually among the general public, changing from one pattern of understanding to another. In the Western world, for example, the Copernican Revolution changed the collective understanding of 'how things are' from belief in a geocentric universe to belief in a solar system in which the Earth is the third planet from the sun, and once the 'new' way of looking at the heavens was adopted—once this paradigm shift was made, in the words of Thomas Kuhn (1962)—many things that just didn't fit into the older way of thinking were seen for the first time, including new stars, sunspots and comets. We now seem to be on the verge of another major shift of paradigm as a result of continuing progress in science, and whether or not it is successfully achieved may well determine whether or not our human species, as well as the many others that evolved with us, will continue to exist into the future. The inertia of our old, shared, but simply habitual ways of thinking and acting has become a major obstacle to our making the necessary shift in our thinking and acting. Fortunately, the way social forces maintain and reinforce that inertia is also something that certain branches of academic endeavor now are grappling with; unfortunately, however, several recently worsening developments are working to undermine our ability to learn from science what we need to know about our reality, ranging from the tendency of certain scientists to allow their research to be influenced by the needs of the industries they serve—thus contributing to a growing skepticism about the integrity of 'science' in certain other quarters—all the way to financial and political interests overtly generating and propagating deliberate misinformation to keep us in ignorance or fostering< collective denial (Oreskes & Conway, 2010).

In this chapter, we will speak a great deal in the language of science, mostly biological science, because the intention here is to provide an overview of how things are with nature—how it works, what we're doing to it, and why; and science, if done with integrity, seems to provide the best way we have of figuring all that out. Empirical science is built on the assumption that what I laid out at the start of this chapter is true: that *there is areality* that we can see and touch and measure; and it is hoped that we can use what is concluded on the basis of careful observations of it to change prevailing beliefs if and when change is discovered to be warranted. We will also speak in the language of philosophy upon occasion. However, and will do so now in order to introduce the

term ontology, the philosophical study of being, of what exists and in what way; here we will follow John Searle (1995) in distinguishing two fundamentally different ontological categories, that which exists 'objectively' in the physical/biological world, independently of the ways we may represent things to ourselves within our belief systems—i.e. the things that are studied by science—and that which exists subjectivel' in the form of the shared representations that we humans carry around in our heads, which underlie our 'social reality,' to be discussed later in the chapter. The revolution in our way of understanding 'how things are'—the shift that needs to happen—begins with opening our eyes to the complexity of nature, to the astounding complexity of living organisms and the ecosystems in which they are enmeshed, which our science is only just recently coming to appreciate; it will come full circle when we begin to see ourselves acting within this larger context, including the ways in which we are acting to construct our social reality, and how we might begin to change this humanly created reality so as not to have such a destructive effect on nature, including that part of nature that is ourselves.

In order to deal with the welter of detail that is emerging rapidly, however, given the sheer number of human beings now engaging in science and contributing to our understanding of all that that complexity, we need to learn how to approach it in terms of 'systems thinking'—a very different way of thinking about how things happen than the simplistic linear model that goes 'A bumps into B and causes C.' A system has been defined as 'a set of things interconnected in such a way that they produce their own pattern of behavior over time,' and as such it needs to be considered holistically, not thought of as merely an assemblage of separate 'parts,' with the recognition that the basic operating unit of a system is *the feedback loop* (Meadows, 2008). Since our reality is unimaginably complex, its vast number of parts are interconnected through innumerable ongoing interactions, and these are damped down or speeded up by a multitude of feedbacks such that the relationship between any given change in the system and its ensuing effects will usually be anything but linear. This broad sea-change in our thinking will also serve to usher in two more specific changes in our way of seeing the world. The first comes when we step back from our shallow stereotypes and see other beings as the immensely complex living wholes that they are, and the other occurs when we take another step back and start getting a grasp of the larger whole made up of all these innumerable other living beings in ongoing relationships with one another—the Biosphere, the dynamic configuration of all life on this planet. We will begin to see many other living beings as highly intelligent and purposive in their own right, that they are not just 'things' or 'resources' to do with as we please, and will recognize that we are not only interconnected with them in many biological ways, we are also enmeshed in moral relationships with them. At the same time that we are beginning to cognize the Biosphere's complexity and that of the myriad living beings we share it with, however, we are also becoming aware of the extent to which our collective human activities have already impacted many of these other beings and the Earth System as a whole, and of how these systems are likely to fare in the future if we continue on along our present course. It is to be hoped that, as we all absorb the many new findings emerging from science, we will decide to reverse course and call off our 'war against nature.'

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11.3: Seeing the Complexity of Nature

Seeing the Commonality of All Life

Living organisms exhibit the highest degree of complexity that we know of, far higher than any systems we humans have designed, and it must be admitted that, as extensive as our scientific knowledge is to date, we are still far from understanding the nature of the phenomenon of *life* itself. As Meadows explains systems thinking, all systems have a purpose, and all of their 'parts' function together in order to fulfill that purpose. We humans construct nonliving systems that function to fulfill purposes of our choosing, from simple thermostat-controlled heat sources to computers. Natural living systems—organisms, and at another level of analysis, ecosystems—function to fulfill the purposes of staying alive, expressing their genomes, and evolving. They have been termed autopoietic systems in light of their properties of self-organization and self-maintenance. When an organism dies, its parts disintegrate into their nonliving components, but while it is alive it maintains its extremely complex, highly organized structure through constantly active biochemical processes, processes that are largely shared throughout the living world.

All life as we know it is based on a set of chemical compounds containing the elements carbon, hydrogen, oxygen, nitrogen, phosphorus and sulfur, a small, select subset of all the chemical compounds found in nonliving nature. These chemical compounds are joined together into proteins, lipids, complex carbohydrates, and nucleic acids, the building blocks of living matter, but the metaphor is misleading if it leads one to envision static structures; the biochemical constitution of living organisms is in constant motion, the vital processes of photosynthesis (in green plants) and respiration (in all living organisms) are ongoing—the engines of life—and continually feeding into more specialized pathways involved in life maintenance and continuation for specific types of organisms. Many of these metabolic processes are said to have been highly conserved, meaning that there has been very little change in them over evolutionary time—they are processes that we all have in common, all of us beings, as living parts of nature, the larger whole.

Seeing the Purposiveness of All Living Organisms

Even as the core biochemical processes of life have remained much the same, the bodily forms taken by living organisms have evolved over time. The discovery that a process of evolution has taken place on this planet, however, has often been said to have 'taken teleology,' or purposiveness, 'out of nature,' but that claim, in itself, is misleading. What can be said is that we have no evidence of natural processes seeking some externally imposed 'final goal' such as we might postulate a detached 'designer' dictating. But our planet, Earth, 'is riddled with purpose,' as the late Mary Midgley observed; it's "full of organisms, beings that all steadily pursue their own characteristic ways of life, beings that can be understood only by grasping the distinctive thing that each of them is trying to be and do" (Anthony, 2014). Evolution, 'descent with modification by natural selection,' is conceived in terms of heritable changes occurring within a population of organisms over time as a result of factors within their environment selecting, for survival, those individuals exhibiting particular traits–bodily manifestations of genetic variability—that make them best suited to live in that particular place. But individual organisms are certainly 'purposive' in striving to do just that, to survive and, if so fortunate, to reproduce, and along the way to live their lives to the fullest according to what their own nature's genetic toolkit enables them to do—as we humans, no more and no less products of evolution, also do.

We are finally coming out, thankfully, of an era dominated by reductionism, so it is no longer necessary to 'flatten' all living beings (excepting ourselves—and we do typically make exceptions of ourselves, inconsistently with an appreciation of evolution) into agency-less, subjectivity-less bits of matter being bumped about, at the mercy of the determinism of their DNA combined with the brutal mechanism of competition and conflict for 'resources.' *This view of living organisms is wrong; it is the purposiveness of life, each individual organism pushing itself forward into the available affordances of its habitat, that provides the motive force behind the process of the evolution of life over time, a purposiveness that all of us living beings share*. The fact that there is something known as 'convergent evolution'—that certain abilities, such as the ability to see, the ability to fly, the tendency to socialize with conspecifics, even the capacity for engaging in 'higher cognition,'have evolved in multiple, distantly related lines—may indicate that there are a certain limited number of ways of 'living out ones genetic toolkit to the fullest' on this planet, as a result of this 'push' from inside toward self-elaboration; it need not be taken as evidence for a predetermined pattern imposed from without, but the evolution of some of these abilities could legitimately give rise to speculations about mutual recognition among living organisms as a kind of strange attractor.

While we still, to reiterate, do not fully understand the nature of the phenomenon, nor its origins, we are bringing into focus an increasingly detailed picture of the development of life once it appeared, which some scientists are now claiming may date back as far as four billion years, almost to the origin of the Earth itself. Innumerable species have come into being and passed out of it again over this multibillion year span; the phenomenon of life has surged forward to elaborate a Biosphere of great complexity many times, suffering setbacks, and a few great die-offs, but so far always recovering, even if ecosystems have taken millions of years between cataclysms to attain the degree of diversity we enjoy today, or at least did until recently. A *species*, according to Holmes Rolston, "is a living historical form, propagated in individual organisms, that flows dynamically over generations" (1985, p. 721). Stepping back to view it from afar, we can thus see life flowing over time, its myriad specific forms adapting to changing circumstances, and simultaneously flowing over space, as forms differentiate and interact within environments. In its most recently generated wave of forms, moreover, life can be seen elaborating itself in multitudes of individual organisms with increasingly sensitive ways of becoming aware of what's around them, and of responding to what's out there, with many possible currents of interaction setting up between the different living forms as 'mind' has blossomed and subjectivity within them deepened.

Seeing Life Flowing over Time

The membrane-bound cell is the basic unit of all life as we know it, and a single cell is in itself an immensely complex system, the functioning of which we are just beginning to understand. All living organisms, single-celled or many celled, are given their bodily structure by proteins, assembled out of a set of twenty left-handed amino acids in a complex process under the direction of a DNA-based genetic code. On the basis of genomic similarities, LUCA (a Last Universal Common Ancestor), has been proposed, believed to have come into existence almost four billion years ago and to have given rise to all species that have emerged since, so that all presently existing species can be seen as deriving from one fundamentally interrelated Tree of Life (Hug et al., 2016). The first lifeforms on this Earth, our science tells us, were prokaryotes—bacteria and the more recently recognized archaea—single-celled organisms that lacked organelles and even a membrane-bound nucleus but that went about busily metabolizing anyway, picking up sensory cues, moving around in their environments, interacting in mutualistic, competitive and predatory relationships by themselves for a couple of billion years, give or take a few hundred million, until other forms appeared, other forms that are still going strong today. Prokaryotic cyanobacteria carried out photosynthesis, combining carbon dioxide and water to make sugars and ultimately many other organic compounds, thereby creating food for themselves and others out of the energy of the sun, and giving off oxygen, which gradually built up in the Earth's atmosphere. Then somewhere around two billion years ago, the prokaryotes were joined by the eukaryotes, organisms whose DNA is packaged inside a nucleus and who come equipped with mitochondria to carry out oxidative phosphorylation, to keep energy flowing in their bodies, and, if plants, chloroplasts to house the processes of photosynthesis—these two essential organelles now recognized as quite possibly having arisen from prokaryotic forms becoming symbiotic with and later incorporated into larger cells, as first hypothesized by Lynn Margulis. "Whatever the exact series of events turns out to be," explains Carl Zimmer (2009), "eukaryotes triggered a biological revolution," since, while "prokaryotes can generate energy only by pumping charged atoms across their membranes," eukaryotes "can pack hundreds of energy-generating mitochondria into a single cell," and therefore could get much bigger, and develop multicellularity.

A little over 600 million years ago, multicellular forms known as Ediacarans appeared on the scene, with bodily forms unlike any organism alive today, some growing in strange, fractal patterns, some displaying three-part symmetry. These were replaced when the first ancestors of all the modern forms of animals—molluscs, echinoderms, arthropods, a group that includes insects and crustaceans, the chordate ancestors of the vertebrates, and so on—made their appearance in what has been called the Cambrian explosion, beginning around 540 million years ago. While its triggering factors are still scientifically controversial, this event has been summed up as follows: "after millions of years of quiet progress, animals had finally accrued the developmental recipes to build body parts and improve on basic themes," an achievement requiring a genetic toolkit that was, in the words of paleontologist Nick Butterfield, "absolutely, astronomically, inconceivably complex" (Sokol, 2018, p. 884). The Cambrian marked the beginning of the Paleozoic era, which continued until roughly 250 million years ago, during which time vascular plants colonized land and vertebrates appeared—first the fishes, followed by amphibians, and then, with the evolution of the amniotic egg that permitted embryos to develop in a dry environment, the reptiles. The animal kingdom is generally thought of as divided between the vertebrates, animals with backbones, and the invertebrates, animals lacking backbones, but bodily development in both groups has been found to proceed along similar lines under the control of a small number of homeobox or *Hox* genes that serve to switch gene expression on and off in the growing embryos. The great majority of animal species, vertebrate and invertebrate, are classified as bilaterians, bilaterally structured with a right and left side that are mirror images of each other. The five classes of vertebrate

animals–the fishes, amphibians, reptiles, birds, and mammals—all share the bilateral tetrapod body plan, with four appendages, be they fins, wings or limbs. [1]

The Paleozoic era ended with the most severe extinction event in Earth's history, the Permian-Triassic (P-T) extinction event or the 'great dying,' occurring around 250 million years ago, during which reportedly about 70% of terrestrial vertebrates and up to 96% of species of marine life became extinct. [2] One likely contributory cause of this event is climate warming. Reconstructed seawater temperatures from the Triassic (the geologic period immediately following the end-Permian extinction), show an inverse relationship with biological diversity, and marine animals have been particularly vulnerable to warming because their need for oxygen increases with rising temperature while its concentration in seawater decreases, with water temperatures over 35 °C being generally lethal (Sun et al., 2012).

Ecosystems collapsed worldwide following the event, and while 'disaster taxa'—weedy generalist species that can colonize many sorts of disturbed habitats rapidly—invaded relatively quickly, true ecological diversity was slow to recover, taking about 30 million years, well into the Late Triassic, for full recovery (Sahney & Benton, 2008). The Mesozoic Era, spanning roughly 250 to 66 million years before the present time and comprising the Triassic, Jurassic and Cretaceous periods, has been termed the 'Age of Reptiles'; dinosaurs appeared in the Late Triassic and became the dominant terrestrial vertebrates over the Jurassic and Cretaceous periods, while the first birds and ancestral mammals emerged in the Jurassic, remaining relatively small and ecologically insignificant through the end of the Cretaceous. The Mesozoic Era came to an end with the Cretaceous-Tertiary (K-T) or Cretaceous-Paleogene (K-P) extinction, occurring around 66 million years ago, most often attributed to an asteroid impact spewing dust and sulfate aerosols into the atmosphere, blocking sunlight, inhibiting photosynthesis, abruptly cooling the Earth (Pope et al., 1998), and bringing about the extinction of an estimated three-quarters of terrestrial plant and animal species. Rebuilding again following the demise of the giant reptiles, the Cenozoic Era or the 'Age of Mammals' began, starting 66 million years ago and extending up through today.

During the Late Cretaceous, some 80-100 million years ago, the placental mammals split into four lines, one giving rise to the hoofed mammals, whales, carnivores,and bats, another leading to primates and rodents, a third to the elephants, among others and a fourth to the anteaters and armadillos (Marshall, 2009); early forms of most of the present mammalian orders emerged during the Eocene epoch, 56 to 34 million years ago. The first were small, but by the end of the Oligocene, 23 million years ago, there were large-bodied herbivores, specialized carnivores, and mammals inhabiting the air and water as well as land. Monkeys evolved during the Oligocene, 34 to 23 million years ago, with the ape lineage splitting from Old World monkeys about 25 million years ago; the apes differentiated over the Miocene, lasting from 23 to 5.3 million years ago, the human line diverging from its common ancestor with the chimpanzee and bonobo around four to six million years ago. By the Pleistocene epoch, the beginning of the Quaternary period, two million years ago, global temperatures having cooled throughout the preceding Pliocene, some very large land mammals and birds had come to inhabit the planet, all of which became extinct as the Pleistocene was winding down.

The factors contributing to the Late Quaternary Extinctions (LQE) have been reviewed and evaluated by Paul Koch and Anthony Barnosky (2006). As they discuss, 50,000 years ago the Earth was populated by many large mammals, including proboscideans—elephant-like mammals including mammoths and mastodons—giant ground sloths, camels, saber-tooth cats and a giant beaver in North America, woolly mammoths, rhinoceroses and giant deer with three-meter antlers in Eurasia, glyptodonts—giant armadillos the size of a car and weighing over 1,000 pounds—and litopterns—three-toed, camel-like mammals—in South America, and diprotodons—vegetarian, rhinoceros-sized wombats weighing up to 2.7 tonnes—in Australia, by 10,000 years ago, the start of the Holocene epoch, all of these had vanished. Reviewing evidence from archaeology, paleoecology, and climatology, Koch and Barnosky conclude that the worldwide disappearance of the Pleistocene megafauna—defined as animals weighing 44 kg or larger—can largely be attributed to human hunting, possibly aggravated by indirect anthropogenic effects like competition and habitat alteration, with changes in climate and other environmental factors also contributing to the patterns of disappearance. The impact was somewhat less severe in Eurasia, since ancestors of modern humans were present there from about 40,000 years ago, hunting with simpler tools, and this probably allowed the evolution of defensive behavior among prey. Africa, moreover, where humans originated, seems to have remained 'a fortunate anomaly,' losing only around half of its megafauna by the end of the Pleistocene, retaining the greatest number of large animals still alive today—although a modern extinction event, from uncontrolled hunting and habitat destruction, may be bringing about their demise right now, as will be discussed in the following chapter (Chapter 12).

The best-preserved paleontological record is from North America, where 'extinctions were rapid and pronounced,' and may even be compatible with the 'blitzkrieg' hypothesis—the notion that human hunters slaughtered the large mammals mercilessly over a

short period of time—something that seems unlikely in most other regions of the globe where extinctions occurred over longer periods. The emergence of our own species, *Homo sapiens*, somewhere around 200,000 years ago, is thus considered to have been a major force leading to the extinction of many large mammals and significantly altering landscapes on all major continents, leaving us to inherit a planet with a post-Pleistocene fauna shorn of some of its more interesting and perhaps ecologically significant variants, and a planet that is now poised to lose many of its remaining specialized forms in the near future if we humans continue along on our current trajectory. Whether or not this trend will continue—whether we will go on waging so direct a war against nature—is currently under contestation; are we re-living out our early role as mega-killers, or will we become reflexive enough to activate our moral agency and change our behavior?

Seeing Life Flowing over Space

While the bodily forms of the Earth's organisms can be seen as changing over time, the ecological relationships established among organisms can be visualized as large-scale patterns of interaction that show a kind of dynamic stability over space. Ecosystems are not simply collections of plants and animals, randomly or haphazardly thrown together; they are highly organized systems that are fundamentally structured by physics, the large-scale configuration of the system produced by the pathways through which energy flows. The basic conceptual framework for understanding ecosystem structure is often presented as a pyramid; the solar energy powering the whole system is first captured by photosynthesizing green plants, the 'producers,' at the base, and it flows upward through successive layers of 'consumers,' animals that can't make their own food and so must eat other organisms power their own bodies . The collective biomass of these animals diminishes in a stepwise fashion, passing up the pyramid layer by layer, because the available energy diminishes at each step, since converting the body of one kind of organism into the body of another is energetically expensive. Aldo Leopold's description of a terrestrial biotic pyramid is one of the best around:

Plants absorb energy from the sun. This energy flows through a circuit called the biota, which may be represented by a pyramid consisting of layers. The bottom layer is the soil. A plant layer rests on the soil, an insect layer on the plants, a bird and rodent layer on the insects, and so on up through various animal groups to the apex layer, which consists of the larger carnivores.

The species of a layer are not alike in where they came from, or in what they look like, but rather in what they eat. Each successive layer depends on those below it for food and often for other services, and each in turn furnishes food and services to those above. Proceeding upward, each successive layer decreases in numerical abundance. Thus, for every carnivore there are hundreds of his prey, thousands of their prey, millions of insects, uncountable plants. (Leopold, 1949, p. 252)

That's why 'big, fierce animals are rare' (Colinvaux, 1979): they need huge territories to support all the other animals that go into making up the lower layers of the pyramid, the prey animals and their prey animals and the plants that they eat, all together contributing enough transformed solar energy to maintain the large, fierce, active bodies of apex predators like lions and leopards.

The layers Leopold speaks of are called trophic levels, first the green plants (supported by microrganisms and nutrients in the soil) that form their own bodies out of air, water and sun, then on a level above them the animals that eat the plants' bodies, the herbivores,a step above them the animals that eat some other animals as well as plants, the omnivores, and above them possibly several levels of animals that only eat other animals, the smaller, 'meso'carnivores, below and at the top the apex predator, an animal able to feast on all the others and who usually doesn't get eaten herself. A rule of thumb holds that the embodied energy goes down by about 90% in each step up a trophic level, such that the level above can contain only about 10% of the biomass of the one underneath—that's why numbers of organisms generally get smaller, even as body size often gets larger (all the better to capture prey)—as they dine higher and higher up the pyramid. That's also why humans draw an increasing amount of energy from the Earth the higher up the food chain they eat—much more energy, embodied in biomass, is required to grow the bodies of the animals on which they feast than would be required if people just met their needs primarily by eating plants directly—as our closest primate relatives still do today. Humans are *not* ecologically constituted to be apex predators. Aldo Leopold assigned humans to 'an intermediate layer with the bears, raccoons and squirrels, which eat both meat and vegetables' (1949), pointing out an ecological relationship that led environmental philosopher J. Baird Callicott to add, "as omnivores, the population of human beings should, perhaps, be roughly twice that of bears, allowing for differences of size" (Callicott, 1980, p. 326).

Real-world ecosystems are usually far more complex than this pyramid with its discrete trophic levels would indicate, of course, so the movement of energy and materials is better described as making up food webs, interconnected chains linking different kinds of organisms, and including the microbial and fungal organisms that break down the bodies of plants and animals, releasing nutrients for reuptake by plants or processing it into organic matter again consumable by other organisms. The fundamental role of plant life,

whose photosynthetic trapping of the sun's energy generates the 'net primary productivity'—given the acronym of NPP–that powers the activities of virtually all of the Earth's other living creatures, must be retained firmly in mind. Now we are aware, however, that quite a bit of 'ecosystem engineering' is a result of animal life. The prevailing view in ecological science once held that the large-scale structure of plant-dominated terrestrial ecosystems was primarily due to the climate and soil conditions facilitating plant growth, but more recent studies are showing the great extent to which top-down control of herbivores by their predators can affect the vegetative community.

One famous example of the way the presence or absence of a carnivore at the highest trophic level can 'cascade' down the system is the way aspen forests have been recovering following the reintroduction of grey wolves into Yellowstone National Park, their territories reducing elk grazing pressure on young aspen stands, ultimately changing the landscape.[3] Another is the ongoing introduced instability of kelp forests in oceans around the world, as commercial exploitation led first to the extirpation of apex predators like sea otters and cod fishes, unleashing a rebound in their prey, populations of herbivorous sea urchins that subsequently overgrazed and diminished many kelp forests. Continued 'fishing down' of coastal marine food webs next led to extirpation of sea urchins in many places around the world, allowing kelp beds to regrow but this time 'devoid of vertebrate apex predators,' with large predatory crabs moving into the top spot in some places (Steneck et al., 2002); it remains to be seen where these systems will eventually restabilize, but one finding of this study is that the more biodiverse the system, the greater the likelihood it will be resilient to systemic kelp deforestation. Moreover, the diversity of species is proving to have important effects on ecosystem structure more generally, with the different kinds of diversity—genetic diversity, diversity in the functional roles played by different organisms in the ecosystem, and diversity of their interactions in biotic networks—having their own kinds of effects; so far, research is showing "compelling scientific support for the idea that maintaining a high proportion of biological diversity leads to efficient and stable levels of ecosystem functioning" (Naeem et al., 2012, p. 1405).

Larger-scale, landscape-level patterns of interaction among animals of different trophic levels are also discernable over time and space, such as 'migratory coupling,' where the migrations of prey induce the corresponding migrations of their predators (Furey et al., 2018), while at smaller scales the regular patterns of banding or clustering of organisms that can be seen in aerial surveys across many different types of terrain are being explained in terms of self-organization resulting from short-range positive feedback—more vegetation grows around pre-existing plants because they pull more moisture up through their roots–coupled with long-range negative feedback—roots from different plants compete with one another in the drier soil between vegetated patches—a principle that seems to hold across many different ecosystems (Rietkerk & van de Koppel, 2008; Pringle & Tarnita, 2017). Of course, as we humans increasingly take over space with growing urbanization and the installation of ever-larger agroindustrial systems for feeding our growing population, less and less room is available to support these patterns of interaction among lifeforms. Just how far this mega-scale alteration in the flowing of life over space will reach is going to be increasingly contested in the years ahead.

In addition to the patterns we can see in the world around us, moreover, our appreciation of the "little things that run the world" has been growing as well. The phrase is taken from the title of a talk by Edward O. Wilson, referring to invertebrate animals, but it could be extended now to include the single-celled organisms, which we are learning contribute a significant part of our own body mass and biochemistry. Wilson pointed out that invertebrate species outnumber species of vertebrates by a factor of more than twenty, and can make up over 90% of the animal biomass on a hectare of land; their importance in food webs and pollination and other ecosystemic interactions is so great that Wilson expressed doubt that we humans could last more than a few months without them. Should all the invertebrates disappear, he maintained:

Most of the fishes, amphibians, birds and mammals would crash to extinction about the same time. Next would go the bulk of the flowering plants and with them the physical structure of the majority of the forests and other terrestrial habitats of the world. The earth would rot. As dead vegetation piled up and dried out, narrowing and closing the channels of the nutrient cycles, other complex forms of vegetation would die off, and with them the last remnants of the vertebrates. The remaining fungi, after enjoying a population explosion of stupendous proportions, would also perish. Within a few decades the world would return to the state of a billion years ago, composed primarily of bacteria, algae, and a few other very simple multicellular plants. (Wilson, 1987, p. 345)

Wilson made these remarks at the opening of the invertebrate exhibit at the Zoological Park in Washington, DC, in 1987, and while the invertebrate-less world he presented seemed dismal, it also seemed far-fetched, since invertebrate populations appeared to be thriving in most places, and the occasion recognizing the importance of their conservation seemed to herald a new awareness of our need to treat them with care. More than 30 years afterwards, however, with populations of many kinds of invertebrates essential to ecosystem functioning on the decline now, his words sound a little more sinister. Meanwhile, a recent examination of the

invertebrates 'right under our noses' has shown that, typically, more than a hundred species of insects and other arthropods live in and around people's homes worldwide, and efforts to 'go to war' with chemicals against pests like cockroaches simply increase the evolution of their resistance. Moreover, the importance of even smaller 'little things' is coming to our attention as well, including the microbes that colonize our bodies, our houses, and other human-occupied spaces. A study of dust collected from forty homes in one American city documented an average of around eighty thousand species of bacteria and archaea, the vast majority of which are benign or beneficial to us humans, and despite people's tendency to want to 'kill them all,' it's being discovered that it is actually healthier to be surrounded by more microbial diversity rather than less (Dunn, 2018); the declining biodiversity in urban homes appears to be associated with an increase in the incidence of allergies and other chronic inflammatory diseases (Hanski et al., 2012). Trillions of microbes also inhabit the human gut, and enter into complex relationships with our diets, giving rise to metabolic products that have important effects on human physiology which are currently under investigation (Gentile & Weir, 2018).

Seeing Mind in Life

In the words of philosopher Evan Thompson, "a living being is not sheer exteriority . . . but instead embodies a kind of interiority, that of its own immanent purposiveness" (2007, p. 225), and it is recently being realized that this may apply to plants as well as animals and to the unicellular as well as the multicellular. The more we learn about life, its amazing complexity and its fundamental commonality as it extends over time and space, the more it becomes clear that there must be some kind of 'mind,' some purposive inwardness that pushes ahead, pursuing its own life in its own way, within each living organism, 'all the way down.'

Microbial life, being *life*, by definition is of such organized complexity that we should not be surprised to find perception, motility, and evidence of subtle responsiveness to environmental conditions even in the single-celled. The green alga, *Chlamydomonas reinhardtii*, for example, has an *eyespot* composed of rhodopsin photoreceptors that, when stimulated, release a current of calcium ions that modify its flagellar motion, orienting it toward or away from light (Kateriya et al., 2004); the slime mold *Physarum polycephalum*, moreover, has been described as showing 'primitive intelligence' by solving a maze, finding the minimum length solution joining two nutrient locations at different ends of an agar labyrinth (Nakagaki et al., 2000). Plants, too, are exquisitely sensitive to factors such as light, moisture and nutrients, as well as predators and pollinators in their environment, and they respond to them in ways that further their growth and propagation; they also communicate with fellow plants, of the same and other species, within their ecological communities. Since plants are sessile (rooted to one place), their behavioral repertoire is necessarily more limited in terms of movement, but they exhibit many sophisticated responses that can rewardingly be studied along the lines of animal behavior, including anticipation of future events, memory, and communication with other organisms (Karban, 2008). They respond individually to the heterogeneity of light and moisture in their environment throughout their growth, not only by placing root and leaf development in the most favorable circumstances, but in ways that have been described as showing 'choice'; the parasitic dodder plant, for example, actively rejects potential host plants of inferior nutrition by turning its shoot growth at right angles from such stems and elongating directly away from them (Kelly, 1992).

It has long been noted that plants respond to leaf-devouring insect attacks by releasing volatile chemicals, a response that not only leads other plants to beef up their own leaf level of insect-repellents but that sometimes draws in specific insect predators and parasitizing wasps (Pare & Tumlinson, 1999). The timing and intensity of release can vary in accordance with a multiplicity of environmental factors, and blends of different odor-producing volatiles can be produced in response to different leaf-eaters, possibly summoning particular carnivorous insects specialized to feast on each kind of herbivore, making it a highly sophisticated response that has been considered, according to a 'behavioural ecological approach' that speaks in terms of plant 'decisions,' and a 'crying for help' within the larger ecological community (Dicke, 2009). It has also been known for several decades now that many forest trees are linked together in underground networks by the mycorrhizal fungi associated with their roots, and they have been shown to send each other nutrients, communicate warning signals, and recognize kin through these networks. According to Suzanne Simard, another scientist who does not hesitate to draw a parallel with the behavior of animals, "the topology of mycorrhizal networks is similar to neural networks, with scale-free patterns and small-world properties that are correlated with local and global efficiencies important in intelligence" (Simard, 2018, p. 191). [4] The communicative properties of trees have also been conveyed to the public by Peter Wohlleben, a German forester, in *The Hidden Life of Trees: What They Feel, How They Communicate* (2016); he speaks of the 'wood-wide-web' that connects the trees in a forest, noting that the 'mother trees,' the big,

old trees that serve as hubs, 'suckle their young,' pumping sugars through the network into the roots of young saplings too shaded to survive on their own (Grant, 2018).

The similarities between plant and animal behavior and, in some respects, their physiology prompted a group of scientists to announce in 2006 the founding of a new subspecialty, 'plant neurobiology,' maintaining that 'the behavior plants exhibit is coordinated across the whole organism by some form of integrated signaling, communication, and response system,' one that 'includes long-distance electrical signals, vesicle-mediated transport of auxin in specialized vascular tissues, and production of chemicals known to be neuronal in animals' (Brenner et al., 2006). The announcement was met with outrage from a certain quarter of the plant science community, more than thirty luminaries signing onto a letter noting that "there is no evidence for structures such as neurons, synapses or a brain in plants" (although the 'plant neurobiologists' had made no such claims) and challenging the proponents of the new field "to reevaluate critically the concept and to develop an intellectually rigorous foundation for it" (Alpi et al., 2007, p. 136). One of the signatories, Lincoln Taiz, interviewed by Michael Pollan, speaks dismissively of 'a strain of teleology in plant biology' and strenuously rejects the notion of 'choice' or 'decision-making' in plants, explaining that "the plant response is based entirely on the net flow of auxin and other chemical signals," and maintaining that the verb 'decide' is a term that "implies free will." He amends his stance, however, with the caveat "of course, one could argue that humans lack free will too, but that is a separate issue" (Pollan, 2013). This last statement is rather telling—when one is coming from a reductionist position that flattens down the purposiveness of all life into the bumping about of chemical compounds- one must be sure to keep that belief system 'separate' from our understanding of how we actually live our own lives. Whereas, accepting the evolutionary continuity that exists among lifeforms seen as whole organisms lets us recognize the purposiveness, intentional behavior and intelligence that exists throughout living nature—in us and in everything else that's alive- with no need to make a special exception for ourselves. Pollan observes that "our big brains, and perhaps our experience of inwardness, allow us to feel that we must be fundamentally different—suspended above nature and other species as if by some metaphysical 'skyhook,' to borrow a phrase from philosopher Daniel Dennett." But he notes that "plant neurobiologists are intent on taking away our skyhook, completing the revolution that Darwin started but which remains—psychologically at least—incomplete" (Pollan, 2013, n.p.). Monica Gagliano is another scientist who has already made the paradigm shift; unapologetic about speaking of learning, memory, and intelligence in plants (Gagliano et al., 2016). She is at the same time, critical of "those who make the big claims and write grand opinion pieces," saying "we don't need another opinion piece"—"we need to do the science." Having started as an animal ecologist, she prefers to call her field 'plant cognitive ethology,' maintaining that, "for me, a plant isn't an object, it's always a subject that is interacting with other subjects in the environment" (Morris, 2018, n.p.). [5]

Unlike plants, however, animals typically move rapidly around in their environments and so must have a way of coordinating their movements rapidly—hence the emergence of the nervous system. Simple animals like sponges rely on cell-to-cell signaling, and radially symmetric animals like jellyfish make do with diffuse nerve nets, but the bilaterians generally coordinate their movements via well-developed nervous systems that are believed to have originated in a last common ancestor arising over 500 million years ago. The basic structure is a linear nerve cord with 'ganglion' enlargements supplying each body segment, and a larger 'brain' at the front end; in invertebrates, including many worms, crustaceans, and insects, the nerve cord is divided in two and placed ventrally, below the major organs of the body, while in vertebrates it is dorsally located and encased in a bony vertebral column. The insect brain is made up of three regions, the protocerebrum, deuterocerebrum, and tritocerebrum. The largest region is the protocerebrum that houses the mushroom bodies, paired neuron clusters making up the 'higher' brain centers, thought to be important in learning, memory, and behavioral complexity, especially in bees, wasps and ants; it is estimated that the mushroom bodies contain about 340,000 neurons in the honeybee. An example of complex cognitive behavior in insects is the 'waggle dance' of honeybees, which communicates information to hive mates about the direction and distance to sources of nectar and pollen. [6] Faced with the striking degree of organizational similarity among living animal forms, one scientist recently summarized, "as our knowledge of neural development increases, so does the list of conserved features, pointing to the existence of a highly sophisticated, single species as the origin of most extant nervous systems" (Ghysen, 2003, p. 555).

The vast majority of animal forms utilize the sensory information they take in from their environment in order to move in appropriate, survival-related ways. Hence they will have a great variety of perceptual abilities, forms of cognitive processing, and behavioral responses shaped by the different ecological niches they inhabit, something that we tend to take for granted but should recognize as a distinctive feature of animal life that extends far beyond the boundaries of our own species. Development of the human brain follows the same basic trajectory as that of all mammalian brains, the neural tube expanding into hindbrain, midbrain and forebrain regions, with the latter giving rise to an expanded cerebral cortex. Some other mammals also manifest a high degree

of cortical development, including the other great apes, elephants, and cetaceans such as the bottle-nosed dolphin. To put our own brain power in perspective, we will look at what we now know about the brains of some other animals, bearing in mind that we are learning more all the time as careful investigations are carried out utilizing new technologies and with an open-minded attitude to what we may find.

The brain of the false killer whale, at almost 4,000 g, is more than twice the size of the human brain, at roughly 1,500 g, while the brain of the African elephant is almost three times larger, at four to 5,000 g, and the brain of the sperm whale, the largest of the mammals, is almost six times larger, at around 8,000 g. The cortical surfaces of the brains of the two cetaceans are also more highly convoluted, cetaceans showing the greatest degree of convolution among the mammals. Earlier comparisons have focused on the ratio of brain to body size, the 'encephalization quotient,' but this appears a rather crude measurement in light of a newly developed technology allowing for a quantitative assessment of the number of neurons and non-neuronal cells in different regions of the brain and in total, opening up insights into a greater degree of diversity in brain architecture than heretofore appreciated (Herculano-Houzel, 2009). Using this technology, it has been discovered that the different orders of mammals have different 'cellular scaling rules' determining the density of neurons present per gram of brain tissue. Larger brains in rodents, for example, will contain larger total numbers of neurons than will smaller rodent brains, but the brains of primates 'scale in a much more space-saving, economical manner,' such that neuron density is greater, and so increasing brain size in primates results in an even greater number of neurons, gram for gram, than would be found in rodents. By this measure, humans, with the largest brains among the primates, do have the greatest number of brain cells—in a 1.5 kg brain, 86 billion neurons and 85 billion non-neuronal cells have been found—but only when compared with the other, smaller-brained primates. [7] According to the author of these studies, "we need to rethink our notions about the place that the human brain holds in nature and evolution, and rewrite some of the basic concepts that are taught in textbooks" (Herculano-Houzel, 2009, pp. 9-10). Ours is not qualitatively different from other primate brains, but simply has the number of neurons expected for its size; it is basically just 'a linearly scaled-up primate brain.' Moreover, our cerebral cortex, which makes up 82% of our brain mass at an average of 1,233 g (out of an average 1,500 g brain), holds only 16 billion neurons (19% of the total in the brain), a fraction similar to that seen in other primates and some other mammals. While the cerebellum—a part of the brain until recently considered solely devoted to movement coordination, but now becoming the focus of increasing interest as its complex interconnections with the cerebral cortex are explored—weighs only 154 g but contains 69 billion neurons (Herculano-Houzel, 2009).

The new research not only gives us a new perspective on our own brains, and thereby our 'cognitive' place in nature, it is beginning to change our views of other animals, what they are really like and what they might be capable of, cognitively. The brain of the African elephant is not only roughly three times larger than our own, it contains roughly three times as many neurons—257 billion of them as calculated in the pioneering study (Herculano-Houzel, 2014). The vast majority of them, however—251 billion, or 97.5%—are found in the cerebellum, with only 5.6 billion in the cerebral cortex—and the neurons that are found there are thought to be an average of 10 to 40 times larger than those found in other mammals, with what this might mean for cognition being currently unknown. The size of the elephant cerebellum, which makes up more than 25% of the total brain mass, the largest proportionally of all mammals, has been speculated to be related to infrasound communication or possibly to processing the complex sensory and motor requirements involved in the sensitive, manipulatory use of the trunk—but much remains to be discovered about this fascinating animal.

The numbers and distributions of neurons in the brains of cetaceans are yet to be determined—one estimate was 11 billion neurons in the cerebral cortex of the false killer whale, but this could be off by a factor of ten, giving an estimate of between 21 billion and 212 billion for the whole brain, depending on the scaling rules for the order, as yet undetermined (Herculano-Houzel, 2009). One thing that is known is that the architecture of cetacean brains is even more divergent from the typical mammalian plan than that of elephants. While their brains are the most highly convoluted among the mammals, their cerebral cortex is comparatively thin and appears to lack one of the usual six layers of cells. Moreover, instead of an expansion of the frontal lobes, as observed in primates, there has been an expansion toward the sides, in the temporal and parietal regions, and there is a completely new lobe, the paralimbic lobe, not found in any other mammal, the function of which is so far unknown (Marino, 2002) but possibly may be related to echolocation or coordination of synchronous movements in groups of animals. The pattern of projection of visual and auditory information onto the cerebral cortex is also highly unusual among mammals, as is the marked degree of independence between the two cerebral hemispheres, which reportedly sleep independently of one another, and seem to be altogether lacking in REM sleep.

The brains of birds, too, have recently been found to be more remarkable than once believed. Birds have a pallium instead of the neocortex found in mammals; the surface of their brains is smooth rather than convoluted, and the cells in their cerebrum are arranged in nuclear clusters instead of layers. It has recently been discovered, however, that their neurons are even more tightly packed than in the brains of primates, with parrots and songbirds having about twice as many neurons as primate brains of the same mass, and their brains are truly 'miniaturized,' since the short distance between neurons necessitated by their high densities likely results in a higher speed of information processing (Olkowicz et al., 2016). Parrots, like primates, show an increased connectivity between the telencephalon and the cerebellum, possibly indicative of an interplay between fine motor skills and complex cognition in birds (Gutierrez-Ibanez et al., 2018), along the lines of what is being investigated in mammals. What is being learned about the brains of birds, moreover, is spurring a new look at the brains of reptiles and even fish. The mobulid rays, a group of cartilaginous fishes comprising the manta and devil rays, have high encephalization quotients, a relatively large telencephalon making up over 60% of the brain mass, and a high degree of cerebellar foliation thought to be due to their active, maneuverable lifestyles and highly developed social and migratory behavior (Ari, 2011). A study of selected genes from mammalian neocortex and homologous genes from avian and turtle brains found, once again, a 'highly conserved' pattern of gene expression, supporting the conclusion that many of the cell types, neurotransmitters, and circuitry are widely shared among the vertebrates, preserving the major connections and performing very similar functions despite major differences in brain structure and tissue architecture, attesting to fundamental continuity since the last common ancestor, over 500 million years ago.

Among the 'brainier' members of the mammalian and avian classes—particularly the primates, elephants, whales and dolphins, parrots, corvids and some other songbirds, and even the mobulid rays (Ari & D'Agostino, 2016)—we are finding many, many examples of 'higher cognition.' Over the last five to 10 years or so, there has been a veritable explosion of research reports, popular articles and books detailing what's being discovered about their abilities, and it is now widely accepted that some of these animals engage in tool use, mirror self-recognition, imitation, vocal learning, and complex social cognition likely including 'theory of mind,' to name a few indicators. Frans deWaal discusses the cognitive abilities of some of these other animals, from apes and monkeys to crows and parrots, elephants and octopuses, and even ants, wasps and bees, raising deep questions about our common assumption: that humans are the only living beings capable of intelligent thought (and that only the *human* kind of thought should be considered 'intelligent'), an attitude that, because it is exclusively 'centered upon the human,' is termed *anthropocentrism*. [8]

One way to see how our thinking has changed can be illustrated by consideration of what we have been learning about birds, both in terms of behavior and in brain structure. As discussed by Ackerman (2016), birds have now been extensively documented to have complex cognitive abilities, including memory and spatial mapping (Clark's nutcrackers can bury and retrieve pine seeds from up to 5,000 caches spread over hundreds of square miles), tool use (New Caledonian crows fashion elaborate tools from branches and bend wires into hooks for obtaining food), vocal learning (mockingbirds can imitate, with near perfection, as many as two hundred different songs of other birds), social learning (a few great tits learned to open milk bottles in a single town in the 1920s and the behavior spread widely over Britain over subsequent decades; crows can recognize individual humans and spread information about the 'dangerous' scientists who capture them across large social networks), mirror self-recognition (Eurasian magpies will scratch away a mark put on their throat when seen in a mirror), and complex social interaction, manipulation, and possibly 'theory of mind' (western scrub jays keep track of other birds that might be watching them when they cache their food, and will recache it later if necessary; male Eurasian jays seem to understand their mates' specific desires for certain foods). But until recently, little effort was put into making such observations, since until very recently we had little respect for 'bird brains.'

The lines giving rise to the primates, elephants, and cetaceans probably diverged over 95 million years ago, with independent evolution occurring in these lines ever since, so it is not surprising that differences are to be found in the overall structure of their brains. The split between what became mammals and birds came even earlier, sometime around 300 million years ago. Nevertheless, parrots and primates "show impressive convergence of complex cognitive abilities, and this is accompanied by convergent changes in the brain," including relatively large brain size, telencephalon size, size of associative areas of the telencephalon, and increased connectivity between the telencephalon and cerebellum- though this increased connectivity has evolved over different neural pathways (Gutierrez-Ibanez et al., 2018, p. 5). "It has been suggested that intelligence in these taxa can only have arisen by convergent evolution," observes cognitive biologist Nathan Emery:

driven by the need to solve comparable social and ecological problems; simple examination of six ecological variables across corvids, parrots, other birds, monkeys, apes, elephants and cetaceans reveals that certain preconditions correlate with the development of complex cognition: omnivorous generalist diet, highly social, large relative brain size, innovative, long

developmental period, extended longevity, and variable habitat, [and] this exercise suggests that the evolution of intelligence was highly correlated with the ability to think and act flexibly within an ever-changing environment. (Emery, 2005, p. 37)

The same can be said about the conditions under which our own species evolved, of course, placing us within the spectrum of cognitively complex animals, one with a very high degree of behavioral flexibility indeed.

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11.4: Seeing Ourselves in Life's Larger Context

We need to back up a bit now in order to place ourselves within the larger context of life on Earth, so as not to make the mistake of imagining that human beings are uniquely distinguished from other animals by their exclusive possession of 'mind.' We humans are a kind of animal, a large-bodied primate to be precise, very closely related to chimpanzees and bonobos—our line having branched with theirs five to six million years ago—and also closely related, although somewhat less so, with the other great apes, the gorillas and orangutans. The mammalian order of living primates is divided into the prosimians, consisting of the lemurs, lorises and tarsiers, and the anthropoid primates, including the new world monkeys, old world monkeys, and the members of the superfamily Hominoidea, which itself is divided into the Hylobatidae, the family of the smaller or lesser apes, the gibbons and siamangs, and the Hominidae family of the great apes, made up of three subfamilies, the orangutans, the gorillas, and one (depending on the method of grouping) which includes chimpanzees, bonobos, and humans. The primates are thought to have evolved from a group of insectivorous early mammals living late in the Cretaceous, emerging as squirrel-like mammals in the Paleocene that began to develop the classic primate features of grasping hands and feet, stereoscopic vision and relatively large brains in the Eocene. First, the prosimians evolved and radiated across several major continents, flourishing until they were displaced by the later-evolving monkeys and apes, except in Madagascar, where they can still be found—if hanging on precariously—today. Monkeys evolved over the Oligocene and apes in the Miocene, with the early ancestors of humans probably making their appearance early in the Pliocene. By the late Pleistocene, *Homo sapiens* had appeared and was already beginning to make an impact on its environment.

If we're going to think about our species' relationship with nature, however, we need to consider the kind of ecological role that is played by the closest relatives of ours, the apes and the primates in general. Except for the insectivorous tarsiers, our primate relatives are far and away predominantly vegetarians, and our human digestive tracts are much more like those of the other great apes than like the mammalian carnivores. Most of the apes and monkeys are classified as either folivores (animals primarily subsisting on leaves), or frugivores (animals for whom fruit makes up a considerable portion of the diet). Folivores have the advantage of greater abundance and accessibility of food, but frugivores obtain a higher concentration of calories by eating ripe fruit, and it is thought that the greater energy provided, in combination with the cognitive demands of obtaining a high-quality but patchily distributed and sometimes only seasonally available food, have led to a larger brain size in otherwise similar species (Milton, 2006). Among the great apes, gorillas are primarily folivores, while orangutans, chimpanzees and bonobos are primarily frugivores, although all have been observed to opportunistically consume invertebrates and the occasional small vertebrate. Chimpanzees will sometimes engage in cooperative hunting of medium-sized mammals– often monkeys– with social sharing of the meat. In places where they coexist with colobus monkeys, they can sometimes have a significant effect on monkey populations (Lambert, 2012). However, great apes and other primates do not seem to play a role in the 'top down' control of other animals. Meat actually makes up no more than about five to six percent of the chimpanzee diet, most of that being in the form of insects (Goodall, 1986, p. 232; Milton, 1987, p. 105) while the amount of animal flesh consumed by the other great apes is usually quite a bit less. According to Katharine Milton, although early humans began adding meat to their diets as the climate got colder in the Pliocene, "this behavior does not mean that people today are biologically suited to the virtually fiber-free diet many of us now consume," since "in its general form, our digestive tract does not seem to be greatly modified from that of the common ancestor of apes and humans, which was undoubtedly a strongly herbivorous animal" (Milton, 2006, n.p.). Primates in nature thus do not have the ecological role of apex predator; the key role they play in ecosystem function is that of seed dispersers, moving the seeds of their favored fruit trees considerable distances and thereby helping to maintain tropical forests; they have also been considered vegetative ecosystem engineers through herbivory, shaping forest structure as they dine selectively on flowers, leaves and bark of certain trees (Beaune, 2015; Chapman et al., 2013).

The great apes notably have a very slow rate of reproduction; chimpanzee mothers suppress ovulation by suckling their young for four to six years, creating a long interbirth interval between what are usually single offspring, resulting in no more than four to fi ve young over a lifetime (Tutin, 1994). Their average density on the lands they occupy is also quite sparse, depending on habitat type and social organization, but is usually on the order of less than one to two to fi ve individuals per square kilometre, with home ranges that can (if not limited by human encroachment) extend to over 500 square kilometers for chimpanzee communities of 20 to 100 individuals (Nishida & Hiraiwa-Hasegawa, 1987). It has been suggested that it is the cognitive capacity of different species that places an upper limit on group size, since an individual can only maintain awareness of a certain number of relationships at the same time (Dunbar, 1992). The difference between the average densities of chimpanzee societies and our own when concentrated

in urban centers is really quite striking, and bears consideration in light of Robin Dunbar's pronouncement that 150 is around the limit on the number of individuals any of us is capable of knowing well (Hill & Dunbar, 2003).

Most of the primates are highly social, often with more or less well-defined hierarchies keeping individuals 'in their place' as a function of social standing, but a wide range of types of social organization is found within the primate order. Among the great apes, orangutans tend to live a fairly solitary existence within tropical forests, while gorillas usually live in troops of several females with offspring dominated by an older, male silverback. The two chimpanzee species typically live in multimale, multifemale groups, the common chimp groupings usually dominated by one or several alpha males. In contrast, the bonobos seemingly accord females the upper hand—and, it should be noted, we humans are equally related to both. In chimpanzee societies, intergroup male-male competition, with several powerful males, vying for the position of alpha-male, is often the most noticeable preoccupation. [9] On the other hand, some primates also seem to have, if not a desire for 'equality,' at least an innate sense of 'justice'—or at least an acute sense of how their rewards compare with those of competing conspecifics—that is thought to contribute to cooperation on the basis of equal sharing within the group. de Waal and his student, Sarah Brosnan, taught captive capuchin monkeys to exchange plastic tokens for food, but when a monkey discovers that her reward is only a bit of cucumber while her neighbor is getting grapes, she shows her displeasure and throws the cucumber out of the cage (Brosnan & de Waal, 2003). The primate order encompasses animals with a wide range of behavioral repertoires, and primates, generally, are perhaps the most behaviorally flexible among the mammals, with humans the most flexible of all, biologically speaking. We humans, thus, innately possess a great many degrees of freedom, allowing for a great many alternative behaviors, many different ways of asserting our moral agency, possible within the realm of human choice.

Seeing Mind in Human Life

But, if we are in fact so similar to other organisms as a result of evolutionary continuity, what about our much-vaunted human uniqueness? Presumably it has to do with our superior intelligence, but if our cerebral cortex is seen as a little less special in light of what we're learning about brain structure and organization in other animals, we were also taken down a peg or two as neural network research began to investigate intelligence in the workings of both biological and artificial systems. It seems that, when the artificial intelligence (AI) folks first started trying to engineer computerized robots that could actually move around and deal with physical objects, they were embarrassingly unsuccessful—because they had been assuming that real intelligence was based on the kind of rule-governed manipulation of abstract symbols, the kind of linear, if-A-and-B-then-C-must-follow logic of which philosophers are generally so proud. It turns out that things don't work that way for animals trying to get around in the real world, however: they appear to identify objects through a process of pattern recognition involving some complex neural circuitry, and their interactions are guided by yet more neuronal connections organized into networks that become activated when particular skill sets are required—and, as we are discovering, the same is true of us (Preston, 1991; Davion, 2002). Even much of what we consider our 'highest' mental activity—our moral reasoning, for example—seems to be carried out by neural networks that we share in basic organization with many other animals. Much of the research disclosing this information is quite recent, utilizing functional neuroimaging (fMRI) in human beings responding to morally relevant scenarios. What was discovered, according to one team of researchers, is that "the psychological processes underlying moral choices recruit socio-emotional and cognitive processes that are domain-general" (FeldmanHall et al., 2014, p. 297), meaning that there is no set of 'moral' circuitry peculiar to humans that enables us to think and behave in a moral sphere uniquely our own. Rather, moral reasoning activates patterns of circuitry involving emotional and social cognition such as empathy and theory of mind, the ability to understand another's point of view—circuitry enabling similar sorts of cognition in at least the brainier types of nonhuman animals as well. In humans, the brain regions involved in what we consider moral reasoning include the ventromedial prefrontal cortex—attuned to emotional response—and the right temporoparietal junction– involved in 'theory of mind' processing in nonmoral contexts as well as moral ones. As another pair of researchers conclude, "so far, the uniquely moral brain has appeared nowhere—perhaps because it does not exist" (Young & Dungan, 2012, p. 7). This conclusion is becoming increasingly clear as further research is carried out. All in all, morality is supported not by a single brain circuitry or structure, but by a multiplicity of circuits that overlap with other general complex processes, according to Pascual et al. (2013, p. 5) "The 'moral brain' does not exist per se: rather, moral processes require the engagement of specific structures of both the 'emotional' and the 'cognitive' brains" (Pascual et al., 2013, p. 6)

On the other hand, a recent development that supporting continuity between us and some other animals with respect to how morality 'works'—how social animals maintain harmony and cooperation within the group—has been the discovery of mirror neurons. Mirror neurons are cells within the brains of certain animals that become active both when an animal performs certain

motor movements and when that animal sees or hears another animal perform the action. They were first discovered by accident, the legend goes, when a rhesus monkey, with electrodes implanted in the brain for other purposes, showed a pattern of activity corresponding to arm, hand and mouth movements—which the monkey was not carrying out—while watching one of the researchers eat his lunch. In the human brain, mirror neurons are concentrated in the posterior part of the inferior frontal gyrus and in the rostral part of the posterior parietal cortex; working together, they seem to transmit information about the goal or intention of another's movements.

These mirror neurons are believed to be connected with the insula and the limbic system to form a large-scale network supporting our ability to feel empathy (Iacoboni, 2009). If perceiving the way others feel through sensory cues sets these 'mirror' neurons to resonating with those of the other being, we, in essence, are able to "feel each other's feelings." It is "something we accomplish . . . naturally, effortlessly, and quickly" that seems well explained by the incorporation into this neural network of "a prereflective, automatic mechanism of mirroring what is going on in the brain of other people," according to Marco Iacoboni (2009, p. 666). Recognizing their existence has been said to 'dissolve' what has been called 'the problem of other minds', the question of how we can come to know that others have minds and, roughly, what they are thinking. Moreover, since "a proximate mechanism that evolved to serve the ultimate goal of cooperation . . . will yield benefits for all contributors" (de Waal, 2008, p. 281), it has been claimed that "the evolutionary process made us wired for empathy" (Iacoboni, 2009, p. 666). Such mirroring neurons have also been found in some of the 'brainier' social animals, including other primates, dolphins and birds, he notes, evidence of the kind of 'interiority' that we humans also possess. Giacomo Rizzolatti, the original discoverer of mirror neurons, suggests that the mirror neuron system allows understanding of the actions of others 'from the inside', providing "a profound natural link between individuals that is crucial for establishing inter-individual interactions" (Rizzolatti & Sinigaglia, 2010, p. 273). However, caution has been raised against 'an overly enthusiastic tendency' to overinterpret possible connections between the mirror neuron system and empathy, since there are likely to be a number of different neural pathways involved in this complex phenomenon, and the empirical evidence for a direct connection with mirror neurons is limited (Lamm & Majdandzic, 2015).

These neurons may also be implicated in processes that have the opposite effect in human beings, in a way that is intimately connected with our major claim to 'uniqueness,' our remarkable facility with language and symbols (Corballis, 2010). The inferior frontal area in the macaque brain where mirror neurons were first discovered, area F5, roughly corresponds with Broca's area in the human brain, one of our important language areas, and in subsequent studies of human 'mirroring,' neurons in the language areas of the left hemisphere have been found to be activated (Rizzolatti & Arbib, 1998). Whereas in the monkey's brain the mirroring area is considered to be primarily involved in hand movements, this striking correspondence has led these and other researchers to propose that human speech, and later language more generally, may have originated with hand gestures, socially shared, which came to be adapted for intentional communication. However it came about, for the majority of us humans at least, our primary language areas are situated within the left hemisphere of our brains, and the left hemisphere's contribution to our human uniqueness may possibly be a key as to why we have increasingly been waging a war against nature, as well as wars against each other from time to time.

A functional differentiation between the two cerebral hemispheres extends far back in vertebrate evolution; birds, for example, have been shown to be more effective in pecking at grains of food using their right eyes, controlled by their left hemispheres (since major nerve tracts cross over inside the brain), while scanning for predators overhead with the left eyes, controlled by their right hemispheres (Vallortigara, 2000; Rogers, 2012). Many subtle and not-so-subtle differences in function between the two hemispheres are still being discovered in humans, but in the view of Iain McGilchrist, a British psychiatrist and philosopher who has devoted many years to studying the neuropsychological specializations of the hemispheres, "the most fundamental difference" between them—and something that would seem to pertain to hemispherically-lateralized animals across the board–is that there is a basic difference in the *type of attention* they direct toward the world (McGilchrist, 2009, p. 4).

The right hemisphere tends to apprehend 'what's out there' broadly, holistically and in context, recognizing other beings as already embedded in social relationships with the self. The left hemisphere, in contrast, directs a narrow, focused attention toward parts and pieces of things, tends to favor thinking in abstract terms and following a linear sequence of 'logical' reasoning, and generally comes at things with a *use-orientation*, categorizing them in terms of how the individual animal, in competition with others, might benefit from exploiting them. The role of the right temporoparietal junction in theory-of-mind processing, important in social cognition and moral reasoning, should be kept in mind. Ideally, the two hemispheres work reciprocally and in coordination with one another. The proper sequence of neural processing of incoming information, McGilchrist maintains, is that the right hemisphere

initially takes in the immediate, real-time presencing of what's in the organism's total environmental surround; then, passing across the corpus callosum to the left hemisphere, the most salient aspects of it are abstracted, categorized and evaluated for use or threat; and finally this information is re-presented to the right hemisphere for reintegration into a more thorough and once again holistic understanding of the overall situation—a sequence that can be represented RH > LH > RH—presumably enabling the organism to take appropriate action within its lived context (McGilchrist, 2009, pp. 189-208).

Our left hemispheres have enabled us to examine the world around us in great detail, and, through the use of linear logic, to formulate and test scientific hypotheses. Without these specialized skills, we would not have been able to discover all the intricacies of living organisms of which we have recently become aware. But its propensity for abstraction in combination with its general use-orientation, when not counterbalanced by the right hemisphere's ability to connect with others and put things in larger perspective, has most likely contributed to the way our society dismisses nonhuman others and nature in general as merely 'resources' for us to use, and it may also be a significant factor in perpetuating the continuing intergroup conflicts within our human realm.

Left hemisphere dominance may also be responsible for a certain linearity of thought—unfortunately emphasized throughout our educational systems today—that may serve to block our ability to engage in systems thinking, something desperately needed in order to understand the impacts of all the processes our 'war against nature' is unleashing now. This preference for linearity may underlie some of the 'short-termism' with which we have approached just about everything, from human population growth to the social spread of unsustainable habits to the accumulation of plastic trash on our beaches. Populations and positive-feedback processes without external controls don't grow linearly over time but rather exponentially. However, just as a tangent drawn between two points on a curved surface can provide a reasonable approximation of the path from A to B if they're close enough together, growth in components of these systems may seem linear if the time interval of evaluation is short enough. Therefore, projections of consequences may lead to overestimation of the time until thresholds are crossed, as well as serious underestimation of all the repercussions as trend lines intersect over time. Should the manufacturers of disposable plastics have been looking ahead to the dissemination of their products worldwide and their eventual fragmentation into indigestible particles contaminating worldwide food webs? It is a serious question to ask: Why not?

It is the degree to which many of us modern humans seem to be 'stuck' in the left hemisphere mode, failing to reintegrate its insights into the holistic picture supplied by the right, that McGilchrist believes may lie at the heart of many of today's pressing problems, as will be discussed a little later on.

Group-Living Social Primates: Cooperation and Conflict in Bioregional Context

To zoom back out of our examination of brain organization and cognition for now and focus more closely on 'who we are' and how we got to be that way, evolutionary biology paints a picture of our early primate ancestors living in relatively small social groupings that had to cooperate in order to survive, just as our closest relatives, the great apes, do today. Our progenitors fanned out from the tropical forests into other habitats, coordinating hunting practices to supplement their mostly vegetarian diets and later domesticating plants and animals to ensure a more consistent food supply. People worked together, sharing tasks within the group and often competing with other groups of humans for needed resources, sometimes engaging in violent intergroup conflict along the lines of what primatologists call lethal raiding, observed among chimpanzees in the wild today (Wrangham, 1996). We should remind ourselves, however, that humans are equally close genetically to the other chimpanzee species, the bonobos, whose social organization is somewhat different and who have been seen to engage in peaceful intergroup interaction, which thus must also be seen as an available option within our larger 'genetic toolkit.' As discussed earlier, the need for cooperation within the group, to maintain its integrity and to defend against threats coming from outside the group, is what many think gave rise to the development of our ethical sensibilities, with the help of our neural wiring that enables us to feel empathy (de Waal, 2009). Too much individual selfishness and too little altruism toward other group members would produce uncooperative bands with a survival disadvantage when pitted against more cohesive tribes of people that worked well together. Human security, then, emerged from small, face-to-face communities that worked together to make their living from the local bioregion and successfully fend off predators and competing human tribes. Individual lives might be more or less difficult, depending on the vagaries of the total environment, and wars might be fought with other bands of humans, but nature itself was the provider, if not always a benign one, during this long period of our evolution. Humans were an integral part of the natural world as we, like all other species, did what came naturally in order to survive, and our early belief systems generally included a core of respect, if not reverence, for Nature, in recognition of its fundamental role in sustaining life.

We Humans Have Specialized in Utilizing Symbols

Coevolution of Symbolic Culture, Language and Intergroup Conflict

One definition of *culture* is 'shared symbolic meaning,' which primatologist Carel van Schaik traces back to the socially learned labeling of edible foods or dangerous predators, seen in a variety of animal species, developing into the emergence of special skills and/or special communicative signals unique to particular populations of nonhuman primates, and finally to the conveyance of meaning by arbitrary signs (symbols), an ability that seems to be possessed rudimentarily by certain groupings of both chimpanzees and orangutans living in the wild (van Schaik, 2004, pp. 156-157). In the primate lineage that includes both chimps and humans, where social groupings came to be dominated by male coalitions engaging in lethal raiding and later in more sophisticated forms of warfare, it seems a crucial threshold was crossed once group membership could be signified by means of behavioral or linguistic conventions. In a move that seems to directly counter Iacoboni's feel-good role for mirror neurons, Van Schaik theorizes that "between-group hostility, by favoring symbolic cultures, helped to lay the foundation for human language" (van Schaik, 2004, p. 158). Our ancestors' ability to cooperate was greatly enhanced by the ability to communicate using sound, sign and gesture, but this applied primarily to those within the social group. Once a simple manifestation of our biology as social primates, held together by bonds of kinship and reciprocity, now *the group* could mark and conceptualize itself, draw a line between the collective self and other human groups sharing and displaying different symbols, pulling disparate members together into tight cohesion. Once we became able to represent a qualitative difference between 'us' and 'them' by the arbitrary symbol, we learned somehow to 'cut' the empathic connection that might otherwise, should we relate face-to-face, set mirror neurons in the emotional circuitry of our brains to resonating empathically; it seems that words and images can get in the way of empathy, as can numbers.

Separation of the Symbolic Realm from the Realm of Nature

Language not only facilitated our immediate, group-maintaining actions, however, it gave people the ability to tell stories, maintain collective memories of past events and imagine possibilities that might or might not ever come to pass, inserting some distance between a human cultural realm and the temporal flux. Moreover, since the ability to communicate meaning through the use of specifically constructed words and signs did make humans stand out from all the other animals not showing such a talent, the move into the realm of symbol can be seen as cutting the first cleavage demarcating the human world from the world of the purely natural. Our growing use of symbols—vocal, gestural, or graphic—pried us away from the concreteness of the world of nature, with all its chaotic diversity, toward the relative stability and uniformity of the general concept. To transmit shared meaning, symbols that could cover minor differences by making things 'the same' were required. [10] In developing our ability to communicate by means of this process of abstraction, the ability to quantify assemblages of relatively similar things began to take precedence over recognition of fine qualitative differences among particulars. Unruly nature could be 'ordered,' named and made to seem more uniform, and increasingly brought under the control of human beings, both physically and conceptually.

It's been known for more than a century that most of our neural wiring for language is located within the left hemisphere, and Iain McGilchrist suggests "the metaphor of *grasp*" (2009, p. 112) as a way to link together language, the possible role of 'mirrored' hand gestures, and the left hemisphere's use-orientation. It 'is not an accident that we talk about 'grasping' what someone is saying,' he maintains; rather:

The idea of 'grasping' implies seizing a thing for ourselves, for use, wresting it away from its context, holding it fast . . . it is the expression of our will, and it is the means to power. It is what enables us to 'manipulate'—literally to take a handful of whatever we need –and thereby to dominate the world around us. (McGilchrist, 2009, pp. 112-113)

'Grasping' certain parts and pieces of nature, naming and 'ordering' them and putting them to use, certainly gave our ancestors an edge over their many evolutionary cohorts; on the other hand, when only certain aspects of reality are plucked out of a very complex total field and made into 're-presentations,' they become abstract concepts that can be quite misleading, particularly so if we fail to complete the circuit and place them back within the larger context from whence they came. Thus, "what is moving and seamless, a process, becomes static and separate—*things*" (McGilchrist, 2009, p. 137)—a transformation in our perception of the world around us of which Nietzsche, for one, complains at length. Moreover, as McGilchrist continues, "manipulation and use require clarity and fixity, and clarity and fixity require separation and division"—so, he maintains, if he had to pick "one governing principle" to characterize the left hemisphere, "it would be that of division." In other words, McGilchrist (2009, p. 137) tells us, "it is the hemisphere of either/or"–the generator of what is referred to as dualistic thinking.

Dualistic Thinking, Enmity and War

Psychologists and philosophers who study the processes underlying our current propensity for waging war among our human groupings often point to an extreme form of dividing up the world, called dualistic thinking, as providing its necessary conceptual framework. In *Faces of the Enemy*, psychologist Sam Keen (1986, p. 18) explains:

> Around the basic antagonism between insiders and strangers the tribal mind forms an entire myth of conflict. The mythic mind, which still governs modern politics, is obsessively dualistic. It splits everything into polar opposites. The basic distinction between insiders and outsiders is parlayed into a paranoid ethic and metaphysic in which reality is seen as a morality play, a conflict between

The tribes versus The enemy

Good versus Evil

The sacred versus The profane

Such dualistic thinking is socially reinforced, producing a consensual paranoiawhereby, according to Keen, the group creates a 'good' self, with which it consciously identifies, by splitting off 'the unacceptable parts of the self—its greed, cruelty, sadism, hostility, and what Jung called 'the shadow' (Keen, 1986, p. 19)–and unconsciously projecting these traits onto 'the enemy'-whoever or whatever lies on the other side of that barrier its members' abstracting and dichotomizing minds have constructed for themselves. As Keen vividly illustrates with examples of propaganda posters created by the different sides of various military conflicts, 'the enemy' is often depicted in nonhuman form, as a fearsome animal or some kind of disgusting vermin, all the better to put some distance between *us* and *them* and make the killing of *them* that much easier to do. This polarizing tendency of thought, taken to an extreme, can also impose a projected 'deadness' on the living other, providing a convenient justification not only for killing individual beings but for abstracting all vital qualities out of them, conceptually transforming human as well as nonhuman nature into uniform bits of lifeless matter and eventually into completely abstract monetary units–often then to be put to use, via our economic institutions, in escalating the ongoing war of *us against them*, in a self-reinforcing, feed-forward process.

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11.5: The ‘War Against Nature’

A Certain Kind of Culture Pits Humans Against Nature

At some time in their histories, all human societies must have taken that fateful step into shared cultural symbolism and language; however, not all proceeded along a path that led them into a ‘war against nature,’ certainly nothing so extreme as what’s going on now in a near-global assault. Recurrent themes in the stories told by Native Americans and many other land-based peoples told of the interrelatedness among lifeforms and the need for mutual respect and harmony; moral responsibilities extended to nonhuman life, and when life was taken, grateful acknowledgment was required. [11] Humans were distinct, everywhere; but a further move along the trajectory, a *separation* of the human from the natural, seems to have been a cultural peculiarity that not all human societies enacted. In what became known as the ‘Western’ world, however—the culture which has given rise to the industrialism that has taken hold in most parts of the globe today—that further move was, and largely still is, much celebrated. It is the culture that originated in Western Europe that Iain McGilchrist sees as having first given expression to the increasing domination of left-hemisphere cognition, with its theme of division, separation, abstraction from context, and us-vs-them thinking, and some of the central myths and metaphors of that culture are still actively structuring the way many of us think today, even if they receive little conscious attention–issues that will be considered at some length later on in this chapter.

The Culture of Western Europe and the Emergence of ‘Modern’ Science

Writing some of the seminal texts to emerge from the culture of the ancient Greeks, Plato accorded more reality to an immaterial world of Ideas, perfect and eternal, than to the messy and changeable actuality of our embodied lives here on Earth. Aristotle, more appreciative of biology than Plato, nevertheless exalted humanity above the rest and pointed to our rationality, our recently evolved ability to abstract and separate in thought, as the feature that not only singled us out from the other animals but gave us moral priority. Nature was still alive, however, in the Greek society of more than two thousand years ago; Aristotle understood all living things to be animated with a soul that initiated movement, humans, animals and plants alike. But he conceived of our human minds or souls as divided into parts, of which our reason, or rationality, was supposed to govern and rein in the parts given to feelings and baser appetites, in parallel with our efforts to control an unruly world of nature that couldn’t always be counted on to deliver the harvest, initiating an internal as well as an external division that might well be conceived in terms of struggle if not an all-out war. The ideas of Plato and Aristotle became intertwined with Christian thought in medieval Europe, and, as historian Lynn White details in a famous essay (White, 1967), the latter, growing in influence at the same time that technology was developing, served to justify an increasingly violent relationship between human society and the natural systems of the land. According to White, the major thrust of the Christian religion, claiming both God and humanity to be transcendent of the created world–deepening the dualistic divide in western thought—urged the ‘chopping down of sacred groves’ as part of its assault on paganism, and thus explicitly endorsed our war against nature.

It took around 2,000 years from the time of Plato and Aristotle for a victory to be declared in this war. In the wake of the great scientific revolution that began with Nicolaus Copernicus’s shifting our worldview from a geocentric universe to a heliocentric solar system and culminated in Isaac Newton’s inscribing the laws of both celestial and terrestrial motion in precisely formulated mathematical terms, all traces of *animism* were finally swept out of our accepted metaphysical scheme. Living things were no longer to be seen as agents generating their own motion and directing their own lives; the apparently purposive actions of animals and plants came to be ‘reduced’ to the mindless movements of machinery. From the time of this scientific ‘enlightenment’ forward until, for many, the present day, we were instructed that what was ‘really real’ was only ‘atoms in the void,’ a pronouncement that led people to imagine the universe as being nothing but a collection of tiny, separate, solid, billiard-ball-like particles colliding with one another in the empty vastness of space- particles that could be further ‘reduced’ in our minds to pure mathematical description in terms of mass, velocity and direction. Mathematician Pierre-Simon LaPlace summed up the enormous change in worldview that resulted from this new metaphysical metaphor–the universe as a machine–in his depiction of a fantasy figure that came to be known as ‘LaPlace’s demon,’ an intellect that, given the positions of all the particles and the magnitude of all the forces acting on them at any one instant of time, could calculate all past and future configurations of the universe, thus removing even human agency from what was now a completely deterministic piece of clockwork.

Exactly how our human lives and our sense of free will could be reconciled with this imaginative cosmology was never quite resolved, but mechanistic science worked beautifully for allowing us to describe, predict, and thus control the movements of

macroscopic physical objects, and if the complexities of living organisms lay beyond its grasp, it was not from lack of trying to put them 'on the rack,' as Francis Bacon is said to have urged, to lay bare the 'mechanisms' undergirding life itself. The desire for *control over the other* while alive and agentive has now turned into pretending that the other has been killed, is dead, has become machinelike and therefore is completely in the power of whatever intellect has access to nature's laws. Rene Descartes made the separation between one part of us, our 'rational' minds, and the rest of nature complete, inscribing in what are still considered the foundational texts of modern philosophy a dualistic metaphysics that remains deeply embedded in our psyches today: all of nature is a vast, mindless machine, including our own bodies, while we are of a different sort altogether, detachable minds or souls that are *eternal*, suitable to inhabit Plato's abstract realm of perfection and immutability, and *free to manipulate* the mechanistic sphere without repercussion, since we do so from our existential positioning safely outside the realm of this 'nature.'

Iain McGilchrist has interpreted the major milestones in the evolution of Western European culture, from Plato's exaltation of a realm of abstraction to Descartes' severing of our minds from our bodies, through the Industrial Revolution's assault on nature and finally to our forlorn detachment in Postmodernity, as evidence for an increasing left-hemisphere dominance in the approach to the world being taken by all who have come under its influence, which in this dawn of the Anthropocene epoch seems to extend to almost everybody—a growing species-wide hemispheric imbalance that may be leading us all toward a literal, not simply metaphorical, 'death of nature.'

The Death of Nature

The disappearance of all notion of souls, spirits or vital forces in the natural world, or indeed of there being any difference at all between the living and the nonliving, was the apparent result of this great revolution in western thought that spanned the 16th, 17th and 18th centuries, a consequence that Carolyn Merchant has called 'The Death of Nature' (Merchant, 1980). Westerners were thereby freed from any moral reservations they might have had about seizing hold of other living creatures, and eventually entire ecosystems, and twisting them to serve particular exploitative human purposes; if there was nothing with will or agency there in the first place, nothing but mindless clockwork, to what could we possibly owe any measure of ethical respect? The Cartesian fantasy of 'our' splendid isolation–or perhaps, rather, that of a certain part of us, our rational minds or souls, as conceived by our increasingly dominant left hemispheres, increasingly detached from right-hemisphere input–coupled with a manipulative approach to the natural world justifying itself on the basis of what is now a very out-of-date physics, appears to be the foundation of what is given the appellation 'our war against nature' today, an orientation that serves to sanction an increasingly violent assault on nonhuman life, and on an important but generally unacknowledged part of our own human lives as well. If nature were really dead, of course, it would make no sense to speak of waging such a war—the 'enemy' would already have been killed and conquered; but then again, with nature dead, there wouldn't be any of 'us' alive to wage such a war in the first place. There is a deep flaw in the logic underlying this anti-nature, anti-self stance, one that will return us to the question with which this chapter started: who are 'we,' such that 'we' can be proud to embrace as its own and carry out a 'war against nature,' and is this 'who' we choose to be?

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11.6: Understanding How and Why We Continue to Wage 'Our War Against Nature' and Reversing Course

If we are to have any hope of calling off our war against nature, it will be helpful to examine, through several different academic lenses, the ways in which we create and perpetuate our present 'social reality,' which, broadly understood, is what generates and structures all of our human activities on the planet, and the current configuration of which must be at the root of why we are continuing to wage this war.

Our Ability to Abstract and Symbolize Enables Us to Construct the Linguistic Core of Our 'Social Reality'

Becoming increasingly aware of how our minds operate allows us to become reflexive, to 'catch ourselves in the act' of shaping the way we think, and this move opens us up to yet another step, actively changing not only how we think but what we do. Most of what we do in the world, however, we do working together as social animals, and analytic philosopher John Searle focuses attention on our social nature in his account of how we humans 'construct culture out of nature,' in a sense taking up where van Schaik's account leaves off. Searle's account deals largely with current practices specific to western, industrial cultures, but presumably the basic moves he describes would be species-wide. His analysis is also almost entirely focused on the linguistic and therefore predominantly left-hemisphere process whereby we build up our symbol-world. Although he doesn't speak of this,the fact that he attempts to describe the process itself and situate it within the larger context of our biological propensities attests to his own ability to employ some right-hemisphere skills as well.

In *The Construction of Social Reality*, Searle (1995) tells us that he was struck early on by what he calls 'the metaphysical burden' of the world we live in, the fact that, in addition to those parts of our reality that exist independently of us, the things that are studied by the natural sciences, there are also a large number of things that do not exist other than by virtue of the fact that we, as human subjects, believe in them–things like money, governments, property, marriages and the like. Ontology is the branch of philosophy that investigates existence, so Searle terms the former, independently existing things, ontologically objective, and the latter, those things that exist only by human agreement, ontologically subjective. As he explains, these latter 'things' come into existence just as the words of our language come into existence, by our doing something we humans are very, very good at: collectively agreeing to give certain sounds, marks and objects symbolic meanings so that we can use them to convey information and coordinate our human activities. Searle defends a correspondence theory of truth, the notion that a 'true' statement describes fairly accurately how things are in the world, i.e. the way it re-presents the world *corresponds* to the way the world actually is. He is quite clear about the difference between what is ontologically subjective—our human belief systems, from our re-presentations of concrete things to increasingly abstracted concepts that have no referent in the actual world—and that which is ontologically objective—the things that actually do exist in the world, independently of whether we 'believe in them' or not.

To explain how the process of symbolization works to allow us to construct our 'social reality,' Searle asks us to imagine a stone wall built by an early band of humans to keep others out of their territory. At first, the wall is a physical barrier; over time, it crumbles into a line of stones that one could easily step across, but it continues to exclude members of other groupings because it has attained symbolic significance as a boundary marker in the minds of all the people of the region, reminding outsiders to the original grouping that the area has been cordoned off, excluding them–it could perhaps be said to signify early 'ownership' and to demarcate an aspect of group identity as well. When entire groupings of humans agree, explicitly or implicitly, to behave *as if* particular things are invested with a certain symbolic meaning or status, then those things can *function* as if they actually had certain physical properties, even if there's nothing correspondingly physical about them. Since it is not just any one individual's thought or desire that brings those symbolic properties into being, but rather the whole human community's shared belief—what Searle calls their collective intentionality–the 'barrier' presented by the symbolic line of stones will be experienced as something substantial insofar as it is outside of any one person's ability to alter. Nevertheless, its existence is utterly dependent upon the continued belief of the larger group, and it would cease to exist when the group died out, or in the moment they decided to change their minds and drop it–it remains something entirely ontologically subjective. Searle provides a formula to represent the way this process of social construction works in general terms. He claims our social institutions are created through many iterations of 'constitutive rules' that take the linguistic form of 'X counts as Y in context C'. A group invests an object, X—the line of stones in the example above—with a symbolic meaning, Y—being a boundary marker–in a particular context, C—demarcating the limits of

the homeland. As long as most everyone in the larger community behaves in a way that follows the 'rule,' recognizing the attachment of symbolic status Y to object X, even if they don't think consciously about it, X 'is' that Y for them.

Our notion of *value* has become abstracted from natural contexts through the action of such a process, becoming increasingly expressed in numerical units with less and less connection to things in the real world. Money, as Searle explains, has evolved from ontologically objective *commodity money* like gold or silver, which most people found desirable in itself, for ornamentation if not for utility, subjected to repeated agreements of the declaration 'X counts as Y in context C' to become *contract money* in the form of promissory notes exchangeable for specified amounts of bullion, and finally *fiat money*, paper currency or electronic traces in computer banks, that governments have declared 'by fiat' to 'count as' a certain amount of value—a purely linguistic/symbolic entity. Our conceptions of *wealth*, as positive value, or of *debt*, as negative value, are similarly socially constructed. Nevertheless, their hold on us is remarkably strong; anthropologist David Graeber traces it back to our sense of moral obligation, as beings who necessarily depend upon social cooperation, which includes keeping our agreements and fulfilling our responsibilities, in order to sustain our societies (Graeber, 2011).

Searle's theory is developed largely in terms of a very sophisticated linguistic philosophy that focuses on the logical structure of our social institutions, emphasizing abstraction and rule-following. He is forced to develop a concept of 'the background' in order to account for the fact that no conscious (or, he claims, even 'unconscious') rule-following or other abstract thinking seems to be involved in the day-to-day participation of most people in economic or other social institutions. This background includes a set of dispositions that we 'evolve' as we grow up within society and receive positive or negative social feedback for our actions—dispositions toward ways of thinking and acting that will presumably thereby be 'sensitive to the rule structure' underlying established institutions even if it is never brought to our conscious attention (Searle, 1995, pp. 144-145). In a more recent work, however, Searle reaffirms his theory's dependence on abstract logic with the claim that "all human social institutions are brought into existence and continue in their existence by a single logico-linguistic operation that can be applied over and over again." Searle (2010, p. 62), outlining the legal process of creating a corporation through a succession of verbal declarations or 'speech acts.' Later, however, he asks—since there is nothing 'there' to an institution before its linguistic creation, "and since its creation is really just words, words, words"—given that this is how all 'facts' regarding the existence of our social institutions come about—"how do we get away with it?" His short answer—which must be rooted in the processes he lumps together under the background—is that 'we' get away with constructing and maintaining our institutions, even some that perpetuate highly unjust social arrangements, "to the extent that we can get other people to accept it." A deeper question, of course, is why people do accept the current structure of our social reality, and in answering this question Searle points to a prominent feature of most cases, "people do not typically understand what is going on." Most people do not understand that things like money, or private property, or corporations, are human creations; rather, "they tend to think of them as part of the natural order of things, to be taken for granted in the same way that they take for granted the weather or the force of gravity" (Searle, 2010, pp. 106-107). Most people simply grow up within a culture and absorb the ability to live in accord with all of its various symbolic meanings, acquiring a set of 'background' capacities without ever thinking about how they originated. In other words, they fail to see that a large part of the 'world' that they take for granted is socially constructed, maintained in its particular form simply by collective human agreement—and therefore open to re-construction if only enough of us could come to realize its true ontological status, and our own capacity to make alterations when and where we determine that they are necessary—this, however, is not something discussed to any extent by Searle.

There Are Other (Social) Reasons Why We Do What We Do (and Don't Do)

Searle's analysis of the logical structure of our social institutions can be helpful if we are to make an effort to bring about some deliberate, fundamental changes in their structure, but it is obviously not the whole picture of how our 'social reality' comes about, as he admits. His explanation of how the 'ontologically subjective' comes into being is what is most relevant to our war against nature, since it provides necessary insight into how we might eventually end it—if our creations foster this war, we can re-create or un-create them. To fill out our understanding of 'why we do what we do'—and what we don't do, including get to the root of major problems—we must look beyond the 'single logico-linguistic operation' postulated by Searle, and draw insights from the fields of social psychology and what Eviatar Zerubavel terms 'cognitive sociology.' Cognitive sociology recognizes 'an intersubjective social world' that lies in between the personal, inner 'subjective' world and the manifest, 'objective' natural world, a world of 'shared mindscapes' that are neither naturally nor logically inevitable but are rather often 'utterly conventional' (Zerubavel, 1997,

p. 9), meaning that they're largely arbitrary, established simply because groups of people come to adopt, for whatever reason, certain shared ways of thinking and acting.

Zerubavel recognizes, as does Searle, the role played by social feedback—often in the form of "tacit pressure which we rarely even notice unless we try to resist it." In what he calls "the process of *cognitive socialization,*" whereby we "learn to see the world through the mental lenses of particular thought communities," subtle social signals teach us things like what to pay attention to and what to ignore, what sorts of behavior to expect, and how to "reason in a socially appropriate manner" (Zerubavel, 1997, pp. 13-15). He points to the Solomon Asch experiment in the social psychology of conformity—in a test of comparative line lengths, many subjects are so strongly influenced by the expressed beliefs of others that they deny the evidence of their own eyes [12] —as a small-scale example of what he terms 'social optics.' It can also be seen as an illustration of the result of following 'the coherence theory of truth,' holding that what makes a statement 'true' is merely the fact that it coheres with the beliefs and statements of most of the other members of the group, not whether it corresponds with reality (a person adhering to this theory of truth can dispense with the notion of 'reality' altogether). He notes, in agreement with Searle's defense of the existence of a real world independent of our representations of it, that, while people from different human cultures can have different pictures of how the world is configured, this kind of 'optical' pluralism or 'perspectivism' does not preclude the existence of an 'objective reality'. What it does is "tie the validity of the different 'views' of that reality to particular standpoints" (Zerubavel, 1997, p. 30), particular ways that groups may be situated within the larger reality, in order to 'see' it that way.

Our ways of 'dividing up' the world are largely shared within our thought communities and are therefore social- this includes the tendency to draw sharp, dualistic divides between certain kinds of things (see Section), which is especially pronounced in some cultures. That this tendency toward dualism is a cultural construction rather than a reflection of an ontological chasm within nature can be illustrated by "the fact that many young children are totally oblivious to the conventional distinction between humans and all other living creatures," an observation which "makes it quite clear that such a distinction is neither natural nor logical" (Zerubavel, 1997, p. 47). Like Searle, Zerubavel draws attention to the "tendency to mistake intersubjectivity for objectivity," forgetting the conventional nature of our symbols and thereby falling victim to what we will call, later on in this chapter, the fallacy of misplaced concreteness, and he emphasizes the importance of the 'cognitive flexibility' that results from maintaining awareness of our ability to consciously alter the meaning of our symbols, contrasting with the rigidity thought that results from 'reifying' our shared symbols, confusing them with objectively real things in the world (Zerubavel, 1997, pp. 78-80). People's willingness to die 'in order to protect their national flag' is an example of such reification, he explains, since "we sometimes confuse totemic representations of collectivities with those collectivities themselves."

Kari Marie Norgaard draws on Zerubavel's work in analyzing the way the residents of a small rural community in Norway 'don't do' something—they don't generally acknowledge the very obvious effects of climate change on their local landscape, or its implications, and thus they don't take any actions to address it. Bringing in issues of emotion, ideology, and power that are omnipresent contributors to the 'background' of which Searle speaks, Norgaard describes what she terms the *social organization of denial*:

Everyday reality is structured through social, political, and economic institutions and produced through ordinary actions and practices, in particular following (and thereby reproducing) the interconnected cultural norms of what to *pay attention to*, *feel*, and *talk about*. Just as social norms of attention, conversation, and emotion create the sense of what is *real*, they also work to produce the sense of what is *not* real, what is excluded from the immediate experience of normal reality. (Norgaard, 2011a, p. 132)

Zerubavel uses the story of *The Emperor's New Clothes* to illustrate the social nature of the way a distortion in our collective perception of reality can be propagated: surrounding the emperor's nakedness was a 'conspiracy of silence', "whereby a group of people tacitly agree to outwardly ignore something of which they are all personally aware." This kind of collective denial is not just a failure to notice something but rather "entails a deliberate effort to refrain from" noticing things "that actually beg for attention" (Zerubavel, 2006, p. 9)—things so big and conspicuous that they often become referred to as the metaphorical 'elephant in the room.' In studying examples of collective denial as it occurs in a variety of contexts, he has observed that "the pressure toward silence gains momentum" in proportion to the number of people involved in maintaining it, and increases the longer the denial is maintained (Zerubavel, 2006, p. 15). The wider the circle of conspirators, the more powerful the group pressure not to violate "a collectively sacred social taboo"—"thereby evoking a heightened sense of fear" should one dare to break the silence (Zerubavel, 2006, pp. 56-57). Zerubavel quotes Paul Simon in noting that such silence 'like a cancer grows'—"which is indeed how an entire

society may come to collectively deny its leaders' incompetence, glaring atrocities, and impending environmental disasters" (Zerubavel, 2006, p. 58).

Our war against nature is starting to boomerang back upon us by unleashing a variety of 'impending environmental disasters,' one of which is climate change. Norgaard's analysis will be valuable in helping us to understand what we're dealing with here–not only why we continue doing what we're doing when we know it worsens the problem but why we seem to be so powerless to even address it. Norgaard lived in Norway growing up and speaks fluent Norwegian. She returned there in 2000 "with a concern about global warming and an intention to conduct research on how the environmentally progressive Norwegians made sense of it" (Norgaard ,2011a, p. xviii). What she found, in the community she visited—where she knew people were quite knowledgeable, abstractly, about global warming—was that, despite one of the warmest winters on record, resulting in an "unprecedented" need for artificial snow and loss of the ice fishing season because the lake failed to freeze, everyday life "went on as though it didn't exist"; people listened to news coverage of unusual weather, and of climate talks going on internationally, but then they "just tuned in to American sitcoms." As far as she could tell, they did not spend much time thinking about how global warming was impacting their own community, and rarely brought it up in conversation; "they did not integrate this knowledge into everyday life" (Norgaard, 2011a, p. 4).

To her outsider's eyes, Norgaard could detect a well-coordinated if not consciously arranged dance around an 'elephant in the room,' and she brought the thinking of a number of other academics focusing on such phenomena to bear on what she saw. Socially enforced 'norms of attention' can rope off large realms of reality from people's perception, thus constituting 'a particularly insidious form of social control.' This sort of attentional norm-setting is an example of Steven Lukes' 'third dimension of power,' she maintains, less visible than the first and second dimensions—'outright coercion and the ability to set the public agenda'—but perhaps even more dangerous because of its ability to, as Lukesputs it, shape people's "perceptions, cognitions, and preferences in such a way that they accept their role in the existing order of things, either because they can see or imagine no alternative to it, or because they see it as natural and unchangeable"—an analysis that agrees with and further fills out the answer to Searle's query, 'How do we get away with it'?

Looking more deeply into the community's failure to take or even envision any climate-change-countering actions, Norgaard found that a desire to avoid unpleasant emotions, including the unpleasant sensation of cognitive dissonance, was likely to be operative not only on the level of individual psychology but also at the social level. Cognitive dissonance is 'a state of tension that occurs whenever a person holds two cognitions'—beliefs, attitudes, worldviews—'that are psychologically inconsistent' (Tavris & Aronson, 2007, p. 13), and it can cause a great deal of discomfort, so people generally do whatever they can to reduce it, usually by trying to deny one or the other of the conflicting cognitions. For example, thinking about all the bad effects on one's health while continuing to smoke cigarettes creates dissonance, so minimizing the health risk by emphasizing smoking's prevention of weight gain might be one way of reducing it. Belying their image as "a simple, nature-loving people who are concerned with equality and human rights," Norwegians are now among the larger per capita contributors to global warming, the country having tripled its oil and gas production over the decade preceding her study to become the second-largest oil exporter after Saudi Arabia (Norgaard, 2011a, p. 88), permitting them to enjoy quite a high standard of living, and yet, by the time of Norgaard's study, they had done "not so much" to meet their emissions reduction goals despite their awareness of the consequences of climate change for less fortunate nations—a thought that must be suppressed because of its threat to personal and cultural values. According to Norgaard, members of the community were able to maintain their distance from the issue of global warming "via a cultural toolkit of emotion management techniques" and the employment of "social narratives" of national identity (Norgaard, 2011a, pp. 213-214); they tended to hold fast to old traditions, maintaining a sense of the past within the present, while refraining from thinking too much about the future, telling and retelling stories of 'Mythic Norway,' displaying images of an unspoiled land and emphasizing the small size of the country in relation to other greenhouse gas emitters—all serving to minimize their responsibility in contributing to the global problem and keeping the dissonance at bay.

Though not the focus of her study, Norgaard also uncovered efforts to avoid "guilt, fear and helplessness" through similar maneuvers in the United States, where she found the thought of climate change to be just so much "background noise." One of her young American interviewees even posed the crux of her angst as follows: "How many of us can really imagine that *the war against nature will really be over* and we will come out alive in a world where continuing ecological destruction is not the order of the day?" (Norgaard ,2011a, p. 197, emphasis added). Moreover, Norgaard worries that, "with the dynamics of global capitalism in which gaps between rich and poor increase," the tendency toward denial of mounting ecological and social problems will likely

increase for those with the economic ability "to build physical, mental, and cultural walls around our daily lives," and she muses as to whether this kind of denial may be "a new psychological predicament for privileged people" (Norgaard, 2011b, p. 410).

Keeping unpleasant emotions at a distance by enabling collective denial of a problem does not contribute to its solution, however—it prevents it. As Zerubavel observes, "conspiracies of silence prevent us from confronting, and consequently solving, our problems." He explains:

it is precisely the effort to collectively deny their ubiquitous presence that makes 'elephants' so big. As soon as we acknowledge it they almost magically begin to shrink. And only then, when we no longer collude to ignore it, can we get the proverbial elephant out of the room. (Zerubavel, 2006, p. 87)

The most effective way of dealing with cognitive dissonance is to confront the problem head-on and start taking the steps that are needed to solve it—which are often well known, but for some reason or other need to be avoided, often in order to maintain a position of privilege, to keep up with others' expectations, or out of fear of what significant change to our human status quo might bring. The status of nature is deteriorating all the time now as a result of our collective human actions, however, so this elephant is getting harder and harder to ignore—and besides, won't we all feel a great relief when we can stop expending so much energy pretending it isn't there?

Acting to Reverse Course: Overcoming Denial, Correcting Our Metaphors, Righting the Ontological Reversal, Rebalancing Our Cognition

Along with many others, Norgaard claims that "climate change is arguably the single most significant environmental issue of our time" (Norgaard, 2011b, p. 399. I would argue the point, insofar as the cumulative impacts of our 'war against nature' include but far exceed climate change, which is just the most dramatic and rapidly progressing result of this misguided 'war.' Our direct assault on nonhuman life and the natural landscape has not let up even in the face of an accelerating extinction event that may be precipitating ecological collapse around the globe, and changes in planetary chemistry have already gone well beyond their consequences simply for the planet's climate. In examining the way the residents of a Norwegian community were 'paralyzed' (Norgaard, 2011a, p. 208) in the face of obvious, locally significant climate change, however, Norgaard has uncovered some of the psychological and social processes that are currently operative to 'keep everything the same' pretty much everywhere, maintaining our life-threatening trajectory even as scientists document its disastrous effects in minute detail. The purpose of doing such a study, presumably, was, at the very least, to help us figure out how to release the 'paralysis' and get some large-scale movement going in a different direction, just as the aim of this chapter is not only to make its readers more aware of some of the whys and hows of our 'war against nature' but also to raise the possibility of ending the war, by seeking alternatives to the things that stoke its furnaces now, of which one is denial itself.

Just as there are national and other group narratives that play and replay to distract from visible contradictions in Norgaard's Norwegian community, there are images, narratives and metaphors that explain and justify this war deeply embedded within our globalizing culture, blocking our ability to see nonhuman nature in any other way than as rightfully the spoils of the conquering species, the supposed 'winners' of this war. Many of these depictions have been found to be quite misleading in light of contemporary science, but since much of their effect occurs below the level of consciousness, and their implications are continually reinforced socially, it can be quite difficult to correct them in people's minds. As it becomes more and more necessary to speak about what's happening, however, discussing the errors and confusions that these images, narratives and metaphors contribute to our 'social optics' should also become easier to do, and once we are made fully conscious of them, they are likely to lose much of their power.

By considering the extent to which our metaphors structure our thinking, George Lakoff and Mark Johnson lay some groundwork for a radical revisioning of western thought in their impressive tome Philosophy in the Flesh. On the basis of recent discoveries in cognitive science, they maintain that our minds are not separate from but are rather a result of our embodiment, highly structured by the organization of our perceptual and motor systems, and that our concepts are largely metaphorical, based on relationships we discover in the real world as we explore it with our bodies and then imaginatively project into logical entailments among our thoughts. The common notion of causality, for example, usually envisioned as the application of an outside force to effect a change in the properties of an object, is the likely result of projecting our human experience of forcibly imparting momentum to a billiard ball, made general and presumably universal through our capacity for abstraction. They claim that the vast majority of our thinking processes are below the level of our conscious awareness, making up what they call the 'cognitive unconscious,' but they maintain

that through empirical study we can become more aware of the way these processes structure our thinking, and as we do so we can learn, to some extent, how to alter, update, or reprioritize the metaphors we import into our thought (Lakoff & Johnson, 1999, p. 537).

And there is a powerful metaphor at the heart of Descartes' metaphysics that we desperately need to correct, because it still seems to be operative within the culture that is enveloping the globe: it conveys the notion of a disembodied reason—pure 'mind,' supposedly inherent only in us human beings—confronting something of a completely different order, a mindless mechanism, lacking any purposiveness within—pure 'matter'—that may be endlessly manipulated, by us humans, from without. Physics and biology have both come a long way since the ideas of Bacon, Descartes and Newton; physicists have discovered that atoms aren't like billiard balls at all, for example, and biologists know that organisms must be conceived as living systems, quite different from mindless machines. [13] A growing number of scientists and philosophers, therefore, have turned their attention to correcting this mistaken conception. Neuroscientist Antonio Damasio has demonstrated that 'reason' cannot be separated from body and emotion, at least not without seriously impairing the judgment of patients who have damage to the emotional circuitry in their brains. In *Descartes' Error*, Damasio points out, not only that it was a mistake to take "clockwork mechanics as a model for life processes," but that Descartes had his metaphysics exactly backwards in presuming that the mind was a "thinking thing" separate from the body – instead of "I think, therefore I am," conscious thought arose somewhere during the process of biological evolution—"in the beginning it was being, and only later was it thinking" (Damasio, 1994, p. 248). What exactly we mean by 'consciousness' may be endlessly debated; however, in the words of Evan Thompson, "a purely external or outside view of structure and function is inadequate for life," since "a living being is not sheer exteriority." Instead, as noted earlier, embodying an inwardness, an "immanent purposiveness" (Thompson, 2007, p. 225) within itself. A better image for the living organism, human or nonhuman, then—as replacement for the Cartesian wind-up toy or the heap of colliding billiard-ball atoms—would be a dynamic system that is both *autopoietic*—self-organizing–and *cognitive*—intelligently related to its environment; in other words, a being for which a 'self' and a 'world' emerge simultaneously, as it interacts with its environment in the process of staying alive (Thompson, 2007, p.158). Seizing hold of our metaphors, myths, and 'imaginative visions' and correcting some of them in light of contemporary science was also a central concern of the late philosopher Mary Midgley. In *The Myths We Live By* she adds her voice in criticism of the Cartesian vision, asserting just how much "we profoundly need to get rid of something"–the notion of the valuelessness, if not the complete lifelessness, of the natural world that was ushered in by the mechanistic, reductionistic science of three to four centuries ago (Midgley, 2004, p. 250). The time has come to purge these dangerously misleading metaphors from our minds.

If a new image is needed to capture our more sophisticated understanding of the individual living being, however, there is also a pressing need for us to update the way we picture the larger system that keeps us alive. It seems there is a powerful image, taken from neoclassical—which now dominates 'mainstream'– economics, that is responsible for structuring much of our contemporary thought. It is an image of a circular flow of money and commodities, regulated by a perfectly competitive market, and operating as a kind of perpetual-motion machine propelled by the maximization of utility and profit– whatever does not have a place in the incessant cycling is considered an inconsequential 'externality' and disregarded. While the mechanistic mindset of the left hemisphere is implicit in this conceptualization, it is the wholly abstract realm of our words and symbols—including that most powerful of all our symbols, money—that is the left hemisphere's proudest achievement, and it is the possibility of conceptually taking flight into that abstract economic realm that reinforces the Cartesian illusion that we can escape the constraints of the real world altogether.

Searle's analysis offers a helpful vocabulary for describing what is happening here: we have effected an ontological reversal in our minds. Many people do not grasp the crucial distinction between the ontologically subjective and the ontologically objective–*they don't get the difference, nor the difference it makes.* In essence, they are falling victim to what Alfred North Whitehead identified as 'the fallacy of misplaced concreteness,' mistaking the abstract for the concrete, taking the concept itself for the underlying reality from which it is derived. Previous generations of humans must have grasped the fundamental ontological order of things—aware of the reality of the natural world, and our dependency upon it, even if they conceived of themselves as engaged in a 'battle' to wrest grain from the soil or fish from the sea. But a large number of people now to seem to share in a mindset that takes such ontologically subjective 'objects' as 'the economy,' or the corporation, or the nation-state, or just 'money' itself, to be somehow more existentially substantial than the living organisms making up the biosphere. Unless they contribute to the circulation of money in some way, they are assumed to be simply 'externalities' that we can get by without. To the vast majority of people living in industrialized societies, therefore, 'the economy' is of far more concern than the ecology–in contrast to land-based peoples, of course, for whom the two are necessarily inseparable. *Most Westerners–and now a growing number of people on the planet as a*

result of economic and cultural globalization–having accepted the Cartesian metaphysics 'unconsciously' at the level of metaphor, seem to conceive of themselves as separate from nature and able to live independently of it, in the Platonic realm of our symbols. They are taking the sphere of our collectively accepted and mutually reinforced beliefs and expectations–the world of our social construction, centered on an image of money and goods revolving in an endlessly turning circle, detached from any larger context–as being more 'real' than our actual planetary reality. We need to learn to 'see through' the money game to what's really happening on the ground, and do the right thing there.

Lakoff and Johnson pick up where the analyses of Searle and McGilchrist leave off, pointing out what's wrong with the kind of thinking inculcated by mainstream economics, which they term 'the theory of rational action'. 'Rationality' itself is construed in terms of translating whatever is deemed desirable or valuable into numbers–performing the ultimate abstraction by converting all quality into sheer quantity, in other words–and then reasoning on the basis of the metaphor 'well-being is wealth' so as to 'maximize' these empty placeholders. The utilitarian ethicists of the 19th century, while similarly fascinated with mathematics, at least construed well-being in units of pleasure or happiness, but we 21st century humans of industrial culture now think almost solely in units of currency. Moreover, what are taken to be the rational actors in the current scheme of things are often themselves ontologically subjective, socially constructed superorganismic entities like corporations and nation-states, which are conceived as being in competition with one another in a race to garner the largest sum of such symbolic wealth. From a perspective that willingly accepts all the layers of projected symbolic status required to divide our social reality up in this way, such an approach may seem rational. "From an ecological and cultural perspective," however, Lakoff and Johnson observe, "it is profoundly irrational, that is, destructive of other vital forms of well-being–the long-term well-being of the natural world, of indigenous forms of cultural life, and of values crucial to the human spirit" (Lakoff & Johnson, 1999, p. 532).

A contrasting type of rationality is what ecofeminist philosopher Val Plumwood has described as ecological rationality. It "includes that higher-order form of critical, prudential, self-critical reason which scrutinizes the match or fit between an agent's choices, actions and effects and that agent's overall desires, interests and objectives *as they require certain ecological conditions for their fulfillment*" (Plumwood, 2002: 68, emphasis added). And in the interests of promoting such an ecological rationality, I propose substituting, at the center of our thought, instead of the contextless, self-enclosed circular flow of abstractions, the following image invoked by Aldo Leopold. "Land," he tells us, "is not merely soil." Rather:

it is a fountain of energy flowing through a circuit of soils, plants, and animals. Food chains are the living channels which conduct energy upward; death and decay return it to the soil. The circuit is not closed; some energy is dissipated in decay, some is added by absorption from the air, some is stored in soils, peats, and long-lived forests; but it is a sustained circuit, like a slowly augmented revolving fund of life. (Leopold, 1949, p. 252)

This 'fountain of energy' powering all life, surging upward to circulate throughout the 'biotic pyramid,' rising within trophic levels from soil to plant to grazer to predator (see Section), is not something tangible that can be 'seen' directly in any landscape, of course. To that extent, the image is like the circular 'engine' of economics, a representation, an abstract conceptualization—but it is a conceptualization of *something real*. The relationships that are described scientifically, though represented abstractly in terms of producers and consumers, trophic levels and food webs, are not arbitrary social constructions; they can be discovered in the structure of ecosystems as different as rainforests and deserts and coral reefs, ecosystems that are themselves, in Searle's terminology, ontologically objective. We should learn to respect both the systems and the structure, since how well we can mesh our lives with these will ultimately determine how we will sustain our lives in the years ahead.

The fixation of our collective attention upon the abstract symbols of economics serves to conceal from conscious awareness the destruction we are wreaking on the natural world, just as metaphysically 'reducing' nonhuman organisms to machines or collections of billiard-ball atoms conceals their aliveness and intrinsic value as centers of self-organizing agency. The very language that we use when speaking of the natural world—so often cast in terms of resources or as the provider of 'ecosystem services' just for us–further blocks our ability to see living beings and their ecosystemic patterns of interaction as they are in and of themselves. It is a maneuver that reduces the dissonance we feel if we admit to ourselves the degree of nonhuman distress and suffering our actions are creating, a way to achieve and maintain denial. Eileen Crist focuses attention on our use of the term *resources*, calling it "a corrupt concept which continues to masquerade as merely a descriptive word," a concept that "reconfigures the natural world in terms of how it is usable, thereby entirely bypassing . . . nature's intrinsic standing, both as being and as value" (Crist, 2014, p. 7). Continual linguistic employment of this term could be considered another example of the "social organization of denial," insofar as the awareness and agency of nonhuman organisms are obscured or erased by collective collusion, and its

influence is pervasive. As Crist observes, “the transfiguration of the natural world into resources has come to shape human thought and action at such an encompassing level that people largely perceive the natural world through this single framework: *of how it is usable and/or profitable*” (Crist, 2014, p.7; emphasis added).

Crist’s observation serves to reconnect us with McGilchrist’s detection of the role of the left hemisphere in our escalating collective environmental destructiveness, since in his view its fundamental attitude is a use-orientation toward whatever is in front of us. As our technologies of brain imaging become increasingly refined, it is likely that a much more nuanced picture of the relationship between our two cerebral hemispheres will emerge– a possibility that McGilchrist seems to acknowledge at the end of his heavily annotated book. He maintains, however, that what he has presented offers, at the very least, a model or metaphor for two “consistent ways of being” that can be tracked over the development of western culture, two ways of being that “are fundamentally opposed” (McGilchrist, 2009, p. 461). They are at least two identifiably quite different clusters of propensities that appear relevant to our dealings with nature, so we might want to take to heart his descriptions of the characteristic “ways of being” of each of our two hemispheres, and strive to rebalance the contributions of each, such that they come into play appropriately within their different realms. There are occasions when what he describes as the workings of the left hemisphere are precisely what we need—when we’re doing scientific work, or analyzing an argument, for example—but we must not allow the talents of our right hemisphere to atrophy, or be overshadowed by their opposites. McGilchrist claims that the right hemisphere has “primacy” over the left, since, being open to the initial presencing of what’s around us, it “starts the process of bringing the world into being,” and is thus “more in touch with reality.” The left hemisphere, on the other hand, “is a useful department to send things to for processing, but the things only have meaning once again when returned to the right hemisphere”—where “the parts, once seen, are subsumed again in the whole” (McGilchrist, 2009, p. 195). If the proper sequence of mental processing is thus RH > LH > RH, as McGilchrist suggests, then it means that the outcomes of the ‘single logico-linguistic process’ of which Searle speaks—if this is indeed what generates the institutional structure of our social reality—must be reintegrated back into our understanding of the larger context, in all its concrete ecological reality, such that those outcomes which are further disruptive of the natural world will be rejected.

Moreover, as McGilchrist explains, one way—the way of the right hemisphere—is:

> to allow things to be *present* to us in all their embodied particularity, with all their changeability and impermanence, and their interconnectedness, as part of a whole which is forever in flux. In this world, we, too, feel connected to what we experience, part of that whole, not confined in subjective isolation from a world that is viewed as objective. The other [–the way of the left hemisphere–is] to step outside the flow of experience and ‘experience’ our experience in a special way: to *re-present* the world in a form that is less truthful, but apparently clearer, and therefore cast in a form which is more useful for manipulation of the world and one another. This world is explicit, abstracted, compartmentalized, fragmented, static (though its bits can be re-set in motion, like a machine), essentially lifeless. From this world we feel detached, but in relation to it we are powerful.
>
> . . . the right hemisphere pays attention to the Other, whatever it is that exists apart from ourselves, with which it sees itself in profound relation. It is deeply attracted to, and given life by, the relationship, the betweenness, that exists with this Other. By contrast, the left hemisphere pays attention to the virtual world that it has created, which is self-consistent, but self-contained, ultimately disconnected from the Other, making it powerful, but ultimately only able to operate on, and to know, itself. (McGilchrist, 2009, p. 93)

As the above passages suggest, an additional benefit of taking the right hemisphere approach is that it will enable us to become the humans who *experience* ourselves in relation to nature in a wholly different manner than one of coldly utilizing its resources. If McGilchrist is right, this will relieve the loneliness of ‘detachment’ that presently seems to haunt our global enterprise, and may even lead to experiencing the ‘awe’ with which some become infused in the presence of nature.

11.6: Understanding How and Why We Continue to Wage ‘Our War Against Nature’ and Reversing Course is shared under a CC BY-NC-SA 4.0 license and was authored, remixed, and/or curated by LibreTexts.

11.7: Becoming Reflexive: Rethinking 'Who' We Are, Breaking Free of a Constricting Paradigm, Ending the 'War'

Congratulations—if you've read this far into the chapter, you already have insight into how we might begin to live more intelligently on our planet, and thus make all of our lives much more secure. You have achieved a degree of reflexivity, the ability to *see yourself, together with all of us in our global human society, engaged in the active process of constructing* our social reality. You now realize we've got a lot more choices than we're currently allowing ourselves to imagine! We are biological organisms, one result of a long process of life unfolding on this planet. We know we are NOT mechanistically determined to continue to behave in predictable patterns like the billiard balls in simplistic physics experiments, nor dissociated rational minds that are 'locked into' following chains of linear logic regardless of where they lead. We see that, as behaviorally flexible primates, we have many more degrees of freedom through which we may exercise moral agency over what we choose to do. Moreover, we realize that *we can also choose* who we are—we can become the humans *who choose NOT to wage this war against nature* any longer. Since it is largely our socially reinforced set of beliefs, expectations, mental imagery, and attitudinal orientation that keeps us on our current path, undercutting our own security in a 'war' that makes no sense, once we get past our denial we can strive consciously to undo some of the mental straightjacketing we have been inflicting on ourselves, along the lines discussed in the previous section. Even if we don't succeed in stopping all the destruction that's already been set in motion, if we can start being honest with ourselves about what went wrong, and why, and take a shot at fixing things—well, at least we will have tried.

In this chapter, we have examined, in a quick overview, some salient aspects of what is currently known about living nature, conceived as life flowing over space and time, and traced the likely path of how we humans came to be doing the kinds of things we are doing to nature now, many of which can be conceptualized as waging a 'war' against it. As close relatives of the chimpanzees (let's not forget our equally close relationship with bonobos, however), it is likely that we all inherited a dualizing tendency arising out of the need of a social animal to defend its 'own' group by sharply differentiating it from all 'others.' Moreover, we do possess characteristics that make us different from other animals, one being our exceptional facility with symbolization, a difference that has probably always been recognized in human cultures around the world. An orientation that seems to have developed especially strongly within cultures affected by Western thought, however, is one that conceives of us humans being not only distinctive but metaphysically separate from and superior to the rest of the living world, a dualistic opposite to what is often conceived as a dead, lifeless backdrop of 'resources' expressly for our use or a biological machine having no other purpose beyond supplying us with 'services.' This overall orientation—the engagement of attention in exploitation of a backgrounded 'other'—can be discovered at work within the intraspecific human relationships of colonization, racism and other group-on-group oppression,[14] but it has been flourishing with little or no widely recognized critique as yet when turned against nonhuman beings and nature more generally. The roots of this orientation apparently trace to which cognitive connections happen to be dominant in our brains, within neural networks that may have considerable potential for flexibility. Whatever its neuropsychological underpinnings, however, this way of framing the world has found resonance with quite explicit philosophical positions and is constantly reinforced by ubiquitous misleading metaphors that need to be updated. Our backgrounding of the 'other' in order to enjoy the privileged position of dominance is often a maneuver about which we prefer to remain in denial, so perhaps, it's time to name this attitude explicitly; it's known as *anthropocentrism*, a constricting paradigm asserting, of just about everything, 'it's all about us,' a narrowness of vision that has become a shackle on our thinking.

In an essay featured in the journal *Science* during the closing weeks of 2018, a time during which many of us were still absorbing the shocking news concerning the planet's plummeting biodiversity, Eileen Crist targeted 'a pervasive worldview' that legitimizes and sustains 'the trends of more'—more people, more consumption, more concrete—that are driving our assault on nature. Human supremacy–'the belief system of superiority and entitlement'–is manifested in such assumptions as 'the human is invested with powers of life and death over all other beings and with the prerogative to control and manage all geographical space'; it is "the underlying big story that normalizes the trends of more, and the consequent displacements and exterminations of nonhumans—as well as of humans who oppose that worldview" (Crist, 2018, p. 1242). Who is it that is fighting our war against nature? Whatever its combination of contributory factors, the war is fought under the banner of this sort of anthropocentric anthropocentric self-glorification, or from within its shadow, the part of us that would prefer to stay in denial about what we're doing and why it might matter. Crist calls on us to 'reimagine the human,' in such a way that we no longer identify 'human greatness' with the domination of nonhumans, individually or within ecosystems. We have it within us to make the 'rational response' to this 'present-day

ecological emergency' (Crist, 2018)—it's clearly a matter of "scaling down and pulling back" (Crist, 2018, p. 1243)—and it is also the ethical response, evoked as we begin to more fully apprehend life on Earth.

As Ben Mylius has pointed out, the anthropocentric paradigm seriously constrains our ability to take in what is out there in the world before us; even a purely descriptive form of anthropocentrism, one that stops short of making claims about moral superiority but that, for example, restricts the definition of terms like 'consciousness' to conditions applicable only to the human case, constitutes a "failure of conceptual imagination," "a failure to work hard enough for a truly capacious frame of reference" (Mylius, 2018, p. 187), thereby curtailing what we are prepared to discover in the world around us. The message from science, moreover, as researchers have begun looking into it, is that there is tremendous continuity as well as diversity in the world of life, and no evidence at all for a sharp discontinuity that could justify humans proclaiming some sort of metaphysical superiority over everything else. It becomes a failure of moral imagination as well, of course, when we try to justify harms to nonhuman nature by mentally erasing or psychologically denying the inner lives of other living beings. As Crist observes, this worldview 'blocks the human mind from recognizing the intrinsic existence and value of nonhumans and their habitats'; it also, as she recognizes, deprives us of the ability 'to experience awe for this living planet'—something that we all might undergo if we opened ourselves to the immensity and magnificence of life as it has manifested over the last four billion years—and an experience that, she claims, should it be rediscovered, "would galvanize the world into action" in opposing the mounting mass extinction currently in progress (Crist, 2018, p. 1242). Anthropocentrism, in the widest sense, means we humans are always the center of every focus, that there is nothing greater than our burgeoning human enterprise. But there is something greater–the Biosphere, of which we are but a part. And thus the larger question before us, as we head farther and farther into the Anthropocene, is not whether we are endangering 'human civilization'—of course we are—but rather just how far down the anthropogenic extinction spasm now in progress is going to knock life on Earth.

Perhaps most seriously in terms of its consequences for us, however, is the effect of our presumed human supremacy in blinding us to 'the wisdom of limitations,' as Crist puts it. If every binary choice between human and nonhuman interests must always be made in favor of the human, and if every human life is always seen as much, much more valuable than any nonhuman life, then it should not be surprising that we have ended up with the astoundingly skewed ratio of almost 50 times as much biomass tied up in our single species plus our livestock as is found in all the remaining wild terrestrial mammals on this Earth (Bar-On et al., 2018). But how can there be 'too much of a good thing,' when it's supposed to be the best kind of thing of all? One gigantic 'elephant in the living room' when it comes to our war on nature, a topic that the forces of denial have for all too long made taboo in polite conversation, is the unsustainable trajectory of our human population growth, which is now in itself crowding out nonhuman nature in many parts of the world (Crist et al., 2017), and which, when multiplied by the growing per capita consumption of 'resources' made possible by increasing affluence, is going to be a focus of increasing concern as we approach 2050; the situation does not bode well for any of the planet's lifeforms, human or nonhuman alike. But our concern in this chapter has been with addressing the processes that gave rise to and perpetuate the war against nature, for the purpose of ending it; its current scope and predictable future consequences are topics for Chapter 12.

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11.8: Resources and References

Review

Key Points

- Science describes and explains certain objective realities, independent of the diversity of perspectives and views.
- Even the simplest living organisms represent immensely complex self-regulating systems. The extent of complexity increases further from organisms to ecosystems and the biosphere. Numerous non-linear interactions are involved in their workings, many of them unknown.
- Despite their diversity, all life forms on Earth share a great deal of molecular constituents and biochemical processes.
- Biological evolution has created life forms of increasing complexity and diversity, joined into ecosystems through interactions and energy flows.
- Solar energy flows into ecosystems, travels through successive trophic layers of organisms and leaves in the form of heat.
- Humans evolved as primarily vegetarian primates that were subject to predation by carnivores. We evolved, and continue to exist, in integration with nature and are entirely dependent on her.
- All living organisms share a degree of awareness about their surroundings; many are able to interact intelligently with their environment with the help of diverse modes of sensory perception. The human senses constitute only a subset of those modes.
- Extending from our sensory perceptions, humans evolved complex systems of social interaction and communication through sound and gesture, culminating in language.
- Language allowed us to create names for things, shared representations that governed our interactions within and between social groups.
- Many other vertebrates share with humans a structural and functional partitioning of the brain that allows separate hemispheres to analyse the environment by reduction or by integration, respectively. Human language centers reside primarily in the left, reductionist hemisphere.
- Our abilities for abstraction and objectification of nature became particularly pronounced in Western European cultures, supporting the development of mechanistic and hierarchical world views which allowed the exploitation of nature as ‘resources’ and as means to human ends.
- Human cultures construct shared social realities that consist of structures and objects that are ontologically subjective. Yet, through their continuous use they tend to be treated as ontologically objective entities, as if they were ‘natural’. This includes our economic and political institutions, customs and traditions.
- Individual perceptions of’ ‘reality’ are informed by numerous such socially constructed and shared entities and relationships, at times in contradiction to what our senses tell us.
- This has influenced humanity’s interaction with ‘nature’ through a series of successively more disastrous stages, culminating in our ‘war against nature’. Reversing that course of collective development and averting its most catastrophic outcomes will require our critical engagement with the ways in which we make sense of the world and impart value on it.

Extension Activities & Further Research

1. Explain your personal position with respect to the idea of a war against nature. In what ways do you find the ideas acceptable? How do you see yourself involved in this war?
2. Identify the major combatant parties who are waging the war against nature in your community? In your province or state? In your country? How does the winning or losing of battles manifest in that context?
3. Examine your personal development through childhood, adolescence and beyond: How were the ideas of anthropocentrism, human-nature dualism and left-hemisphere domination brought to your attention by teachers, peers, family members?
4. What university courses have your experienced (or perhaps only heard of) that do not conform to those conventions? On what grounds did the instructors justify their dissent, if at all?

List of Terms

See Glossary for full list of terms and definitions.

- agency

- Anthropocene
- Anthropocentric
- Anthropogenic
- autopoietic
- biotic pyramid
- collective intentionality
- consensual paranoia
- dualistic thinking
- ecological rationality
- emergence
- empathy
- fallacy of misplaced concreteness
- lethal raiding
- LUCA
- metaphysical metaphors
- mirror neurons
- neural network
- NPP
- ontologically objective
- ontologically subjective
- ontology
- paradigm
- reflexivity
- resilience
- self-organization
- social construction
- systems thinking
- theory of mind

Suggested Videos

Anthropocene: from global change to planetary stewardship with Will Steffen where his client is the Earth and humanity is the defendant.

Consciousness a biological phenomenon (TED Talk, with John Searle)

Elephants communicating

Elephant listening project (with Katy Payne)

Elephants mourning

Idea framing, metaphors, and your brain (with George Lakoff)

From the Holocene to the Anthropocene

Honeybee waggle dance

How trees talk to each other (TED Talk, Suzanne Simard)

How wolves change rivers (with George Monbiot)

Living in denial (with Kari Norgaard)

Mindwalk

Mirror behaviour in dolphins

Mirror self-recognition in elephants

Moral behaviour in animals (TED Talk, Frans de Waal)

Solomon Asch experiment (with Philip Zimbardo)

Welcome to the Anthropocene

What if the right brain hemisphere ruled the world? (with Iain McGilchrist)

Wood wide web: How trees talk (with Suzanne Simard)

Suggested Websites

Biodiversity hotspots

Dolphin brain

Ecological pyramid (pyramid of biomass)

Elephant brain

Great Acceleration in human activity from 1750 to 2010

Homeobox genes

Mirror behavior in manta rays

Neuron numbers across species

Primate behaviour

Your Inner Fish series

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Footnote

1. For illustrations of these homologies, see Shubin (2008).
2. This figure may be under revision downward, to no more than 81%–see Stanley (2016).
3. See Ripple & Beschta (2011) and How Wolves Change Rivers video.
4. See also Simard's TED talk.
5. See also Hall (2011) and Chamovitz (2012) for more popularized thinking about plants.
6. Watch the honeybee waggle dance video.
7. See List of animals by number of neurons for comparison diagrams.
8. Frans de Waal's *Are We Smart Enough to Know How Smart Animals Are?* (2016) provides some detailed examples. Over the last five to 10 years or so, there has been a veritable explosion of research reports, popular articles and books detailing the cognitive capacities of other animals. For example, see Baboon Metaphysics (Cheney & Seyfarth 2007), The Genius of Birds (Ackerman 2016), 'Thinking Chickens' (Marino 2017) and What a Fish Knows (Balcombe 2016).
9. Frans de Waal's (1982) Chimpanzee Politics provides a classic description of this kind of behavior, something that is often on display in our human realm as well. You can watch de Waal's TED talk on moral behavior in animals. An excerpt from this video, highlighting the capuchin 'sense of justice,' can be seen in this video clip.
10. See Nietzsche, F. 1974year?. The Gay Science. New York: Random House, Inc. pp. 169-172, pp. 297-300.

11. See, for example, Suzuki & Knudtson (1992) and Perkins (1994).
12. For an introduction to the Solomon Asch experiment by Philip Zimbardo, watch this video.
13. For an accessible explanation of the shift in scientific thinking, see Capra (1996).
14. See, e.g. Plumwood (1993; 2002); also see Caviola et al. (2019).

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CHAPTER OVERVIEW

12: Our War Against Nature - Letters from the Front

Learning Objectives

- Summarise the diverse manifestations of global anthropogenic environmental change that characterise the Anthropocene.
- Explain how those changes affect nonhumans and ecosystems, creating the sixth mass extinction event in the Earth's history.
- Describe what characteristics and circumstances render an animal species particularly at risk of becoming extinct in the Anthropocene.
- Explain what food webs are, giving examples; explain how they can become 'frayed' by human impact.
- Summarise how marine food webs are affected by acidification, deoxygenation and marine heat waves.
- Differentiate the impacts exerted on food webs by macroplastics, microplastics and nanoplastics.
- Summarise the challenges that render global overpopulation particularly problematic and difficult to address.
- Explain how population size, consumption level, technological means work together to determine the ecological impact of a person.
- Analyse how cultural factors conspire to render patterns of mass consumption to become part of the War on Nature.
- Explore how the assumptions, beliefs and aspirations held by neoclassical economic theorists render their field non-scientific.
- Develop a personal view about justifications, critiques, prospects of humanity's *War Against Nature*.

Ronnie Hawkins

This chapter is made up of the 'case studies' that follow from Our War Against Nature, written from a perspective that sees human security as co-extensive with maintaining the integrity of the Biosphere; in other words, if the Biosphere goes down we go down. It is important for us to resist the 'shifting baselines' phenomenon, a tendency to adjust uncritically to 'the new normal' as ecosystems are disrupted, human-altered landscapes spread and the global climate shifts into new extremes. Instead of recapping the dynamics of climate change, discussed in Chapter 9, however, the focus here will be on some of the pressing but lesser known "other" problems our growing demand on planetary systems is generating, with connections to climate change pointed out where pertinent. Many of the articles referred to herein have appeared in the scientific literature just in the last five years, and public awakening to the stark reality of our "existential crisis" is considerably more recent. It may not yet be too late to prevent a 'state shift' of the Earth System and the massive loss of Holocene-adapted lifeforms likely to accompany it, but the case studies presented in Part I of this chapter are meant to stand as evidence that our current trajectory is accelerating toward such a shift. Appreciating the magnitude of our human footprint, examined in Part II, should help us to understand what sorts of moves are needed to change course; it will require transformation of many of our humanly constructed institutions and certain widely shared beliefs and values– but that's well within our capacity as flexible biological beings. We face a choice between clinging to the habits of thought and behavior that have driven Our War Against Nature and creating new ways of living that will assure a viable future for all Life on Earth. What will we choose?

The chapter is divided into two parts:

- **Part I - The Assault on Organisms and Ecosystems**
  - This consists of Sections 12.1, 12.2, 12.3, and 12.4
- **PART II - The Human Footprint**
  - This consists of Sections 12.5, 12.6, 12.7 and 12.8

12.1: Introduction - Welcome to the Anthropocene!
12.2: Animal Armageddon
12.3: The Fraying of Food Webs

12.4: Assault on the Oceans - Chemical and Physical Changes
12.5: The Human Footprint - Population
12.6: The Human Footprint - Consumption
12.7: Money Games - Chasing the Symbol
12.8: Who Are We?
12.9: Resources and References

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12.1: Introduction - Welcome to the Anthropocene!

We humans have become so numerous and so powerful, the changes we have wrought on the Earth's surface so extreme, that a new geological epoch is being named after us, the Anthropocene. It seems we have left the stability of the Holocene epoch, the preceding 10,000 to 12,000 years that followed the last Ice Age, and are now entering a period wherein many planetary parameters are shifting toward values unseen in hundreds of thousands or millions of years, with unknown consequences not only for human civilization but for all highly evolved lifeforms. Paul Crutzen dates its onset to the onset of the Industrial Revolution in the late 1700s, heralded by the invention of the steam engine and, coincidently, the beginning of the anthropogenic increase in atmospheric carbon dioxide and methane (Crutzen, 2002). Representative of the emerging field of Earth System Science, [1] Will Steffen and colleagues (2011) present a series of graphs, all reflecting the general outline of a J-curve, starting out slowly and rising to very high values rapidly near the end–the paradigm case being our human population, holding at less than one billion for all our previous existence prior to 1800 and then beginning a slow rise followed by a sharp upturn around 1950, coinciding with the onset of the "Great Acceleration" of "just about everything" else, from motor vehicles, telephones and McDonald's restaurants to water use, fertilizer consumption, and species extinctions—and attempt to consider the effects of the changes in all these variables and their interactions with one another on the state of the biogeophysical system as a whole. Johan Rockstrom and associates (2009) delineate nine planetary boundaries that must not be crossed if we are to stay within "a safe operating space for humanity," of which three have already been exceeded: rate of biodiversity loss, climate change, and interference with the nitrogen cycle, primarily in the form of massive amounts of reactive nitrogen created in the manufacture of fertilizer. Anthony Barnosky and co-authors (2012), meanwhile, focus specifically on the possibility of a "planetary-scale tipping point" that could trigger an irreversible shift from the present state of the Earth System into another, largely unknown one. As they explain, "biological 'states' are neither steady nor in equilibrium; rather, they are characterized by a defined range of deviations from a mean condition over a prescribed period of time," and from time to time this "mean condition" can change, either as the result of a "sledgehammer" effect, such as the sudden bulldozing of an ecosystem, or via a "threshold" effect, through the accumulation of incremental changes over time, the actual threshold being unknown to us before the shift occurs. These authors list the global-scale "forcings" pushing us away from our present state, including habitat transformation, energy production and consumption, and climate change—all of which "far exceed," in rate and magnitude, the forcings that drove the last global-scale state shift, the transition from the last ice age into the Holocene epoch, a transition that occurred over more than 3,000 years. They note, however, that "human population growth and per-capita consumption rate underlie all of the other present drivers of global change," and so these ultimate drivers of Earth System change will be considered in more detail later in this chapter.

Steffen and colleagues (2018) recently explored the "Trajectories of the Earth System in the Anthropocene," depicting the "limit cycle" traced by the Earth when it was following its glacial-interglacial oscillation and, since many parameters are now departing from earlier values, projecting a possible alternative path that reaches a state they term "Hothouse Earth," the impacts of which "would likely be massive, sometimes abrupt, and undoubtedly disruptive." Analyzing the Anthropocene "from a complex systems perspective," they illustrate our present precarious position, perched upon a "stability landscape" between two stable states, by asking the reader to visualize a marble rolling along a ridge between two valleys, representing two different "basins of attraction"–complex interactions among various parameters can trap the system in either of these two different states, should something trigger its rolling down into one or the other valley. While feedbacks in the complex relationships among many variables (greenhouse gas concentrations, ice sheet reflectivity, etc) have kept us in the relatively stable Holocene "valley" for thousands of years, anthropogenic changes are lifting us out of that valley and could potentially push us over the "hilltop" into another, possibly quite different and most likely less hospitable basin of attraction, which they describe as a "geologically long-lived, generally warmer state of the Earth System."

To avoid the "Hothouse Earth" scenario, they stress the need for "planetary stewardship," including "resilience-building strategies" to keep the planetary system in a "Stabilized Earth" state, noting that the current trends of our collective human activities, which tend to focus on enhancing economic efficiency rather than biogeophysical stability, "will likely not be adequate" for doing so. Carl Folke (2016) advocates seeing our human societies coupled with natural processes as interdependent social-ecological systems that need to focus on developing resilience, "the capacity to change in order to sustain identity" by "reorganizing in the face of disturbance." He explains, "adaptation refers to human actions that sustain development on current pathways, while transformation is about shifting development into other emergent pathways and even creating new ones." Engaging in "resilience thinking" in confrontation with our planetary boundaries, it becomes obvious that a transformation of our collective human actions is required,

so as to become “in tune with the resilience of the biosphere” (2016). However, as he and his colleagues remark, “alas, resilience of behavioral patterns in society is notoriously large and a serious impediment for preventing loss of Earth System resilience” (Folke et al., 2010). Perhaps propagating awareness of the ontological difference between our socially constructed economic and political institutions and the complex systems that sustain the Biosphere—which we did not create and which we destabilize at our peril—could help foster such a transformation.

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12.2: Animal Armageddon

“At least 1 million plant and animal species of the estimated eight million known are now at risk of extinction,” summarizes Eric Stokstad (2019) of the report from the Intergovernmental Science-Policy Platform on Biodiversity (IPBES) issued in May of 2019. The report follows an announcement by the Living Planet Report the previous fall, informing us of “an overall decline of 60% in the population sizes of vertebrates between 1970 and 2014—an average drop of well over half in less than 50 years” (World Wildlife Fund, 2018). And it was followed by another shocker, a report that nearly 3 billion birds—representing almost a third of bird abundance in North America—have been “lost” from ecosystems over the last 48 years (Rosenberg et al., 2019). The recent news of how severely our collective human activities have impacted other lifeforms on this planet has been a rude awakening for many of us, but alas, a dip into the recent scientific literature assures us that it is true.

On a scientifically conservative estimate, we humans have already brought about the extinction of almost 500 species of vertebrate animals since 1900 (Ceballos et al., 2015); these scientists found that “the evidence is incontrovertible that recent extinction rates are unprecedented in human history and highly unusual in Earth’s history,” leading them to conclude that “our global society has started to destroy species of other organisms at an accelerating rate, initiating a mass extinction episode unparalleled for 65 million years.” The total number of species already declared officially extinct may not sound that alarming, however, until the number of species, vertebrate and invertebrate, that are now considered to be somewhere along the way—officially “threatened” with extinction in the near future—is revealed: it was around 28,000 in 2019—27% of over 100,000 assessed species–and includes, for example, 25% of all mammals, 14% of all birds, and 40% of all amphibians (IUCN Red List, 2019). The “1 million at risk of extinction” reflects the fact that more than 500,000 terrestrial species now “have insufficient habitat for long-term survival” and thus “are committed to extinction,” many of them within the coming decades unless significant habitat restoration is carried out and other threats defused quickly (Diaz et al., 2019, p. 13)

High levels of vertebrate population decline and loss are found across the tropics, and are especially prominent in the Amazon, central Africa and south/southeast Asia. The ‘proximate’ drivers of the descent toward extinction—the immediate threats responsible for taking out a species—include overexploitation (direct killing by humans), habitat destruction through land conversion and fragmentation, invasion by introduced species and disease, toxification from pesticides and other pollution, and now, increasingly, climate change (Dirzo et al., 2014). The “ultimate” drivers of these trends, however, are just about always some combination of continuing human population growth and increasing per capita consumption (Ceballos et al., 2017). Overexploitation of wildlife now takes the form of the ‘bushmeat’ trade—now including the taking of animal body parts to sell on the world market—in many tropical countries around the world, as what may have once been the ‘sustainable’ hunting of wild animals for meat has “metamorphosed into a global hunting crisis” that now threatens “the immediate survival” of over 300 species of mammals as well as other kinds of wildlife (see Ripple et al., 2016a), a problem that will be considered in more detail in Section here.

Focusing on extinction per se is misleading, however, because it obscures the fact that an actual extinction is usually the result of a long period of loss of organisms from local populations and loss of populations from the landscape that eventually adds up to the disappearance of the species altogether. While extinction results in a permanent loss of biodiversity from the planet, moreover, population declines and alterations in species composition contribute to alterations in ecosystem function that can cascade throughout ecosystems in nonlinear fashion (as will be discussed in the following section). In 2017, Gerardo Ceballos, Paul Ehrlich and Rudolfo Dirzo reported on the “biological annihilation” that’s happening with increasing rapidity now, as numbers of individual animals shrink and populations diminish. Examining data for a sample of over 27,000 species of terrestrial vertebrates—nearly half of known vertebrate species—they found that around a third are experiencing significant population losses, both in numbers and in range size; moreover, almost half of the 177 species of mammals they examined have lost more than 80% of their geographical ranges since 1900, and all of them have lost at least a third. Most shocking of all, however, is their estimate that “as much as 50% of the number of [vertebrate] animal individuals that once shared Earth with us are already gone” (Ceballos et al., 2017). And a look at biomass ratios really brings home the massive scale of our growing human footprint, and what it is doing to our evolutionary cohorts within the Biosphere. Yinon Bar-On, Rob Phillips, and Ron Milo (2018) estimated the total biomass of all living wild mammals (terrestrial and marine) today to be, in round numbers, only about 0.006 gigatonnes of carbon (GtC), while the biomass of all the humans on the planet—more than 7 and a half billion of us–is .06 GtC, and that of all livestock (dominated by cattle and pigs) is 0.10 GtC; in other words, the total biomass of all the wild mammals on Earth is equal to only about four

percent of the total biomass of humans plus their domesticated food animals. When the biomass of great whales and other marine mammals is excluded, moreover, the biomass of wild *land* mammals is estimated to be about 0.003 GtC, or about five percent of the biomass of humans alone, and less than two percent of the biomass of us humans and our livestock taken together. The impact of our human species on other forms of life has thus been truly staggering.

Characteristics that tend to make a species more vulnerable to diminution and eventual extinction include large body size, low reproductive rate and large home range requirements, especially when the existing habitat range is small, making many of the "terrestrial megafauna" severely threatened (see Ripple et al., 2016b, 2017). You can take almost any large-bodied wild mammal you've ever heard of and chart an ominous decline. Franck Courchamp and colleagues (2018) discovered that there is still very little public awareness of the dire straits of many of their favorite animals; recapping the little-known situation with our "charismatic megafauna," tigers have been knocked down to less than seven percent of their historical levels in the wild, lions to less than eight percent, and elephants less than 10%; three of four giraffe species have experienced declines of over 50%, one more than 90%, leopards have lost up to 75% of their range, with only three percent of the original range remaining for six of nine subspecies, and cheetahs have been extirpated from 29 African countries, remaining on only nine percent of their historic range, while two gorilla subspecies have dwindled to a few hundred individuals and populations of the other two have plummeted to less than half what they were over the last 20 years.

While habitat loss has been steadily reducing populations across the board, these authors report that, when killing for bushmeat, trophy hunting and conflicts with humans are considered together, direct killing by humans is responsible for the greatest number of them being endangered overall; they estimate, for example, that "unsustainable bushmeat hunting, trophy hunting, habitat loss and human conflict all combine to make most of African lion populations surviving the next few decades unlikely" (Courchamp et al., 2018, S2). Elephants and rhinos are being slaughtered mercilessly for their ivory and their horns across Africa, and even giraffes, which have declined by 40% over the last 20 years, are in part falling prey to the trade in their highly prized tail (see Chase et al., 2016; Gibbens, 2018; and Daley, 2016, respectively). Polar bears, who typically support themselves almost exclusively by preying on seal pups emerging from crevices in the sea ice, and as the ice thins and melts, they will inexorably starve unless they learn to consume land-based prey (Whiteman, 2018). Killer whales, once abundant in the oceans, are now estimated to count only in the tens of thousands, with many populations declining as a result of a reduction in salmon and other prey, disturbance by boat traffic, acoustic injury from sonar used in naval exercises and underwater exploration, and toxic effects of oil spills and other pollution; more than half of their populations are thought to be at high risk of "complete collapse" over the next century from the bioaccumulation of polychlorinated biphenyls (PCBs) in their tissues (Desforges et al., 2018).

Among our closest evolutionary relatives, 60% of primate species are threatened with extinction "because of unsustainable human activities," while 75% of primate populations are decreasing globally (Estrada et al., 2017). Chimpanzees are officially classified as "endangered," and all gorillas are now listed as "critically endangered," while the tiny mountain gorilla population is holding on at less than 500 individuals (Gray, 2013). Bonobos are also classified as "endangered," with an estimated population of 15,000 to 20,000 individuals (Fruth et al., 2016); disturbingly, their entire range is contained within the lowland forests of the Democratic Republic of Congo, the largest country in sub-Saharan Africa and one that is subject to out-of-control slaughtering of wildlife for "bushmeat," [2] as well as increasing habitat fragmentation, warfare, and the rages of an ebola epidemic, to which great apes are susceptible. Meanwhile, the fourth great ape, the orangutan, may be hurtling toward extinction the fastest of all, with over 100,000 killed in Borneo between 1999 and 2015, cutting the population by more than half, leaving an estimated 70,000-100,000 there plus less than 14,000 in Sumatra; all orangutans are now listed as "critically endangered," by expanding palm oil plantations as well as hunting in primary and selectively logged forests (Voigt et al., 2018).

Pangolins—a little-known, shy, nocturnal mammal described as resembling "an artichoke on legs" that, when threatened, rolls itself up in a scale-covered ball sufficient to protect it from all natural predators but not, unfortunately, from its human enemies—are being devastated by a burgeoning trade in their meat, skin and scales; after China's population of pangolins was reduced by 94% since the 1960s, poaching of pangolins in Africa has reportedly increased by 150%, with as many as three million now being removed annually from Central African forests, most of them bound for China (Ingram, 2018); pangolins are being considered a "probable animal source" of the coronavirus outbreak that has now become a global pandemic (Cyranoski 2020); Sonia Shah points out that many zoonoses now affecting the human species are the result of our accelerating invasion of natural habitats for live animals and their parts to sell in so-called "wet markets" (Shah, 2020), as will be discussed further in Section here.

Hundreds of thousands of seabirds suffer high mortality as “incidental catch” in drift nets, purse seines, gill nets, traps, trawls and longlines, while wind turbines have been estimated to kill more than 400,000 birds a year, communication towers over six million, and domestic cats between 1 and 4 billion in the US alone (White, 2013), even as millions are being shot while migrating over Europe “for food, profit, sport, and general amusement” (Franzen, 2013; Margalida & Mateo, 2019). Meanwhile, hundreds of thousands of wading birds have been destroyed by the closing off of the Saemangeum tidal flat by South Korea in 2006, described by Michael McCarthy (2015, pp. 66-68, 81) as “the biggest destruction of an estuary that has ever taken place,” “a giant engineering vanity project” and “one of the most egregious examples of environmental vandalism the modern world can offer”; the number of shorebirds using the flat are down by as much as 97% (Lee et al., 2018), and worse yet, 50 million wading birds using the East Asia/Australasia Flyway for their twice-yearly migration are at risk from escalating habitat destruction all along the Chinese and Korean coast of the Yellow Sea, their precipitously declining numbers already indicating “a flyway under threat” (Piersma et al., 2016). The Helmeted Hornbill, another notable bird species, was put on the “Critically Endangered” list in 2015, not only for rapidly dwindling habitat but also because demand is growing for the “red ivory” of its “casque,” which is carved into handicrafts for Chinese markets, [3] something that was recently decried in the journal *Science* (Li & Huang, 2020). And, unbeknownst to many ardent admirers of Irene Pepperberg’s late Alex, the celebrated African Grey Parrot is also now in danger of extinction. African Greys used to inhabit more than a million square miles across West and Central Africa, but because of the international pet trade—the African Grey is the single most heavily traded wild bird, according to CITES, the organization that regulates global wildlife trade—it is believed that more than a million of the birds were taken from the wild over the past 20 years. Ghana reportedly has lost 90-99% of its African Greys since 1992 (Annorbah, 2015); as populations are wiped out in Ghana, Tanzania, Uganda, Rwanda and elsewhere, birders are recognizing “the African silence” (Steyn, 2016).

Reptiles are included in the global decline, while amphibians are seriously threatened worldwide by the chytridiomycosis panzootic that is affecting over 500 species, causing the presumed extinction of at least 90 of them over the past half-century, the greatest loss of biodiversity attributable to a disease ever recorded (Scheele et al., 2019). Large fish in the oceans have reportedly dropped in numbers by over 90% (Myers and Worm 2003, SeaWeb 2003), with some species, such as cod and some tunas, falling by as much as 99%, and it has been noted that only 37% of shark species *are not* threatened with extinction, with up to 100 million sharks being killed every year for the global trade in shark fins, the major driver of their road to extinction (Sadovy de Mitcheson et al., 2018). And populations of mobulid rays–manta and devils rays, now known to be highly social and intelligent but also very slow to reproduce, with only one offspring every three years or so —are plunging, largely due to the growing Chinese market for their gill plates, erroneously believed to “clean impurities” when ingested but actually containing high levels of cadmium and arsenic (Guardian, 2014). They are also suffer high mortality as “incidental catch” in drift nets, purse seines, and other technologies of industrial fishing.

The dire straits of many more of our fellow members of the Biosphere could be recounted here, but perhaps it is more pertinent to ask how it is that even the well-known mammals—the ‘charismatic megafauna’ so prominent in our human imaginations—could be under such assault without it having come to our global attention long before this. How could we have missed it? This question is explored by Franck Courchamp and his colleagues (2018). They identified “the 10 most charismatic animals”: the tiger, the lion, the elephant, the giraffe, the leopard, the panda, the cheetah, the polar bear, the gray wolf and the gorilla, all but one of which are either *vulnerable*, *endangered* or *critically endangered*, and discovered, that fully half of people asked in surveys were not informed about their conservation status. Volunteers were then asked to document every encounter with one of these 10 animals in advertisements, entertainment, logos and so on, and they reported seeing as many as 30 individual images of each of the 10 species over the course of a week, corresponding to several hundred encounters per month; lions, for example, were seen at an average rate of 4.4 images per day, “meaning that people see an average two to three times as many ‘virtual’ lions in a single year than the total population of wild lions currently living in the whole of West Africa.” They concluded that “the public perception of the conservation status of these species appears to reflect virtual populations rather than real ones” (Courchamp et al., 2018), masking the real extinction risk, and they have proposed that companies benefiting from using images of these (and other endangered) animals in their marketing pay a fee to be spent directly on conservation efforts benefiting these animals. But, meanwhile, our War Against Nature continues to take its heavy toll.

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12.3: The Fraying of Food Webs

Terrestrial Food Webs: Defaunation and Pollution

It is now known that “ecosystems are built around interaction webs within which every species potentially can influence many other species,” and that the “trophic downgrading” that results from the loss of large apex consumers reduces food chain length and can lead to abrupt state changes in ecosystems “with radically different patterns and pathways of energy and material flux and sequestration” (Estes et al., 2011). *Anthropocene defaunation* is a more precise name for the phenomenon discussed in the previous section, since the term defaunation can cover loss of individuals, populations, and species of wildlife (Dirzo et al., 2014); it is a term that needs to become as widely recognized as deforestation, since “a forest can be destroyed from within as well as from without” (Redford, 1992), as will be discussed in more detail in Section here . Human hunting is increasingly taking a toll, especially on the larger animals, while other proximate drivers of overall terrestrial defaunation include habitat destruction, the invasion of nonnative species and climate change.

Large-bodied animals that feed at the ‘apex’ of trophic pyramids, like the great cats and other true carnivores, often exert strong top-down regulatory effects on the ecosystems they inhabit (see Ripple et al,. 2014), so the loss of a carnivore at the highest trophic level can “cascade” down through all the trophic levels in an ecosystem. When sea otters were removed from waters off the coast of Alaska, sea urchins, released from otter predation, devastated kelp beds, until they themselves were ‘fished out’ from many parts of the ocean (see Steneck, 2002); likewise, when dam construction in Venezuela created a chain of predator-free islands, leaf-eaters–howler monkeys, iguanas and leaf-cutter ants—were released from predation and there was a subsequent reduction in young canopy trees (Terborgh et al., 2001). Conversely, when an apex predator, the grey wolf, was reintroduced into Yellowstone National Park, [4] wolf territories reduced elk grazing pressure on young aspen stands, allowing the forest to regrow and ultimately changing the landscape in a remarkable manner (see Ripple & Beschta, 2011). Large herbivores like bison and elephants are also important components of ecosystems, acting as “ecosystem engineers” by trampling and consuming vegetation (Ripple et al., 2015); they can also be important seed dispersers, and as herbivore populations become depleted around the world, a “wave of recruitment failures” is expected among animal-dispersed trees. While not typically apex consumers, primates are important seed dispersers as well, as are fruit-eating and nectar-feeding bats and many kinds of birds, which are also important in pollination and insect control.

Meanwhile, so far nothing has been said about invertebrate life—“the little things that run the world,” as E. O. Wilson called them more than 30 years ago, when the current situation was barely imaginable; even then, however, he expressed doubt “that the human species could last more than a few months” if they all disappeared (Wilson, 1987). Now several recent studies are highlighting alarming trends. Hallman and colleagues (2017), counting insects in nature reserves surrounded by agricultural fields within a typical Western European landscape, reported a decline in the biomass of flying insects of about 80% over 30 years—an average loss of 2.8% biomass per year that, if continued, could result in a total loss within the century. A parallel decline was observed in larks, swallows, swifts and other insectivorous birds, leading one of the researchers to comment, “if you’re an insect-eating bird” living in the areas studied, “four-fifths of your food is gone in the last quarter-century, which is staggering” (see Vogel, 2017). A similar 60-80% drop in biomass over 36 years was recorded for insects living in the tree canopy of a tropical forest, as well as a 98% drop in insects from the forest floor (Lister & Garcia, 2018), with “synchronous declines” documented in the lizards, frogs and birds dependent upon them for food.

Reviewing of more than 70 reports of insect decline from around the globe, Sanchez-Bayo and Wyckhuys (2019) compiled evidence of “dramatic rates of decline” in insect numbers that, if continued, they projected could “lead to the extinction of 40% of the world’s insect species over the next few decades.” More recently, Seibold and colleagues (2019) reported “widespread declines in arthropod biomass, abundance, and the number of species across trophic levels” in both grassland and forest habitats, finding the major drivers of the declines to be largely associated with agriculture at the landscape level. “Our study confirms that insect decline is real,” Seibold told BBC News, noting that it is occurring in protected areas as well as those that are intensively managed (Briggs 2019). A group of conservation biologists “deeply concerned about the decline of insect populations worldwide” provided a comprehensive overview of the problem and issued a “scientists’ warning to humanity” about the seriousness of this problem as this chapter was undergoing its final edit (Cardoso et al., 2020).

Since insects are adapted to a very narrow range of temperature variation in the tropics, climate warming may be a factor in insect decline there, but elsewhere the “root cause” of the dramatic decline is thought to be the intensification of agriculture and, in

particular, “the widespread, relentless use of synthetic pesticides,” according to Sanchez-Bayo and Wyckhuys (2019). As the most widely used insecticides in the world, neonicotinoid insecticides are highly suspect as a major driver of this decline. They are systemic, meaning that they are absorbed and distributed to all parts of the plants they are applied to, not only leaves and flowers but pollen and nectar. They persist in soils for a year or more, but are water soluble, contaminating up to 80% of surface waters; there they affect a variety of aquatic insect larvae, indirectly reducing populations of fish, frogs, birds, bats and others that feed on them. Along with fipronil, the neonicotinoids are suspected of playing a large role in the decline of honeybees, bumblebees and other wild bees around the world (Sanchez-Bayo, 2014); foraging bees typically take contaminated pollen and nectar back to the hive, where sublethal effects of these neurotoxic insecticides affect movement, olfaction, orientation, and navigation, impairing the mushroom bodies (see Section here) important in bees’ learning and memory, disturbing foraging and homing behavior and disrupting the “waggle dance” [5] used to communicate the location of nectar plants to other bees in the colony (van der Sluijs et al. 2013). These synthetic insecticides disrupt biological controls and trigger pest resistance, and they don’t really contribute to crop yields, according to Sanchez-Bayo and Wyckhuys, so there will be “no danger” in reducing their use drastically (2019).

Meanwhile, the escalating use of herbicides–especially glyphosate, the active ingredient in Roundup, widely used around the world now in combination with genetically modified crops—is leading to growing concerns about their effects on soil invertebrates, as well as soil microorganisms, the functioning of below-ground ecological communities, and the aquatic communities downstream of agricultural runoff. According to Benbrook (2016), about 8.6 billion kg have been applied worldwide over the last 40 years, with dramatic increases over the last decade or so. Glyphosate acts by inhibiting the EPSPS enzyme in the shikimate pathway, essential to metabolism in plants, fungi, and some bacteria but absent in vertebrate animals, so it was originally assumed to pose minimal risks, but a potentially serious effect on honeybees has recently been reported, illustrating the complexity of ecological systems: genomes of the beneficial bacteria in honeybee gut flora contain the gene coding for EPSPS, potentially making them susceptible to glyphosate inhibition, possibly increasing mortality and reducing their effectiveness as pollinators around agricultural fields (Motta, Raymann & Moran, 2018).

Glyphosate is absorbed from the leaves of sprayed plants and transported systemically to the roots; it can be released into the rhizosphere, possibly being transferred through the roots of dying plants to living, untreated ones, affecting trees and other plants near treated fields. Kremer and Means (2009) found glyphosate interacted with the below-ground microbial community, and Kremer (2014) reported herbicide-resistant weed infestations release root exudates potentially detrimental to the mycorrhizal fungi, important for plant uptake of nutrients and water. A review article by Annett, Habibi and Hontela (2014) examines the reported effects of glyphosate and formulations with different surfactants on organisms in freshwater ecosystems, noting amphibians seem particularly susceptible to its toxic effects due to their larval dependence on water and frequent location near agricultural fields. There are also growing concerns about its effects on human health, especially since high residue levels are being found on crops subjected to post-season drying (“green burndown”) with glyphosate (Myers et al., 2016); studies on residues, and the concept of “substantial equivalency,” have been criticized as inadequate (Cuhra, 2015). In 2015, the World Health Organization found “sufficient evidence of carcinogenicity in experimental animals” and “limited evidence of carcinogenicity in humans for non-Hodgkins lymphoma” following exposure to glyphosate (WHO, 2015).

Predictably, more than 200 weed species have developed resistance to one or more herbicides, with at least 24 of them resistant to glyphosate (Heap, 2013). In response, biotechnology companies are developing second-generation, “stacked” GM crops with resistance to several herbicides, typically 2,4-D and dicamba, containing synthetic auxins that interfere with the natural plant hormones involved in growth regulation; they are reportedly of low toxicity to vertebrates but extremely toxic to broadleaf plants, and their high volatility and proneness to drift risks injury to both non-GM crops and nontarget plant species, according to Mortensen and colleagues (2012). Noting that the evolution of resistance to both herbicides and insecticides is outstripping our ability to come up with new ones, Gould, Brown and Kuzma (2018) discuss why we “mostly continue to use pesticides as if resistance is a temporary issue,” calling it a “wicked problem” arising from a combination of social, economic and biological factors that decrease incentives for taking a different approach to “pest” control.

According to Hayes and Hansen (2017), “there is probably no place on earth that is not affected by pesticides; they report that an estimated 2.3 billion kilograms of pesticides are being used annually around the world, and they review evidence of alterations in landscapes, populations and gene pools of organisms from both actute toxic and chronic “low dose” effects. Many older, “legacy chemicals” are also still around, contaminating food webs around the world (Matthiessen, Wheeler & Weltje, 2018). The organochlorine insecticides, “hard” pesticides like DDT, were banned in most developed countries years ago but are still in

widespread use, with 3.3 million kilograms produced annually (Hayes & Hansen, 2017); these, along with other chemicals such as polychlorinated biphenyls (PCBs), are known as persistent organic pollutants (POPs)– long-lived, fat-soluble compounds that are known to accumulate in animal tissues and biomagnify, increasing in concentration as they move up food chains, often reaching very high levels in apex predators. Many of the POPs have been shown to be toxic, endocrine-disrupting and/or carcinogenic, and long-lived vertebrates occupying high trophic levels not only risk such effects from retaining these chemicals in their own bodies for long periods of time but potentially pass them on to offspring in eggs or milk (Rowe 2008). Kohler and Triebskorn have drawn attention to how little we know about the full extent of unintended impacts of pesticides on wildlife at the higher levels of populations, communities and ecosystems (2013); immunosuppression reportedly can be caused by all the organochlorine, organophosphate, and carbamate insecticides as well as by atrazine and 2, 4-D herbicides.

Moreover, in addition to the biocides—chemicals intentionally designed to kill certain forms of life, the "pesticides" that include rodenticides, insecticides, herbicides, fungicides, and so on—there are over 4000 pharmaceuticals now in global use in human and veterinary medicine continuously being released into the environment through wastewater and sewage sludge; they are generally highly potent at low concentrations, and their modes of action show strong evolutionary conservation across vertebrate species– meaning that what affects us will probably affect many other lifeforms somewhat similarly. An Australian team found over 60 pharmaceutical compounds in the bodies of invertebrates collected from streams and in riparian spiders consuming them, considering them likely to be contaminating other consumers such as frogs, birds and bats (Richmond et al., 2018); they calculated that vertebrate predators on aquatic invertebrates such as the platypus could consume as much as half a human's therapeutic dose of antidepressants, kilogram for kilogram.

Finally, it should be noted that pollution from small particles of plastic—"microplastics"—which is a growing concern in the world's oceans, to be discussed in Section here, is problem for terrestrial ecosystems as well. A recent study found that microplastics are being carried by the wind to places far from population centers and are likely distributed widely around the planet; daily counts of atmospheric deposition averaging almost 250 fragments 3 mm or less in size per square meter were found in a remote and supposedly "pristine" mountain area of the French Pyrenees (Allen et al., 2019). "It suggests that this is a far bigger problem than we have currently thought about," says one of the study's co-authors; the concern is that it "gives us a background level of microplastic that you probably get pretty much everywhere in the world" (see Thompson, 2019). If there are worries about this atmospheric deposition contaminating soil, however, here's an even bigger source of that problem: some farmers use treated sewage sludge to fertilize their fields, adding a load of microfibers skimmed off of wastewater along with the nutrients that could add up to tens to hundreds of thousands of tonnes of plastics added to farmlands in Europe and North America every year (Thompson, 2018a); yet another soil additive, moreover, is so-called "mixed waste—a ground-up amalgam of food scraps and unrecyclable material" that, applied thickly on one farm in Australia, added so much plastic to the topsoil that it looked like it was "glistening." And yes, it's finally happened—"anthropogenic debris" has been reported in beer, as well as sea salt and tap water (Kosuth, Mason & Wattenberg, 2018). It seems microplastics are now everywhere—they have even been found in human feces (Parker, 2018).

Marine Food Webs: Overfishing, Disruption and Collapse

Ransom Myers and Boris Worm startled the scientific community with their announcement (2003; see SeaWeb, 2003) that "the global ocean has lost 90% of large predatory fishes," along with "general, pronounced declines of entire communities across widely varying ecosystems." The decrease in many marine vertebrates has been severe enough that too few of them remain to carry out their normal functional role in many ecosystems, in some places leaving "empty estuaries" and "empty reefs" similar to the "empty forests" in terrestrial systems (McCauley et al., 2015). The striking marine defaunation is recent, since fishing effort intensified only over the last century with the arrival of industrial fishing techniques, the loss of fish being followed by a decline in sea turtles, sea birds, and marine mammals. As Crespo and Dunn (2017) summarize, "the world's oceans are experiencing an unprecedented level of biotic exploitation, which is altering the abundance and population structure of many species, transforming the composition of biological communities, and threatening the integrity and resilience of entire marine ecosystems." Marine biologist Daniel Pauly and colleagues explain (1998) that fisheries around the world have shown a pattern over recent decades of "fishing down the food web," where what is caught is transitioning from "long-lived, high trophic level, piscivorous bottom fish toward short-lived, low trophic level invertebrates and planktivorous pelagic fish," often with complete collapse of the high trophic level species and replacement with lower trophic level species in fishing catches.

Changes in Chesapeake Bay illustrate how these changes evolved in one coastal community. According to Jackson et al. (2001), "gray whales, dolphins, manatees, river otters, sea turtles, alligators, giant sturgeon, sheepshead, sharks and rays were all once abundant inhabitants of Chesapeake Bay but are now virtually eliminated." Until the end of the 19th century, the Bay contained dense concentrations of oysters, filter feeders that consumed phytoplankton so efficiently that algae blooms never occurred, even with agricultural runoff. Introduction of mechanical harvesting in the late 1800s had a serious impact on the oyster reefs by the early 20th century and decimated them by the 1920s. Eutrophication began to be observed in the Bay by the 1930s. Today, with the oyster reefs essentially destroyed, Chesapeake Bay is now considered a "bacterially dominated ecosystem," with a trophic structure completely different from what it was a century ago; it is characterized by "population explosions of microbes responsible for increasing eutrophication," and, in combination with hypoxia, disease, and continued dredging, this now prevents the recovery of oysters and their associated ecological community (Jackson et al., 2001).

Coral reefs are in decline around the world due to global warming-induced coral bleaching, and the combination of higher temperatures and increasing acidification of ocean waters as they absorb CO_2 may at some point drive them over a 'tipping point' into algae-dominated states [6]; according to Hoegh-Guldberg et al. (2007), at atmospheric CO_2 levels nearing 500 ppm, "reefs will become rapidly eroding rubble banks, as are already seen in parts of the Great Barrier Reef." Australia's Great Barrier Reef—the world's largest and most diverse coral reef ecosystem–has undergone mass bleaching events four times over the last twenty years, the northern two thirds being severely damaged by the last two in 2016 and 2017, with the concomitant heat stress killing many reproductive adult corals, leading to nearly a 90% drop in larvae recruited into the population in 2018 (Hughes et al., 2019). Many reefs are also suffering from overfishing, with loss of the larger predatory fish cascading through the system, allowing the escape of smaller fishes and invertebrates that causes booms and busts of algal overgrazing, such that "today, the most degraded reefs are little more than rubble, seaweed, and slime"; these researchers also report that many reefs off the coast of Florida are "well over halfway toward ecological extinction" (Pandolfi et al., 2005).

Perhaps the best-known example of marine defaunation, however, is the 'crash' of the Northern Atlantic cod fishery off Newfoundland and Labrador in 1992, which apparently came as quite a surprise to the fishery operators and regulators. Atlantic cod had been harvested for centuries, but with modern harvesting equipment and factory ships arriving in the 1950s, catches went from around 227-327,000 tonnes per year to a peak of 735,000 tonnes in 1968 and then began to diminish, and were down by 80% by 1977. Harvesting was then restricted, but the cod never recovered to anywhere near their previous levels; technological advances in locating and capturing fish allowed increasing catch sizes despite "dramatic declines in catch rate," concealing the true condition of the cod population throughout the 1980s until its sudden collapse (Hutchings & Myers, 1994). The cod still haven't come back significantly, and cascading effects within the marine ecosystem have allowed small pelagic fish like herring that principally feed upon zooplankton—which include the eggs and larvae of the cod– increased in biomass by around 900%, effecting a "predator-prey role reversal" that may be largely responsible for preventing cod recovery (Frank et al., 2005; Frank et al,. 2013).

Tunas are another group of particular concern. More than 60% of the tuna harvest is captured in purse seines, giant nets that pull up from below to encircle entire schools of tuna and other schooling fish once they are located with sophisticated sensing technologies, taking a significant amount of 'bycatch,' other species that are (usually) unintentionally caught up in the seine nets, such that "tuna fisheries are directly responsible for endangering a wide range of oceanic pelagic sharks, billfishes, seabirds, and turtles" (Juan-Jorda et al., 2011) as well as marine mammals, killing around 1000 dolphins a year and harming many more (see Brown, 2016). Unlike the cod, overall tuna catches have continued to increase since the 1950s, but this continuing increase "was achieved by halving global tuna biomass in half a century" (Juan-Jorda et al., 2011). Tunas and their relatives, along with the billfish–swordfish and marlins–are apex predators of pelagic food webs, so they very likely exert important trophic effects within the whole ocean ecosystem; unfortunately, some of them are highly valued economically and thereby increasingly threatened with extinction, with the biomass of the Southern Bluefin tuna is now said to be about five percent of its original size, so its population "has already essentially crashed," paralleling the trend of the western Atlantic Bluefin, whose population has not rebuilt since it plummeted in the 1970s (Colette et al., 2011). Individual Bluefin tunas were selling at over $100,000 five years ago, making them among the "rhinos of the ocean"—for those of a certain mindset, they will "never be too rare to be hunted" (McCauley et al., 2015).

And it is clear all is not well with marine fisheries globally. Daniel Pauly, attempting to reconstruct the historical sizes of fish populations, concluded that most of his colleagues had fallen prey to the "shifting baselines syndrome," [7] whereby each new generation of scientists takes the stock sizes that prevailed at the beginning of their careers as the 'baseline' and evaluates changes

in relation to it, not noticing that the baseline itself has been gradually shifting downward (Pauly, 1995), a phenomenon he has described in a (2010) TED talk. [8] In a recent interview (Schiffman, 2018), Pauly called the global industrial fishing industry "a Ponzi scheme," explaining, "a Ponzi scheme is where you pay your old investors money from new investors, not from any actual profit." That's what's been happening as industrial fisheries have developed over the last 50 or 60 years, he charges—"we fish out one place, European or North American waters, for example, then we go to Southeast Asia or Africa, now even Antarctica." With the new technologies that have become available, "we've destroyed all the protections that fish populations once enjoyed"—"depth was a protection, cold was a protection, ice was a protection because we couldn't fish in those areas"—but "we can now go everywhere the fish once sheltered." Global catches have been declining by one to two million tonnes a year since the mid-1990s, he reports; we're getting up against the limits of the Earth now, it seems, and when you run out of new fishing stocks to exploit, "the whole [Ponzi] scheme collapses."

But what's happening to populations of deep-sea organisms may be cause for even more concern. Most deep-sea fisheries utilize bottom trawls, fishing gear that drags a net along the ocean floor and that can weigh several tonnes and do tremendous damage to the benthic habitat. One study found that, compared with the impacts of oil and gas drilling, submarine communications cables, marine scientific research, and the historical dumping of radioactive wastes, munitions and chemical weapons, "the extent of bottom trawling is very significant and, even on the lowest possible estimates, is an order of magnitude greater than the total extent of all the other activities" (Benn et al., 2010). Moreover, bottom trawling activities can be concentrated on ocean ridges and seamounts, which are particularly vulnerable to the effects of such disturbance. Seamounts are "true mountains under the sea," usually 2-3 kilometers in height, that have become covered with sessile invertebrates including octocorals, hard corals, sponges, crinoids, and other suspension feeders that structure the habitat for fish but that are very fragile and easily broken (Watling & Auster, 2017). Daniel Pauly tries to describe what was "encountered" by a trawler in his "shifting baselines" TED talk: "Well," he says, at the time "we didn't have words for it," but now he knows, "it was the bottom of the sea"; 90% of the catch was made up of sponges and other organisms that had been attached to the bottom, while any fish that were caught were just "little spots on the piles of debris." The "most rational decision," according to Watling and Auster, is to simply protect seamounts in perpetuity; meanwhile, Pauly advocates closing off the "high seas"—the open ocean outside the control of the coastal countries, which extends out to 200 miles offshore—from fishing, allowing many fish populations to rebuild and very likely increasing the harvestable catch of many less-developed coastal nations, while Eileen Crist has called for declaring the whole "area" of the high seas off limits to all extractive activity, for fish and fossil fuels as well as for minerals, renaming it "the common heritage of all Life" (Crist ,2019).

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12.4: Assault on the Oceans - Chemical and Physical Changes

Acidification, Deoxygenation and Marine Heat Waves

As we humans have changed the chemistry of the atmosphere by emitting increasing amounts of carbon dioxide and other gases, we have also been changing the chemical composition and physical properties of the world's oceans. Three major changes in the oceans are taking place globally in response to this: acidification, deoxygenation and an overall warming trend with focal areas of markedly higher temperatures than were the recent norm, all of which have ominous implications for the organisms that live there.

Ocean Acidification and the Decalcification of Shelled Marine Life

Only about half of the carbon dioxide we have emitted over recent decades has remained in the atmosphere; of the other half, about 30% has been absorbed and stored in the oceans and 20% incorporated into the bodies of terrestrial biota, holding down the amount of global temperature rise that would otherwise have occurred (Feely et al., 2004). When CO_2 dissolves in seawater it forms carbonic acid, which releases hydrogen ions, making the water slightly less alkaline and more acidic. Acidity or alkalinity is measured in pH, a logarithmic scale on which 7.0 indicates neutrality. Ocean acidification doesn't mean that the seas are "turning acid"—they are slightly alkaline, presently with a pH of 8.6—but rather that their pH is moving downwards, toward the acid side of the scale. Ocean acidification should perhaps be called ocean decalcification, however, because the most sinister effect of reducing the availability of carbonate ions in the oceans is that it will make it harder for many different types of shelled organisms to form the calcium carbonate that mineralizes them and, if carbon emissions continue to rise as they have been, this will threaten the survival of a large percentage of the organisms making up the base of oceanic food webs, with ramifications that will reverberate throughout marine ecosystems (Hardt & Safina, 2008).

Calcium carbonate ($CaCO_3$) can crystallize in three different forms, each with a different solubility; it takes the form of aragonite in corals and pteropods [9] as well as many larger molluscs, as magnesian calcite in coralline algae, and as calcite in coccolithophores and foraminifera. Aragonite and magnesian calcite are about 50% more soluble than calcite, so the organisms utilizing these forms are likely to be the most vulnerable in the near future. A combination of temperature, pressure and depth determine whether or not the ocean water is saturated with the calcium ion, Ca^{++}, a state in which the mineral will tend to be deposited, or undersaturated, in which it will tend to dissolve; a definite horizontal boundary, known as the *saturation horizon*, exists at a certain depth for each crystalline form, below which the shells and other calcified parts of the bodies of these marine organisms will start to dissolve, according to the reaction [10]

$$CO_2 + CaCO_3 + H_2O \rightarrow 2\text{mtd}$$

The saturation horizons for all these forms of calcium carbonate are becoming shallower by tens to hundreds of meters, squeezing calcifying marine organisms into an ever-shrinking available habitat between the saturation horizon and the surface (Hardt & Safina, 2008). Moreover, even in waters above the saturation horizon, as the degree of carbonate ion supersaturation decreases, the rate at which these animals are able to calcify their body parts decreases; nearly all reef-building corals are showing "a marked decline" in calcification under these conditions (Feely et al., 2004). [11] A modeling study of calcium carbonate saturation under several emissions scenarios, "a new shallow aragonite saturation horizon emerges suddenly" in many places in the Southern Ocean between now and 2100 (Negrete-Garcia, 2019), potentially affecting shelled pteropods, cold-water corals, sea urchins, molluscs, coralline algae, and some foraminifera; this habitat contraction could occur as suddenly as within one year's time, and occurred even under an emission-stabilizing scenario, just at a later time. "'That inevitability," said one of the co-authors, Nicole Lovenduski, in an interview for the University of Colorado at Boulder (2019), "along with the lack of time for organisms to adapt, is most concerning."

It is the rapidity of these anthropogenic changes, "potentially unparalleled" in the last 300 million years (Honisch et al., 2012), that has scientists extremely worried; "analog events" of relatively rapid CO_2 release—but far less rapid than the one now underway–include the Paleocene-Ecocene Thermal Maximum (PETM) of 56 million years ago, which resulted in the largest extinction of deep-sea foraminifera in 75 million years, the Triassic-Jurassic (T-J) mass extinction of 200 million years ago, when CO_2 levels doubled over 20,000 years, causing an almost total collapse of coral reefs, and the Permian-Triassic extinction of around 250 million years ago, the most severe extinction event since multicellular life evolved. An examination of the reef-building corals that survived the Cretaceous-Tertiary (K-T) mass extinction of 66 million years ago and those that are presently classified as "of least

concern" under the conditions being imposed by the mounting Anthropocene extinction event (Dishon et al., 2020) shows similar "survival" traits possessed by both groups, providing "alarming evidence that reef communities are currently in the process of transforming into disaster communities akin to previous extinction events." [12]

Ocean Deoxygenation

As if ocean acidification isn't enough to worry about, our brave new Anthropocene is ushering in yet another grave concern: ocean deoxygenation—also a result of our unchecked emission of carbon, but in this case due to the ocean temperature increase it is causing. Many people are aware of the sudden "fish kills" that occur when a pulse of nitrogen- and phosphorus-enriched water, usually from agricultural runoff into surface waters and their outflow tracts, stimulates an algal bloom which then dies and decomposes, lowering the oxygen concentration in the water to a point that fish and other animals are unable to tolerate, but fewer are aware of the growing problem in the open oceans. The open ocean is believed to have lost about two percent of its dissolved oxygen since 1950, and has developed a number of "oxygen-minimum zones" (OMZs) that have expanded by millions of square kilometers over recent decades, now occupying a combined total area around the size of the European Union (see Breitburg et al., 2018).

Warming reduces the solubility of oxygen in water and increases stratification of ocean waters, reducing ventilation, the movement of oxygen from the surface into the interior of the ocean, and often limiting the input of nutrients as well, thereby reducing photosynthesis and thus the production of oxygen in the water. Moreover, just as the amount of oxygen available in seawater is decreasing, the metabolic processes of living organisms that consume oxygen are increasing with rising temperatures, putting the squeeze on many different types of marine life. Species vary in their oxygen requirements and their responses to low oxygen concentration, but alterations in their interactions, feeding habits, and therefore marine food webs are known to be occurring and expected to increase. Lowered oxygen concentration in the water column limits the extent of diel vertical migration, the movement of zooplankton and fish deeper into the ocean in the morning and toward the surface in the evening, compressing their available vertical habitat, reducing suitable habitat for deep-ocean organisms, and restricting some species to shallower waters where they are more vulnerable to predation and fishing pressure.

One of the most serious consequences of ocean deoxygenation is its potential to impair the vision of many marine organisms. The retina, containing photoreceptor cells, is the tissue with the highest metabolic demand in the bodies of terrestrial vertebrates, and hence of highest vulnerability; the need for oxygen is especially high in organisms with "fast" vision, where visual pigments need to regenerate rapidly, including not only fish but cephalopods like the octopus and squid and arthropods that depend on high-speed feeding and escape behavior, all of which may become subject to "visual hypoxia" after a much smaller drop in oxygen concentration than what would be metabolically limiting (McCormick & Levin, 2017). Hypoxia is also thought to be an important factor in the death of corals and their accompanying reef inhabitants. The evidence of increasing ocean deoxygenation as the climate warms is so alarming that a group of scientists and conservationists recently called for awareness of the problem to "extend to all facets of society, beyond the pages of scientific journals" (Earle et al., 2018), and the Kiel Declaration on Ocean Deoxygenation, calling for more marine and climate protection, was issued by over 300 scientists in September of 2018.

Marine Heat Waves

Another global-warming-related phenomenon that has recently emerged into common scientific parlance is the occurrence of "marine heat waves," defined as strings of 5 or more days in which the ocean temperatures in a certain area are in the top 10% of temperatures recorded there over the past three decades. One such "marine heat wave" developed in the Gulf of Alaska in late 2013, a patch of exceptionally warm water a third the size of the continental United States that became nicknamed "the Blob" (see Cornwall, 2019). By the summer of 2015 it had doubled in size to over four million square kilometers, stretching from the waters off Baja California to the Aleutian Islands. with waters up to 2.5 $^{\circ}$C above normal. A little over a year later, marine food webs all along the western coast of North America were collapsing, with dozens of whales and tens of thousands of seabirds dying and more than 100 million Pacific cod suddenly vanishing.

The disaster apparently began with a ridge of high pressure that held winter storms at bay in the fall of 2013, reducing the effect of winds that usually brought deeper, colder water to the surface in the Gulf, and with them the nutrients the winds typically churn up, leading to a decline in the phytoplankton biomass. The decline in marine plant matter led to a decline in copepods and krill, zooplankton that formed the prey base for small forage fish like capelin and sand lance, which were staples for many seabirds. Only 166 humpback whales returned to Glacier Bay from their tropical calving grounds in the summer of 2015, down 30% from

2013, and all calves born that year were lost, while the bodies of 28 humpbacks and 17 finback whales subsequently washed up along the shoreline from Alaska to British Columbia. Thousands of young California sea lions were stranded on beaches when their mothers were forced to forage farther and farther from the shore in search of food, as many as half a million common murres died of starvation in early 2016, and the cod population dropped by 70% over 2015-2016, finally 'crashing' in 2017. It seems likely that what was being witnessed was a crumbling of the marine food web from the bottom upward.

The arrival of cooling La Nina winds at the end of 2016 finally broke the heat wave, stirring up the waters and reversing some of the effects of 'the Blob.' But by 2018, only two of five murre colonies seem to be returning to normal breeding levels; only 99 humpbacks returned to Glacier Bay, accompanied by only one calf; and cod numbers were projected to be even lower than the year before. There are some hopeful signs, with some rebounding of copepods and krill and with them forage fish and tiny cod, but the effects of this rebound will have to work their way up food chains. Meanwhile, marine heat waves are becoming more common, the number of days with a marine heat wave present somewhere around the globe having doubled since 1982. Without a major effort to slow down planetary warming, Blob-like temperatures could become typical for the northeast Pacific and perhaps elsewhere by 2050, pushing marine organisms and ecosystems to the limits of their defaunated, already-diminished resilience (Cornwall, 2019).

Plastic, Microplastic and Nanoparticulate Pollution

Macroplastics

The amount of plastic produced since 1950 now exceeds six billion tonnes (Chen, 2014), accelerating rapidly over the last decade; annual global production is now said to be around 320 million tonnes annually, with less than 10% ever recycled and about 40% of plastic waste resulting from single-use packaging (see Lavers et al., 2020); as a result of increasing production combined with inadequate ways of dealing with disposal, it is accumulating in the environment and persisting for long periods of time, entangling or blocking the digestive tracts of seabirds, marine mammals, sea turtles and many other species. As one example of a potential population-level impact, significant entrapment of hermit crabs was discovered in plastic debris, with as many as 500,000 crabs dying on the beaches of the uninhabited but "very polluted" Cocos Islands (Lavers et al., 2020); hermit crabs depend on shells retrieved from other animals, and are attracted to the odor of dead conspecifics, which helps them locate empty shells as they become available, but with the addition of this type of anthropogenic waste to their environment, "the very mechanism that evolved to ensure that hermit crabs could replace their shells has resulted in a lethal lure"—one single container was found to contain 526 dead and dying crabs. Since ingested plastic can potentially cause a variety of lethal and sublethal effects, ranging from the toxicity of its component monomers and plasticizers, chemical pollutants adsorbed to plastic surfaces, and micro- and nano-sized fragments interfering with nutrient absorption, entering living tissues, and accumulating at higher trophic levels in marine food webs, there has been a call to recognize plastic as a "persistent marine pollutant" like the persistent organic pollutants (POPs) whose production is largely phased out (Worm et al., 2017).

In round numbers, the amount of plastic washing into the ocean is somewhere between five and 20 million tonnes per year (see Lebreton et al., 2018); a portion of this is swept into the sea and may enter an oceanic gyre, a rotating circular current that traps it in an "accumulation zone" resembling a giant floating island. There are five major ocean gyres, circling in the North and South Pacific, North and South Atlantic, and Indian Oceans, each with its own floating patch of garbage, the North Pacific being the largest. The plastic that ends up in the ocean and along shorelines has to get there somehow, of course, and most of it comes down via riverine systems. According to Schmidt, Krauth, and Wagner (2017), 88% to 95% of all that plastic waste is thought to be coming from just 10 rivers; eight of these plastic-loaded rivers are in Asia and two in Africa, with the Yangtze River in China alone responsible for more than half of this waste stream, dumping an estimated 1.5 million tonnes into the Yellow Sea annually (for a comparison graphic, see Patel, 2019).

The Great Pacific Garbage Patch (GPGP) is a mass of largely plastic debris floating in a 1.6 million square kilometer area in the North Pacific Ocean off the coast of North America; it can be seen from the air, and is often pointed out by commercial pilots to interested passengers. Lebreton and colleagues (2018) estimated its total mass to be at least 79,000 tonnes; these scientists collected, classified and quantified the buoyant plastic pieces and particles composing it. Megaplastics, large pieces like fishing gear, were calculated to make up 42,000 tonnes; macroplastics, like crates and plastic bottles, 20,000 tonnes; mesoplastics, in the size range of bottle caps, 10,000 tonnes; and microplastics, 0.05-0.5 cm in diameter, 6,400 tonnes. The microplastics were generally fragments of larger plastic items, dispersed in an estimated 1.7 trillion pieces—in other words, microplastics made up around eight percent of the total mass, but 94% of the total number of pieces.

Microplastics

All of the mega-, meso-, and macroplastic pieces accumulating in the oceans are problematic enough, but the microplastic pieces and smaller ones have the scientists particularly worried; they are plastic particles less than 5mm in size (the size of "a grain of rice down to a virus"), [13] generally formed as breakdown products of larger plastic pieces, and are now being discovered to be widely distributed in the air, water, and land around us (A. Thompson 2018a, 2018b, 2019). Extremely high concentrations of microplastic particles were recently found in Arctic sea ice by Ilka Peeken and colleagues (2018), and their findings suggest a larger circulation of them throughout the planet's oceans, with the sea ice serving as a temporary sink; they speculate that large amounts of microplastics are likely to be released from sea ice as the Arctic meltdown accelerates. Fortunately, so far the concentration of microplastics in the Southern Ocean surrounding Antarctica appears to be much lower, although their presence there at all indicates that marine plastic pollution is ubiquitous—"plastic-free ocean environments are increasingly rare" (Isobe, Uchiyama-Matsumoto & Tokai, 2017). There are disturbing indications that this accumulating mass of microplastics is entering marine food webs. Richard Thompson and colleagues reported finding microscopic plastic particle concentrations steadily increasing in collections of plankton samples dating from the 1960s through the 1990s; these authors demonstrated that microplastic particles were rapidly ingested by various components of marine food webs (R. Thompson et al., 2004). More recently, a group of researchers (Cozar et al., 2014) discovered a "gap" in the expected number of plastic fragments below a few millimeters in size, indicating what appears to be a massive loss of plastic from the surface of the open ocean; the size range of these "lost" plastic particles corresponds with that of zooplankton in the oceans, and plastic particles within this size range are commonly found in the stomachs of small, mesopelagic fish, the most abundant predators of zooplankton in the open ocean and in turn an important part of the prey base for upper trophic levels of the marine community. But perhaps the most serious threat is to the ocean's large filter-feeders, including the "brainy" morbulids, manta rays and devil rays, as well as whale sharks and baleen whales (Germanov et al., 2018); supporting their large bodies on tiny zooplankton, they must swallow hundreds to thousands of cubic meters of seawater daily, and therefore must be taking in microplastics both directly from the water and indirectly from their contaminated prey. According to lead author Elitza Germanov, "It is vital to understand the effects of microplastic pollution on ocean giants, since nearly half of the morbulid rays, two thirds of filter-feeding sharks, and over one quarter of baleen whales are listed by the IUCN as globally threatened species and are prioritized for conservation" (see Gaworecki, 2018).

Revealing a major source of microplastic contamination in North America, a study of municipal wastewater treatment plant effluent from 17 facilities across the US found that, on average, each is releasing over four million microparticles per day, leading researchers to estimate that somewhere between 3 and 23 billion particles of microplastic are being released in US waterways through municipal wastewater per day overall (Mason et al., 2016), polluting lakes and rivers before making it into the oceans. High levels of microplastics, mostly in the form of fibers shed from synthetic fabrics, were also found in treated wastewater in Paris, as well as substantial levels in the River Seine (Dris et al., 2015). Not all microplastic particles that end up in rivers, lakes and oceans are from the breakdown of larger-sized pieces of plastic, however; many facial cleansers, cosmetics, toothpaste, and other personal care products contain intentionally produced plastic particles, most less than 1 millimeter in size, that escape wastewater treatment plants and can reach the oceans (Fendall & Sewall, 2009); one study estimated between 4,000 and 95,000 microbeads could be released in a single use of a facial scrub (Napper, 2015).

Nanoparticulates

If we don't know much about what the microplastics are doing to our bodies, there's an even bigger unknown out there: microplastics may eventually degrade all the way down into 'nanoplastics,' plastic pieces in the 'nano' size range of a few billionths of a meter, several millionths of the size of a "microparticle." This is getting down to the size range of single atoms and molecules, and particles in this size range often have unusual properties that can be quite different from their properties in the larger size ranges, properties with largely unknown effects on living systems. So far, scientists have not found a good way to quantify the amount of nanoparticulate plastic in the oceans and surface waters, although they assume that, the smaller the particle, the more of them are going to be out there; they are just beginning to attempt assessing the effects that anthropogenic nanoparticulates have on living organisms, but they do know that particles this small can easily penetrate living tissues. Antarctic krill have been shown capable of ingesting microplastics (less than 5mm in diameter) and breaking them down into nanoplastics (less than 1 micrometer in size) through digestive fragmentation, a process possibly shared by other zooplankton (Dawson et al., 2018). The breakdown of larger pieces of plastic is not the only source of nanoparticulate contamination of aquatic and marine

ecosystems, however; sunscreens containing engineered nanoparticles of titanium dioxide and zinc oxide are polluting beaches, with the potential to harm marine and aquatic organisms.

Dr. Jerome Labille discovered that almost 70 kilograms of sunblock cream was deposited at one small beach in the south of France visited by about 3000 people daily, amounting to more than 1.8 tonnes over the summer season, and releasing around almost 2 kg of titanium dioxide daily, or over 50 kg for the summer, much of it expected to accumulate on the littoral zone, affecting seaside wildlife of various kinds (AAAS Eurekalert! 17 Aug. 2018). Titanium dioxide and zinc oxide have long been used as sunblockers in traditional, 'bulk' formulations and are considered inert and harmless, but questions about the safety of their 'nano' formulations have been raised; they reportedly can cause adverse effects in living organisms, largely through the generation of reactive oxygen species (ROS), resulting in cellular damage and possible genotoxicity and nanoparticle-sized titanium dioxide ($nTiO_2$) has been classified as "possibly carcinogenic to humans" via inhalation (see Skocaj et al., 2011). Since so little is yet known about the effects, and there are problems with informed consent, monitoring and controlling the material after release to the public, and the proportionality of hazards versus benefits, Jacobs, van de Poel and Osseweijer (2010) have called the marketing of $nTiO_2$ an ethically undesirable "social experiment." In the marine environment, $nTiO_2$ has been found to bioaccumulate in the gills and digestive glands of clams, suggesting "a potential risk for filter-feeding animals" (Ilaria, 2018). Both inorganic (titanium and zinc oxides) and various organic sunscreens have been found to have deleterious effects on phytoplankton, which carries out the preponderance of photosynthesis going on in the oceans and thus make up the base of virtually the entire oceanic food web (Tovar-Sanchez et al., 2013).

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12.5: The Human Footprint - Population

Virtually everyone who has looked into the matter agrees that the two 'ultimate drivers' of our global ecological crises are continuing human population growth—which most people don't want to talk about—and continuing economic growth, leading to out-of-control consumption of 'resources'—which pretty much nobody wants to give up. The human footprint, our species' overall ecological impact, classically has been formulated as $I = PAT$, where P represents the size of the human population, A stands for affluence, a measure of our average per capita consumption of resources, and T is the technology factor, able to increase or reduce the product of the other two factors—the primary drivers—somewhat (see Ehrlich and Holdren, 1971 for the classic paper). These two drivers, population and consumption, and the "economic growth" that fuels the latter, need to be considered in more detail in order to get a grasp of what's actually happening in the "war" we are currently waging against nature.

The Human Footprint: Population

To have an intelligent conversation about population, the first thing everybody needs to understand is the mathematics of exponential growth; our collective inability to understand this has been called "the greatest shortcoming of the human race" by renowned physics teacher Albert Bartlett (Bartlett, 1969; also see Bartlett, 1978, especially parts 2-4). [14] It's the basic way to describe the growth of biological populations when not subjected to negative feedback, but the mathematics applies to anything growing steadily at a constant rate, represented as a percentage of the total, per unit of time—including, in the abstract world, money growing at a certain rate of interest, as will be considered in Section 12.7. The relationship between the rate of growth–the added numbers over a given period of time described as a fraction of the total number in the population at the beginning of that interval—and the time it takes for the population to double in size—the 'doubling time'—can be worked out mathematically in terms of the natural logarithm of 2, but it can be approximated as doubling time = 70/growth rate in percent. Thus, if a population is growing at five percent per year, then its doubling time will be 70 divided by five or 14 years. The important thing about exponential growth, however, is that it can kind of sneak up on you. If you try to graph the growth over time, you don't get a straight line, as you would if the relationship were linear, you get what some call a 'J-curve,' a line like a recumbent 'J' that curves upward, appearing to shoot off into space as the exponential function approaches infinity. The reason it does this, of course, is that, for every new interval of time, the base which will be multiplied by the percent growth rate is a little larger than it was before, so the number that will be added over the next interval will be larger, and so on and so on.

An example often used to illustrate the 'sneakiness' of this kind of growth is the case of an exotic waterweed growing on a pond; the waterweed has a doubling time of one day and is capable of covering the entire pond within 30 days. For the first three weeks after it is introduced, the floating pondweed is barely noticeable, and it hardly attracts attention even after four weeks have gone by; the people living along the shoreline aren't too concerned about it, saying they will only do something when it covers half of the pond's surface. On what day will that be? The answer, of course, is *on the 29thday*—once a 'base' of reproducing plants has built up, the takeover occurs very quickly, catching the locals by surprise. A similar but more telling example is a bacterial sample inoculated onto the nutrient medium in a sterile petri dish. When the plate is incubated at a favorable temperature, the number of bacterial cells follows a typical J-curve, their population slowly growing from a tiny speck into visible circular colonies that spread across the agar, enjoying luxurious growth amid a seemingly infinite amount of nutrients, free from predators, competitors, and pathogens. Over time, however, nutrients run thin while harmful metabolic wastes build up; with no other kinds of organisms present to recycle wastes back into nutrients, bacterial growth stalls, and then the number of living bacterial cells drops rather precipitously as the colony reaches the finite limits of the plate.

The example has been used to illustrate the risk we humans run as we proceed to take over the surface of the Earth, simplifying ecosystems by eliminating more and more of the 'other' kinds of organisms whose ecological roles include breaking down our wastes and producing nutrients we can use, even as our numbers continue to climb. The standard reply of uncritical optimists has been that this won't be a problem because 'we humans are a lot smarter than bacteria,' but unfortunately this is yet to be demonstrated at the global level. In the big picture, our species' growth certainly looks as if it followed a J-curve. Our numbers stood at under one billion throughout all of our evolutionary history up until around 1800 or so, when they started to turn upward as the Industrial Revolution got underway; they then shot up steeply after 1950 [15] in what is known as the "Great Acceleration," as discussed in section 12.1. Our global population was reportedly 7.6 billion in mid-2018, and it had an overall rate of natural increase of 1.2 % per year (Population Reference Bureau, 2018)—which, by the straight math, would give a doubling time of around 58 years, yielding a total of over 15 billion people on the planet by the last quarter of the 21st century. When projections are

made, however, our overall growth rate is generally assumed to be falling, and since its highs during the 1950s and 60s–which resulted in a doubling of the total from three billion in 1960 to over six billion in 2000—it *has* been falling in many places around the world, but not everywhere. An overall increase of 28% is expected by 2050, adding around 2.2 billion for a total of 9.8 billion (PRB, 2019); a different projection yielded 11.2 billion for 2100 (UNDESA, 2017). Given our human capacity for exercising choice over what we do—a capacity that's frequently overlooked in these modeling studies—the number we will actually add is up for grabs; what will not be up for grabs, however, is the fact that each additional human will come with certain needs and 'demands,' and that the cumulative impact of these will largely determine the state of the Biosphere in 2050, in 2100, or any other future time.

One important concept to keep in mind when considering human population growth is the demographic transition—the change a society makes, with the help of modern sanitation, vaccination, and other public-health-related procedures, when it goes from having a high birth rate and a high death rate to having a low death rate and subsequently a low birth rate, a changeover that many presently industrialized countries made early in the 20th century. A second important concept is what is known as demographic momentum, the fact that the growth rate of a population at any given time will reflect its current age structure, such that populations having a large percentage of young people will continue to grow in size for many years even if the average number of children born per woman (the *total fertility rate* or TFR) lowers to replacement level, as this large cohort enters reproductive age, begins contributing to the population, and then lives alongside its children and grandchildren.

Brazil, for example, like much of Latin America, underwent a demographic transition between the mid-1960s and the mid-1990s, with its total fertility rate falling from an average of 5.4 children born per woman in the late 1960s to an average of 1.9 by 2010, below *replacement level.* Its population is continuing to grow, however, because of the large number of children born during the high-growth years, who are reproducing now and will be continuing to bear children for some time to come; if current rates continue, the population of the Amazon region is thus expected to double in less than 30 years (Williams, 2011). Sub-Saharan Africa, however, is said to be "the youngest region in the world" (Madsen, 2013), and the demographic transition is said to have "stalled" in many of its countries; with 46% of Middle Africa's population under 15 years of age (PRB, 2019), there is enormous demographic momentum built into it. In 2018 this part of the world had a total population of slightly over one billion, an overall average rate of increase of 2.7% per year, and the highest TFRs in the world, with Nigeria (already maintaining a population base of over 400 million) averaging 5.5 children per woman: Mali 6.0, Angola 6.2, the Democratic Republic of Congo 6.3, Chad 6.4 and Niger an astonishing 7.2 (Population Data Sheet, 2018)—a figure that came down to seven by 2019; increases of one to two billion people are expected by 2050 in the Democratic Republic of the Congo and Nigeria alone (PRB, 2019). Contraceptive use among married women is very low in these countries, partly from lack of knowledge and/or availability, but also preference or cultural expectation; in Chad and Niger, married women reportedly will state that an ideal family size can include up to nine children (Madsen, 2013).

A reason often given for desiring such a large family size is to ensure that some children will be able to provide care for parents as they age, but the extent to which this now proves true is questionable, as increasing populations are less and less able to support themselves within deteriorating ecosystems and many young people are forced to migrate to urban centers. In Madagascar, even though the population growth rate has fallen from 2.9%, with a TFR of 4.6 children per woman, in 2013 to 2.6% and 4.1 in 2018, people are leaving the overpopulated interior of the island and migrating to the coasts; there, however, they are finding that "the number of people who are going out to catch fish to feed their families is going up exponentially, and those fishermen are having to work harder and harder to catch smaller fish that are farther and farther down the food web," according to Dr. Vic Mohan (Williams et al., 2012). [16] As has been pointed out by many, to slow this growth and eventually stabilize the human population, advances in women's and children's rights, improving the position of women in society, and securing for them a basic education and access to contraception and family planning services are needed worldwide. Education for women is considered the key, since the number of children a woman will have has been shown generally to vary inversely with the number of years of education she has attained. Moreover, if unintended pregnancies—those not planned or unwanted–could be minimized around the world, the overall fertility rate would decline substantially. A little-known statistic that is somewhat shocking in its significance is that the percentage of unintended pregnancies is highest in North America, Latin America and the Caribbean–where they may make up more than 50% of all pregnancies (Crist et al., 2017).

Human population growth in or around most any relatively 'natural' area usually results in decreasing biodiversity, but continuing population growth is particularly problematic for the biodiversity 'hotspots' around the world, regions identified as conservation

priorities for having both very high concentrations of species diversity, with many species found nowhere else in the world, and also very high levels of habitat fragmentation and extinction threat, threats that are often related to high human population densities. [17] It is also a concern for the three major tropical wilderness areas (TWAs)—the Amazon Basin, the Congo Basin, and New Guinea and its associated archipelago—high biodiversity areas that just a few decades ago were mostly intact, with relatively low human population densities (usually less than 5 people per square kilometer), and that were expected to be "storehouses of biodiversity" that could serve as "controls" for the hotspots, as well as places where indigenous peoples are said to "have any hope of maintaining their traditional lifestyles" (Mittermeier et al. 1998, 2008). [18] By 2010, the hotspots were estimated to contain almost 1.5 billion people, with an average density of 99 per square kilometer, while the average population density in the TWAs had increased to 13 per sq km; their population growth rates, moreover, were averaging three percent per year, more than twice the rate in the hotspots–all worrisome numbers, given that "the livelihood and resource demands for most of those people likely came from within the respective hotspots or TWAs" (Williams, 2011). [19]

The famous *I=PAT* Equation, referred to earlier, is a thumbnail sketch of how the size of the human population can be related to its environmental impact: basically, the impact is the product of the number of human beings multiplied by the average amount each person in a given society "consumes" from the (local and global) environment, adjusted by whatever technologies enable them to consume this much. The relationship is somewhat intuitive, and the expression was not meant to be quantitative, but rather to convey an overall qualitative relationship that seems pretty hard to deny (although some may try). Lest it be taken too literally, however, to mean that impact simply increases linearly as population increases, John Harte (2007) details a number of ways in which the relationship can be dynamic and nonlinear. Consider, for example, the effect of a temperature rise above 80 $^{\circ}$F in a well-off community, triggering the use of air conditioning, thus increasing electricity usage and fossil fuel consumption and setting off a positive feedback hastening yet more planetary warming, an effect that will grow in proportion to population size. Or consider the highways and other infrastructural connections between three cities—aspects of the built environment that may make life easier for people but much more difficult for wildlife, directly causing mortality, cutting up blocks of habitat and interfering with migration patterns and breeding opportunities for many species; with just three cities, three roads can connect them, but as the population grows, the original three cities will increase in size while three new ones may spring up, necessitating twelve or more interconnections, severely fragmenting the terrain and possibly eliminating the larger-bodied and more sensitive species. Moreover, "rising numbers impede governance and problem-solving," Harte cautions, so we may find ourselves in "an intensifying downward spiral." So far, people in many places have accepted these "shifting baselines" and been able to adjust, but the cumulative effects are likely to be catching up with us as we approach 2050.

Attempts have been made to quantify various aspects of the relationship between human population growth and climate change. At the individual level, Paul Murtaugh and Michael Schlax (2009) calculated that one extra child born to a woman in the United States increases her 'carbon legacy' into the future by an additional 9,441 tonnes of CO_2, 5.7 times her own contribution; Seth Wynes and Kimberly Nicholas (2017) used their calculations to conclude that having one fewer child would have far and away the greatest impact, coming in ahead of living car-free, avoiding air travel and eating a plant-based diet, which also made their list of top recommended actions. In a macro-level study with serious implications for future global trends, Michael Raupach and colleagues (2007) utilized a formula in some ways similar to the IPAT equation to separate out global and regional drivers of the growth in CO_2 emissions from 1980 through 2004; their report's Figure 5 is especially telling. It is noted that the "developing and least developed" regions of the globe, inhabited by 80% of the world's population, accounted for only 23% of global cumulative emissions, but were responsible for 41% of emissions in 2004, and accounted for 73% of global emissions growth; they state "Fig. 5 has implications for long-term global equity and for burden sharing in global responses to climate change," letting their readers draw any further conclusions.

A number of modeling studies have utilized the general form of the IPAT relationship with the addition of some social and economic indices to make projections of future carbon emissions [20]; of particular interest here is study by Noah Scovronick and colleagues (2017) utilizing an updated version of "a leading cost-benefit climate-economy model (CEM)"—the same basic kind of modeling done by the IPCC [21] in its "integrated assessment models" (IAMs), which will be considered in more detail in section 12.7—to examine how "cost-sensitive" mitigation decisions will be affected by the size of the human population and also by what they call "population ethics." Under the latter heading they explore how "two approaches to valuing population," total utilitarianism (TU) and average utilitarianism (AU), can lead to considerably different outcomes. As this thinking goes, an 'average' utilitarian, such as John Stuart Mill, takes as the ethical aim maximizing the average happiness (termed utility) of a given group of people, while a "total" utilitarian, supposedly following the thinking of Jeremy Bentham, seeks "the greatest good for the

greatest number," understood as getting the total amount of "utility" to be the greatest it can possibly be, overall. As interpreted today, this may mean maximizing the total number of people, even at the expense of their average happiness. Since attaining this goal may result in a very large population composed of people whose individual life experience may be only very slightly positive, the upshot of this line of thinking has been termed "The Repugnant Conclusion" [22] (see Parfit 1984). Scovronick et al. just happen to note that all of the leading climate-economy models that try to optimize for costs share a total utilitarian (TU) social welfare function rather than an average utilitarian (AU) one, revealing an important aspect of why much of the prevailing thinking in "global governance" circles today is unable to slow our progression into worsening climate change.

The fact that these and other studies of the relationship between human population growth and carbon emissions are being done at all, however, makes the absence of recognition of the importance of population size all the more glaring in recent IPCC reports and most international environmental discourse. Moreover, if utilitarian, and especially TU-type thinking, is already built into the assumptions of the modeling programmes, then just what is being valued, and how, should not only be made explicit but should be open to public input and academic debate. None of this appears to be happening, however; it seems, that the topic of our ever-increasing population has become one of those "elephants in the room" of which Eviatar Zerubavel speaks, as discussed in Chapter 11. Martha Campbell explores some of the factors leading to this peculiar situation in "Why the Silence on Population?" (2007). As she explains, rapid population growth and some of its accompanying problems garnered world attention in the 1960s and 70s, and the adoption of "family planning" measures–providing information about and access to modern contraception methods that had recently become available—began to show success in reducing population growth rates in many places. By the 1990s, however, an active avoidance of the issue had appeared in many academic and policy circles, apparently including some quite central to setting the international agenda for our trajectory into the Anthropocene.

Campbell identifies six contributory factors creating a "perfect storm" shoving the issue off the table by the early 2000s. Birth rates had come down in many places, while consumption in the industrialized countries had grown enormously, clearly outpacing that of the less developed regions even though their populations were growing more slowly; meanwhile, family planning funds were being diverted into the fight against HIV/AIDS, and conservative pro-natalist groups were becoming more influential, while the academic community was in the grip of a theory holding that some external factor was needed to make couples opt for smaller families. But the sixth and perhaps most effective factor in silencing serious discussion of the need to limit our population growth was a matter of social psychology; a certain way of thinking came to be roped off from acceptable discourse, inside and outside of academic and policymaking circles, by means of the taboo-ification of certain terms and even the creation of particular epithets to be hurled at violators of the prohibition. Northern consumption patterns were placed in the crosshairs as a substitute target "at Cairo," the UN's 4th International Conference on Population and Development (ICPD) held in Cairo, Egypt, in 1994—not undeservedly, but this was followed by an effort to paint all family planning efforts with the broad brush of coercion, despite the fact that, as Campbell claims (2007), "the vast majority of family planning programmes were designed to make family planning easier for women and men to obtain, not to force them to control their fertility." The new term *reproductive health* was introduced to supersede the term *family planning*, but it also served to make the latter politically incorrect, often along with the word 'population' itself, and people who still employed the older vocabulary were saddled with derogatory adjectives like 'neo-Malthusian'; with adoption of the position that "macro-level data was conducive to inhumane approaches in reducing birth rates," she claims, it became unacceptable to consider issues from this big-picture perspective at all (Campbell & Bedford, 2009).

Unfortunately, it seems that much of this enforced silence on population issues is still around today. Calling out the mass psychology propping up "The Last Taboo," however, Julia Whitty (2010), a woman of Indian heritage, expresses concerns about India's increasing desertification and declining crop yields and maintains that "the root cause of India's dwindling resources and escalating pollution is the same: the continued exponential growth of humankind." As she explains, in 2010 India had 1.17 billion people—17% of humanity–trying to live on less than 2.5% of the Earth's land, and was facing an additional growth of "400 million to 2 billion" by 2050. Unafraid to take on the macro-level issues, she illustrates her article with the dramatic J-curve of our global population growth and our surging ecological footprint, and she observes that, while human rights activists found the conservationists' take of "people vs nature" to be "simplistic and even racist" in failing to address problems of poverty and injustice, she notes that these activists "in turn have tended to deny the limits of growth," which Whitty refuses to overlook. She recounts the stages of the "demographic transition"—the first a state of high birth rate offset by high death rate, the second a stage of rapid population growth as the death rate falls below the birth rate, and the third a state of low birthrate back in balance with the lowered death rate, often linked with women's education and economic improvement; she then points to the lamentable literacy rate of women in India—only 54% in 2010—and makes the prediction that "whether we are a world of 8, 9.1, or 10.5 billion

people in 2050 will be decided in no small part by the number of illiterate women on Earth." The fourth stage in the demographic transition, she continues, is a "stable and aging population," but she notes a recent study identifying a fifth stage, a reversal of the long-established relationship between economic development and reduced fertility (see Myrskyla et al., 2009), which, she remarks, is "good news for those who worry about Social Security deficits, but bad news for those who worry about societal security on a planet with finite resources." Whitty dares to ask, "how much has our silence around population growth contributed to the emergence of this fifth demographic stage?"—and she says she's looking forward to "the sixth stage in our demographic maturity: the transition from 20th-century family planning to 21st-century civilizational planning."

There is, however, one final point to be considered under the population issue, one that, from the perspective of this point in time, seems so glaring that one must wonder if it lies at the heart of the 'elephant in the room,' denial that there could be a 'population problem.' With the blossoming of truly amazing scientific knowledge about almost everything, an obvious moral buffer between us and the absolute limits of the Earth is emerging into view, given that questions about population size are ultimately value questions. The silence surrounding it is even louder and heavier than that surrounding the *p*-word itself, since at those rare times when human population growth does make it to center stage it is usually framed, as pointed out by Eileen Crist (2012), in terms of the question "how many people can the Earth support?"—the assumption being, of course, that supporting people is the only purpose the Earth is meant to serve; what else might there be?

Such silencing phenomena are often efforts to maintain collective denial over a shared sense of moral culpability, as discussed in Chapter 11. Yes, there may be evolutionarily-instilled factors that also militate against open recognition of the need to limit population growth of one's own "group," however defined; in addition to the natural desire of many people to have children, bigger groups can defend themselves, and have generally been able to get away with bullying smaller ones, going way back. But our collective silence on the population issue may mask an even greater desire to avoid confronting the reality of what our burgeoning numbers inescapably mean on the ground: that there is less and less room for nonhuman life, that many of the ongoing ways in which we displace nonhumans are filled with brutality and suffering, and that nonhuman lives *are* filled with inner subjective experience—and therefore are often filled with terror and loss, as we perpetrate an "Animal Armageddon" across the planet. What else might there be for the Earth to support, besides more people? The myriad other living beings that those additional people will squeeze right out of existence, that's what. Can we see them now?

Eileen Crist insists that we see them, as well as the socially-reinforced silencing that surrounds it, noting "The ongoing and escalating genocide of nonhumans is shrouded in silence, a silence signifying disregard for the vanquished. [. .] Silence is how power disdains to talk about their extinction." (Crist, 2012, p. 142). She believes the term *anthropocentrism* is much "too feeble and academic" to describe what has given rise to this genocidal project, describing it as "the open or tacit stance of human supremacy, " a stance that "manifests most clearly in the attitude of total entitlement"—an entitlement "that can hardly be challenged because it claims both consensual power *and* morality on its side (Crist, 2012). And perhaps this entitlement is nowhere more evident than in the exhortations against abortion, wherein the life of a single-celled embryo—because it is a *human* embryo (and despite the fact that, during development, its fundamental relatedness to all other animal life on the planet can be seen very clearly [23])—is presumed to be of inestimable value, while all the nonhuman lives that will be displaced by its being brought fully into the world are counted for nothing, and are deemed not even worthy of mention. It is only with the arrogance of such entitlement that pronatalists can profess to be 'pro-life'—as if the only 'life' that has a value is so obviously *human* life that the word needs no qualification.

We still have a choice, Crist maintains, between "Resource Earth" and "Abundant Earth," the former with a human population of many billions and little else, the latter with a declining human population that is able to make room for rebounding numbers of wild nonhumans in all their diversity and complexity. All it would take to set us on the path to Abundant Earth is more and more women choosing to limit their childbearing—"an elegant solution—and not an authoritarian one, because in a global human society *actually awakened* to the precipice of Life's collapse, many women and men may well choose none, while others choose one, and a few choose two" (Crist, 2012). On the second path, by 2100 we could be on the way to a human population eventually leveling off around two billion, in the ballpark of what has been estimated would be the "optimum human population size," where there would be enough for all life to flourish (see Daily et al., 1994). One thing is clear—we need to start talking about population again, and all its consequences that we've been denying. It's time to change the conversation.

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12.6: The Human Footprint - Consumption

Sustaining the Human Population

When ‘consumption’ has been discussed in environmental contexts, attention has usually focused on the consumption of energy and material goods, largely derived from ‘resources’ that have been translocated from the ‘developing’ world to the ‘developed’ one and used to make the stuff the people there ‘demand’ to have, whether they need it or not—a ‘demand’ that has been fueled to a great extent by marketing efforts aimed at increasing the circulation of money (see Section 12.7). However, from our perspective here in the early Anthropocene, it appears that this conversation needs to be updated in several ways. It is becoming clear that industrial culture has penetrated virtually every region of the globe, fueling desires and ‘demands’ for this high-consumption lifestyle everywhere in its wake, and with the increasing money-based affluence that absorption into the global economic system has brought about in many ‘developing’ countries (one must ask—what are they ‘developing’ into?), more and more of these demands are being met by rapidly increasing ‘consumption’ worldwide. While this change may be good news with respect to alleviating human poverty and decreasing inequality among subgroupings of our human species, increasing the per capita consumption of what is now a very large human population is taking an even more devastating toll on nonhuman populations worldwide. Moreover, as the human population continues to grow while the planetary changes we have already set in motion take effect, simply feeding people around the world is going to become increasingly difficult, let alone supplying everyone with the ‘stuff’ they have been conditioned to think they need; therefore, the focus of this section will be primarily on the food that we consume and the impacts on ‘nature’ of providing it, as well as some other products that come directly from the wild.

It must be acknowledged that people of the ‘developed’ world have historically been responsible for the greatest share of consumption overall, as well as the largest amount of emitted carbon, and they still maintain the highest per capita energy consumption at present. However, the ‘developing’ world, considered altogether, has now taken the lead in energy consumption, with China becoming the largest global energy consumer in 2011, and the second largest consumer of oil—second only to the United States–as well as the largest producer, consumer, and importer of coal, accounting for almost half of global coal consumption for at least five years (EIA, 2015). The entire Asia-Pacific region taken together, moreover, was utilizing about 42% of the world’s energy consumption by 2015, about equal to that of North America, Europe and Eurasia combined (Ritchie & Roser, 2019), and its share of the global oil and gas trade is being projected, based on present trends, to rise to around 65% by 2040 (EIA, 2018), with per capita energy use expected to increase by 46% (Woody, 2013). This changing ratio of energy use can be seen as correcting an inequitable balance among nations, but again, on the macro level, if historical inequalities are to be rectified by simply demanding *more* for everybody from the global environment, we will be substantially increasing the likelihood of seriously destabilizing the Earth system as a whole.

It seems that, once we humans become accustomed to living with certain luxuries and conveniences, we ‘shift our baselines’ and become very resistant to the notion that we should cut back on these apparent improvements that we have learned to take for granted, even if we understand intellectually that there are very good reasons why we should. A thought-provoking article by David Owen in *The New Yorker* (2010) examines humanity’s track record—which, in the face of continually improving technological ‘efficiencies,’ shows us doing nothing but consuming more, more and more—a phenomenon that’s been termed the Jevons paradox. [24] And as ‘efficiencies’ in many technologies have made prices fall at the same time that convenience and accessibility have risen, our collective consumption of energy and many other things has steadily expanded, in a way that is rather frightening when we allow ourselves to look at the larger situation. Take refrigeration, for instance. As Owen explains, the average refrigerator in 2010 was reportedly 20% larger than it was in 1975, used 75% less energy and cost 60% less; sounds great, but if we shift our perspective to the macro-level, we discover that “the global market for refrigeration has burgeoned” along with its contribution to energy consumption and carbon emissions. Refrigerators didn’t come into widespread use until around the middle of the 20th century, and then they were generally modest metal boxes—before that, people used ‘iceboxes’ or found other ways of preserving whatever food wasn’t eaten fresh. Now expectations in suburban America run to enormous side-by-side refrigerator-freezers with on-demand ice machines that ‘everybody’s gotta have,’ and the energy that could have been saved by all the ‘efficiency’ gains is going to satisfy the incessant demand for *more*—more volume, more convenience and more food kept past its due date before finally being thrown away; “coincidentally or not,” Owen observes, “the growth of American refrigerator volume has been roughly paralleled by the growth of American body-mass index.”

But surely, refrigeration has led to improvements in diets and health all around the world; how could we deny that its development and proliferation has been a good thing? “Refrigerators,” Owen explains, “are the fraternal twins of air-conditioners, which use the same energy-hungry compressor technology to force heat to do something that nature doesn’t want it to.” In 1960, 88% of homes in the US did not have air conditioning—and of course *nobody* had it before the 20th century, demonstrating that human life can go on without it—but by the mid-2000s, with efficiency driving down the cost of their production and operation, the percentages were roughly reversed, with almost 90% of homes having air conditioning, mostly central air, the consequence being that “we now use roughly as much electricity to cool buildings as we did for all purposes in 1955.” And air conditioning is not just for the developed world anymore—air conditioner use tripled in China between 1997 and 2007, he reports, and it was estimated to have accounted for 40% of electricity consumption in Mumbai in 2009, with India’s use projected to increase tenfold between 2005 and 2020. Economists generally see this ‘efficiency dilemma’ in monetary terms—if you increase the efficiency of producing something, the price goes down, and the demand for it goes up—a good thing within their conceptual framework. But in the real, three-dimensional world, the human population everywhere is increasing all the time, insidiously multiplying the effect of our demand for *more*—so, as we enter the third decade of the 21st century, we can all watch as unprecedented heatwaves blanket North America, Europe and Asia, and contemplate all those air conditioners giving temporary relief while applying strong positive feedback toward worsening our predicament.

The global food supply is an often-overlooked type of ‘consumption’ much more fundamental to our human lives than the energy to run our air conditioners, however. To understand its effect on the natural world, we first need to recognize our massive appropriation of the net primary production (NPP) of the Biosphere. The NPP is basically ‘the total food resource on Earth’—what’s left after the plants sustain themselves for all the other organisms that can’t make their own food the way plants do—and the proportion appropriated for human use was originally calculated to be nearly 40% of the terrestrial NPP (Vitousek et al., 1986); this “human appropriation of net primary production” (HANPP) was recalculated by Haberl, Erl and Krausmann (2014) and revised downward to around 25%, but it was still noted to have doubled over the course of the 20th century, reflecting “large increases in land use efficiency” while still incurring “considerable” ecological costs (Krausmann et al., 2013).

We have the *Green Revolution* to thank for allowing us to sustain our massive population increase over the 20th century, increasing the amount of biomass nature has been able to produce utilizing the sun’s energy by making substantial energy inputs of our own; the Haber-Bosch process for artificially fixing nitrogen, industrially scaled up in 1910, has been called “the detonator of the population explosion” (Smil, 1999). Primary agricultural production globally only makes up somewhere in the range of 2%-6% of the world’s total energy consumption (FAO, 2011), while the rest of food-sector energy consumption—altogether accounting for about 30% of the world’s total energy consumption–goes to things like processing, distribution, refrigeration, preparation, and retailing, which presumably includes advertising and other marketing (see Woods et al., 2010). On the other hand, agriculture is becoming increasingly dependent on fossil fuels, primarily required for energy-intensive inputs like pesticides and nitrogen fertilizer—the latter requiring large amounts of natural gas for its production, a demand that has increased at least sixfold over recent decades—so much so that the FAO appears to be quite worried about how we will manage to feed our expected population increase, especially in view of our looming long-range greenhouse gas ceiling and the short-term volatility of the fossil fuel market.

Clark and Tilman (2017) observed that “global agriculture feeds over 7 billion people, but is also a leading cause of environmental degradation”; agricultural activities account for between one-fourth and one-third of all greenhouse gas emissions, occupy over 40% of the Earth’s land surface, are responsible for more than 70% of freshwater withdrawals, and drive deforestation, habitat fragmentation and biodiversity loss. Modern agricultural systems inject a tremendous amount of nitrogen and phosphorus into the global system every year, so much so that our interference with their global cycling constitutes one of the “planetary boundaries” that Johan Rockstrom says we shouldn’t be crossing, as discussed in Section 12.1; a little less than half of added nitrogen (N) and phosphorus (P) reportedly is taken up by crops in the field; much of the rest finds its way into rivers and lakes, causing eutrophication, causing algae blooms and deoxygenated ‘dead zones,’ as well as acidifying water bodies and soils. Moreover, unlike the nitrogen incorporated into fertilizer, which can be produced industrially from nitrogen gas that is abundant in the air, the phosphorus used in fertilizer is derived from phosphate rock, posing a surprisingly little-appreciated problem; phosphate rock is a non-renewable resource that may be depleted within 50-100 years (Cordell et al., 2009).

In addition to these specific threats, however, planetary-system level worries are emerging that have direct consequences for our human security. Thomas Homer-Dixon and colleagues (2015), considered the possibility that “synchronous failure” in several separate social-ecological systems could interact to cause “a far larger intersystemic crisis” that could then “rapidly propagate

across multiple system boundaries to the global scale" and potentially "quickly degrade humanity's condition." As they explain, while the global GDP increased by a factor of almost 20 since the 1950s, this seeming achievement was made possible by a sevenfold increase in the withdrawal of resources from natural systems and the injection of wastes back into them, thus leaving many of these natural systems "under enormous strain" and eroding the resilience of the entire planetary system, making it more likely that a major crisis in one part of the system will affect all other parts. Nystrom and colleagues (2019) name the emerging anthropogenic artifact that feeds us the "global production ecosystem" (GPE), an entity that is "homogeneous, highly connected and characterized by weakened internal feedbacks," constructed "to yield high and predictable supplies of biomass in the short term, but create conditions for novel and pervasive risks to emerge and interact in the longer term."

These authors evaluate the resilience of the GPE with respect to three key features: connectivity, diversity, and feedback. With the huge recent expansion in global trade and increasing socioeconomic connectivity, production ecosystems are increasingly connected across continents and oceans; exports of soybeans and palm oil to markets in China, the US and the EU, increasingly to feed livestock, are driving deforestation across the tropics, while declining fisheries in one place shift fishing pressure to another or to aquaculture, itself increasingly in need of crop-based feed. With consolidation of entire supply chains reinforcing "global homogenization of species," crop diversity suffers; biodiverse tropical forests are replaced by extensive monocultures, with a shift toward a "globally standardized food supply based on a few crop types," such as maize, wheat, and rice–leaving large numbers of people vulnerable to pathogen-induced crop failure. In decoupling the GPE from natural feedback processes, crucial feedback processes that have regulated and maintained the Earth System are increasingly weakened; when one type of resource becomes depleted or one ecosystem degraded, instead of responding to reduce the destabilizing processes, the global production system simply moves on to drain resources and exploit ecosystems elsewhere. The entire Earth is thus kept "in a forced state through intensification" so as to maintain "a high and predictable global supply of biomass," while the increasing loss of resilience of the system is being "masked at a global level, thus increasing the risk of shifting the GPE into an unknown state" (Nystrom et al., 2019). [25] Moreover, the frequency of "food production shocks"—sudden losses to food production—has been increasing over time, mainly due to "geopolitical and extreme weather events," according to Richard Cottrell and associates (2019), and adding to these concerns, a report by the London-based research firm Chatham House (Bailey & Wellesley, 2017) has identified 14 *chokepoints*—"the junctures along shipping and overland trade routes through which transit especially high volumes of commodities" in the food transport network that are especially vulnerable to disruption—all but one of which have been closed or disrupted at least once over the last 15 years. The impact of the spreading coronavirus pandemic on our global food supply chains is yet to be determined.

Meanwhile, virtually every recent article addressing agricultural production begins with a nod to the huge increase in global food production that will be needed by 2050—as well as a growing 'demand' for meat. Almost all of them also make mention, however—if hidden somewhere in the body of the document—of the possibility that we humans might drastically cut back on our consumption of meat, and the difference this could make; the Chatham report, for example, notes (p. 30) that, should this occur, "the vast volumes of soybean and maize grown and traded to support livestock production could decline dramatically." Striking differences were revealed in comparisons of the environmental impacts of different foods, for example, in Clark and Tilman's (2017) life cycle assessment of over 700 agricultural systems: "for all indicators examined, ruminant meat (beef, goat, and lamb/mutton) had impacts 20-100 times those of plants, while milk, eggs, pork, poultry and seafood had impacts 2-25 times higher than plants, per kilocalorie of food produced." The implications of this dawning awareness are so enormous, in light of the projected demands of the global food system over the coming decades, that they will be considered in greater detail in the subsection that follows.

The Global Livestock Industry

The Diet-Environment-Human Health-Animal Ethics Quadrilemma

Ruminant animals like cattle and goats can convert low-quality forage material into high-quality protein that humans can eat, and raising them can sometimes be a sustainable practice within the bounds of nature alone, especially on lands not capable of supporting much else, as long as the number of humans to be fed in this way is not too great for the overall system. That said, however, today's intensive cattle production is far from that sort of system, even as the number of humans being fed in this industrial way seems to be increasing all the time. Raising livestock intensively is "becoming an industrial-scale process" around the world; as of 2019, the global production of beef and veal was forecast by the USDA to reach 62.6 million tonnes, led by the US,

Brazil and the EU, together accounting for roughly half of it, followed by China and India. The US is reportedly the greatest domestic consumer of beef, consuming almost the same amount as the US production, 12.4 MT, as well as exporting 1.5 MT (USDA 2019). Chicken production for 2019 was forecast to be 98.4 MT globally, led by the US at 19.5 MT. Global pork production for 2019 was projected to be 108.5 MT, with the US in fourth place, producing 12.4 MT. The total global 'production' of beef, pork and chicken was thus expected to be around 245 million tonnes in 2019—it's apparently never been higher. As Shefali Sharma of the Institute for Food and Agriculture Policy (IATP) explains (2018), a small number of corporations make up the "Global Meat Complex": "a highly concentrated (horizontally and vertically), integrated web of transnational corporations (TNCs) that control the inputs, production and processing of mass quantities of food animals." JBS, a Brazil-based company with headquarters in Greeley, Colorado, has become the top meat-producing corporation in the world, followed by Tyson Foods and then Cargill—the latter a prime example of the integration of these multinationals, being not only the third-largest meat processor in the world but also a top grain trader and the second-largest feed manufacturer. These giant corporations generally receive large tax breaks and publicly funded subsidies from the governments that house them; they also happen to be major contributors of GHG emissions, land and water co-optation and pollution with little or no accountability for their environmental impact.

In order to supply the growing demand for meat, intensified production of livestock is on the increase in developing countries, particularly in Asia, with "at least 75% of total production growth to 2030 projected to occur in confined systems," or confined feeding operations (CAFOs), according to Machovina, Feeley and Ripple (2015); such intensified production depends on internationally traded feed concentrates, with livestock being fed 626 million tonnes of cereal grains (around one-third of the global harvest), 16 million tonnes of oilseed, mainly from soy, and another 268 million tonnes of protein-rich byproducts, mainly bran, oil cakes and fish meal. These CAFOs—concentrated animal feeding operations—are coming under increasing scrutiny; according to the US Government Accountability Office (USGAO, 2008), there were around 12,000 of them in the U.S. in 2002, housing an estimated 8.6 million beef cattle, 3.2 million dairy cows, almost 48 million hogs, 304 million laying hens, 457 million broiler chickens and over 678 million turkeys. The size of these operations continues to increase; in 2012 there were reportedly more than 12 million beef cattle in operations with at least 500 animals, with the average feedlot holding more than 4,300; there were 5.6 million dairy cows in dairies averaging 1500-2000 animals; 63.2 million hogs in operations averaging nearly 6,100 animals; 269 million egg-laying hens in operations averaging 695,000 animals; and over a billion broiler chickens, with operations in some states exceeding 500,000 animals, according to Food & Water Watch (2015). Ethical concerns have been raised about the conditions under which animals are cared for in these operations, with respect to cleanliness, noise, crowding, constraint of movement, and sometimes deliberate cruelty on the part of certain workers, and slaughterhouses in England are slated to be monitored with CCTV cameras to prevent such abuses (Smithers, 2017); in the United States, however, new regulations permitting "high-speed slaughter" of pigs and chickens, rapidly being instituted, are likely to further jeopardize humane treatment in U.S. facilities. [26] Altogether these intensively raised animals in the US generated at least 335 million tonnes of manure in 2012, "about 13 times as much as the sewage produced by the entire U.S. population" (Food and Water Watch, 2015).

Globally, livestock production is reportedly responsible for about 14.5% of all anthropogenic greenhouse gas emissions at that time, which in 2014 were 7.1 GtCO_2 equivalents out of a total of 49 GtCO_2 equivalents emitted (Ripple et al., 2014); of that amount, about 44% of the livestock emissions, or 3.1 GtCO_2 equivalents, were in the form of methane (CH_4)—said to be 20-30 times more potent as a greenhouse gas than CO_2—most of which is produced by ruminant animals (cattle, sheep, goats and water buffalo) in the process of enteric fermentation, the largest single source of anthropogenic methane. Livestock's other contributions to greenhouse gas emissions are about evenly divided between CO_2 emissions from land use change (deforestation and other ecological conversions) and fossil fuel use–about 2.4 GtCO_2—and nitrous oxide (N_2O) emissions—another 2.2 GtCO_2 equivalents —from fertilizer applied to grow feed crops and from manure (Machovina et al., 2015). Ripple and colleagues (2014) note that the livestock sector of the global economy has "generally been exempt" from climate policies, emphasizing the importance of increasing public awareness of the fact that "what we choose to eat has important consequences for climate change." [27]

Meanwhile, there has been increasing attention focused on the human health benefits of reducing the amount of meat in our diets. David Tilman and Michael Clark (2014) observe that " a global dietary transition"—one that hasn't been good for us–has already been taking place around the world, driven by rising incomes and urbanization: traditional diets are being "replaced by diets higher in refined sugars, refined fats, oils and meats," contributing to increases in obesity, type II diabetes, coronary heart disease and other chronic "non-communicable diseases." [28] Tilman and Clark (2014) speak of "the tightly-linked diet-environment-health trilemma"—which should be expanded into a quadrilemma of diet-environment-human health-animal ethics, as we recognize what the livestock industry is doing to both domestic animals and, through habitat destruction and its associated hazards, wild animals as

well, something that will be considered next. “Animal product consumption by humans (human carnivory) is likely the leading cause of modern species extinctions,” according to Machovina, Feeley and Ripple (2015), and what’s happening in the Amazon “is a primary example of biodiversity loss being driven by livestock production”: “never before has so much old growth and primary forest been converted to human land uses so quickly.”

The Deforestation of the Amazon

Originally occupying more than six million square kilometers, Amazonia is “the largest and most diverse of the tropical wilderness areas,” centered on Brazil but extending into eight other countries. It is known to contain include at least 40,000 species of plants, 427 species of mammals, 1294 species of birds, 378 species of reptiles, 427 species of amphibians and around 3,000 species of fishes (da Silva, Rylands, & da Fonseca, 2005); when species as yet undescribed by science are added to the mix, the total number of different species in the Brazilian Amazon alone is thought to be on the order of 1.4-2.4 million (Lewinsohn & Prado, 2005). Denizens of the Amazonian rainforest include jaguars, tapirs, giant otters, pink river dolphins, macaws, toucans, harpy eagles, anacondas, poison dart frogs and electric eels, not to mention rhinoceros beetles, morpho butterflies and giant cockroaches. [29] When roads begin to penetrate the unbroken forest and large areas of the forest are cut down, almost all of the animals are destroyed along with it, and those that survive in the forest fragments left behind are forced to live under radically altered circumstances; forest edges become hotter and drier and more vulnerable to invasive species, and human hunters can enter via new road networks, penetrating the remaining habitat and stripping them of their larger native animals. Moreover, isolated forest fragments act like islands—animals are trapped within them, physically or behaviorally, and are often unable to find appropriate mates to insure gene flow, leading eventually to population die-out. Extinction does not follow immediately upon habitat fragmentation and degradation but generally occurs progressively over time, leading to the notion of an extinction debt, species with a few remaining members but already doomed to disappear (Wean, Reuman & Ewers 2012); it is estimated that the last 30 years of Amazonian deforestation has already committed 10 species of still-existing mammals, 20 species of birds and eight species of amphibians to extinction (Rangel, 2012), numbers expected to rise substantially if deforestation continues or accelerates. And, as we should remember while we watch the Amazonian and other tropical forests go up in flames, the number of individual animals perishing may reach into the billions. [30]

The forests of Amazonia are also critical to one of the Earth’s major hydrological cycles. Making up what she calls “the Flying Rivers of the Amazon,” Sharma (2017) explains that 18 billion tonnes of water are pulled up through the trees of the rainforest every day–more than 7.25 trillion tonnes of water every year–evaporating to form clouds 3,000 meters high that drift to the west, encounter the Andes mountains, and then shift to the south, bringing needed rain to the grass- and shrub-lands of southern Brazil’s Cerrado, as well as Paraguay, Uruguay and northern Argentina—rain that is now diminishing, lowering aquifers and causing water deficits in these regions. This massive movement of water influences global atmospheric circulation and supplies up to 20% of freshwater input into world oceans (Nepstad, 2008). More than 15 billion tonnes of water pour out of the Amazon River into the Atlantic Ocean every day, but the “river of vapor that comes up from the forest and goes into the atmosphere” is even larger than this flow, according to Amazon researcher Antonio Donato Nobre [31]; he likens the evapotranspiration of as many as 600 billion trees to a geyser spouting water into the air, but “with much more elegance” (see Kedney 2015). But the Amazon underwent severe droughts in 2005, 2010, and 2015-16, alternating with periods of severe flooding in 2009, 2012, and 2014, an oscillation that some scientists believe could represent “the first flickers of [an] ecological tipping point,” a tipping point that they believe could be reached at 20-25% deforestation (Lovejoy & Nobre 2018), a point many believe is fast approaching; these authors estimate current deforestation at 17% across the entire Amazon basin and almost 20% in the Brazilian Amazon, and urge a major reforestation project as “the last chance for action” (Lovejoy & Nobre, 2019). Should large parts of this massive forest abruptly ‘tip’ into a different state, the event would likely not only have immense consequences for the hydrology of all of southeastern South America and beyond, it would release a massive amount of carbon from dead and dying trees that could push the planetary system past other climate change thresholds. Not to mention the loss of all that Life!

“What people don’t realize,” according to University of Florida ecologist Emilio Bruna (see Simon, 2019), “is that those trees have over millennia evolved really efficient nutrient extraction mechanisms,” mechanisms that species evolving in other types of ecosystems don’t have. “It’s called the paradox of luxuriance,” he says—people look at the luxuriant growth of the vegetation in the forest and think they will be able to grow anything there, but the nutrients initially released when the trees are cut and burned quickly vaporize or leach away, leaving the land impoverished. “You go from a really lush tropical forest to a completely nonproductive cattle pasture almost immediately,” says Bruna, so agriculturalists frequently abandon worn-out fields and move on

deeper into the forest, repeating the process. Increasingly, however, the deforestation is less for pastures than for soybean cultivation—soybeans to be exported and fed to livestock elsewhere on the planet—that represents "a recent and powerful threat to tropical biodiversity in Brazil," as Philip Fearnside (2001) predicted almost 20 years ago; 87 million tonnes of soybeans were produced by Brazil in 2016, 71% of them going for livestock feed, according to Fuchs et al. (2019), noting that China's imports of soy from Brazil increased by 2000% between 2000 and 2016.

The Amazon forest is one of the largest stores of carbon in the Earth System, and is estimated to sequester around 150-200 PgC [GtC] in its living biomass and soils, but its ability to store carbon seems to be decreasing (Brinen et al., 2015); the droughts in 2005, 2010 and 2015-2016 and their resulting fires released millions of tonnes of carbon into the atmosphere. Wet tropical forests like the Amazon aren't supposed to burn, but rainforests which were once fireproof are now flammable due to drought (see Sax, 2019), and in drought years wildfires alone—even in areas without intentional deforestation—can emit up to a billion tonnes of CO2. [32] Nearly 42,000 fires were reported by the end of August 2019—the highest since 2010; Brazil suffered a severe drought in 2010, whereas rainfall was only slightly lower than normal in 2019, making "a massive uptick in deforestation" the likely root cause of the fires (see Sax, 2019). Jos Barlow and colleagues (2019) "clarified" the cause of Amazonia's "burning crisis," finding "strong evidence" that the increase in fires was linked to deforestation; not only were there nearly 3 times as many active fires in August 2019 than there were in August 2018, refuting the government's claim that August 2019 was a "normal" month for fires, but more than 10,000 square kilometers were deforested between August 2018 and July 2019, more than four times the average for the same period in 2016-2018.

Unfortunately, Barlow and colleagues had to withhold the names of some fellow researchers at their request (see Pickrell, 2019) because of the "landscape of fear" created by President Bolsonaro, who has slashed science funding and fired prominent scientists publishing such data. But people were already getting the picture; as Bill McKibben (2019) reported, "satellites were showing a new fire erupting somewhere across the landscape every minute"—"not because lightning was striking, but because greed and corruption were striking." Jair Bolsonaro, who has proudly claimed the title of 'Captain Chainsaw,' made it clear that the Amazon is now open to development. Questioned about the remarks of Pope Francis, who said that, in the Amazon there prevails "a blind and destructive mentality that favors profit over justice," and that "highlights the predatory behavior with which man relates to nature" (Sassine, 2019, in translation), Bolsonaro reportedly answered that "the forest was 'like a virgin that every pervert from the outside wants,'" and that "therefore Brazilians should cut it down before others had the chance" (McKibben, 2019). Ironically, the InterAcademy Partership (IAP) of over 140 academies of science recently released a Communique (2019) not only declaring that "there can be no solution to climate change without addressing deforestation" but also noting that, if the Amazon is no longer able to provide rain for the country's crops, Brazil will face an estimated trillion-dollar economic loss over the next 30 years, with pasture productivity reduced by 30% and soybean production reduced by up to 60%.

Bolsonaro has also signaled his disdain for the indigenous peoples of the Amazon, going back many years, as documented by Survival International (2019). In 1998, Bolsonaro was quoted as saying, "It's a shame that the Brazilian cavalry hasn't been as efficient as the Americans, who exterminated the Indians," and in 2018 he asserted, "If I become President there will not be a centimeter more of indigenous land"; in Brazil's Congress he posted "In 2019 we're going to rip up Raposa Serra do Sol (indigenous territory in northern Brazil)—We're going to give all the ranchers guns," and he promised to abolish FUNAI, Brazil's national Indian Foundation, responsible for mapping and protecting indigenous lands. As Survival International's Fiona Watson (2018) reported for the *Guardian* shortly before he took office in January of 2019, under his rule the 100 or so uncontacted tribes of the Amazon will face genocide—"silent invisible genocides," with few witnesses, as they are "massacred over resources because greedy outsiders know they can literally get away with murder." Meanwhile, indigenous groups and biodiversity alike are also threatened by big infrastructure projects, many of which are "dragged along" after agricultural expansion. A scheme to build more than 40 dams on the Tapajos River and its tributaries and create an industrial waterway, of which "the soy industry will be one of the main beneficiaries" (see Salisbury, 2016), was halted in 2016, largely because of its threat to the Munduruku people, whose traditional territory would be flooded (Amazon Watch, 2016), but it is likely to be rehabilitated under the Bolsonaro regime. Altamira, the city spawned by the Monte Belo dam complex on the Xingu River, slightly to the east of the Tapajos has spawned, is a good example of the kind of culture that is expected to replace the people who have been living sustainably in the area for hundreds of years (Faiola et al., 2019); it already hosts its own mall with a Burger King franchise, across from which is displayed "a mural of jungle animals and forest—now a popular backdrop for mall-goers to take selfies." These moves provide all the more reason for bringing pressure to bear on the livestock industry, and particularly its deep roots in Brazil.

The “Bushmeat” Crisis

Consuming Our Evolutionary Cohorts

Much of the world’s population lives in urban centers and is fed by industrial agriculture; however, another large and rapidly growing segment lives in large part by hunting for ‘bushmeat’ wherever wild animals can still be found. [33] This consumption of wild animals is “considered among the greatest threats to biodiversity throughout Africa, Asia, and Latin America”; “indeed, case studies illuminate a multitude of locations where once vibrant wildlife communities are harvested to a state of defaunation” (Brashares et al., 2011). Going back through earlier reports form a few decades ago, it’s beginning to look like we’re already starting to see something resembling the dawn of the thirtieth day, when the growth of the waterweed, which seemed so slow and innocent at first, finally covers the whole surface of the pond; the human population is already not only huge and still growing but also eating way, way outside of its appropriate trophic niche as a large-bodied primate, and where it is not being sustained by the great industrial machine it is now increasingly turning on its surrounding wildlife populations to consume animals in such numbers —and in some cases with an additional, money-seeking ferocity—that observers are asking the question: when they’re all gone, then what?

Probably the first report in the scientific literature on this emerging problem was Kent Redford’s “The Empty Forest” (1992), which stateded that “*until recently*, human influence on tropical forests through such activities as burning, swidden agriculture, and hunting was regarded by ecologists as of such low impact that it was negligible, as important but confined to areas of human settlement, or as confined to rapacious colonizers destroying the forest from the outside” (emphasis added). Redford pointed out that forests can be emptied of many or most of their large animals even when the tree cover remains–in other words, that “a forest can be destroyed by humans from within as well as from without.” But the problem was brought to the attention of the general public—some of them, at any rate—in a shocking manner largely through the photographs of Karl Ammann, a wildlife photographer whose horrific illustrations for the books *Consuming Nature* (Rose et al., 2003) and *Eating Apes* (Peterson, 2004) bring home just how devastating a toll is being taken on many of the most iconic of the African animals, including all of our great ape cousins, whose habitats lie entirely within some of the most active areas under attack by the bushmeat trade. [34] Ammann also called out big NGOs like the World Wildlife Fund for sitting on the issue, not drawing it to the attention of their donors or doing much about the problem for fear of its potential to rock a lot of cushy boats. Much of the bushmeat is being transported out of the forests on logging trucks, to be sold in urban centers, locally and even internationally. Logging operations open up forests like can-openers, constructing extensive road networks that provide easy access to hunters who may come from far away to engage in the commercial trade in wild meat, and timber companies often encourage the consumption of bushmeat as a cheap and easy way of feeding their workers; moreover, the lucrative returns allows hunters to equip themselves with guns and ammunition, snare wires and motorized transport that increase the efficiency with which wild animals can be ‘harvested.’

By 1999, it was being reported that people in the Brazilian Amazon were consuming somewhere between 67,000 and 164,000 tonnes of wild meat, coming from an estimated 9.6 to 23.5 million wild animals every year, while the amount of meat being taken out of tropical forests in Africa was thought to exceed one million tonnes per year; when calculated in kilograms per square kilometer, this would amount to as much as 20-50 times more than the “largely subsistence” take out of the Amazon (Robinson et al., 1999). Four years later, in “Wild Meat: The Bigger Picture,” it was acknowledged that “massive overhunting of wildlife for meat across the humid tropics is now causing local extinctions of numerous species” (Milner-Gulland & Bennett, 2003). “Protein extraction” rates were being calculated in terms of “production” of tonnes per year, with an estimated quantity of over five million tonnes of wild mammalian meat being removed from the forests and consumed by the human populations of Latin America and Africa, the amounts for the Congo basin being four times higher than had been estimated earlier (Fa et al., 2002). [35] Many large-bodied, slow-reproducing species are especially vulnerable, including some of the most cognitively complex; the great apes (whose wild populations are entirely confined to the tropical forests of Africa) and elephants, for example, are presumably included in this estimate of protein extraction.

Moreover, when the ratio of exploitation, in kilograms of meat taken per square kilometer of forest per year, to “production”—presumably animals being born and growing to huntable size, reduced to kilograms of living animal biomass per square kilometer per year–was calculated and projected forward (Fa et al., 2003), the results were unsettling; almost five times more meat would be removed than ‘produced’ in the forest of the Democratic Republic of the Congo by 2050; when divided by the expected population at that time, this would lead to an estimated drop in the “bushmeat protein supply” of 78%. The authors acknowledge that “the picture is indeed a bleak scenario, not only for wildlife but also for the region’s inhabitants”; the “trends of protein supply” are

"highly pessimistic," they conclude, "simply because of the uncontrolled increase in human numbers," and they raise the hope that this might be compensated by "alternative protein sources," animal or vegetable, locally produced or imported. They speak nary a word, however, about doing something to lower the denominator of that latter consumption ratio.

If the relationship between bushmeat consumption and population growth is a dismal one, the linkage between its consumption and income level is also a disturbing one; it seems that, in rural areas, the least wealthy families consume the most bushmeat, but in urban centers, the wealthier households have higher rates of consumption—"thus, the 'poor' person's meat in the country becomes the 'rich' person's meat in the city," according to Brashares and colleagues (2011). Much of it is consumed in the big cities of the tropical countries where it originates, but there is also a lucrative international trade; for example, at just one European airport, the Paris Roissy-Charles de Gaulle in France, an estimated five tonnes of bushmeat was being smuggled in every week through the personal baggage of arriving passengers, suggesting "the emergence of a luxury market for African bushmeat in Europe" (Chaber et al., 2010).

In "the first comprehensive global assessment" of hunting on terrestrial mammals, William Ripple and colleagues (2016) conclude "results show evidence of a global crisis." They identify 301 mammal species threatened with extinction for which human hunting is a primary threat, including 126 species of primates, 65 species of even-toed hoofed mammals, 27 species of bats, 26 marsupials, 21 species of rodents, 12 species of carnivores and all pangolin species; the likelihood of threat is generally proportional to body size, with almost two-thirds of the largest terrestrial mammals (over 1000 kg) being at risk of extinction as a result of human hunting. Bushmeat hunting is occurring almost entirely in the developing countries of Africa, South America and Southeast Asia; of the 301 threatened mammals, 113 are found in Southeast Asia, 91 in Africa, 61 in the rest of Asia, 38 in Latin America, and 32 in Oceania. Almost a quarter (23%) of all populations of these heavily hunted mammal species deteriorated between 1996 and 2008, the highest percentages being among the primates and even-toed ungulates; the majority of them currently have less than 5% of their ranges in protected areas. Threatened species inhabit a number of different trophic levels, from apex predator to mesopredator to herbivores of all sizes, and play ecological roles from seed dispersers to pollinators to prey species. Since human hunting disproportionately affects the larger-bodied animals, which generally are slower to reproduce, dramatic reductions in their populations produce cascading effects throughout their ecosystems, primarily by loss of the 'top-down' control they normally exert, sometimes "releasing" smaller species and possibly increasing risk of transmission of disease to humans. The primary method of obtaining bushmeat is often through the use of traps and snares, which is highly wasteful and results in a great deal of suffering, since up to a third of animals escape with injuries and the many that die may take hours or days to do so. When under severe hunting pressure, moreover, mammals can develop complex ways of avoiding human presence, but living in such "landscapes of fear" can rob them of energy and reduce their time spent foraging or capturing prey (Ripple et al., 2016).

Zoonotic diseases that are thought to have emerged from butchering of wildlife for human consumption include Ebola, HIV-1 and -2, the SARS and MERS coronaviruses, and most recently SARS-CoV-2, the coronavirus currently spreading in a global pandemic. As Morens, Daszak, and Taubenberger (2020) acknowledge, "we must realize that in our crowded world of 7.8 billion people, a combination of altered human behaviors, environmental changes, and inadequate global public health mechanisms now easily turn obscure animal viruses into existential human threats"; as they observe, "we have created a global, human-dominated ecosystem that serves as a playground for the emergence and host-switching of animal viruses." William Karesh and colleagues (2012) explain "nearly two-thirds of human infectious diseases arise from pathogens shared with wild or domestic animals," and note that "changes in land use, extractive industry actions, and animal production systems" have been involved in zoonotic transmission. The viruses responsible for both the 2002-2003 SARS epidemic and the 2012 MERS outbreak are thought to have originated as bat viruses, the MERS virus passing through dromedary camels as an intermediate host and the SARS virus through palm civets sold in a Chinese "wet market" (Cui et al., 2019). COVID-19 is also believed to have jumped the species barrier in a 'wet market' where exotic wild animal bushmeat of various kinds can be found (see Perlman 2020); its animal host of origin is also thought to be a species of bat (Zhou, 2020), although pangolins—illegally but widely consumed in China—are also under consideration (see Cyranoski, 2020; Yu, 2020). There have been calls for the abolition of these so-called 'wet markets' by critics including the *Wall Street Journal* (see Walzer & Kang, 2020), while Sonia Shah (2020) focuses attention on the rampant habitat destruction that is forcing wild species into greater contact with humans, and David Quammen (2020) addresses the "perilous trade in wildlife for food, with supply chains stretching through Asia, Africa and to a lesser extent, the United States and elsewhere," in conjunction with "bureaucrats who lie and conceal bad news, and elected officials who brag to the crowd about cutting forests to create jobs in the timber industry and agriculture or about cutting budgets for public health and research."

Ripple and colleagues (2016) state that "we must find ways to curb our insatiable consumption," pointing out that "it is critical to acknowledge that the terms 'protein' and 'meat' are not synonymous"; they recognize that "ultimately, reducing global consumption of meat is a key step," both in regard to the bushmeat situation and with respect to the environmental problems created by the livestock industry globally, suggesting a shift in dietary preferences toward high-protein plant foods and even invertebrates and other novel sources of protein. They also do not shy away from advocating programmes to help lower birth rates, referencing a 2012 study by the Guttmacher Institute that calculated the provision of adequate contraception to all women in developing countries worldwide would cost only around eight billion dollars annually (Singh & Darroch, 2012)–a cost that could be easily shouldered by developed countries with 'defense' budgets in the trillions. These scientists repeated their warning three years later (Ripple et al., 2019), drawing attention to our species' outlier status as what Darimont at al. (2015) called "an unsustainable 'superpredator'": we kill adult prey preferentially over juveniles, taking adults up to 14 times as often, something no other animal species does in nature, an unusual form of predation that can be thought of as drawing down the 'reproductive capital' of a population—those who make it to adulthood—rather than "living off the interest" of the juveniles produced every year, as other predators do (see Worm, 2015). The urgency of the situation, including the risk of creating future zoonotic pandemics, is spurring increasingly emphatic calls to make dealing with the escalating bushmeat crisis a conservation priority. [36]

Profiting from Body Parts

The trade in animal parts is an escalating problem over and above the hunting of bushmeat for subsistence consumption, however, and needs to be examined as a social phenomenon. When certain 'parts' become the object of sudden popularity, [37] or perhaps become marketed as a newly discovered cure-all unknown to Western medicine, or simply become known as a 'good investment,' this added symbolic status can in itself drive a species into extinction, something known as the "anthropogenic Allee effect" (Courchamp et al., 2006). The Allee effect is a well-known phenomenon within ecology, wherein once the population density of a species falls below a certain level, the less able the animals are to reproduce themselves and recruit new members into their population—a matter of "negative growth rates at low densities," resulting from various biological factors. The *anthropogenic Allee effect* is a "human-generated feedback loop" that intensifies the process. Standard economic theory insists that the marketplace won't drive species into extinction because, since the 'resource' becomes increasingly scarce as it becomes rarer, the cost of catching it will increase until exploitation stops, after which time its population will recover. Even as the last assumption is coming into question, the major claim of this theory has been shown to be incorrect by examples of species whose 'value' (read 'price' of some animal or part thereof) increases with its increasing rarity, which "stimulates further harvesting and drives the species into an extinction vortex" (Courchamp et al., 2006).

In certain places, the killing of animals for their meat and/or parts is being carried out by organized groups with sophisticated weapons, and is being met with similar tactics and firepower on the 'anti-poaching' side, and this is probably nowhere better illustrated than in and around Kruger National Park in South Africa, where the lucrative trade in rhino horn seems to be driving an anthropogenic Allee plunge in the two remaining African rhino species, even in their supposedly well-protected last stronghold. Annette Hubschle provides some important insight into the many human dimensions of the forces underlying the bushmeat crisis in Africa and likely in many other parts of the world. *A Game of Horns: Transnational Flows of Rhino Horn* (2016), which served as her dissertation in economic sociology. She focuses on Kruger National Park, where somewhere between 8,000 and 9,500 white rhinos and 350 to 500 black rhinos were thought to survive in the roughly 20,000 square kilometers of the park, and where, according to park anti-poaching officials, it's so bad that "an available pool of 2,500 to 3,000 poachers" can always be found in and around the park, with "an average of ten to fifteen hunting crews tracking rhinos at any given time" (Hubschle, 2016, p. 325).

Hubschle traces the history of 'conservation' in South Africa, beginning with the arrival of the Dutch East India Company in 1652, imposing colonial rule; native Africans lost property and hunting rights, while colonists began seriously depleting populations by the late 1800s, necessitating conservation measures. As she explains, "while one might think that these conservation regulations sought to protect wildlife, in reality they can only be understood in the context of colonial exploitation of African people" (2016, p. 175). Kruger was set up as a game reserve before being declared South Africa's premier National Park in 1926, but this came at the cost of several waves of forced removal of African people from the land, which continued until as recently as 1969. A wildlife ranching industry began to develop over the 1960s and 70s, with private ownership of wildlife and rhinos in particular accruing to the while elite, creating a legal market in wild animals and their products from which Africans continued to be excluded. This legal market in live rhinos, rhino horn and rhino trophies "provided the foundations for certain criminal activities to flourish and for gray

channels to develop into fully-fledged illegal supply chains" (Hubschle, 2016, p. 181), and many of these activities continued after CITES banned the international trade of rhino products in 1977.

Conservation came to mean moving rhinos to the private holdings of white ranchers, ostensibly to rebuild wild populations, but more importantly opening the door to the commercial trophy-hunting industry; meanwhile, subsistence hunting by local communities of black Africans was branded *poaching* and criminalized. The breeding, sale to ranchers and commercialization of rhinos for their horns and trophies intensified over the 1990s and into the early 2000s, allowing this elite group to become accustomed to enjoying a most profitable business; however, she explains, the escalation of illegal killing of rhinos on public lands is now cutting into the supply of animals available for sale to the private sector, providing an incentive for the escalation of a paramilitary 'war against poaching' that she claims has little to do with respect for the animal itself.

Hubschle conducted interviews with 239 SubSaharan Africans who agreed to participate in her study, many from Mozambican communities located just outside the KNP. As they explained to her, their villages had been undergoing increasing economic marginalization for years after the illegalization of their own hunting, and as rhino poaching became increasingly lucrative, it only made economic sense to take the risks. Men from many different backgrounds make up the hunting crews, freely cooperating in rhino killing–and a grisly business it is, too, since, while rhino horns can be removed by careful excision without killing the animal because the hairlike horn material does not have a bony attachment to the skull, "illegal hunters use either ax, pocket knives or machetes to remove the horn" (2016, p. 307), and the wounded animal is left to die. Village 'kingpins' coordinate the huntying groups and emerge as self-styled Robin Hoods, constructing their identities as "economic freedom fighters" within a shared perspective that "the poacher is claiming back his right to hunt by poaching in modern conservation areas, which were the traditional hunting grounds of his forefathers" (2016, pp. 311-312).

She also interviews many of the "consumers" of rhino horn and those involved in the quasi-legal or illegal trade channels, and notes what she calls the "sacralization" of the rhino horn—but unfortunately not of the living rhino itself—in Asian communities; her conclusion was that "the sanctity of ancient beliefs and socially accepted norms not only supersedes rhino conservation initiatives but also international trade bans and domestic rules" (2016, p. 169). Contemporary consumers of rhino horn generally indicated they desired it for reasons of health (although most medical communities deny it has any efficacy) or for the status that its possession imbued; interviews with actors in the criminal networks meeting this 'demand,' however, indicated they looked forward to the extinction of the species because of its likely effect of escalating the 'investment potential' of caches of the horn.

The basic argument of her dissertation (2016, p. 67) is that successive programmes instituted for the protection of the rhino have "led to a historical lock-in that has allowed the illegal market in rhino horn to flourish"; key actors in this flow of horn do not accept the ban on trade in rhino horn and/or the legitimacy of the differentiation between legal and illegal rhino killing, and they use this "contested illegality" to justify both "gray" economic activities and those that are clearly illegal. A key finding of her research was the importance of actors situated "at the interface between legality and illegality" in maintaining the resilience of the criminal networks; somewhat shockingly, Hubschle observes that, "while conventional narratives point to the involvement of organized crime in transnational rhino horn flows, this label is only correct if wildlife professionals and state officials are subsumed under it, and the dominant role of local actors is acknowledged" (2016, p. 368). In her view, rhinos will "have a fighting chance" only when they can be seen as enhancing the well-being of the local communities close to the parks where they live, so the conservation community should seek positive change for them, and make sure that the voices of marginalized people are heard in planning the future.

The situation of rhinos in South Africa, while perhaps at the extreme end of the spectrum of violence as well as monetary reward, most probably applies in general terms to many other areas around the world where wildlife populations are beset by human hunters who live in villages and towns next to nature reserves and who have likewise been "economically marginalized," often in small or large part by conservation efforts. Elephants are being slaughtered at astonishing rates virtually everywhere in Africa, the holocaust driven by the 'demand' for ivory; perhaps even more grotesquely than the rhinos, the elephants' faces are chopped off with axes, poachers making off with the tusks and leaving the animals to die. Since older individuals—the ones with big tusks—are especially hard hit, altered sex and age ratios result, leading to in dramatic changes in the social structure of the population and leaving many 'orphans,' unaffiliated juveniles, to fend for themselves (Wittemyer et al., 2013). While elephant populations had been holding their own in the relatively well-protected parks of Southern Africa until recently, on a continent-wide basis at least three quarters of African elephant populations are declining; elephants in the "lawless forests of Central Africa" are "'on the front end of the spear'" and being slaughtered mercilessly (see Stokstad, 2014; Wittemyer et al., 2014), with forest elephants apparently

extirpated from the eastern DRC between 1996 and 2005 (Wasser et al., 2015; Stokstad, 2015). Poachers are now turning to the last stronghold of savannah elephants, the Southern African nation of Botswana, home to about a third of Africa's remaining wild savannah elephants, which had until recently maintained a stable elephant population of over 130,000 with relatively little poaching (see Nuwer 2019); Schlossberg, Chase and Sutcliffe (2019) estimated that a minimum of 385 (plus or minus 54) elephants were slaughtered in poaching hotspots in Botswana over the one-year period prior to their survey. According to Michael Chase, one of the co-authors of the study, the poaching must have started around the same time that Botswana's rangers, who previously had maintained a zero-tolerance, 'shoot-to-kill' policy toward poaching, were disarmed (see France-Presse, 2018). President Mokgweetsi Masisi, coming to power in May of 2019, reversed a previous ban on hunting elephants, reinstituting the lucrative practice of trophy hunting. [38]

A recent discussion taking place around the issue of trophy hunting both illuminates how high the stakes are re the wildlife trade and offers a glimmer of hope that a new attitude is arising toward our evolutionary cohorts—at least within certain communities. Reporting on lion conservation, a situation representative of many large carnivores and other African megafauna, David Macdonald (2016) explains that lions have already been extirpated from 92% of their former range, and warns that, while trophy hunting may further diminish lion populations in some areas, if it becomes widely banned, loss of the revenue generated thereby is likely to result in conversion of most remaining lion habitat to more financially rewarding uses, primarily agriculture and livestock grazing. Voicing their opposition, Chelsea Batavia and colleagues (2018) identify the trophies themselves as "emblems of conquest," while noting that the individual animals—""commoditized, killed and dismembered"—are "relegated to the sphere of mere things when they are turned into souvenirs, oddities and collectibles"; they further claim that the practice is situated within "a Western cultural narrative of chauvinism, colonialism, and anthropocentrism" where trophy hunters symbolically reenact the subjugation and colonizing of indigenous peoples, and they condemn it as "morally indefensible." Since Africa is facing predictions of a doubling of its human population by 2050 and a tripling by the end of this century, combined with what is already an antagonistic attitude toward lions and other carnivores due to increasing conflicts with local people, and since nonconsumptive tourism is unlikely to yield sufficient revenue to offset these pressures, Macdonald et al. (2017) maintain that "new financial models to encourage coexistence with nature must be found." However, Macdonald knew Cecil the Lion as a researcher, and in reporting on the dramatic spike in world media attention that occurred shortly after Cecil's killing by an American bowhunter, he and his colleagues express hope that this focused interest reflects "a personal, and thus potentially political, value, not just for Cecil, and not just for lions, but for wildlife, conservation, and the environment" in general (Macdonald et al., 2016). Echoing this optimism, Michael Manfredo and colleagues (2020) propose that cultural modernization—at least in certain countries—is resulting in a value shift "from domination, in which wildlife are for human uses, to mutualism, in which wildlife are seen as part of one's social community"; they believe a key factor in this shift is anthropomorphism ("interpretive" anthropomorphism is an appropriate attribution of intentions, beliefs and emotions to nonhuman beings based on their behavior and/or general neurological homologies; see Urquiza-Haas and Kotrschal, 2015) – they see this value shift as challenging the domination-based approach of traditional wildlife management to transition into one of compassionate conservation.

The coronavirus pandemic should intensify our scrutiny of the international wildlife trade, and indeed of all the other ways we humans are exploiting nonhuman animals—from the habitat destruction that pushes remaining wild populations into closer contact with people to the CAFOS that cram great numbers of domestic animals together in highly stressful and often unsanitary conditions to the wild animal farms that imprison nondomesticated species for profit—as unwise and unnecessary practices that are increasing the risk of future human pandemics. Policy discussions routinely address expanding disease surveillance and "managing the wildlife trade" (Watsa et al., 2020), but these authors also note that, in addition to pathogen screening, "how humans interact with wildlife" will be at the crux of our ability to deal with emerging infectious diseases. It seems the choice is ours: If we move farther into the 21st century without reversing the major trend lines of our collective trajectory—increasing human population, increasing meat consumption, increasing habitat destruction— it appears that, not only will we be further imperiling our own future, but virtually all African wildlife, as well as many other wild species around the world, if they survive at all, will become at best financial hostages, caught between the Scylla of human desperation and the Charybdis of the global money game, while the Biosphere goes down all around us. On the other hand, if we can come to see the approach of domination and use-orientation as the cognitive framework that underlies all forms of oppression and exploitation of "the other," human and nonhuman alike (see, e.g. Hawkins, 1998), and choose to take the alternative approach to otherness that we know exists within our cognitive repertoire (a resonance can be recognized between Manfredo's "mutualism" and the African philosophy of *ubuntu*, if understood as "a basically humanistic orientation *towards fellow beings*"; see Mokgoro, 1998), we might still have a chance at remediation. In order for this to

happen, however, those groupings of humanity with the means to do so will need to radically revise their way of conceptualizing economics in order to alleviate poverty and undo existing inequalities, at the same time that we all begin shifting our diets back toward something more befitting a large-bodied primate and realizing that we all have the capacity to exercise a great deal of moral choice over how much larger our global population becomes and how much of the Earth we will leave wild for sharing with other beings.

12.6: The Human Footprint - Consumption is shared under a CC BY-NC-SA 4.0 license and was authored, remixed, and/or curated by LibreTexts.

12.7: Money Games - Chasing the Symbol

How does our pursuit of money or 'economic growth,' and its relationship to the consumption of real things, necessary or not for our human wellbeing, relate to our impact on nature? There are many dimensions to this issue, and multiple ways of conceptualizing the relationship. Sanderson, Walston and Robinson (2018) look to "the market economy" as a savior, of sorts, for biodiversity. As growing human populations, no longer able to support themselves in rural environments, move into cities in a massive process of urbanization, they will—at least, if they're lucky enough to find a job—become incorporated into the economic system, no longer living off the land but finding one or another way of 'making money'; and along with this transition, these authors assure us, will come the incentive to seek more education, as a way of moving up the employment ladder, and fewer children, as they discover the 'costs' of feeding and caring for them, thus in the long run facilitating a leveling off and eventual stabilization of the human population. They dispute the widespread belief that increased consumption necessarily follows increased income—accumulating savings and more time for leisure activities may prove to be preferred alternatives, they muse—and at least, even though the centralized services of cities in the aggregate use a tremendous amount of 'resources' and generate a tremendous amount of waste, on a per capita basis these indices are said to be reduced, while opportunities for cultural activities, technological advances and social movements—including, perhaps, a move to conserve nature—will be enhanced. These authors admit that some regions are currently still caught in a 'bottleneck,' where human populations are still growing and rates of "natural-resource extraction" and pollution are still increasing, SubSaharan Africa being a case in point—but that, if we can just get them through the next 30-50 years, which will be a time of "extreme difficulty" for conservation, with more losses expected, then they will finally experience 'breakthrough,' with populations stabilizing and indices of concern beginning to decline. Toward this end, they assert that "improving the governance and functioning of African urban areas while simultaneously protecting Africa's unique wildlife is arguably the most urgent need in conservation today, because it is the fastest path to global population stabilization."

For the sake of Africa's wildlife, let us hope they are right; if African people who are currently "making money" in the bushmeat trade, let alone the skyrocketing industry in certain kinds of animal "parts," can find alternative gainful employment in the city centers, well and good, and perhaps their craving for meat can be satisfied by the excess production of livestock industries in the developed countries, until meat consumption can be brought down on a global scale and vegetable protein and other alternatives consumed in its place. Looking at statistics from a highly developed, already largely urbanized country, the United States, however, wildlife biologist Brian Czech and his colleagues have come to a conclusion opposite to that above. They examined accounts of species endangerment and found the urbanization associated with economic growth generally driving the process, concluding that economic growth "amounts to the competitive exclusion of nonhumans in general" (Czech et al., 2000). Czech suggests that the notion of "economic growth" is an "American ideal" that provides psychological comfort as well as the promise of material comfort, but he declares it to be the "limiting factor" in wildlife conservation, at least in the U.S., and takes his fellow wildlife professionals to task for being "virtually silent" on the topic, "suggesting that the profession has been laboring in futility" (Czech, 2000).

Environmental philosopher Philip Cafaro (2011) also dares to address the negative effects on nature that result from both economic growth and population growth. Like Czech, he observes that, in the United States, economic growth "is the primary goal of our society." As a corrective, Cafaro offers the views of philosophers from the past about "the proper place of economic activity" in human life. Aristotle maintained that living well entails recognizing limits, observing that some, failing to grasp this truth, mistakenly desire to "increase without limit their property in money" and in "what is productive of unlimited things." Epicurus spurned "the pleasures of consumption," and Seneca criticized "luxury" as leading to "the vices"; Thoreau chided those whose life devolved into a keeping-up-with-the-Joneses competition, always thinking they must have a house "such as their neighbors have," while Aldo Leopold urged "a little healthy contempt" for a world "so greedy for more bathtubs." Cafaro also draws attention to the phenomenon of advertising, reporting that, in the United States, $163 billion were spent in 2006 "to keep Americans consuming at high levels" (Cafaro, 2011).

Aristotle also put his finger on a certain distortion in our thinking that may lie at the heart of some of our most serious problems today: it has to do with our economic notion of "interest." [39] In a passage condemning usury (*Politics*, 1258b), he charges that the practice is "most unnatural"; it seems that the term for "interest" in Greek, meaning "breed" or "offspring," incorporates the idea that the offspring resembles the parent, and employing it in an economic context gives the mistaken impression that money can be bred with itself to generate offspring resembling its parents in the same way that living beings like cattle or fruit trees can—but

alas, it cannot, since it is not a living thing at all. Aristotle's example may have concerned the fact that metal coins can't "breed" in such a fashion, but he is drawing our attention to the basic difference between the abstract and the concrete; as we learned from our reading of Searle, money is an abstract, socially constructed entity—on the one hand, it is mathematically capable of being "increased" without limit, theoretically to infinity, but on the other, it is nothing at all in the real, ontologically objective world, just a symbolic placeholder that cannot fill an empty belly. Unfortunately, however, when we think of a country's "GDP," we tend to fall prey to the illusion that, because growth in this numerical sum is theoretically infinite, then the real economy—our consumption of real goods in the real world—can go on without limit too.

Alfred North Whitehead termed this confused form of thinking "the fallacy of misplaced concreteness" (Whitehead, 1929), a mistake that Nicholas Georgescu-Roegen identified as "the cardinal sin of economics." Georgescu-Roegen was the first major contemporary economist to emphasize the importance of grounding economics in physical reality and the finitude of what we call natural resources, and his work was foundational to the subdiscipline of ecological economics. His student, Herman Daly, went on to advocate the steady-state economy, of which both Cafaro and Czech speak approvingly. [40] Daly elaborates on this problem of "misplaced concreteness," finding examples of this in modern economics:

Perhaps the classic instance of this fallacy in economics is "money fetishism." It consists in taking the characteristics of the abstract symbol and measure of exchange value, money, and applying them to the concrete use value, the commodity itself. Thus, if money flows in an isolated circle then so do commodities; if money balances can grow forever at compound interest, then so can real GNP, and so can pigs and cars and haircuts. (Daly 1987)

This "isolated circle" is described at greater length by Kate Raworth, of Oxford University's Environmental Change Institute, *Doughnut Economics* (2017):

The central image in mainstream economics is the circular flow diagram. It depicts a closed flow of income cycling between households, businesses, banks, government and trade, operating in a social and ecological vacuum. Energy, materials, the natural world, human society, power, the wealth we hold in common . . . all are missing from the model. . . . . Like rational economic man, this representation of economic activity bears little relationship to reality. (Monbiot, 2017)

In her alternative "doughnut model," [41] Raworth redraws the economy, embedding it within two larger circles: the outside of the doughnut represents the "ecological ceiling," the nine "planetary boundaries" we must not cross, and the hole in the doughnut, the space beneath the "floor" of our social foundation, is where people live lives of deprivation; in between, people have enough of the things needed to live a good life–healthful food, clean water, sanitary living conditions, education, and so on. Figuring out how to bring our global population up into the body of this doughnut will be a neat trick, if we can do it; unfortunately, that has not been the goal of modern economics as we know it.

It should be noted, at this point, that economics is NOT a science. Science "bottoms out," as Searle would say, in the ontologically objective: things that really exist in the world, independently of our representations of them, whether they are molecules or mountains, gigatonnes of carbon in the air or in the ground, individual living organisms or the living webs of relationships that knit them together. Since they have an existence that is independent of us humans, they "push back" when we measure, probe and manipulate them—that's why groups of scientists can confirm or reject the research conclusions of other scientists—even though different scientists may be situated somewhat differently in the world and so come at their work from somewhat different contexts, there's a "real thing" out there that they're trying to describe and on which it is hoped all findings will eventually converge. Economics, on the other hand, at least the 'mainstream' neoclassical economics that's taken over the world today, just bottoms out in ontologically subjective entities like "price" and "discount rate"; even its fundamental element, the "dollar," is a socially constructed entity through and through.

Understanding that important difference is probably the reason why Alfred Nobel never set up a "Nobel Prize in Economics" as he did Nobel Prizes in Chemistry, Physics, and Medicine, as well as Literature and Peace. Instead, there is the "Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel," a prize funded by the central bank of Sweden. Peter Nobel, "the great, great nephew of Alfred Nobel," claims his distinguished ancestor "would never have created" such a prize, which he considers to be merely "a PR coup by economists to improve their reputation" (The Local, 2005). Friedrich von Hayek, moreover, who was awarded this Nobel Memorial Prize in 1974, said in his acceptance speech that he would have advised against creating it, because "the Nobel Prize confers on an individual an authority which in economics no man ought to possess." "This does not matter in the natural sciences," he explained, because in the case of scientists such influence is chiefly felt by fellow scientists, who "will soon

cut him down to size if he exceeds his competence," whereas an economist will have influence over politicians, journalists and the general public, before whom he may be tempted to make pronouncements that do exceed his competence (von Hayek 1974). The reason why fellow scientists can "cut down to size" one of their number who "exceeds his competence," of course, is that there is an independent reality that they all ultimately have to be faithful to, whereas all an economist has is a conceptual framework, unbounded and ungrounded, about which he can expound at length to scientist and citizen alike.

The problem of what happens when these two "worlds collide"—when the real world of living beings comes up against the abstract world of our economic constructs, and in particular its "interest rates"—is brought home graphically in a paper by two researchers trying to develop a plan for sustainable forestry in the Bolivian Amazon in collaboration with a specialist in natural resource economics (Rice et al., 1997). They discovered that timber companies had no financial incentive at all to invest in sustainable forestry, which would entail restraint in cutting trees, allowing smaller trees to grow in volume over time and replanting seedlings after harvests; "unrestricted logging" was found to be two to five times more profitable. It seems the "most rational approach" from a financial perspective was to "liquidate" all the monetarily valuable trees immediately and then invest the proceeds, especially given the notably high rates of return being given in most Latin American countries at the time. The stark economic "facts" of the matter are illustrated in a graph plotting monetary growth in US dollars over time as a function of varying "rates of return." Sustainable forestry yields a mere 5% growth by letting a hypothetical $1,000 worth of trees grow in size and value to turn into $2,000 worth in 15 years, and is illustrated by a sedately rising linear trajectory; cutting them all down immediately and investing the money at interest rates ranging from 14% to 24%, on the other hand, is illustrated by a series of J-curves turning ever more sharply upward, with money tripling, quadrupling, and even increasing by a factor of 8 within just 10 years. A second illustration displays colorful photos of rainforest plants and animals, with the heading "Vive la Difference." It should be noted that, within the larger conceptual framework, the "difference" being illuminated by these contrasting images is ontological.

These authors reference an earlier paper that also addresses this collision between the economic and the biological worlds, one that gets into an even more disturbing outcome: economic rationality can drive species extinction. Colin Clark (1974) considers threats to the blue whale and other species, introducing the insidious notion of "discounting." A species can be driven into extinction by economics by "the maximization of present value, whenever a sufficiently high rate of discount is used." The discount rate exploiters adopt, he explains, "will be related to the marginal opportunity cost of capital in other investments"—it's the same problem faced by Rice, Gullison and Reid, but in econospeak. Clark calculates that, for the Antarctic blue whale, if exploiters seek "maximization of the present value of harvests," an annual discount rate of between 10% and 20% would be sufficient to drive the species into extinction, a discount rate "by no means exceptional in resource development industries."

What is this so-called discount rate? It's given two different meanings within the economics literature. The one most people are familiar with is that it's the rate that the US Federal Reserve charges when lending money to other banks; typically a rate for overnight lending, this discount rate is set by the Fed "internally," and not released to the public in a general publication (see Investopedia, 2019), though other interest rates will generally reflect this base rate. The second meaning is a little more difficult to grasp; it has to do with the "time value of money." As put by Rose Cunningham (2009), the mathematics are a matter of running the "'miracle of compound interest' in reverse." Again, it points back to the real-world situations described by Rice, Gullison and Reid and by Clark; a hypothetical investor is confronted with a choice between receiving a certain amount of cash immediately or waiting a certain amount of time to receive the same amount of cash at a predetermined point in the future, as presumably would be the case if a certain off-take of some "natural resource" was to be harvested "sustainably" and turned into cash. Since, if the person receives the lump sum now, it can be invested immediately in some financial scheme that will make it grow according to a certain "interest" rate, it can always be expected to be a greater sum at the end of the waiting period—thus it will always seem "better to have money now rather than later." Therefore, money is considered to be "more valuable in the present," and because of this perception the deferred amount is "devalued" mathematically–essentially by running the interest calculation in reverse. Heyford (2019) gives an example of comparing these alternatives, starting with $10,000 received now or received after 3 years; if the 10,000 is invested now for 4.5% interest, then–due to the exponential nature of compounding [42]—by the end of the 3-year period it will have increased to $11,412, its "future value." However, if we want to find out how much we would have to invest today in order to receive $10,000 in 3 years, we have to "rearrange the future value equation" to accommodate what becomes a negative exponent [43] in order to find the "present value" of that deferred sum—which would be $8763 in this case. In other words, what we are doing is "discounting the future value of an investment" (Heyford, 2019).

This may, unfortunately, make "rational sense" to investors concerned only about maximizing their financial returns, but—even more unfortunately—the same sort of abstract, mathematicized reasoning is being applied to "discounting" the value of just about everything else as well. As Cunningham (2009) explains in simple terms, even human lives can be considered in this way; if one current human life is assigned a monetary "value" of $5 million, for example (she defers any discussion of the ethics of this to another post), at a "sensible seeming" discount rate of 5% per year (well, annual interest rates of 4 to 5% would seem "sensible" to us, so consider the way the interest calculation can be "run in reverse" to devalue things in the future) that human life 200 years in the future would only be worth $304 in today's dollars, and in 300 years only about $2.30. If this surprises you, her answer to how we arrive at "such a dramatic mark-down" is that it is "simply the exponential nature of discount and interest rates." (It seems population growth is not the only area in which we humans encounter difficulties because of a poor understanding of the nature of exponential growth.) These rates "embed assumptions about how much value we place on future human lives"; we apparently only value them equally with our own "if the discount rate is zero." Now, perhaps that's the answer to the thorny issue of intergenerational equity—if the "time value of money," from whence this notion of "discounting the future" has sprung, is considered "a basic principle of finance," then perhaps the present configuration of our economic system should be rethought. But to understand what is happing now at policy-making levels, it is important to grasp how this kind of thinking goes.

Policy decisions, Cunningham tells us, are made on the basis of what is termed a "social discount rate," not directly linked to market interest rates, that presumably expresses "that rate at which society, not just the market, trades off the future and the present"; it is, essentially, "just a measure of how impatient we are," [44] reflecting "our preference for receiving benefits or consuming today rather than tomorrow." Apparently what is under consideration in most policy decisions is whether or not, or how much, money to "invest" in policies and projects aimed at mitigating some of the effects of climate change (apparently overlooking altogether the fact that the essential thing that should be done is a matter of not-doing, of cutting back on many kinds of projects), with a keen eye on the "efficiency" with which overall monetary returns can be maximized. Cunningham herself appears torn on the issue of how to make these value judgments; she observes "I think that the overall society does care about the future, and future generations' wellbeing, but we don't act as if we value the future as much as we value the present," and she seems to prefer the use of "declining" discount rates that discount fairly steeply for the near future and very little or nothing at all (after the initial near-term devaluations) beyond several hundred years from now.

A number of criticisms of this overall approach have been launched, which unfortunately cannot be discussed at length here. [45] The general pattern of "discounting the future" still appears to dominate economic approaches to climate change, however, and a paper by Erling Moxnes (2014) illustrates how such thinking is shorn up. Moxnes argues for approaching policy decisions using an "alternative welfare function" instead of the standard one to better "capture the preference structure" revealed by two questionnaires he developed, questionnaires which he claims demonstrate that "people are able to choose among policies by inspecting time graphs of policy consequences." But, while respondents are told "you will see the exact consequences of the policies on national consumption development per person," they see no pictures of raging wildfires or flooding landscapes; they are given no depictions of the real world at all, in fact, but rather line graphs depicting units of "per capita consumption" and "per capita well-being." And here's the hook: they are asked to consider how much of their own consumption they would give up for children and grandchildren "*that will enjoy higher consumption than you*"; in the first questionnaire, consumption grows steadily in both scenarios presented, consumption in 2110 being given as "*4 times higher than in 2010*," while, in the second questionnaire, respondents are told "*well-being doubles after 100 years*" (Moxnes, 2014, emphasis added).

These sorts of assumptions are by no means unusual in the economic literature, and belief in limitless economic growth and steadily increasing human wellbeing appear to be the lynchpin on the case for substantial discounting in discussions of climate mitigation policy; "economists commonly assume that economic growth will leave future generations richer than the present one, in spite of climate change," according to Matthew Rendall (2019). Rendall explains that this form of argument–"giving equal weight to future costs and benefits would impose intolerable obligations on the present generation"—"has been one of the most influential arguments for the economic practice of discounting." He himself seems willing to allow that most people will be better off in the future—or "richer, at any rate"—but he also maintains that, if there's even a very small chance of permanent world impoverishment instead, we should not take this chance. Moreover, he observes, "we should not take it for granted that the story of industrialization has a happy ending" (Rendall, 2019).

Taking it all for granted is just what still seems to be commonly done, however, as in this blog post by a philosophy graduate student; he argues against the view that "any discount rate other than zero would be incompatible with intergenerational justice,"

maintaining that the reason why this conclusion is wrong is "the *fact* that, as a result of economic growth, people in a century from now *will be a lot richer* than us" (Lemoine, 2017, emphasis added). He then says something that may convey a deeper message than he intended:

You may be tempted to say that we can't assume that productivity will continue to increase, but you have to realize that, if it did not, climate change would not even be a problem. Indeed, the models that are used to predict what is going to happen if we keep emitting greenhouse gases into the atmosphere assume that GDP will continue to grow, which is precisely why they predict that greenhouse gases emissions will continue to increase unless we do something. If economic growth stopped, emissions would not continue to increase and, as a result, there would be no problem to mitigate in the first place. (Lemoine, 2017)

The point of the above claim seems to be well made: the policies we should be considering seriously are not simply about choosing what mitigation strategies we should invest in, as projects to be carried out, but rather ways we can begin cutting back on our consumption and our "economic growth," which *of course* is driving our increasing GHG emissions.

That's precisely what adherents of the emerging idea of "degrowth" have in mind. Samuel Alexander (2011) calls for a policy of "planned economic contraction," defined as "'an equitable downscaling of production and consumption that increases human well-being and enhances ecological conditions,'" pointing to the work of Richard Easterlin and others seemingly showing that, "beyond a certain material standard of living, increases in personal and/or national income have a fast disappearing marginal utility, [46]" a finding that reportedly holds for a number of developing and transitioning countries as well as developed ones (Easterlin et al., 2010); he warns, however, that adoption of a policy of degrowth is "highly unlikely" without "a cultural revolution in attitudes toward Western-style consumer lifestyles." Milena Buchs and Max Koch (2019) note that Easterlin's conclusion has been challenged, and they argue for a move away from comparing scores of "subjective wellbeing" toward an assessment of wellbeing in terms of objective standards, as done in the "human needs" approach, which can be used to provide a basis for claiming a moral obligation to fulfill the needs of future generations; while wants are regarded as "insatiable" in contemporary economic theory, moreover, needs can be satisfied and are "in principle compatible with an economy based on stable matter and energy throughput." They also focus on the problem of "growth lock-in" due to its embeddedness in many of our socially constructed institutions and the relationship "between growth and people's mind-sets and identities."

To the IPCC, however, making a move in the direction of "degrowth" is apparently inconceivable at this time. The studies that most policymakers are looking at are presented under the guise of being "scientific"—and they do look impressive, with lots of quantitative modeling–but when you look at what's actually being "modeled," you find that much of it bottoms out, not in the real world, open to empirical investigation, but rather in abstract concepts that are rooted in the conceptual framework of the kind of standard economic theory we have been discussing here. The IPCC projects "mitigation scenarios" to control emissions on the basis of "Integrated Assessment Models," which are essentially cost-benefit analyses; those who devise them are more at home measuring quantities of dollars than the thickness of ice sheets, and seem more concerned with achieving a token amount of mitigation at the lowest possible cost than with maintaining conditions on the planet that will be most conducive to supporting biological life. Joachim Spangenberg and Lia Polotzek (2019) take aim at these "IAMs," climate scenarios that merge the science and the economics that the IPCC relies on "assuming that both disciplines provide adequate descriptions of the parts of reality they are in charge of analyzing and understanding," asking, "—but do they?"

As they explain, current mainstream economics–technically known as neoclassical economics—is based on "three defining elements": methodological individualism, utility maximization, and market equilibrium; economic behavior can be modeled on the basis of parameters reflecting these elements and their interactions, but these models are "inherently deterministic," and thus incapable of grappling with the unpredictable dynamics of the real-world systems and with their ascending levels of complexity. The models have been tweaked, but they are still basically deterministic, and their equilibrium assumptions rule out evolution of the structure of the overall system itself, so any major changes are assumed to be reversible—a "fatal flaw," they claim.

Moreover, earlier economists, including John Stuart Mill, John Maynard Keynes, and even Friedrich von Hayek, were interested in understanding broader issues, such as how wealth, markets, and the macro-structure of the economy came into being, but after World War II mainstream economists narrowed down their focus to individual agents making "rational" choices. But the roots of "rational choice theory," construing "rationality" solely in terms of self-interest and utility maximization, clearly lie squarely within utilitarian ethics, [47] which is only one of several schools of moral philosophy in the Western tradition; it can hardly be claimed to be "a universal theory of human behavior," since, in "stark contrast" with other ethical theories, it is unable to account for "committed" or "pro-social" behavior (see Herfeld 2013). As Spangenberg and Polotzek point out, this means that, while such

economic models are being presented as purely descriptive, they are in fact smuggling in a great deal of "normative baggage," disguising the outcomes of their economic models as the result of "purely rational" human thought, when in fact they incorporate a set of assumptions generated by one particular approach to ethics. It also explains why the IPCC's models have been unable to generate any scenarios that actually halt the increase in greenhouse gas emissions; built into them from the start is an imperative to maximize the "social utility function," usually represented by the GDP. In other words, "the 'optimal' outcome is more wealth in a national economy, in monetary terms"; consequently, policy steps that might reduce production and consumption and therefore lessen GDP growth would be considered sub-optimal, and "either cannot be depicted or are not used"—even though such cutbacks are needed to reach emissions goals. They conclude, "it is our very standard of evaluation"—inherent in the construction of these models themselves—that leads to "deeply ideologically biased policy recommendations being presented as 'objective scientific insights,' which has made economics the favorite legitimation science [but remember, it's *not* a science!] of neoliberal decision makers in politics and business."

The "fatal flaw," however, was revealed when the IPCC duly cranked out four scenarios aimed at avoiding crossing the 1.5 C-above-preindustrial-levels "safety" threshold, including "one explicitly ambitious sustainability scenario"—lo and behold, all of them still produced an overshoot in emissions and hence temperature. To rectify this, the policy wonks simply proposed that the overshoot will be reversed, principally via the "negative emissions" of their favorite technology, bio-energy with carbon capture and storage (BECCS). Among other criticisms of this move, Anderson and Peters (2016) point out that the IPCC's IAMs "assume that the discounted costs of BECCS in future decades is less than the cost of deep mitigation today"—thereby, as Spangenberg and Polotzek remark, making it "appear plausible to 'kick the can down the road.'" Since the IPCC offers no scenario that does not assume continuing economic growth, such growth "appears to be an assumption which cannot be questioned"; "thus, assumptions of 80 years of growth and the risk of hothouse climate conditions are considered a realistic option, while deep structural change necessary to limit climate damage isn't."

The "fatal flaw" in this thinking, however, according to Spangenberg and Polotzek, is that it fails to grasp the irreversibility of evolutionary paths of complex systems, the fact that "you never cross the same river twice"; it should thus be obvious, they say, "that an overshoot—temporary or permanent—is not acceptable, once the lessons from complex systems theory are taken into account." The discipline of economics, they observe, "is driven by world views and their ontologies which are more based on Newton's mechanics than rooted in modern science's understanding of systems complexity"; to provide intelligent guidance into a livable future, it must change. First of all, economics must change its ontology: it must be recognized that "the economy is a subsystem of society, which in turn is embedded in the environmental systems." In accord with this, they say, it must also change its epistemology, to accommodate uncertainty and ignorance, and it must change its axiology, recognizing other sorts of value systems beyond the "economic rationality" of self-interested utility maximization. As part of its ontological change, moreover, economics must change its anthropology, coming to see human beings as the symbol-using social and biological beings that they are, engaged in the process of actively constructing their economic systems, as Searle would have it, and fully capable of changing them to meet the challenges we face. As it stands now, however, Spangenberg and Polotzek charge, the IPCC's climate models "are castles in the clouds, and the conclusions drawn from them are dangerous for humankind and the global environment" (2019).

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12.8: Who Are We?

It is now time to ask, who are we? What kind of beings do we choose to be? What does it mean to be a member of the human species—what are our possibilities, and what sorts of responsibilities follow from that membership? Roughly two decades ago, I considered what we might learn from an examination of the lives of the other primates, our species' closest relatives, and I also explored some of the ethical dimensions of intergroup relations, those between different groupings of humans and those at the level of species, our own and others. Today much concern is expressed about the evils of racism and sexism, but still few seem to be "woke" to the evils of anthropocentrism, which not only heedlessly destroys other life but also blinds us humans to the incredible, awe-inspiring aliveness of the Biosphere and the kinds of lives we could lead were we not trapped in self-absorbed patterns of thought and action, noncognizant of our place within the larger scheme of things. Does it make sense for us to subgroup ourselves into warring nation-states, escalating our militaries to fight over the last deposits of fossil fuel when we know burning it will spell doom for us all? Is it intelligent to draw down aquifers and ecosystems around the globe so that more and more of us can consume more and more? Does rationality dictate that our lives should be devoted to maximizing the number of symbols we can accrue in conceptual space? Shall we risk future zoonotic pandemics because we fear to criticize the cultural proclivities of human subgroups different from our own? We need to start *thinking as a species* now, finding the biological commonality beneath the socially constructed boundaries that constrain and confuse us, in order to craft a viable future.

Eileen Crist urges us to "reimagine the human," to relinquish the worldview of human supremacy, "scaling down" the size of the human enterprise and "pulling back" from our invasion of nature, and I hope this chapter has clarified why doing so is necessary. Why is it so hard to do? Again, the answer seems to lie with our social psychology: the reinforcement of denial, growing stronger as group members sense the depth of guilt potentially associated with learning the truth, generating paralysis as the group seeks refuge in determinism—the belief that "we have no choice" but to keep on thinking and doing as we have been. To counter this powerful force, I suggest turning to Lorraine Code, whose notion of "epistemic responsibility"—the responsibility to seek out an understanding of the reality of one's situation–should be fundamental to human species membership, and to Jean-Paul Sartre, an existentialist philosopher appropriate for today's "existential crisis." Making no excuses for his anthropocentric disdain of all things biological and the sexist language of his day, I nevertheless respect in Sartre his courage to reject the determinist ploy, recognizing our human freedom to choose our actions and the responsibility this carries. Seemingly speaking for the species, he writes "man is, before all else, something which propels itself towards a future and is aware that it is doing so"; "man is responsible for what he is," but "in choosing for himself he chooses for all men." The conclusion to this line of thinking, however, must be amended; where Sartre declares, "our responsibility is thus much greater than we had supposed, for it concerns mankind as a whole," I would add, no, it is far greater than this—it now concerns the Biosphere as a whole.

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12.9: Resources and References

Review

Key Points

- For centuries, humanity has been waging a war against non-human nature that culminated in the complex challenges that we are facing in the Anthropocene.
- The war has brought a catastrophic wave of species extinctions that occur at an unprecedented rate which is still increasing. This has led to the disintegration of food webs and ecosystems worldwide as a backdrop to the explosive growth of our populations and consumption patterns.
- The anthropogenic driving factors behind extinctions include human predation, pollution, resource extraction, and mismanagement of environments. Pollution in its many forms exerts adverse effects on climate and on the chemical composition of land and oceans.
- In order to sustain our growing numbers, humans have developed ever more intrusive and abusive practices of food acquisition that are beginning to feed back and affect public health. Especially the industrial production and processing of animal parts has reached such grotesque extents and procedures that they need to be hidden from the view of consumers.
- Human incursions into 'natural' ecosystems in pursuit of animal protein and industrial raw materials is driving further ecological deterioration. The continued 'harvesting' of body parts for cultural uses illustrates our incompetence at realizing the consequences of what we are collectively doing.
- The growth of economies has been driven by conceptual models that are outdated, harmful, abusive and utterly unscientific. Yet, those models and ways of thinking are continuing to dominate world politics and decision-making. This obstinate collective refusal to learn does not bode well for the coming decades, where rapid collective learning will be essential for our security and for the stability of the biosphere.

Extension Activities & Further Research

1. Speculate how the global plastic pollution might have been avoided if the packaging industries and recycling industries had been combined in a timely manner; how could that be accomplished at this late stage?
2. In terms of ecological integrity and biodiversity, what are the most harmful industrial activities in British Columbia? Who controls them, and how?
3. Formulate your own perspective on the mechanisms and manifestations of humanity's War against Nature. How is this war different from other wars, and how is it the same?
4. Explain what factors are at work in shaping the consumption level of a human individual. In what ways and to what extents are those factors affecting your own consumption?
5. Express your ideas and hopes as to how this War might end or be ended. In what ways would humans need to 'reinvent' themselves?

List of Terms

See Glossary for full list of terms and definitions.

- acidification
- Allee effect
- apex predator
- CAFO
- defaunation
- deoxygenation
- extinction debt
- food web
- footprint
- neoclassical economics
- species

- utility

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Footnote

1. Readers should recall the importance of "thinking in systems," as discussed in Chapter 11.
2. For an account of a large population of chimpanzees and other forest animals recently discovered in a remote forest of the DRC and now falling victim to the bushmeat trade, see Carrington, D. (2014), Huge Chimpanzee Population Thriving in Remote Congo Forest. The Guardian, 7 February, https://www.theguardian.com/environment/2014/feb/07/chimpanzees-congo-forest;video recordings of the chimpanzees (https://www.youtube.com/watch?v=pBs6HGcL3Yk&feature=youtu.be), forest elephants (https://www.youtube.com/watch?v=WBpUxzmeknQ&feature=youtu.be), and worries about their fate (https://www.youtube.com/watch?v=hnxHzNWGfAM&feature=youtu.be) were made by researchers, and later followed up by NBC News (https://www.nbcnews.com/dateline/video/on-assignment-one-more-thing-mystery-apes-of-the-congo-686499907922).

3. For videos on the helmeted hornbill and efforts to save the species, see https://video.nationalgeographic.com/video/magazine/year-of-the-bird/00000165-34b0-d8ac-a7fd-34f6a47d0000?cs and https://video/nationalgeographic.com/video/magazine/year-of-the-bird/180828-ngm-illegal-hunting-has-pushed-this-iconic-bird-to-the-brink?source=relatedvideo.
4. The video "How Wolves Change Rivers," narrated by George Monbiot, can be seen at https://www.youtube.com/watch?v=ysa5OBhXz-Q.
5. The bee waggle dance can be seen at https://www.youtube.com/watch?v=LU_KD1enR3Q.
6. The effects of these changes on calcifying organisms at the base of many marine food webs will be considered in the next section.
7. Thereby coining a term that is finding ever-widening applicability as changes accelerate in this Anthropocene epoch: as we all "shift our baselines," forgetting how things used to be as we get used to the changes coming on all around us and stop trying to stave them off.
8. See https://www.ted.com/talks/daniel_pauly_the_ocean_s_shifting_baseline?language=en.
9. Some amazing photographs of hand-collected live pteropods can be seen at https://www.smithsonianmag.com/science-nature/amazing-sea-butterflies-are-the-oceans-canary-in-the-coal-mine-61813612/; Waters, H., (2013), Amazing Sea Butterflies Are the Canary in the Coal Mine. Smithsonian.com; for a short video on pteropods, see https://wwwyoutube.com/watch?v=3-40RU3iSkA.
10. It should be noted that two molecules of bicarbonate (HCO_3-) are used up for every calcium ion incorporated into the shell of a marine organism, lowering the pH and total alkalinity of the seawater and rendering it less able to absorb CO_2; therefore, a decrease in the removal of carbonate ions by calcifying organisms dying and falling to the sea floor, presumably brought about by a dramatic decrease in their populations, "would increase the capacity of the oceans to take up CO_2 from the atmosphere," since there would be more carbonate ions available in the water and total alkalinity of the upper ocean would increase (Feely et al., 2004), a relationship that has been discussed for several decades. David Archer claimed in 2005 (Fate of Fossil Fuel CO_2 in Geologic Time. Journal of Geophysical Research 110: C09S05. Doi 10.1029/2004JC002625. https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2004JC002625) that, if the size of what he called "the anthropogenic CO_2 slug" turned out to be 5000 GtC (the estimated size of carbon reserves at that time—they are now thought to be as much as three times greater), the calcium carbonate in the deep ocean will "near depletion," after which atmospheric carbon dioxide would begin to rise again—by which he seems to mean, on a less than charitable reading, that, from a purely anthropocentric, reductionistic perspective, he can contemplate humanity letting all of the shelled organisms of the world's oceans be killed off so that we can continue burning fossil fuels and emitting carbon into the air for just a little bit longer.
11. For studies of the relationship between increasing acidity and shell decalcification of a number of marine organisms, see Orr, J., et al. (2005), Anthropogenic Ocean Acidification over the Twenty-first Century and Its Impact on Calcifying Organisms, Nature 437: 681-686 https://www.nature.com/articles/nature4095, Rivero-Calle, S., et al. (2015), Multidecadal Increase in North Atlantic Coccolithophores and the Potential Role of Rising CO2, Science 350 (6267): 1533-1537. https://science.sciencemag.org/content/350/6267/1533.full, and Davis, C., et al. (2017), Ocean Acidification Compromises a Planktic Calcifier with Implications for Global Carbon Cycling, Scientific Reports 7: 2225, 1-8. https://www.nature.com/articles/s41598-017-01530-9.pdf.
12. These authors note that, unlike the order of reef-building corals, members of the Primate order "do not possess analogous 'survival' traits that enable some species to transcend major extinction boundaries," referencing Estrada, A., et al. (2017). Impending Extinction Crisis of the World's Primates: Why Primates Matter. Science Advances 3 91): e1600946 https://advances.sciencemag.org/content/3/1/e1600946.full.
13. A. Thompson (2018) provides a graphic illustrating the size range of plastic particles.
14. Professor Bartlett explains the fundamentals of exponential growth and its relation to population and energy in the first few minutes of the video at https://www.youtube.com/watch?v=sI1C9DyIi_8.
15. An animation of the growth of the human population over time is available at https://www.youtube.com/watch?v=PUwmA3Q0_OE . Growth in real time is shown at https://www.worldometers.info/world-population/.
16. A panel discussion on these issues can be viewed at https://www.wilsoncenter.org/event/hotspots-population-growth-areas-high-biodiversity).
17. See Cincotta, R., J. Wisnewski, and R. Engelman. (2000). Human Population in Biodiversity Hotspots. Nature 404: 990-992. Doi 10:1038/35010105 https://www.nature.com/articles/35010105, Cordeiro, N., et al. (2007). Conservation in Areas of High

Population Density in Sub-Saharan Africa. Biological Conservation 134 (2): 155–163. https://www.sciencedirect.com/science/article/abs/pii/S0006320706003211, and Burgess, N., Balmford, A., and Cordeiro, N. (2007). Correlations Among Species Distributions, Human Density and Human Infrastructure Across the High Biodiversity Tropical Mountains of Africa. Biological Conservation 134 (2): 164-177. Doi 10.1016/j.biocon.2006.08.024 https://www.sciencedirect.com/science/article/abs/pii/S006320706003326.

18. See also two richly illustrated books, Mittermeyer, R., N. Myers, and C. Mittermeyer, eds. (1999). Hotspots: Earth's Biologically Richest and Most endangered Terrestrial Ecoregions. Mexico City: CEMAX, S.A. ISBN 968-6397-58-2, and Mittermeyer, R., et al. (2005). Hotspots Revisited: Earth's Biologically Richest and Most Endangered Terrestrial Ecoregions. Mexico City: CEMAX, S.A. distributed by Conservation International, Chicago. ISBN 9789686397772.
19. Also see a podcast by Williams, J., V. Mohan, and D. Lopez-Carr. (2012). Hotspots: Population Growth in Areas of High Biodiversity. Podcast, Wilson Center Environmental Change and security Program. https://www.wilsoncenter.org/event/hotspots-population-growth-areas-high-biodiversity.
20. See, e.g. O'Neill, B., et al. (2012). Demographic Change and Carbon Dioxide Emissions. Lancet 380: 157-164. http://dx.doi.org/10.1016/S0140-6736(12)60958-1, O'Neill et al. (2014). A New Scenario Framework for Climate Change Research: The Concept of Shared Socioeconomic Pathways. Climate Change 122: 387-400. Doi 10.1007/s10584-013-0905-2. https://link.springer.com/content/pdf/10.1007%2Fs10584-013-0906-1.pdf, Lutz, W. (2017). How Population Growth Relates to Climate Change. PNAS 114 (46): 12103-12105. http://www.pnas.org/cgi/doi/10.1073/pnas.1717178114,and Casey, G., and O. Galor. (2017). Is Faster Economic Growth Compatible with Reductions in Carbon Emissions? The Role of Diminished Population Growth. Environmental Research Letters 12: 014003 doi: 10.1088/1748-9326/12/1/014003.
21. The Intergovernmental Panel on Climate Change, "the United Nations body for assessing the science related to climate change"
22. A short video on the reasoning behind this conclusion is available at https://www.youtube.com/watch?v=XTm-402a9dA, offering some telling insight into the reductive, highly abstract logic entertained by some schools of philosophy; the narrator ascribes this counterintuitive conclusion to "the recursive error": "just because the first two examples are reasonable, it does not mean that the conclusion is reasonable"—"or even sane, to consider a huge, miserable population better than a small happy one."
23. A famous illustration by Ernst Haeckel (https://en.Wikipedia.org/wiki/File:Haeckel_Anthropogenie_1874.jpg) has been the subject of some controversy, but developmental biologist Michael Richardson and colleagues, while criticizing the inaccuracies of his drawings, note that, "on a fundamental level, Haeckel was correct: all vertebrates develop a similar body plan (consisting of notochord, body segments, pharyngeal pouches, and so forth)," and that "he was also right to show strong similarities between his earliest embryos of humans and other eutherian mammals," such as the cat and the bat (Richardson, M., et al. (1998). Haeckel, Embryos, and Evolution. Science 280 (5366): 983. Doi 10.1126/science 280.5366983c https://science.sciencemag.org/content/280/5366/983.3.full.)
24. Concerned about the rapid depletion of the coal supply that was needed to maintain Britain's hegemony as an industrial power, William Jevons observed in 1865 that improvements in the efficiency of deriving power from coal would not help the situation, maintaining "it is wholly a confusion of ideas to suppose that the economical use of fuel is equivalent to a diminished consumption. The very contrary is the truth."
25. A similar warning about the increasing trade in virtual water and the threat posed by its decoupling from local feedback processes was raised earlier by D'Odorico, P., F. Laio, and L. Ridolfi. Does Globalization of water Reduce Societal Resilience to Drought? Geophysical Research Letters 31 (13): L13403. Doi: 10.1029/2010GL043167 https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2010GL043167, and "alarming rates of groundwater depletion worldwide" embedded in the international food trade were reported by Dalin C., et al. (2017). Groundwater Depletion Embedded in International Food Trade. Nature 543: 700-704, https://www.nature.com/articles/nature21403.
26. Working as an undercover investigator at a pork processing plant, Scott David reports (2018) that he observed "workers—under intense pressure to keep up with high line speeds—beating, dragging, and electrically prodding pigs to make them move faster"; video from this pork-producing plant has surfaced showing many animals have not been effectively rendered unconscious before their throats are cut (https://www.youtube.com/watch?v=b4NmCsvGrx0); Meanwhile, the USDA also has plans to increase the slaughter rates for chickens to 175 birds per minute, according to the ASPCA (2018); a similarly horrifying video of the rapid slaughtering of chickens can be witnessed (http://cok.net/inv/amick/).
27. The IATP publishes an infographic entitled "Big Meat and Dairy's Supersized Climate Footprint" (IATP 2017), showing the relative size of GHG emissions contributions made by just the top twenty livestock (meat and dairy) corporations, with a

collective sum of 845 million tonnes of carbon dioxide equivalents (MtCO2e), greater than all of Germany's; see https://www.iatp.org/supersized-climate-footprint.

28. Space limitations do not permit a review of other recent studies linking a reduction in meat-eating to improved human health and environmental sustainability, but see, for example, Clark, M., and D. Tilman. (2017). Comparative Analysis of Environmental Impacts of Agricultural Production Systems, Agricultural Input Efficiency, and Food Choice. Environmental Research Letters 12: 064016. https://iopscience.iop.org/article/10.1088/1748-9326/aa6cd5/meta. [includes video], Springman, M., et al. (2018). Options for Keeping the Food System Within Environmental Limits. Nature. https://doi.org/10.1038/s41586-018-0594-0, Poore, J., and T. Nemecek. (2018). Reducing Food's Environmental Impact Through Producers and Consumers. Science 360: 987-992. https://science.sciencemag,org/content/36o/6392/987.full, and most recently the British medical journal The Lancet Willet, W., et al. (2019). Food in the Anthropocene: The EAT-Lancet Commission on Healthy Diets from Sustainable Food Systems. The Lancet Commisions. http://dx.doi.org/10.1016/S0140-6736(18)31788-4.
29. Some of them can be can be seen at the World Wildlife Fund (http://wwf.panda.org/knowledge_hub/where_we_work/amazon/about_thje_amazon/wildlife_amazon/ and Mongabay (https://rainforests.mongabay.com/amazon/amazon_wildlife.html websites.
30. An estimated one billion wild mammals, birds and reptiles were estimated to have died in the Australian wildfires (partly tropical forest, partly not) by early January 2020; see Lewis, D. (2020). Ecologist Michael Clarke Describes Australian Wildfires' Devastating Aftermath. Nature 577: 304. https://www.nature.com/magazine-assets/d41586-020-00043-2/d41586-020-00043-2.pdf.
31. Nobre's talk (mostly in Spanish) on this invisible river can be seen at https://www.youtube.com/watch?v=ClesJyZUWTy.
32. For more on the relationships among deforestation, drought, and wildfires, see Zemp, D., et al. (2017). Self-Amplified Amazon Forest Loss Due to Vegetation-Atmosphere Feedbacks. Nature Communications 8: 14681 doi: 10.1038/ncomms14681 https://www.nature.com/articles/ncomms14681, Aragao, L., J. Barlow and L. Anderson. (2018). Amazon Rainforests that Were Once Fire-Proof Have Become Flammable. The Conversation, February 13. https://the conversation.com/amazon-rainforests-that-were-once-fire-proof-have-become-flammable91775, Brando, P., et al. (2019). Droughts, Wildfires, and Forest Carbon Cycling: A Pantropical Synthesis. Annual Review of Earth and Planetary Sciences 47: 555-581, https://www.annualreviews.org/doi/abs/10.1146/annurev-earth-082517-010235, and Fonseca, M., et al. (2019). Effects of Climate and Land-Use Change Scenarios on Fire Probability During the 21st Century in the Brazilian Amazon. Global Change Biology 25 (9): 2931-2946. https://onlinelibrary,wiley.com/doi/abs/10.1111/gcb.14709.
33. Please note that the term *bushmeat* will be used here to indicate the result of animals being taken directly from the wild, whether for meat, the trade in live animals or their body parts, or hunting trophies; the term *poaching* is often used by authors to distinguish such killing when it is illegal, but, as will be discussed later in this section, sometimes the legality or illegality of the killing is contested, or unclearly related to the protection of the species.
34. Much more can be learned about the bushmeat problem at Ammann's website, https://karlammann.com.
35. The terminology employed in this report—animals are referred to as "sources of biomass that move," for example–is quite unsettling to those of us who think in terms of the subjective lives of the animals under the gun.
36. A suggested way of effecting behavior change with the aim of curtailing the COVID-19 outbreak (Michie, 2020) could be adapted to this purpose, by creating (a) "an accurate mental model of the process of transmission," expanded to display the global trajectory of bushmeat, showing potential points of interruption; (b) new social norms; (c) appropriate emotional responses at appropriate levels, such as anxiety and disgust; (d) replacement behaviors for the undesirable ones, and—the only one likely to be difficult in this situation; (e) a way to make the desired new behaviors easy.
37. The helmeted hornbill, for example, is being pushed into extinction because of trade in its helmet-like casque; see https://video/nationalgeographic.com/video/magazine/year-of-the-bird/180828-ngm-illegal-hunting-has-pushed-this-iconic-bird-to-the-brink?source=relatedvideo.
38. Space concerns constrain our ability to consider these issues further here, but for pro and con positions on using firearms and military tactics to defend remaining wildlife populations, see Lunstrum, E. (2014), Green Militarization: Anti-Poaching Efforts and the Spatial Contours of Kruger National Park. Annals of the Association of American Geographers 104 (4): 816-832. http://dx.doi.org/10.1080/00045608.2014.912545, Lindsey, P., et al. (2013). The Bushmeat Trade in African Savannahs: Impacts, Drivers, and Possible Solutions. Biological Conservation 160: 80-96. https://www.sciencedirect.com/science/article/abs/pii/S0006320712005186, and Mogomotsi, G., and P. Madigele. (2017). Live by the Gun, Die by the Gun: Botswana's "Shoot-toKill" Policy as an Anti-Poaching Strategy. South African Crime Quarterly

No. 60, June. https://journals.assaf.org.za/sacq/article/view/1787. For pro and con positions on trophy hunting, see Macdonald, D. (2016a). Report on Lion Conservation with Particular Respect to the Issue of Trophy Hunting. A Report Prepared at the Request of Rory Stewart OBE, Under Secretary of State for the Environment WildCRU, Oxford. https://www.wildcru.org/wp-content/uploads/2016/12/Report_on_lion_conservation.pdf, Dickman, A., et al. (2019). Trophy Hunting Bans Imperil Biodiversity. Science 365 (6456): 874. https://science.sciencemag.org/content/365/6456/874, Sills, J., ed. (2019) Letters [on Trophy Hunting]. Science 366 (6464): 432-435. https://science.sciencemag.org/content/sci/366/6464/433.1.full.pdf, Batavia, C., et al. (2019a). The Elephant Head in the Room: A Critical Look at Trophy Hunting. Conservation Letters 12:e12565, https://conbio.onlinelibrary.wiley.com/doi/epdf/10.1111/conl.1256.5, and Batavia, C. et al. (2019b). Trophy Hunting: Values Inform Policy. Science 366 (6464): 433. Doi: 10.1126/science.aaz4023 https://science,sciencemag,org/content/366/6464/433.1/tab-pdf., and Darimont, C., B. Codding, and K. Hawkes. (2017). Why Men Trophy Hunt. Biology Letters 13: 20160909. http://dx.doi.org/10.1098/rsbl.2016.0909. For discussions of value change in among conservationists and within the larger public on these issues, see Bruskotter, J., et al. (2019). Conservationists' Moral Obligations Toward Wildlife: Values and Identity Promote Conservation Conflict. Biological Conservation 240: 108296, https://www.sciencedirect.com/science/article/abs/pii/S0006320719312595, Manfredo, M., et al. (2019). How Anthropomorphism Is Changing the Social Context of Modern Wildlife Conservation. Biological Conservation online 2 December, 108297, https://www.sciencedirect.com/article/abs/pii/S0006320719311929, and Keim, B. (2019). America's Views On Wildlife Are Changing. Anthropocene December 18 http://www.anthropocenemagazine.ord/2019/12/anthropomorphism-and-wildlife/.

39. It should be noted that charging "interest" on loans was considered usury and outlawed by some Christian societies until well past the Middle Ages, and is still prohibited by some Islamic societies today.
40. Czech has gone on to serve as president of the Center for the Advancement of the Steady State Economy (www.steadystate.org).
41. Images of both the embedded "circular flow diagram" and her new "doughnut model" can be seen at https://www.theguardian.com/commentisfree/2017/apr/12/doughnut-growth-economics-book-economic-model.
42. Adding the interest earned over each given time period to the base sum and then multiplying that larger sum by the interest rate over each subsequent time period
43. The maneuver is something like subtracting the accumulated interest from the initial $10,000, but it comes out mathematically a little different.
44. There is evidence that different parts of the brain are involved in valuing immediate versus delayed returns—the limbic system appears to be more involved with immediate outcomes, while lateral prefrontal and associated parietal cortices appear to become activated when considering loner time periods and more difficult decisions (see McClure et al., 2004). Separate Neural Systems Value Immediate and Delayed Monetary Rewards. Science 306 (5695): 503-507. Doi: 10.1126/science.1100907 https://science.sciencemag.org/content/sci/306/5695/503.full.pdf)
45. See, e.g. Liederkerke, L. (2004). Discounting the Future: John Rawls and Derek Parfit's Critique of the Discount Rate. Ethical Perspectives 11 (1): 72-83. http://www.ethical-perspectives.be/pahe.php?, Gowdy, J., J. Rosser, and L. Roy (2013). The Evolution of Hyperbolic Discounting: Implications for Truly Social Valuation of the Future. Journal of Economic Behavior & Organization. 90S: S94-S104 https://www.sciencedirect.com/science/article/abs/pii/S0167268112002727.
46. Marginal utility is the additional amount of positive experience or "utility" a person gets from acquiring one additional unit of something.
47. Utilitarian ethics can, however, be expanded to include the "disutility" of the impacts of climate change on nonhuman animals (or at least on humans who care about them); see Sunstein, C., and W. Hsiung. (2007). Climate Change and Animals. John M. Olin Program in Law and Economics Working Paper No. 324. https://chicagounbound.uchicago.edu/law_and_economics/106/Climate_Change_and_Animals.

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CHAPTER OVERVIEW

13: Transnational Crime

Learning Objectives

- Distinguish international crime from transnational crime.
- Define transnational crime and provide examples.
- Explain some of the drivers of transnational crime.
- Appreciate the economic scale of transnational crime.
- Explain why transnational crime is such a problem.
- List the primary ways that transnational crime is addressed.
- Understand the main obstacles limiting effective action against transnational crime.

John Wilson

This chapter examines some of the greatest threats to human security emanating from transnational crime. Such threats include terrorism, human trafficking and slavery, the international trade in weapons and armaments, environmental crime, illicit drug trafficking, piracy, corruption and bribery of public officials. These crimes present great challenges to the rule of law, economic and social development, and the protection of human rights and security. In particular transnational crimes can undermine people's quality of life and threaten their human security by limiting access to employment and educational opportunities. The chapter begins with a definition of transnational crime, provides examples of the human security issues associated with the victims of transnational crime, and summarises the particular human security issues associated with trafficking in persons. The chapter then explores the history and limitations of international efforts to address those threats.

13.1: International Crime or Transnational Crime? Some Definitions
13.2: Globalization and Transnational Crime
13.3: The Economic Scale of Transnational Crime
13.4: The Threat of Transnational Crime
13.5: Transnational Crime as a Human Security Threat
13.6: Trafficking in Persons
13.7: International Efforts to Address Transnational Crime
13.8: Regional Efforts to Address Transnational Crime
13.9: Sovereignty, Security or Sentiment? Solving Transnational Crime
13.10: Resources and References

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13.1: International Crime or Transnational Crime? Some Definitions

In 1995, the United Nations (UN) defined transnational crime as offences "whose inception, perpetration and/or direct or indirect effects involve more than one country" (UNODC, 2002, p.4). In 2000 the UN Convention on Transnational Organized Crime defined an offence as transnational if it met one of these four conditions: if it is committed in more than one state, if it is committed in one state but a substantial part of its preparation, planning, direction, or control takes place in another state, if it is committed in one state but involves an organized criminal group that engages in criminal activities in more than one state, and finally, if it is committed in one state but has substantial effects in another state. [1]

Transnational crimes therefore involve offences that cross international borders or which affect the interests of more than one state. It can be distinguished from domestic crime (offences that occur within a single national jurisdiction) and international crime (offending that is recognised in international law and against the world community). Examples of international criminal offences that are subject to prosecution are those that threaten world order and security, crimes against humanity and fundamental human rights, war crimes, and genocide (Partin, 2015). For example, in 2001 the International Criminal Tribunal for the former Yugoslavia reached a verdict that the rape and sexual enslavement of women and girls in eastern Bosnia and Herzegovina that occurred in 1992 constituted crimes against humanity. (See Chapter 6 for a discussion of offences against international criminal and humanitarian law.)

The UN has identified several different categories of transnational crime: drug trafficking, trafficking in persons, organ trafficking, trafficking in cultural property, counterfeiting, money laundering, terrorist activities, theft of intellectual property, illicit traffic in arms, aircraft hijacking, sea piracy, hijacking on land, insurance fraud, environmental crime, fraudulent bankruptcy, infiltration of legal business, corruption and bribery of public officials, and other offences committed by organized criminal groups (UNODC, 2002, p. 4).

There are also a number of new and emerging transnational crimes that have been identified by the Conference of the Parties to the United Nations Convention on Transnational Organized Crime including cybercrime, identity-related crimes and fraudulent medicine (UNODC, 2018).

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13.2: Globalization and Transnational Crime

Transnational crimes may be committed by individuals working alone but more often they involve organised groups or networks of individuals working in more than one country. Disparate crime groups seem to be communicating, sharing information and coordinating their operations to a greater extent than in the past. In part, these organizations have been helped by corrupt or weak governments and by the resurgence of ethnic and regional conflicts across the former Soviet Union that followed the end of the Cold War in the 1990s. (For the significance of failed states see Chapter 14.)

As well, criminal organisations are taking advantage of the opportunities created by globalization – easier, faster and cheaper communication technologies, deregulated financial markets, and more open borders that allow increased flows of people and money (UNODC, 2002).

For example, the development of digital communications, encrypted digital streaming, and high-quality video conferencing have made it easier for transnational criminal groups to diversify and expand their activities by communicating, sharing information, and transferring money around the world.

Globalisation is also implicated in a particular form of transnational crime–human trafficking. Although globalisation has made it easier to transport goods and capital across international borders, labour markets and human migration have remained highly regulated. Restrictions on immigration such as visa requirements have become more stringent, making it more difficult for migrants or so called ‘economic refugees’ to escape impoverished or oppressive countries, or those involved in conflict. This has increased the demand for illegal immigration which means that human trafficking has become more profitable. According to Yury Fedotov, the Executive Director of the United Nations Office on Drugs and Crime (UNODC), globalization has turned out to be a double-edged sword, allowing loose networks of terrorists and organised criminal groups to easily link with each other, to pool their resources and expertise and to significantly increase their capacity to do harm (UN, 2011).

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13.3: The Economic Scale of Transnational Crime

Because it contravenes the laws of at least one state, those involved in transnational crime try to keep it secret, making it difficult to measure in economic terms. Nevertheless, transnational crime is big business and money is the primary motivation for those that engage in it. At the global level the revenues of transnational criminal activities were estimated in 2014 to range between US$1.6 trillion and $2.2 trillion per year (May 2017, p. ix). This would represent about 2.5 per cent of 2014 global gross domestic product (Statista, 2018).

Table 13.1 shows that drug trafficking and counterfeiting may account for as much as 81 per cent of this total, roughly $1.8 trillion. Counterfeiting is the single largest transnational crime category involving pirated goods and the theft of intellectual property. It is estimated that between two-thirds and three-quarters of counterfeit goods come from China (UNODC, 2013, p. 123).

The counterfeiting trade provides transnational criminal groups with an avenue for laundering the enormous financial profits as well as financing other crimes such as drug trafficking. The revenues also enable them to corrupt politicians, judges and police authorities, and thereby facilitate the organisation and planning of their activities.

Table 13.1: Economic revenues from transnational crime (Data source: May, 2017, p. xi).

TYPE OF ILLEGAL TRADE	ESTIMATED ANNUAL VALUE (US$)
• Counterfeit and pirated goods • Digitally pirated goods • Electronics • Pharmaceuticals • Tobacco products **Counterfeit Goods**	• $466 billion • $213 billion • $169 billion • $70 billion to $200 billion • $5.2 billion **Total: $923 billion to $1.13 trillion**
Drugs	**Total: $426 billion to $652 billion**
• Human body parts • Human trafficking **Humans**	• $840 million to $1.7 billion • $150.2 billion **Total: $151.5 billion**
• Art and cultural property • Fish • Mining • Oil • Timber • Wildlife **Resources**	• $1.2 billion to $1.6 billion • $15.5 billion to $36.4 billion • $12 billion to $48 billion • $5.5 billion to $11.9 billion • $52 billion to $157 billion • $5 billion to $23 billion **Total: $91 billion to $278 billion**
Small arms and light weapons	**Total: $1.7 billion to $3.5 billion**
All illegal trade	**Grand total: $1.6 trillion to $2.2 trillion**

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13.4: The Threat of Transnational Crime

Transnational crime has conventionally been seen as a threat to the state, threatening its national and regional security and rule of law, impeding its political and economic development, and limiting the social and cultural development of its society. Transnational criminals undermine the political and economic institutions of the state through the corruption and bribery of the police, immigration, customs officials, and the judiciary. For example, following the East Asian financial crisis (1997-1998) that resulted in increased poverty and unemployment, some of Indonesia's coastal inhabitants turned to sea piracy as a means of survival. Low rates of pay among Indonesia's police, navy and other maritime officials and port workers make them susceptible to corruption by pirates who offer money in exchange for information about the movements of ships and their cargoes (Emmers, 2010).

The illegal exploitation of environmental resources is made possible, and sometimes even organised, by the complicity and protection of corrupt elements in the civil service, security forces and legislature (Elliot, 2007). Over a longer time frame, corruption and bribery destroys the trust that citizens have in the rule of law and the institutions of governance. This is of particular concern in developing countries where the very institutions necessary to tackle transnational crime – political, bureaucratic and law enforcement – are already weakened, as explained in Chapter 8.

Transnational crime also results in much economic harm to the state and its inhabitants through decreased taxation revenues for the state and less employment. The trade in counterfeit parts, for example, costs US automobile manufacturers and suppliers about $12 billion in revenue annually, while up to $9 billion in trade is lost by US companies due to international copyright piracy. Estimates of US job losses due to counterfeiting are as high as 750,000 (International Anti-Counterfeiting Coalition, 2011). Corresponding job gains in poor countries remain unregulated and insecure. Transnational crime can also result in the breakdown of social structures and can be very costly for a country's social development. Children who lose a parent to trafficking must often quit school and work in order to help support the family. The loss of education has enormous implications for the child, but also for the society as a whole in terms of its future economic development.

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13.5: Transnational Crime as a Human Security Threat

Increasingly, transnational crime is being recognised as not only a threat to national security, but as a major threat to human security. Although this threat is often indirect it is nevertheless substantial, and the immense sums of money involved, as well as the penalties of getting caught, means that the trafficking of drugs, people, goods, and resources is a high stakes game carried out by those who without hesitation use systematic violence against those that become caught up in such activities.

This poses direct threats to the lives of individuals, and many people living with extreme poverty or unemployment attempt to enhance their prospects by seeking work abroad and then fall victim to people-smuggling and trafficking networks. Such victims of human trafficking are often subject to dangerous and traumatic conditions – such as being transported in concealed spaces, sealed in cargo containers, or cramped up in leaky boats. Women and minors who are trafficked often end up in positions of forced prostitution, sometimes forcibly addicted to drugs, and vulnerable to sexually transmitted diseases including HIV/AIDS and communicable diseases like tuberculosis. There are also traumatic psychological effects associated with human trafficking. The experience of being trafficked and the separation of children from their parents, and the break-up of family life can place a heavy toll on victims.

Illegal resource extraction also poses human security threats. The environmental resources that individuals and communities rely on for their own personal security – for food, medicines, building materials, irrigation and trade – are compromised by the illegal exploitation, intimidation, and violence that often accompany such transnational environmental crime. Illegal timber logging, for example, can lead to soil erosion and landslides, destroy wildlife habitats, and degrade water tables and river systems (Elliot, 2007). The smuggling of wildlife, especially of those species that are already endangered, threatens overall biodiversity. It also poses bio-security and disease threats to the areas and people to which they are re-located. Avian Influenza (H5N1), Severe Acute Respiratory Syndrome (SARS), Heartwater Disease, and Monkeypox are examples of such threats.

Counterfeiting poses another serious threat to human security, particularly to human health and safety. The World Health Organization estimates annual counterfeit pharmaceutical sales at around $35 to $40 billion, and the US Food and Drug Administration estimates that counterfeit drugs account for 10% of all drugs sold in the United States. Such fake pharmaceuticals can be very dangerous for consumers – they often lack the active ingredients that can alleviate the medical condition, and in some cases even contain toxic substances (Haken, 2011). Counterfeit toys also pose a danger to children if they are painted with lead paint, and counterfeit batteries and cigarette lighters have been known to explode. Counterfeit auto and airplane parts pose some of the biggest dangers for consumers because they are not subject to safety testing. The Federal Aviation Administration estimates that two percent (520,000) of the 26 million airline parts installed each year are counterfeit; in 2003, the Motor and Equipment Manufacturers Association cited examples of counterfeit auto parts compromising safety: brake linings made of compressed grass, sawdust or cardboard; transmission fluid made of cheap oil that is dyed; and oil filters that use rags for the filter element (Haken, 2011). Moreover, because producers of counterfeit goods are unlikely to meet minimum labour or environmental standards, they threaten the health and safety of their labour force. The use of child labour, poor if not dangerous working conditions (such as environmentally toxic production), and low wages are illustrations of the ways in which the human security risks of counterfeiting are not just confined to those who buy or use them.

Another way that transnational criminal groups threaten human security is by exploiting individuals and local communities that have limited economic resources. For example, farmers involved in subsistence agriculture may turn from legal crop production to the higher returns available from illegal drug cultivation. It is well documented that the groups controlling drug trafficking also engage in other sorts of violent and criminal enterprise, such as the extreme number of mass murders occurring in Mexico. The profits from drug trafficking may also appeal to terrorist organisations or militant insurgents such as Al Qaeda, the FARC in Colombia, and possibly Hezbollah in Lebanon (Haken, 2011).

Thus, the human security threats posed by transnational crime involve victimization, violence, and health and safety issues as individuals get caught up. Since the perpetrators are often from outside a region, indigenous communities, women and children become particularly vulnerable to the kinds of human rights abuses associated with this type of crime. In the light of such risks, any economic advantages that these illegal activities might provide to poor regions still do not outweigh the injustices that accompany them.

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13.6: Trafficking in Persons

Human trafficking, or trafficking in persons, remains difficult to address not least because there is an overlap between trafficking and illegal immigration (Chapter 6). The practice involves the act of recruiting, transporting, transferring, harbouring or receiving a person through the use of force, coercion or other means, for the purpose of exploiting them. Illegal immigration or the smuggling of migrants involves the illegal entry of a person into a state of which that person is not a national or resident, facilitated by agents for financial gain (UN, 2000). A person may voluntarily seek to be smuggled into a country but once there become victimised – held against their will through acts of coercion and forced to work or provide services to the trafficker or others. For example, a person may be forced into bonded labour, forced labour, or to become a sex worker through threats of violence, or by having their passports held by their employers. Sexual exploitation accounts for about 79% of human trafficking, while forced labour accounts for almost one in five victims (UNODC, 2009).

It should be noted though, that the Trafficking Protocol (see below) sees the voluntary consent of a victim of trafficking in persons as irrelevant to their exploitation in most circumstances. These include the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude, or the removal of organs. Human trafficking for the purpose of organ removal is known as an ancillary trade where organized crime groups traffic victims across borders through false promises or coercion to sell their organs, such as kidneys. While trafficking of persons for organ removal is a criminal act under the Trafficking in Persons Protocol, the Protocol "does not cover the transfer of organs (for profit) alone; trafficking in organs, under the Protocol, only occurs if an individual is trafficked for the purpose of organ removal" (UN, 2008). Only in a few cases are trafficking victims actually kidnapped or taken by force. More usual is that they volunteer to be smuggled into a new country that offers better economic opportunities, or an escape from oppressive conditions in their own country, only to fall prey to traffickers who then use coercion to exploit and entrap them. The International Labour Organisation (ILO) estimates there are at least 67 million domestic workers over the age of 15 worldwide, 80% of which are women. Almost one-fifth (17%) of domestic workers are migrant workers, and many have few rights or face severe exploitation (ILO, 2017).

It is unsurprising, therefore, that most victims of human trafficking originate from developing countries. In an analysis of sex trafficking into Europe, for example, the majority of victims were found to have come from developing countries newly formed following the breakup of the former Soviet Union (UNODC, 2009). Other source countries include those of Eastern Europe, the Balkans, Brazil, Colombia, Indonesia, the Philippines, Mexico, Nigeria, Morocco, Myanmar, Thailand, and Vietnam. If the victims tend to originate in developing countries, it is developed countries – including those in the European Union, the United States, Canada, Israel, Japan, and Australia – which are their final destinations. Saudi Arabia and Turkey are also destination countries, especially for domestic servants and labourers. China, India, Pakistan, Poland, Thailand, and the Czech Republic can be both origin and destination countries. However, no country in the world is necessarily immune from human trafficking, with people from 127 countries being exploited in 137 nations (UNODC, 2009). In some cases prosecution is hampered by the fact, or the perception, that the illegal workers make a sizeable contribution to the host country's economy. Because transnational crimes such as human trafficking and people smuggling are clandestine, an accurate assessment of the scale of the problem is not possible; estimates vary. According to the International Labour Organisation there were an estimated 40.3 million people in modern slavery (forced labour, bonded labour, and forced prostitution) around the world in 2016. Women and girls comprise 71% (28.7 million) of the total, but 99% of the victims of forced labour in the commercial sex industry and 58 per cent in other sectors (ILO, 2014).

In 2007, the UN estimated the total market value of illicit human trafficking at $32 billion, including about $22 billion of profits from the activities of the victims (UN, 2007). A more recent study by the ILO now estimates that the total illegal profits obtained from the use of forced labour worldwide amounts to US$150.2 billion per year. An estimated two thirds of the profits from forced labour were generated by forced sexual exploitation, amounting to an estimated US$ 99 billion per year (ILO, 2017).

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13.7: International Efforts to Address Transnational Crime

Transnational organized crime cannot be addressed by individual nations acting alone. As organized criminal networks have become globalised, efforts to combat them requires a coordinated transnational response. Such efforts can be traced back to the middle of the 19th century when Britain, France, Russia, Prussia and Austria signed the Quintuple Treaty in 1841 in a multilateral effort to suppress the slave trade. Heretofore efforts aimed at the abolition of slavery had been primarily unilateral or bilateral. Subsequently the International Agreement on the Suppression of the White Slave Traffic was signed by Belgium, Denmark, France, Germany, Great Britain, Netherlands, Italy, Portugal, Russia, Sweden and Switzerland in 1904, and in 1910 this agreement became a Convention and permanent governmental bodies were established to suppress trafficking. Further extensions to the scope and membership of the Convention occurred later in 1921 and 1933 – the latter providing for the prosecution of persons who recruited adult women for prostitution abroad, even with their consent. And in 1949 the UN General Assembly adopted the powers and functions of the 1921 and 1933 Conventions (UN, 2007). Numerous other conventions and agencies have also been established by the UN, including the UN Commission on Crime Prevention and Criminal Justice and the Commission on Narcotic Drugs. In 1988 the UN Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances was introduced. In recognising the links between illicit drug traffic and other organized criminal activities, the Convention aimed at strengthening and enhancing effective legal means for international co-operation in suppressing the international criminal activities of illicit drug trafficking.

Further international efforts are directed at enforcement. In 1923 the International Criminal Police Organization (Interpol) was founded to provide a vehicle for the exchange of information and assistance between police forces, and currently has 188 member countries. The Group of Seven (G7) created the Financial Action Task Force (FATF) in 1989 to combat money laundering and in 1999 established the Lyon Group to increase international cooperation against transnational crime. The United States, through its Justice Department and Department of Homeland Security, are also involved in efforts to improve the international investigation of crime. For example the Federal Bureau of Investigation has an Office of International Operations that enables FBI agents to be stationed in more than 50 countries where they help train domestic law enforcement personnel and investigate drug trafficking offences. The Office facilitates the on-going exchange of information with foreign law enforcement and intelligence agencies and reciprocal assistance in criminal and other matters.

More recent UN efforts include the adoption of the United Nations Convention against Transnational Organized Crime in 2000 (the Palermo Convention), which came into force in 2003. States that ratify this instrument commit themselves to taking a series of measures including:

- The passing of legislation facilitating the prosecution of some domestic criminal offences (participation in an organised criminal group, money laundering, corruption and obstruction of justice)
- The adoption of new and sweeping frameworks for extradition, mutual legal assistance and law enforcement cooperation
- The promotion of training and technical assistance for building or upgrading the necessary capacity of national authorities.

The Convention is further supplemented by three Protocols, which target specific areas and manifestations of organized crime: the Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children (also known as the Trafficking protocol—adopted in 2000, and in force since 2003); the Protocol against the Smuggling of Migrants by Land, Sea and Air (adopted in 2000 and entered into force in 2004; and the Protocol against the Illicit Manufacturing of and Trafficking in Firearms, their Parts and Components and Ammunition (adopted in 2001 and entered into force in 2005).

The Trafficking Protocol is a global, legally binding instrument that, by 2018, had been signed by 117 countries and 173 parties. It defines trafficking as:

the recruitment, transportation, transfer, harbouring, or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability, or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation. (UN, 2000, Article 3)

Providing a common definition of trafficking across national jurisdictions is important and should allow increased international cooperation in investigating and prosecuting the trafficking of persons. The Protocol is also designed to improve the human security of those who often fall prey to trafficking by guaranteeing the respect of their human rights.

In 2010 the Global Plan of Action to Combat Trafficking in Persons was adopted by the General Assembly of the United Nations. In 2016 the UN Security Council adopted its first resolution on human trafficking (2331), which called on member states to investigate, disrupt, and dismantle criminal networks by utilizing anti-money laundering, anti-corruption, and counterterrorism laws. It also emphasized the importance of international cooperation in law enforcement and strong partnerships with the private sector and civil society.

Then in 2017 the UN General Assembly adopted a political declaration reaffirming commitments to implement the Global Plan of Action to Combat Trafficking in Persons. The Political Declaration includes a directive to examine the progress achieved and the continuing challenges for international organizations and officials at the national, regional, and global levels. The Political Declaration also strengthens the capacity of the United Nations Office on Drugs and Crime to collect information in order to connect and harmonize anti-trafficking efforts across UN programmes and policies.

Other efforts to combat human trafficking include joint initiatives between the Inter-Parliamentary Union (IPU) and the UN Office on Drugs and Crime. Together they launched the book *Combating Trafficking in Persons: A Handbook for Parliamentarians* in April 2009 (IPU & UNODC, 2009). The book covers international laws and good practices developed to combat human trafficking. It also offers guidance on how national legislation can be brought into line with international standards. It outlines measures to prevent trafficking, prosecute offenders and protect victims, and also contains advice on how to report on human trafficking and how to encourage civil society organisations to combat human trafficking.

Nevertheless, state authorities often view the trafficking of people as a migrant problem, rather than as an issue of wider criminal significance. Such a stance results in trafficked people being deported as illegal immigrants rather than as being seen as victims of a crime requiring state investigation. The prosecution of those involved in transnational crime networks is also fraught with difficulty. It carries risk or reprisal for those giving evidence – either from state authorities who view their presence as illegal or from the traffickers themselves. Thus the under-reporting of trafficking and its associated criminal activities, such as sexual violence and other human rights abuses, is very likely.

The *United Nations' Programme of Action to Prevent, Combat, and Eradicate the Illicit Trade in Small Arms and Light Weapons* in All Its Aspects was adopted in 2001. It provides a non-legally binding framework for states to adopt various measures to combat the illicit trade in small arms and light weapons at the national, regional and international levels. In assessing the programme of action the International Committee of the Red Cross (ICRC) noted the progress made in establishing a variety of mechanisms and norms and the considerable resources states, international organizations and NGOs had invested to support its implementation. However, the ICRC was unable to say whether the Programme of Action had saved lives on the ground or led to an overall reduction in the availability of illicit arms and believed that "more binding and comprehensive measures are sorely needed" (ICRC, 2005, n.p.). [2]

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13.8: Regional Efforts to Address Transnational Crime

While United Nations and multilateral conventions are an important mechanism for combating transnational crime and enhancing human security, there are some limitations to such international efforts. For example, there are differences among countries in their perception of the seriousness of the problem, in their commitment to adhere and enforce such conventions, and in their ability and willingness to prosecute trafficking offenders—which requires on-going political commitment to contribute the necessary economic resources. Other barriers to effective international efforts to combat transnational crime include bureaucratic inflexibility and a lack of information sharing. Instead of international conventions, therefore, it may be that regional efforts and structures for enforcement—such as the European Union Europol or Southeast Asia's Aseanapol—offer a better approach. This is because regional governments are more likely to face similar crime problems, be more willing to share information, be more able to harmonize laws against transnational crime, and be more willing to cooperate in enforcing such laws.

One example is the 2005 Council of Europe Convention on Action Against Trafficking in Human Beings. This develops a rights-based approach to trafficking based on prevention, the protection of victims, and the prosecution of traffickers. In an operation in March 2011 in 'one of the biggest cases of its kind' Europol identified 670 suspects, arrested 184 persons, and identified and rescued 230 children. [3] All of the Council of Europe's 47 members had ratified the Convention as of June 2019.

Another regional example is the Association of South East Asian Nations (ASEAN) whose member states have adopted a common position and expressed their willingness to increase cooperation against transnational crime. The Bali Process on People Smuggling, Trafficking in Persons and Related Transnational Crime was established in 2002 to help ASEAN members work together on practical measures to help combat the smuggling of people, trafficking in persons, and related transnational crimes in the Asia-Pacific region and beyond. The Declaration from the Sixth Bali Process Ministerial Conference in 2016 acknowledged:

the growing scale and complexity of irregular migration challenges both within and outside the Asia Pacific region … [and] supports measures that would contribute to comprehensive long term strategies addressing the crimes of people smuggling and human trafficking as well as reducing migrant exploitation by expanding safe, legal and affordable migration pathways. (Ministerial Conference of the Bali Process, 2016, pp. 1, 5)

For the most part, the regional approach of ASEAN appears to be limited to releasing numerous communiqués, with member countries lacking in resources and confronting high levels of corruption. Moreover, because ASEAN is built on a consensus model, members are reluctant to criticise each other, leading to resistance to institutional reforms and few concrete policy outcomes (Emmers, 2010). In the case of piracy at sea, for example, most ASEAN members tend to respect the limits of their territorial jurisdiction and are reluctant to prosecute pirates if those crimes were committed outside of their own jurisdiction. Criminal groups tend to exploit this reluctance and often commit their crimes in the territorial waters of one state before seeking sanctuary under another country's jurisdiction.

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13.9: Sovereignty, Security or Sentiment? Solving Transnational Crime

We can see that part of the problem in trying to tackle transnational crime derives from the principles of conduct underpinning the international system. Those principles sometimes limit effective international co-operation among states. They include the territorial sovereignty and limited jurisdiction of states and the narrow self-interests of states that define their domestic priorities. International measures and cooperation to protect the human security of the victims of transnational crime will not be forthcoming if they threaten a state's national security and interests. Even if such international agreements are reached they may be weakened or limited by the states themselves – resulting in agreements that provide for ad hoc non-binding commitments that lack the funding necessary to establish monitoring mechanisms or agencies responsible for the problem, that fail to set timetables or targets, and that fail to generate public interest in the issue through an acquiescent media industry.

A further normative problem is the framing of transnational crime as a security issue threatening the state, rather than as an issue affecting the security of human beings. For example, the Counter-Terrorism Task Force (CTTF), established by the Asia-Pacific Economic Cooperation (APEC) in 2002, is emerging as an action-oriented security actor. While the rapid evolution of an APEC security regime is drawing APEC members into an ever-deeper series of counter-terrorism commitments, it has not been fully welcomed by all ASEAN members. Disagreements among APEC members over the legitimacy and wisdom of a security role for APEC are emerging and creating a fault-line within the organisation. Whereas Singapore and Thailand have welcomed US-led initiatives within a counter-terrorism context, officials from Indonesia, Malaysia, and Vietnam have openly expressed reservations, arguing that they do not wish to be associated with the US "War on Terror", which is widely regarded amongst their populations as anti-Muslim, unilateral, pre-emptive, and disproportionately military.

More effective action against transnational crime could be achieved if instead it were seen as a criminal issue threatening the human security of individuals. This would require individual nations to criminalize all types of transnational crime in their own domestic criminal codes as well as to sign bilateral agreements, extradition treaties, and mutual legal assistance treaties with other nations to ensure that law enforcement officials have the authority to investigate and prosecute these activities as criminal offences. For example, while many Southeast Asian countries have bilateral extradition treaties with the United States, only a few have signed them with each other. The situation is even worse in some countries where the rule of law and the legal system is weak or only partially applied. Myanmar, Cambodia and, to some extent, Vietnam are states where the legal system is undermined by a lack of democratic representation, corruption, and domestic struggles for power. Such states are therefore ideal environments for transnational criminal groups. For example, the United Wa State Army operates with impunity in Northeast Myanmar and is estimated to control 80 per cent of the opium and heroin trade in the country (Emmers 2010). If states fail to criminalize transnational crime at a national level, it becomes much more difficult to create or enforce regional or international efforts to address such activity.

Beyond international, regional, and national responses important contributions are made by the efforts of well-resourced Non-Governmental Organizations (NGOs), such as Human Rights Watch and Amnesty International. For example in 2007, NGOs, together with the UN, launched The Global Initiative to Fight Human Trafficking. This was the 200th anniversary of the abolition of the trans-Atlantic slave trade (UN, 2007). In essence NGOs are attempting to change and shape the global norms (guiding values) concerning transnational crime. A combination of religious beliefs, humanitarian sentiments, faith in progress, compassion, and moral conscience helped eliminate the slave trade of the 19th century. A similar set of ethical values motivate NGOs to persuade states to address modern transnational crimes such as human trafficking or the ivory trade. NGOs work towards establishing a moral consensus by states and societies that all peoples, irrespective of their nationality, gender, age, race, or religion, or other defining characteristics, are entitled to the basic protections ensuring their human security (Nadelmann, 1990).

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13.10: Resources and References

Review

Key Points

- Transnational crime can be distinguished from international crime in that the former is crime that crosses international borders and affects the interests of more than one state.
- The trafficking of drugs, counterfeit goods, arms, humans, protected species and environmental resources (such as diamonds) across international borders are some examples of transnational crimes.
- Ethnic conflict, unstable regimes, economic hardship, globalization, immense profits and corruption are some of the drivers of the issue.
- Although an accurate figure on the economic scale of transnational crime is impossible, credible estimates range from $1.6 to $2.2 trillion annually.
- Transnational crime is a problem for the political, economic and social development of states as well as state security; it also has numerous negative impacts for the human security of individuals, whether as consumers living in the developed world or as victims from the developing world.
- UN conventions, regional approaches, national-level legislation and NGOs are some of the main ways by which transnational crime is addressed.
- The main obstacles limiting effective action against transnational crime are the normative assumptions underpinning state sovereignty, the dominance of a state centred security perspective rather than a human security centred approach and the slow progress in achieving a moral consensus among society in general.

Extension Activities & Further Research

1. Discuss the difficulties in dealing with transnational criminal organizations.
2. What crimes are not yet defined as transnational crimes but should be in your view?
3. Should terrorism be classified as a transnational crime? Find arguments for and against this proposition.
4. Discuss whether transnational crime is mainly a problem for the developed or developing world.
5. Is downloading an illegal copy of a music track from the internet an example of a transnational crime?
6. Why are some states more likely to fight transnational crime than other states?
7. What can be done to promote a human security approach to combating transnational crime? How would such an approach be different from present policies?
8. Do some research on the pirates operating off the coast of Somalia and explain whether their activities fit the definition of transnational crimes. What could be said in their defense?
9. Occasionally a practice that counts as a transnational crime in terms of state interests seems harmless or even beneficial under a human security perspective. The opposite can also occur: A practice that violates human security might not be considered a transnational crime by current international standards. Find some examples for either.

List of Terms

See Glossary for full list of terms and definitions.

- domestic crime
- human trafficking
- international crime
- transnational crime

Suggested Reading

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Footnote

1. See Article 3, Protocol To Prevent, Suppress And Punish Trafficking In Persons, Especially Women And Children, Supplementing The United Nations Convention Against Transnational Organized Crime, 2000. https://www.ohchr.org/en/professionalinterest/pages/protocoltraffickinginpersons.aspx (accessed 5 Sept 2019)
2. Editors' note: To our knowledge it has not been established whether illicitly traded arms cause more harm than legally traded ones. In fact, the ethical difference between the two categories appears rather questionable.
3. AFP News Services. (2011, March 17). Police Rescue 230 Children as 184 Nabbed in Global Paedophile Ring. Sydney Morning Herald.
4. Estimates on the global drug trade.
5. For the assessment of the influence of globalization on crime, and appreciation of organized crime in Eastern Europe, South Africa, China, Japan, Italy, Israel, Austria, the U.S. and Colombia.
6. For a critical assessment of the war on drugs and an overview of human trafficking, plus ten case studies.

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CHAPTER OVERVIEW

14: Recalling the Significance of Local Governance to Human Security in Illiberal Sub-Saharan African Contexts

Learning Objectives

- Local governance is crucial to human security.
- Locally defined political liberalisms and human security are inextricably linked.
- Africanists need to refocus their energies on matters of local governance to help identify how this can benefit human security.
- Due to the deeply entrenched norm of central government empowerment, established during both the colonial era and the Cold War, strengthening local government institutions in sub-Saharan African states is not only challenging but broadly viewed as a 'non-starter.'

Christopher LaMonica

The citizens of sub-Saharan Africa (SSA) states experienced two waves of great democratic hope: the 1960s and the 1990s. Yet in the 21st century most SSA states are still troubled by undemocratic forms of governance, severe dependence on development aid, and poor human security across all four pillars. Population growth, environmental degradation, violent conflict, and corruption at all levels renders developmental prospects of all kinds less likely than in most other parts of the developing world. Indeed, many argue that SSA states are now worse off than at the time of independence, or what has been termed the "Year of Africa," 1960.

Today, depending on who is asked, this developmental shortfall tends to be blamed on either *internal* (weak African state) or *external* (powerful state) actors. During the Cold War, the explanatory divide over Africa's 'development dilemma' was largely ideological, broadly referred to as a battle between a 'free' (private property oriented) First World and a (Marxist-Leninist oriented) Second World. And while each ideological side was firmly convinced of its own moral superiority and practical worth, both tended to promote change of *internal* African (and all Third World state) conditions. This was of course achieved through a variety of coercive methods that included proprietary loans, (later) loan conditions, and infamously, the support of one or another ideological side in protracted 'proxy wars'. Post-Cold War, in spite of claims to the contrary, this ideological divide continues to be influential and continues to dominate both politics and policy; yet, if one can see beyond the ideological lenses of yesteryear, the truth is that *both* sets of stakeholders (*internal* and *external*) are crucial to developmental success in SSA. Today we all need to move beyond the ideological divide that was so firmly embedded in our governing norms and institutions during the Cold War. Today, we must speak clearly about the ongoing challenge of centralized non-democratic norms—a powerful remnant of colonial history—that have led to illiberal authoritarian circumstances throughout SSA, with grave consequences for human security. This chapter suggests that greater attention to the development of *local* governance norms and institutions could make a significant difference at improving the prospects for individual livelihoods, democratic hope, and ultimately, human security. Doing so would help to provide new and necessary governance frameworks for locally defined forms of liberalism that would inevitably impact people's day-to-day affairs and, more broadly, empower communities to address their own locally identified challenges.

14.1: Introduction
14.2: Post-Cold War Realities in Sub-Saharan Africa Versus Africanist Scholarship
14.3: Assessing Value
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14.1: Introduction

In a provocative 1997 article entitled “The Rise of Illiberal Democracy,” Fareed Zakaria convincingly argued that, despite holding formal elections, liberal democratic practice in most of the world’s newly declared ‘democracies’ remained elusive (Zakaria, 1997). Zakaria was asking us all to think critically of the sudden rise of democratic elections taking place in the post-Cold War context for, in his view, they remained illiberal or ‘not free.’ For many, this kind of critique of a Cold War victory of liberalism over Marxist-oriented ideas was not especially welcome; after all, liberalism – as Francis Fukuyama had so famously declared – was the ‘right’ answer to all governance woes (Fukuyama, 1989). Wars had been fought and untold millions had died in the defence of freedom! Gradually, yet surely, a growing number of defenders of liberalism (of freedom) have been obliged to concede that illiberal conditions now prevail among many of the world’s newly declared ‘democracies’ (Kagan, 2019).

In the 21st century, Africanists have been slow to respond to this new political reality. Stubbornly tied to state-centric norms within the field, the majority of Africanists have continued to speak of ‘democratization’ at the central government level and systematically ignore the challenges of governance at the local level. Ignoring local governance not only postpones potentially meaningful dialogues on democratization, it also detracts policymakers from developing “strategies that strengthen the protection and empowerment framework needed for the assurance of human security” as defined by the UN Generally Assembly (UNGA A/64/701). This chapter is written in response to both the 2009 UN Report on Human Security to the Secretary-General and to Zakaria’s academic challenge, for both human security and liberal democracy are inextricably intertwined. Moreover, the realization of both human security and liberal democracy in sub-Saharan Africa will require that policymakers at all levels place a renewed emphasis on local governance. Absent local governance, only the most superficial observations of SSA state democracy and human security can be expected.

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14.2: Post-Cold War Realities in Sub-Saharan Africa Versus Africanist Scholarship

The end of Cold War patronage has had dramatic implications for governance in sub-Saharan Africa. Without US-Soviet rivalry, the kinds of support that corrupt [1] African state leaders had come to rely on is now gone, leaving central government leaders decidedly less at ease. What this could mean for the citizens of sub-Saharan African states is a new possibility for democratic hope, the kind of hope proponents of democratization have long had for the African continent. Unfortunately, to date, a good number of Africanists have continued their long-established pattern of remaining focused on politics at the central government level. Moreover, many are repeating the error that occurred during the era of Africa's 'first independence': interpreting political events in an overly optimistic and, in the end, quite superficial manner.

History

Of course, Africanists of all political perspectives have maintained that the first real democratic hope for sub-Saharan Africa came with decolonization—the 'Year of Africa': 1960—when thirteen African states gained their independence; from France: Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Côte D'Ivoire, Gabon, Madagascar, Mali, Mauritania, Niger, Senegal, Togo and the Republic of the Congo; and from the UK: Nigeria and Somalia; from Belgium: the Democratic Republic of Congo. Others were soon to follow suit and many scholars of the time, such as the young Immanuel Wallerstein, were thrilled to partake in these great historical events and wrote of them with great optimism (Wallerstein, 1961, 1967). During the decades that followed, however, the subject of African politics was decidedly less popular among scholars and students alike. Even that previous generation that had expressed so much optimism in the 1950s and 1960s now deemed African studies as somehow less appealing, irrelevant, or even 'too depressing' (Kitching, 2000). And even Wallerstein, who has moved on to other areas of academic inquiry, now considers his optimistic language of the time to be unwarranted (Wallerstein, 1995).

The same can be said of the optimistic observations made by many observers of African politics in the immediate aftermath of the Cold War—what Colin Legum referred to as Africa's 'Second Independence' (Legum, 1990). Writing for the *Journal of Democracy*, for example, Richard Joseph declared in 1991: "It is conceivable that by 1992 the continent will be overwhelmingly democratic in composition" (Joseph, 1991, p. 32). Carol Lancaster was similarly upbeat in an article written for *Foreign Policy*, noting that "three-fourths of the 47 countries south of the Sahara are in various stages of political liberalisation" (Lancaster, 1992, p. 148). The primary reason for these Africanists' optimism was that democratic elections were suddenly taking place across the African continent after decades of single-party and/or autocratic rule. Yet, just a few years later, doubts were being expressed about the 'wave of democratization' that was taking place, not only in Africa, but also around the globe.

The Rise of Illiberal Democracy

It was in 1997 that Zakaria famously remarked: We see the rise of a disturbing phenomenon—illiberal democracy." He explains: "It has been difficult to recognize the problem because for almost a century in the West, democracy has meant *liberal* democracy—a political system marked not only by free and fair elections, but also by rule of law, a separation of powers, and the protection of basic liberties of speech, assembly, religion, and property." Zakaria's crucial insight that has clear implications for today's new democratic states (and perhaps some of the older ones as well), is that *liberalism* is "theoretically different and historically distinct from *democracy*" (Zakaria, 1997, p. 22).

It could be argued that today the vague term of democratization, still in vogue in some circles, is gradually being replaced by the notion of democracy *alongside* political liberalisation—terms that, for many, are more meaningful and more easily subjected to scrutiny and measurement. This is because, as Zakaria points out, the *sine qua non* of democracy is, indeed, elections; and now that most of sub-Saharan African states are holding elections, they can be called formal 'democracies.' But there can be little doubt that observers of African politics have always had more in mind, when speaking of democratization, than the formal process of democratic elections. Many of the aforementioned observers of African politics were thinking not only of 'democracy,' but also the prospects for political liberalisation, that is, the various forms of political freedom. This post-Cold War concern is not only more 'refined' than what was typically argued during the Cold War; it has also made countless observers more sensitive to the need for local institutional support for liberal and other policy aims that directly impact human security. With human security in mind the pressing question for Africanists to ponder is whether neo-colonial norms of centralized governance, in this period of 'Second Independence,' can really be challenged. And there are reasons to be pessimistic because neo-colonial norms have prioritized the whims of those in central government and dominated the political culture in Africa for decades.

In the period of 'First Independence,' many Africanists refused to assign part of the responsibility to external powers such as those that helped to create the conditions for political monsters like Desiré Mobutu. Instead, they focused on the internal political realities and were freely writing about a 'unique' form of African political leadership that was patrimonial, patriarchal, etc. in form. Harvard's Martin Kilson and Robert I. Rotberg are prime examples of Africanist scholars who based their entire careers on critiquing African leadership. With the implicit presumption that our external influence could only be benevolent, these Africanists argued that it was *they* – the Africans – who had a host of internal leadership problems. As early as 1963, Kilson was pessimistically describing the 'patrimonial,' 'neo-patrimonial,' 'patriarchal,' 'authoritarian and single-party tendencies in African politics' and Rotberg has been a consistent contributor to the 'irresponsible' and 'corrupt' African leader perspective. Since the Cold War these established scholars have not adjusted their thinking and in a 2004 contribution to *Foreign Affairs* Rotberg wrote that, "Africa has long been saddled with poor, even malevolent, leadership: predatory kleptocrats, military-installed autocrats, economic illiterates, and puffed-up posturers" (Rotberg, 2004, p. 14). And, of course, scores of others have remained in this 'career-safe' sceptical mode of talking about the *internal* shortcomings of Africa and/or Africans. To continue along the path of one-sided pessimism, I submit, is not only inaccurate, it is irresponsible scholarship that is good for careers in political science but hardly an accurate description of Africa's political realities, past or present. The corrupt political phenomena that Kilson, Rotberg, and other experts describe do and have existed in Africa, but they cannot be attributed to only central government politics and politicians.

As Peter Schraeder and other Africanists have emphasized, responsibility for the lack of checks and balances in modern African contexts – that is, the abuse of political power – cannot be accurately portrayed as a uniquely African creation and that African political failures are and have been greatly influenced by *external* forces (Schraeder, 2004, p. 66). Indeed, the fact that Africanists have continued to make generalisations about African political realities based only on observations about central governments has only further aggravated the distortions that lead to misunderstanding. So ironically, both the optimistic and pessimistic views of today's Africanists are much in alignment in that they both base their observations on central government events. Both, I contend, are largely superficial as a result and far removed from matters of local governance that impact human security for millions of sub-Saharan state citizens. As part of an effort to correct these distortions, the next generation of Africanists needs to have a more balanced perspective on the significance of both internal and external capabilities and influences, and to re-focus its energies on matters of local governance.

To do this, Africanists should also take a careful look at the clash of indigenous governing norms and the history of colonial efforts to implement new local government norms and institutions. Due to the Cold War tendency of focusing on central government politics, much of this local level discussion remains marginalized – addressed mostly, if not only, by the field of anthropology. Of course, there are also very real problems with the historical literature. For example, the writings of careful colonial observers of African politics, such as Lord Hailey, are problematic in the sense that doubtlessly they prioritized the interests and racial attitudes of the British Colonial Office. In retrospect, however, it should be recalled that Hailey's local governance focus also aimed at achieving "the general improvement of the standards of life of the African peoples" (Hailey, 1938, p. 1600; Wolton, 2000). To date, the vast majority of Africanists has tended to ignore the fact that some improvements in local governance were achieved during the colonial era as – quite understandably – this would require 'placing aside' the racial attitudes and dramatic violence caused to African peoples and their pre-colonial governing institutions. But the same can be, and is, said of the histories of today's free democracies, notably of the United States (consider Zinn, 1980). The point is, we can and should acknowledge the hugely flawed approaches to governance used in the early democratic states as elsewhere in the world, while simultaneously acknowledging some of the substantive gains of infrastructure, local governance, and political communication that were made. At present historical discussions on local governance in formerly colonized regions of the world are almost completely lacking; when mentioned they are usually dismissed as self-serving, wrongheaded, racist, or worse, with little attention to the sometimes mutually beneficial and potentially humanistic aims of those involved.

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14.3: Assessing Value

As is the case in today's liberal democratic states, changes of methods in governance are rarely made without some form of coercion or even conflict, but to summarily dismiss such efforts as colonial, as many Africanists are inclined to do, is not especially helpful. In the interest of having a frank discussion on local governance, it must also be said that there remains among many observers of African politics the idealization of pre-existing political norms and institutions, in much the same way as French philosopher Jean-Jacques Rousseau is said to have spoken of the 'noble savage' that could do no wrong. [2] According to these scholars, all that was indigenous prior to the arrival of the colonizer was best and the ongoing encounter with the outside world has been only detrimental – akin to the unfortunate introduction of Original Sin to Adam and Eve or to the Christian doctrine of the Fall of Man (e.g. Asante, 2007). The fact is that many well known Western Africanists are direct beneficiaries of a history of colonial governance, though they scarcely give the issue thought. The problem, in their minds, is simply 'over there' in Africa and *their* colonial legacy.

Africanists, such as Bernard Lugan, who have attempted to suggest that some advances in governance were made during the colonial era, have been dubbed conservative *révisionnistes* or worse (Lugan, 2004). But even the most critical of the colonial era should agree that local governance and human security have declined in vast regions of sub-Saharan Africa since the 1960s wave of independence movements – notably in the Democratic Republic of Congo (DRC) where over 5 million souls have been lost in just a few years in a complex protracted war (Prunier, 2009; Stearns, 2011). Critics like Adam Hochschild and Michela Wrong have correctly noted that the circumstances at independence were far from adequate: in the entire Congolese state there were fewer than thirty African university graduates and only three Congolese were employed in the five thousand management level positions in civil service (Hochschild, 1998, p. 301; Wrong, 2002). Yet all agree that the infrastructural and other public service gains that might have been achieved within the Belgian Congo during the colonial period deteriorated over the many decades that followed independence. That is, in the literature on the history of the DRC there is an acknowledgment of colonial infrastructural gains, though the focus is generally on colonial violence and post-independence decline.

Michela Wrong, for example, highlights the desperate efforts of all citizens to just get by with virtually no income in former Zaire: "knowing how to '*se débrouiller,*'" she tells us, "that untranslatable French concept meaning to fend for oneself, to cope against all odds, to manage somehow…" became crucial to survival. She continues:

> For public servants, juggling two jobs – the one that involved sitting in a dimly lit office reading newspapers and the real one that started at noon and, hopefully, brought in some real money – became the norm. The skill was finding a Darwinian niche in the ecosystem, the tiny competitive edge that meant one had something to sell, a means of survival in a ruthless world… (Wrong ,2002, p. 152)

Throughout the Cold War period this entailed the use and abuse of public assets and, as Wrong describes, any leverage that a government job might provide. With Cold War patronage, the State became a resource to latch onto if one was lucky enough to do so though the overall trajectory was of state decline.

The post-Cold War period has now challenged that previously entrenched norm of survival. Wrong describes the decline in terms of a gradual withdrawal from *all* formal sector jobs:

> In 1955 nearly 40 per cent of the active population worked in the formal sector. By the 1990s, this had shrunk to 5 per cent and the official figures for per capita income had fallen to a laughable – and obviously impossible – $120 a year .(Wrong, 2002, p. 152)

According to the Gérard Prunier, author of *Africa's World War*, the issues at independence were much like the adage so often attributed to Antonio Gramsci: the Old was dead but the New was not yet born – "a dangerous moment indeed" (Prunier, 2009, p. xxx). Whatever the exact reasons – Cold War patronage, fluctuations of the global economy, etc – the gains of infrastructural development and local governance that took place during the colonial era were gradual and surely lost. Regaining an interest in the redevelopment of these areas is, upon reflection, eminently important to the realization of human security. Since the end of the colonial era these issues have been apparently lost in the overly optimistic first wave (1960s; second wave 1990s), and in today's pessimistic literature of the postcolonial left and the corrupt-leadership-focused right.

Moreover, in policy circles the process of strengthening local government institutions in sub-Saharan African contexts has been viewed, largely within the context of internal 'decentralization policies,' as a drain on central government resources and power –

but it need not be so. Proponents of such zero-sum views assume that the functioning of local governments takes place at the expense of central government authority and control. Indeed, the fact that Africa's central government leaders have tended to hold onto central government political power is nothing new; what is dramatically different in the post-Cold War context is that external Cold War patronage that tended to support central over local government leadership, is now over. This new environment has already led to highly publicized political reforms, including the aforementioned 'wave of democracy.' Yet, as indicated above, most observers of African politics remain focused on central government events.

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14.4: Making Historical Comparisons

Although today's politically liberal observers vary in their views as to how central and local governments function, the assumption among them is that there are at least some *positive-sum gains* to be had between local and central governments. Considerations of these local-central government relationships, not only at present but throughout history, do matter to the realization of political liberalism in all contexts. One should not shy away from making historical comparisons of yesterday's liberalisation experiences with the circumstances of today's liberalizing states.

Political theorists of the post-independence era of the 1950s and 60s similarly emphasized the need for 'order' in African and other developing country contexts before political liberalisation can take place. For example, in his 1968 book, *Political Order in Changing Societies*, Samuel Huntington famously argued that 'political decay' was to be temporarily expected in developing state contexts as they liberalize (Huntington, 1968). Disorder, Huntington argued, was part of the process of change – in fact, disorder and the 'promise of disharmony,' he later argued, is what the practice of democratic freedom requires (Huntington, 1981). In retrospect, of course, such arguments can be seen as providing excuses for delaying progress towards political liberalisation in the developing world, such as the kinds of Cold War influences that supported dictatorships elsewhere in the world (notably throughout the Middle East). The human reality since that initial period of optimism for African political change has been decreasing standards of living throughout the sub-Saharan African region, as so vividly described by Wrong and many others.

Many observers of the left and right, who had been so optimistic at independence, now deem African development as a lost cause. In fact, some Africanists have been so discouraged by events of recent decades that they have simply chosen to walk away from the African area of studies (Kitching, 2000). Those who have remained seem to focus on either the development of an African 'civil society' (bottom-up) or a change in African 'leadership' (top-down). Yet neither of these groups, roughly representing the Western political left and right, respectively, dares to make direct historical comparisons based on the practical underpinnings of liberal democratic practice. Instead, ideological assumptions that they might have about political development anywhere are simply transferred to their observations about politics in Africa. Both developmental agenda, in other words, are prone to 'one size fits all.' The one group of theorists that does emphasize historical circumstances – the historical structuralists (Marxist-Leninists) – have generally deemed Africa's developmental circumstances as a kind of lost cause due to the nature of the global capitalist system. Since Africa's independence, the very idea of comparisons of political development North-to-South, or developed countries versus LDCs (less developed countries) has been largely discredited due to the earlier works of modernisation theorists such as Daniel Lerner (1958) or Walter Rostow (1960).

Falling into Extremes

Genuine debates on the matter of political development are, in a sense, confined to a rather superficial level, largely because of persistent differences of ideology. On the one hand, many *progressive leftist* Africanists simply dismiss direct comparisons of political behaviour and experience as 'modernisation theory' and/or dismiss the prospects for African development because of the global capitalist system; their inclination is to support the development of African 'civil society,' largely based on their own preconceptions of democratic development at home, whereby the people 'rose up' to check the abuse of political power (Chazan, et al., 1999; Cooper, 2002). On the other hand, many *conservative rightist* Africanists prefer to avoid any discussion of external influences on today's African realities and focus on the failings of what goes on within individual African states, for example, irresponsible leadership and their lack of understanding of effective policy, and unethical or corrupt governing norms (Rotberg, 2002; Lugan, 2004). The fact of the matter is that both groups have an overarching interest in promoting 'modernisation' of African states and societies, as can be seen in the ongoing work of the development industry.

The majority of Africanists fall into the first three columns: the first two columns represent the broad differences of those involved in the development industry who tend to focus on the *internal* changes required within African states to achieve 'modern' developmental goals. The third column includes many leftist academics, both within Africa and elsewhere, and though there might be much truth to their arguments, there are few professions where one can be an advocate of them other than in teaching and/or scholarship within Western power structures. In sub-Saharan African contexts, by contrast, this kind of logic has received much political support! Change of the external power structure is where there is the greatest political resistance and, in fact, there are inevitably local beneficiaries of relationships with external actors (forth column). Local beneficiaries are the local powerful who tend to be on the more conservative side of the political spectrum, locally defined.

Table 14.1 Internal vs. external focus on reasons for developmental woes.

FOCUS	INTERNAL LENS[3]		EXTERNAL LENS[4]	
Political Orientation	Left[5]	Right[6]	Left[7]	Right[8]
Developmental Agenda	Civil society	Leadership	Anti-colonialism	Power, influence, wealth
	Community	Governance	Social justice against capitalist exploitation	Establishment of joint ventures (African government, foreign investment)
	Education	Policy	Cold War	'Order'/non-democratic government
	Empowerment	Anti-corruption	Against neo-colonlialism	Attracting foreign direct investment (FDI); supporting multinational corporations (MNCs), notably resource extraction industries.

Given those diverse orientations about addressing African political concerns, it should come as no surprise that many African citizens themselves are losing faith in any 'democracy' that they might have had just a few years ago, in part because they have little faith in the development industry described above and because, for many, the meanings of democracy, democratization, liberalism and neoliberalism are too easily conflated. The work of Nigerian scholar J. Shola Omotola demonstrates, for example, that in African contexts 'liberal democracy' is generally equated with neoliberalism which is generally aimed at reforming markets in a reckless and ideological fashion (Omotola, 2009).

Liberalism and Democracy

Today, Africanists must address the shortcomings of formal 'democracy' and turn their attention to how their governing institutions can support locally defined forms of liberalism (understood as political freedom). This will require true historical comparisons that have thus far eluded the field of African area studies and mainstream comparative politics. But there are a few examples of this kind of effort. One is a 2001 book by Africanist Robert Bates, who undoubtedly wrote of the structure and purpose of Europe's pre-liberal governing institutions with *African* political development in mind. For him, the original purpose of governing institutions was to control violence and, for individual citizens in the history of democratic states, this is experienced at the local level. 'Political development,' Bates argues, "occurs when people domesticate violence.… Coercion becomes productive when it is employed not to seize or to destroy wealth, but rather to safeguard and promote its creation" (Bates, 2001, pp. 101-102). For Bates, Europe's pre-liberal governing institutions, by helping to deter violence, in turn aided European development. Again, with African development clearly on his mind, he argues rather provocatively, "Societies that are now urban, industrial and wealthy were themselves once rural, agrarian and poor" (p. 21).

To his credit, Bates does emphasize the importance of local government to political development in history. But like other conservative Africanists, Bates ignores the link between local governmental development and the new, and historically significant, external influences on African development. That is, there can be no doubt that local governance in sub-Saharan Africa has been dramatically affected by the dictates from outside actors (colonial, Cold War, developers, investors); the same could not be said of the medieval European village. On the other side of the political spectrum, leftist/historical structuralist Africanists are right to emphasize the role of history but, as in all schools of thought, the emphasis tends to be on 'state' development.

The rise of today's illiberal democracy conditions that have direct significance to matters of human security is a direct result of today's external/globalization pressures. Yet most observers continue to interpret illiberal conditions in the world through a superficial Cold War lens of a state-wide label of 'democracy or not,' rather than focusing on the needs of citizens on the ground. For example, in a 2004 article entitled 'Why Democracies Excel,' the authors provide a variety of statistics to make the point that democratic states outperform autocratic states in virtually every category of developmental change: economic growth, quality of life indices, and avoidance of humanitarian crises (Siegle et al., 2004). This is undoubtedly true. [9] But in doing so, they conflate

liberalism and democracy. As Zakaria suggests, it is high time that we start moving away from 'democracy or not' superficiality and toward the important details that lead to liberal (locally–defined) circumstances that improve the prospects for human security.

As the Arab Spring (and other springs) demonstrates, Huntington's 1968 argument that 'political decay' is only part of the process of change and that authoritarian regimes are a kind of necessary evil that promotes order amidst chaos, is now being challenged from all sides. That is, the policy of 'order over democracy' may not be as valid as previously thought and, following Siegle et al, we know that democratic states do consistently outperform 'orderly' autocratic or military forms of governance. But most discussions of what is required for newly declared democracies to work tend to remain focused on central over local governmental leadership.

Thus far the internal demand side of the debates on democratization has generally been portrayed in terms of 'civil society.' The prevailing logic of civil society proponents is that improved livelihoods, at the individual and local level, will lead to a variety of developmental improvements, manifesting in such phenomena as public political protest, which will eventually take place within the political system. In African contexts they have generally argued in terms of developing the demands of individuals and local representatives so that they may act, collectively, as a safeguard over otherwise authoritarian forms of government. This makes good theoretical sense but the efforts to improve livelihoods at the local level generally have little to do with locally-defined liberal ideals. Instead, discussions of civil society are overwhelmingly oriented toward the policy debates within 'developmental circles' that relate, specifically, to the provision of public services, such as water and electricity. While the provision of these public services is undoubtedly a meritorious venture, it is unclear that older democracies developed in such a fashion. Policy debates on democratization, framed either as an ideological quest or as a desperate call for water or electricity, are importantly neglecting the historical underpinnings of liberalism.

Liberalism Versus Democracy

The hard fact that Africanists have been slow to respond to is that democratic elections are limited in their impact. In today's African context, a fundamental truth is that 'democracy,' as with previous forms of government, has been handed down from above without any political struggle by a large section of the people. While the media might portray urban protests as a positive sign of political struggle, a sizable percentage of sub-Saharan African citizens reside in the countryside where the kind of coordination required for effective political protest is generally lacking. This, in fact, may be very analogous to what happened in early democracies, where urban protest (later documented by historians) was where the debates of political theory took place, while the masses in the rural countryside remained largely removed from the process. 'Democracy,' in other words, can be thought of as an arrangement of the elites to keep the masses contented; all the while, liberalism is what the masses cared most about. 'Democracy,' conceived another way, was how then reigning elites maintained order, while simultaneously disposing of monarchy—obviously a direct interest of elites who were to usurp political power. Faced with an opportunity for establishing liberal state practice, elites were keen to do so, as it protected their own property (thereby avoiding disorder), but it also appealed to the masses in ways that Bates refers to (avoidance of violence) and, gradually, a sense of new possibilities for the future. In early democratic states then, as in new democratic states today, the vast majority of rural and urban residents continues to focus on day-to-day struggles and, if anything, generally has remained politically apathetic and disunited. This reality is not unique to Africa. Democracy is an important step toward political legitimacy but it is not what incites the interests of the elites or the masses in their respective futures; liberalism does.

The very fact that individual citizens have no real avenue to pursue effective protest is undoubtedly disappointing to many, but the disappointment stems from broader theoretical preconceptions about the historical development of *democracy*. Both Western and Marxist models of political development see promise in protest, in the 'rising up' of peoples, in an effort to hold their political and/or industrial leaders more accountable. But democracy is not a panacea as can be seen in the case of the ancient Greeks, where the masses were generally kept outside of any democratic experiment.

Upon reflection it is clear that the average democratic citizen in history has been less interested in theoretical democracy than in the day-to-day struggle for survival. This does not detract from the overwhelming virtue of democracy over other forms of government; the point is to emphasize the practical concerns of citizens at the local level. At this level of analysis, the individual's struggle for political liberalism, viewed in terms of citizen demand, can be revealing. To the average citizen of pre-democratic and democratic states alike, the state did help to deter random acts of violence, but it also helped legitimize claims to private property ownership, a cornerstone of Western understandings of political liberalism. Because of their geographic proximity, at a time when

travelling great distances was uncommon, local governments also fostered ties with the central government through, for example, collection of state tax or tribute and, ultimately, in matters of security. As Bates argues, contact with the state was considered worthy insofar as the state authorities provided a sense of protection from violence. Another crucial 'spill-over' effect, of course, was to affirm (through civil records of births, marriages, and deaths) a sense of national identity.

Most of these early local governmental tasks were largely administrative or jurisprudential and not, one might suspect, especially cumbersome, but they had revolutionary results in terms of their 'liberal' outcome. Accordingly, within today's liberal democracies there exists a practical connection between government institutions and the citizenry – what Louis Hartz once termed a submerged Lockean consensus (Hartz, 1955). By this, Hartz meant a popular consensus within liberal states as to what political liberalism entails and what the role of government institutions should be, an interpretation that was first argued by the then radical John Locke *contra* the political philosophy on governance then promoted by apologists of illiberal state practice, such as Sir Robert Filmer. Locke's argument that government institutions should protect our 'lives, liberties, and estates,' later interpreted as the protection of 'life, liberty, and the pursuit of happiness' by Thomas Jefferson in the U.S. Declaration of Independence, is fundamental to liberal practice. The U.S. Declaration of Independence has often been interpreted as an important stepping-stone toward 'democracy'; it might better be thought of as a crucial step towards today's predominant view as to what political liberalism entails.

Stumbling Blocks

For political liberalism to be realized in sub-Saharan Africa's new democracies, local governmental institutions must assume, at a minimum, the administrative roles that they had in today's liberal democratic states such as maintaining civil records (births, marriages, deaths), titles to property, judiciary power, and a locally accountable law enforcement authority. Thus far, they have not (LaMonica, 2017). Instead, when local governance is mentioned in sub-Saharan African contexts, and for understandable reasons, the focus is on the soaring demand for other more visible public services. As witnessed in South Africa during the campaigns prior to 2006, candidates in local government elections were quick to make *unrealistic promises* regarding the provision of improved public health care, education, and the like, while burgeoning issues that underlie improved local government administration were entirely neglected. In the party manifesto of the African National Congress (ANC) it was declared, for example, that their action plan would make local government 'speed up the delivery of services.' Other parties, including the African Christian Democratic Party (ACDP) similarly focused on improving 'service delivery.' While political organizers know all too well that this would appeal to the voting public, there is little visible evidence that this will actually happen. Citizens of other early democracies did not have these kinds of public service expectations and one can reasonably assume that the citizens of sub-Saharan Africa will only develop cynical attitudes toward 'democracy' in this sort of atmosphere.

To date, administrative challenges such as keeping track of titles to property, which generally falls under the heading of 'land tenure" in the development literature, have been consistently marginalized in discussions of sub-Saharan state policy. To the extent that government records maintain land tenure, there is a tendency to rely on the records of central government authorities that often date back to the colonial era. These notoriously incomplete records require careful consideration if political liberalism of any kind is to be realized in sub-Saharan Africa. And, certainly in the short term, there is no guarantee that the process of increasing administrative austerity at the local government level will work without controversy. The harsh and even violent property redistribution policies of the Mugabe regime in Zimbabwe, allegedly justified on the grounds of an inequitable history of colonial rule (what the Mugabe regime described as 'white' over 'black' property ownership), has caused many throughout sub-Saharan Africa to fear reform in this area. Certainly, there is no intention here to support Mugabe's approach to the problem; it is an exceptional case on the African continent. But the historical result of linking state power to property ownership in sub-Saharan Africa has been to alienate many locals from the administrative processes that underlie land tenure. Historically, all governing procedures at the local level had been viewed as linked to the interests of agents of the central government and, since well before the independence era, this has generally been something that local citizens would rather avoid. The impact of having the authoritarian Mugabe regime dictate land reform in a completely ruthless, violent and partisan manner (favouring ZANU-PF, The Zimbabwe African National Union – Patriotic Front) has been to postpone the prospects for true local government reform throughout the region.

The Future

Improved records of titles to property, and other forms of civil administration, would improve the relationship of citizens with their local governments, as has been the case in all-liberal contexts. Moreover, doing so would be perfectly in line with the goals of the

United Nations Commission on Human Security, which defines human security as “the protection of a vital core of all human lives in ways that enhance human freedoms and fulfilment” (UN, 2009, p. 6). Doing so would also require closer attention to matters of local governance than the majority of Africanists have paid to date.

Within sub-Saharan African contexts, internal politics on local governance is characterized by general avoidance of the issue; because central government authorities view the needs of local government as an inept bottomless pit – incessant demands for costly services – local governance is rarely listed on the national policy agenda. Indeed, one is not surprised to see external actors, such as internationally recognized non-governmental organizations (INGOs), in rural areas of sub-Saharan Africa aiding local communities in a variety of ways. Whether these external actors are motivated by humanitarian concerns, the provision of ‘basic needs,’ or an expectation as to what a modern welfare state might provide, there is virtually no support for what might be termed Lockean ideals at the local government level. Land tenure remains largely a concern of under-funded anthropologists, while internal and external policymakers frantically address more ‘pressing’ policy matters. As the successes of the Grameen Bank and countless NGOs have demonstrated throughout the world, central governments are not especially adept at responding to household level needs. In order to achieve the goal of locally defined political liberalisms within today’s newly declared ‘democratic’ states will similarly require the involvement of local citizenries and the strengthening of local government institutions; absent this, sub-Saharan states are likely to continue falling into the post-Cold War phenomenon described by Zakaria as ‘illiberal democracy.’

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14.5: Conclusion - Recalling the Significance of Local Government Institutions

Today, the issues surrounding governance in sub-Saharan Africa ought not be portrayed as a blame game, as it so often is, pointing fingers at the Belgian colonizers, the Mobutu regime or Cold War (US or Soviet) supporters, or even internal failings of one kind or another. Yes, there are plenty of firmly embedded political and other norms to deconstruct and discuss but we must also think of the next steps. Today, Africanists must also frame the issues in terms of today's human security needs of e.g. the Congolese people, as realized or not by the Congolese people and their existing governing institutions, operating as they now must, within a whirlwind of global pressures. Historical blame is far too often the sole basis of scholarship and teaching of African affairs; we also need to think pragmatically about what needs to be done because lives are at stake, and what can be done under increasing environmental constraints. Today one must lament the loss of traditional norms in many African contexts – as anywhere in the world. While the circumstances have been as horrific as anywhere in human history, there comes a moment when we all knowingly and respectfully move on to create what Gramsci refers to as the New. And, in many ways, this has to be done in ways unlike Africa's colonial past, that is, to specifically prioritize the needs of humanity – human security – above all else. Today, to do this properly – democratically – will require the heightened involvement of sub-Saharan Africa's local citizenry and of their own, heretofore marginalized, local governments.

In the geographically vast regions of sub-Saharan Africa, the proximity of government authorities can play a crucial role. Largely due to the history of capital-centred politics and the 'national' formulation of policy, many have considered local governments to be a burden or even a luxury. To the extent that local government was even considered by colonial administrators, it was to emphasize the maintaining of 'order' (through indirect rule, assimilation, or other) and not to establish local government institutions that had as their principal aim the local human security and security of local property. Moreover, due to the colonial history of sub-Saharan African states, local citizens have viewed local authorities as agents of 'the state'. In these circumstances, 'the state' was something to be avoided at all costs, and unfortunately this legacy remains. To this day, it is certainly not assumed that local government authorities act in the interest of the local citizens. Much of this can be explained in terms of colonial history and the often corrupt practices that continued during the era of 'neo-colonialism.' This chapter has argued that a careful consideration of the limited roles of local government authorities in liberal democratic contexts could point the way towards improved human security. Within that context, local governance plays a largely unsung but crucial role in expanding human security and liberal practice. One of the most fundamental functions of local governments in liberal states, then and now, has been the protection of the 'fruits of our labour,' that is, citizens' property.

As agrarian productivity improved locally, administrative ties with central government intensified along with the understanding that there could be positive-sum gains to be had by those involved. In the sub-Saharan context, central government leaders directly benefited from colonial and Cold War ties, to the detriment of local governmental development. The relationship then, has been viewed as top-down, zero-sum (competing for limited resources) and antagonistic. By contrast, in liberal democratic states, there have been political debates over the appropriate balance of local versus central state authorities, but cooperative connections have largely prevailed. By contrast, in sub-Saharan Africa, colonial history and its aftermath led to the development of governing institutions that consistently favored centralized over local forms of governance.

The concomitant realization of human security and of locally defined liberalism, in all historical contexts, is an ongoing process, not an event. And in all instances it has required the involvement and participation of local governance. In the post-Cold War environment this should be openly acknowledged for all democratic states in the world. For example, human security and political freedoms that accompany democratic practice today certainly did not apply to all residents of the United States in its early years. There were significant inequities regarding how the sizable slave population experienced those securities and freedoms, or the systematically excluded female citizenry. The inclusion of marginalized groups, a hallmark of progress in democratic practice, took place over time. Policy circles are becoming increasingly aware that this process is part of the challenge that new democracies must face. The argument that the process takes time offers little solace to those anxious to implement liberal democratic practice in new democracies. Yet historical comparisons that focus on the practical underpinnings of liberalism and human security demonstrate the indispensible role of local governance.

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14.6: Resources and References

Review

Key Points

- Local governance is crucial to human security because it ensures representation.
- Locally defined political liberalism (e.g. the protection of 'life, liberty and estates') and human security are inextricably linked.
- In their observations of sub-Saharan African political realities, Africanists have remained focused on central government issues, leading to largely superficial conclusions that often neglect matters of human security.
- Because of the legacies of both the colonial era and the Cold War, strengthening local government institutions in sub-Saharan African states is especially challenging.
- In those states the prospects of strengthening local government is largely viewed with skepticism.

Extension Activities & Further Research

1. How have the approaches used by Africanists been flawed in terms of their attention to liberal democracy and, in turn, human security?
2. What are the historic and ongoing challenges to promoting the role of local governments in sub-Saharan African contexts?
3. How are progressive left and conservative right of Africanists blocked in their conceptions of democratic development?
4. Democracy is thriving, liberalism is not. Explain.
5. Democratization is a process not an event. Explain.
6. The concept of 'modernisation' is mentioned throughout this chapter. What do you think it means, in the views of Africanists, and in your own view?

List of Terms

See Glossary for full list of terms and definitions.

- conservative révisionnistes
- illiberal democracy
- liberalism
- neoliberalism
- positive-sum
- *se débrouiller*
- submerged Lockean consensus
- zero-sum

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Footnote

1. The term 'corrupt' is used in many meanings by many authors. In a post-colonial context the concept becomes even more difficult to define. Here it is intended to indicate any one or several of the following attributes: using one's position of power or influence in order to gain personal wealth; accepting bribes or kickbacks in exchange for political favours; favouring or discriminating against particular groups in society for reasons of personal gain or patronage; misusing national resources for purposes outside the national interest.
2. In fact, Rousseau never did refer to a "noble savage" in his writings.
3. Advocated by many Western/ external participants, to whit: Africa/ns must change internally.
4. Emphasis on many local/ internal participants, to whit: the external is the source of our woes (left) or the source of our riches (right).
5. Liberal by US standards.
6. Conservative by Western standards.
7. Marxist-Leninist or anti-imperialist; local and otherwise.
8. Conservative by African standards; local beneficiaries; often colluding with external powers.
9. Editor's note: The reader is encouraged to explore the limits of this proposition under conditions of ecological overshoot. Chapter 21 offers an extension activity (#4) to that end.

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CHAPTER OVERVIEW

15: Issues with Human Rights Violations

Learning Objectives

- Explain how the notion of universal human rights is based on shared basic needs and the principle of justice.
- Recognize that human rights arose in three generations, addressing the civil-political, social-economic and environmental domains.
- Explain how only first and second generation rights can be granted universally; third generation rights are limited by the availability of natural resources. Nevertheless, they are vitally important for socioeconomic equity and environmental security.
- Understand that respect for and attention to human rights require a functional civil society; government and civil society uphold and strengthen each other.
- Be aware that without a guarantee for a modicum of human rights what level of human security might be achieved in a country can only be temporary.
- Explain how human rights are threatened by autocratic governments, corporate rule, crime and any group or organization that is not scrutinised by civil society.
- Describe how human rights can be strengthened by monitoring, enforcement, activism and education. The latter is essential for the development of civil society and can take many forms from state-sponsored to grassroots-driven and subversive.
- Acknowledge that particular challenges to enhance human security and cultural safety arise from the agenda of decolonisation.

Sabina Lautensach and Alexander Lautensach

This chapter is based on a paper presented at the 2011 GEIG conference (Lautensach & Lautensach, 2011b). We are grateful to Mr Farai Maguwu for contributing to this chapter.

An important area of initiatives to pre-empt and to mitigate threats to human security lies in the promotion of human rights. Efforts to promote them, however, must take into account an important distinction between those rights that can be granted under virtually all circumstances (i.e. civil, political and social rights) and those that depend on limited physical resources and are therefore not always grantable. The most comprehensive way to ensure human rights involves and relies on civil society at all levels. In turn, attention to human rights is required to maintain and perpetuate civil society. This raises particular challenges for those countries that are currently coping with a deficit in human rights. In this chapter the possible roles of non-governmental organizations are discussed in strengthening the recognition of human rights. We explore the possible roles of top-down reform programmes and compare them with the potential of grassroots initiatives. A particularly powerful example of the top-down kind is public education. The chapter concludes with a discussion of the influence of cultural context, the extent to which culture defines, and ought to define, moral norms such as rights and duties, as well as the limits of such definitions.

The discourse on human security continues to mirror the famous words of former UN Secretary General Kofi Annan, “we will not enjoy security without development. We will not enjoy development without security, and we will not enjoy either without human rights” (Annan, 2005, p. 1). Annan’s words are further buttressed by Nelson Mandela who once said, “we do not want freedom without bread, nor do we want bread without freedom’. [1] Whilst the central role of human rights in promoting human security is no longer contested, the methodologies and strategies of putting human rights at the heart of human security are complex, culture sensitive and context specific. This chapter looks at how civil society can contribute towards the attainment of human security through building a culture of human rights using top down and bottom up approaches.

15.1: What Human Rights?
15.2: Two Kinds of Human Rights Differ in Their Relation to Human Security
15.3: How Important Are Grantable Human Rights to Human Security?
15.4: How Can Human Rights Be Strengthened?

15.5: Human Rights Education
15.6: Resources and References

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15.1: What Human Rights?

Modern international human rights law has been in existence for the past 70 years; the concept dates back much further, to the humanist thinkers who provided the philosophical platform for the French revolution. Instrumental in the idea was the notion that certain basic needs of subsistence were shared by all human beings – bodily integrity, food, shelter, health care, and freedom – and should therefore have moral significance (Jones, 1999, p. 58; Alston & Goodman, 2013). The language of human rights is found in every society and embedded in every culture and religion because it is based on the fundamental principle of justice. The 1948 Universal Declaration of Human Rights (UDHR) (UN, 1948), the 1966 Covenant on Civil and Political Rights, and the 1966 International Covenant on Economic, Social and Cultural Rights constitute the backbone of international human rights law. 'Human Rights' is a buzzword that is often talked about but whose practical application remains a distant reality in many contexts and places. Many governments and non-state actors continue to pay lip service to the doctrine of human rights, exhorting one another to respect the rights of citizens whilst perpetuating structures and attitudes that jeopardise human rights or openly contradict them.

Many conceptualisations of human security are founded on human rights. As was explained in Chapter 3, basic needs are classified in a hierarchy. The right to have one's needs recognised applies mainly to the bottom levels of that hierarchy, namely survival needs and safety. The discussion of climate justice in Chapter 9 established that rights come from the application of the justice principle to any situation that involves potentially unequal risks or benefits from areas beyond an individual's control. Human rights developed historically in three stages, each based on agreement on a set of basic needs. The first generation of human rights, formulated in the 18th century, was civil and political in nature and was based on the cardinal value of freedom. The second generation of human rights refer to economic and social priorities, based on the cardinal value of human equality. A third generation of rights has been formulated, as illustrated by the UN and numerous major NGOs focusing on the right of every global citizen to enjoy freedom from fear and freedom from wants (Annan, 2005; UN, 2000). They add to the list of human rights specified in the UDHR (UN, 1948).[2]

In thirty articles, the UDHR specifies the human right to life, liberty, and security of person; to freedom from discrimination by race, creed, gender, and equality before the law and due process; to a fair and public hearing in case of criminal accusations; to be presumed innocent until proven guilty; to free association and nationality, to freedom of movement; to own property; to freedom of expression and of religion; to democratic choice of representation; to respect for human dignity; to work and to equal pay as well as to leisure; and to a basic humanistic education. Negative rights include freedom from inhuman or degrading treatment or punishment, from arbitrary arrest, detention, or exile. Article 29 recognises appropriate duties and limitations of the rights of the individual for the common good but it does not mention ecological limits.

The third generation of rights consists again of negative rights, freedoms from certain undesirable states of being. Those freedoms are distinct from civil liberties and from the negative rights specified in the UDHR which both pertain to the functioning of civil society. They extend on the rights specified in Article 25 of the UDHR which refers to "the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services…". In terms of environmental security those freedoms amount to certain quality attributes pertaining to environmental support systems, sometimes referred to as 'environmental rights'.

The UN's Millennium Development Goals (MDGs) (UN, 2009) referred to 'environmental rights' as the right to clean air, safe potable water, adequate nutrition, shelter, the safe processing of wastes, and adequate health care. The document revealed no awareness of ecological limits of any kind that might curtail the availability of those resources and services. Even the current Sustainable Development Goals (SDGs) (UN, 2015) and the Agenda 2030 vision they promote leave unaddressed the question to what extent the rights of present-day humanity can be justifiably fulfilled while our present activities jeopardise the same rights for future generations. This question has been asked particularly in the context of the right to health care (Deckers, 2011; Jameton & Pierce, 2001). We will suggest that this question raises serious doubts about the validity of third generation human rights.

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15.2: Two Kinds of Human Rights Differ in Their Relation to Human Security

The Criterion of 'Grantability'

In earlier chapters in this textbook it was established that the purification of air and water, the provision of foods and shelter, and the processing of wastes are directly contributed by local ecosystems. It follows that the sustainable provision of those services depends on the biological integrity of those ecosystems (Karr, 2006; Ryan, 2016). Likewise, the health of a population is evidently affected by the state of its ecosystems (McMichael, 2001; Daw et al., 2016), as will be discussed in detail in Chapter 17. Accordingly, it would make sense for human communities to claim that 'their' ecosystems have a right not be harmed or diminished in their integrity. The fact that such a claim is not usually made, and that instead the demands pertain exclusively to the human recipients of those services (as in 'the right to a clean environment') represents, in our view, both a grave logical fallacy and a strategic error in judgment by human rights advocates.

The integrity of an ecosystem can – given sufficient care, experience and motivation – be maintained sustainably, barring any major external threats such as climate change. Among the conditions of such a policy would be that the total environmental impact of the human community that enjoys the ecosystem's support does not exceed the sustainable maximum, i.e. the ecosystem's carrying capacity. In contrast, claiming that the individual community member has a right to a certain quality of service makes no sense because no-one has the power to grant such a demand, not even the most absolute dictator, once the population's impact has exceeded that threshold. Thus, those third generation 'environmental rights', including the 'right' to adequate health care or the entitlement not to be poor, belong in a different category of human rights, the category of ungrantable 'rights.' Being grantable, however, is an essential property of any right (Rawls, 1971). Therefore, a right that cannot be granted is no right at all (hence our use of inverted commas), and it makes no sense to promise or to claim it.

For example, the language in the MDGs and SDGs tends to frame the UN's efforts to eradicate poverty (which is generally accepted as a moral duty) as fulfilling some kind of entitlement or right. This right is ungrantable in principle according to our above definition. Such an interpretation of a moral duty of the benefactor into a right for the beneficiary is also evident in documents from the UN Office of the High Commissioner for Human Rights (UNHCHR, 2004). The laudable intention was to "prevent slow large-scale progress from masking the loss or marginalization of individuals or minorities" (O'Neill, 2006, p. 13). Yet, only someone who believes that resources are unlimited can extend their allocation as a universal right.

The strategic error in judgment associated with claiming ungrantable 'rights' derives from the habituation effect that they it have on other rights. Such a claim diminishes the status of other rights to which realistic and legitimate claims could be made. For example, if the UN's Human Rights Council added to the list of human rights the right to own a circus, clearly ungrantable, the entire list would as a result acquire a less serious, less binding, and more conditional appearance. This would be regarded as a disservice by most humanists who harbour genuine respect for human rights and concern for their enforcement. Some countries have laws that contravene basic human rights, such as outlawing homosexuality or freedom of expression. Such laws demean the way in which citizens respect (or not) the country's laws in general. Similarly, 'rights' that contravene the laws of nature demean the status of all rights. The claiming of ungrantable 'rights' diminishes the sense of urgency with which all human rights ought to be respected worldwide. On the health care side, people become habituated to media images of sick individuals from poor countries and they take it for granted that whatever 'right' to health care those people or their advocates might proclaim is quite immaterial to their own privileged situation. The danger with this tacit distancing and discounting is that it is all too easily applied to more respectable rights, such as the right for political representation, to self expression, and to other presumably 'self-evident' rights, which compromises civil society worldwide.

The problem of ungrantable 'rights' does of course not diminish the need for guarantees to promote the environmental security of communities, especially when it comes to the world's disempowered. After all, a moral duty merely commands us to give it our best effort—no more and no less—towards a moral goal. The concept of ecosystem integrity could function as such a goal, in formulating policy guidelines that would go a long way towards such a best effort, as discussed in Chapter 9 and Chapter 10. This approach might also lead to more balanced moral reasoning, away from the heavy emphasis on rights-based arguments and including arguments from utilitarian and virtue ethics. Arguments based on rights and duties often do not go far enough to promote human security in the form of effective policies and legislation because they often do not specify clearly enough what actually needs to be done. Grantable rights depend primarily on human behaviour and attitudes whereas ungrantable 'rights' depend heavily

on environmental resources. In the light of this distinction, the question arises whether ungrantable 'rights' are of any use at all. Specifically we might ask, is there any benefit in insisting on the individual global citizen's entitlement to adequate health care, a safe environment, adequate nutrition, considering that such provisions cannot necessarily be provided even under the best of intentions?

From Environmental 'Rights' to Environmental Demands

The preceding discussion emphasised the need to use rights-based arguments prudently when debating environmental security and human security in general, and to invoke grantable rights in different ways and on different occasions compared to those kinds of demands that are based on ungrantable 'rights'. Heretofore, we will refer to the latter as 'environmental demands'. We do not mean to insinuate that such demands have no place in the human security debate—on the contrary: The qualities of air and water, of nutrition, of shelter, of the ways of recycling wastes, and the status of public health are still among the best indicators to assess the environmental security of a community. And they can help bolster some legitimate rights-based arguments, namely in connection with the right to justice. We perceive at least three distinct benefits how environmental demands can render human security more achievable and more equitable.

First, in the case of a community or region that has not yet reached the maximum sustainable environmental impact, as for example, the West African country of Gabon, environmental demands can highlight situations of injustice and inequity. Based on claims for distributive justice they would help promote initiatives to elevate the quality of life for society's poorest and their standard of living in the community. For example, elevated local incidences of cancer are often used to bolster demands for the authorities to explore possible causes and to implement local policies to improve prevention, screening and treatment. Likewise, environmental demands can direct public attention to environmental harms. Once public attention is gained, the evidence of ecological deterioration can inform policies to promote more sustainable practices and possible restoration. Thus, the 'right' does not refer to receiving certain benefits but to the equitable distribution of what benefits and sacrifices pertain in a particular situation.

Secondly, in situations where the maximum sustainable impact has already been exceeded—Ethiopia might serve as an example country—environmental demands serve to highlight that very circumstance. No other physical observation illustrates the fact of ecological overshoot more clearly than the widespread squalor caused by polluted air and water, famine, and the resulting abundance of ill health (McMichael, 2001). Vociferous demands for mitigation can make a significant difference politically, specially in the context of ecological overshoot as noted in earlier chapters. Against the worldwide opposition by powerful groups, environmental demands can provide the conduit for disseminating such information and educating the public (Rees, 2004; Lautensach, 2010). The language of environmental demands is one that everyone understands, even if those demands are bound to remain partly unmet. The causal connections between overshoot and poor human security have not yet widely entered the public's awareness. Calls for fairness and equity can help to direct public attention to regions where overshoot is worst.

Thirdly, environmental demands are the mainstay of the discourse on justice in bioethics (Potter, 1988). An effective way to illustrate the widening gap between global rich and poor is to compare the environmental indicators that reflect the qualities of their respective lives, in addition to the often invoked data on per capita consumption. Regardless of the extent of overshoot, such comparisons highlight the injustice inherent in the global economic order, its trading schemes, and its underlying maldistribution of political power. While insisting on one's right to a certain environmental quality is unlikely to lead to improvements, demands for equitable quality are more justifiable and authorities are more likely to heed them. This is the strategy that informs the SDGs.

Insisting on environmental demands in those contexts represents of course only the first step in an argument that necessarily leads to a discussion of Potter's (1988) five modes of survival as outlined in Chapter 1. The SDGs are intended to lead us from the current prevailing global mixture of mere, miserable, and irresponsible modes towards acceptable alternatives. Unfortunately their chances of success are slim because many SDGs compete with each other for physical resources, as suggested in Chapter 3.

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15.3: How Important Are Grantable Human Rights to Human Security?

Grantable human rights are the ones mentioned in the thirty articles of the UDHR (UN, 1948). They depend on social, moral and emotional capital such as goodwill, altruism, empathy, trust and open-mindedness. Thus, they do not depend on finite limits of physical resources. History abounds with well-intentioned efforts by powerful rulers to enforce measures for the 'common good', which arguably required that the individual rights and liberties of some or all of their subjects be curtailed. Article 29 of the UDHR serves that purpose, albeit not in a dictatorial way. Even in retrospect it is often difficult to assess whether such specific curtailments of freedom in fact led to preferable outcomes all around. Certainly human rights were often violated in the course of such measures. In principle, every law that is passed represents a compromise between benefits to society and sacrifices to individual autonomy.

As discussed in several of the preceding chapters, the next few decades will bring some drastic changes in lifestyle choices towards greater efficiency, reduced consumption, adaptation to global changes, and organisational reform, most likely accompanied by economic downturns and ultimately by a reduction in populations. Inasmuch as those changes are based on deliberate policy reform they will necessitate either an unprecedented amount of consensus on sacrificing current minority privileges or a draconian repression of individual autonomy (Bowers, 1993; Daly & Cobb, 1994; Lautensach, 2010). [3] Neither option sits well with advocates of human rights. Of course, avoiding the problem is always an option.: The 2005 quote by then Secretary-General Kofi Annan (2005, p. 1) given at the beginning of the chapter, from his report 'In Larger Freedom' advocating development, security and human rights for all (i.e. regardless of how many 'we' may be), eloquently catches the essential task while circumlocuting the important questions. Those questions include which rights are to be sacrificed for what degree of security, what kind of development can get us there, and how humanity is to make those decisions.

The challenge, then, will be to find the right compromises between rights and security—solutions that will find the approval of democratic societies at the national level and international acceptance at the global level. The concept of human security focuses on the security of the individual as opposed to the security of the state against foreign enemies or competitors. It builds on grantable human rights while remaining in tension with ungrantable ones— echoing the tension between achievable and unachievable SDGs as noted in Chapter 3. Human security postulates that it is for the security of the individual that the security of the state is guaranteed. By making the individual free from fear and want, the state enables him/her to actively participate in decision making and thereby making it unnecessary to govern through force and violence—or so the theory goes. Many security challenges facing the world today are closely connected to the failure by governments and by the international community to respect and uphold the grantable human rights and fundamental freedoms of peoples around the world. Whilst it is undeniable that some autocratic states have achieved notable economic gains without paying much attention to human rights, history teaches that in the long run such countries remain turbulent, unstable and can easily degenerate into civil unrest. (To further explore this problem of secure autocracies, see Extension Activity 4 in Chapter 21.)

One guideline for finding those proper compromises between rights and security, therefore, is the establishment and perpetuation of a stable civil society. Human rights must be respected and upheld sufficiently to allow this. Civil society augments the capacity of the state to protect human rights and it helps in holding perpetrators accountable for human rights abuses. Thus, it acts both as a watchdog against totalitarian tendencies and as a source of moral norms and ideals that govern society. Civil society campaigned for the downfall of dictatorships in Tunisia, Egypt and Libya and is responsible for similar uprisings in Bahrain, Syria and Yemen. The role of civil society, augmented by social media, in setting the agenda for political reform at the national and international stage has been growing over the past decades. There is also a growing recognition of civil society by national, supranational, and international bodies such as the EU, AU, World Bank, IMF and the UN, as evident in international legislation and regimes holding states responsible for the protection of their citizens.

However, despite the significant gains attained by civil societies in many countries in driving the agenda for human security, more than half of the world's citizens still suffer human rights abuses of one type or another. The state remains the biggest perpetrator of human rights violations. Freedom House reported in 2018 that 2.8 billion people (37% of the world's population) have no say in how they are governed and face severe consequences if they tried to exercise the most basic rights, such as expressing their views or their sexuality, assembling peacefully, or organizing independently of the state (Freedom House, 2018). The fall of autocratic regimes in Tunisia, Egypt and Libya due to popular uprisings, at a great cost in terms of human life and suffering, and continuing disorder in those regions challenge us to rethink the concept of security in the 21st century. The fall of these regimes and the

ongoing upheaval in the entire Arab region demonstrate that it is the relationship between the state and civil society that will ultimately guarantee peace and security as opposed to the traditional notion where peace and security were understood only in the realm of international relations. A productive relationship between the two absolutely depends on a modicum of human rights, and in many countries that norm has not been attained.

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15.4: How Can Human Rights Be Strengthened?

In advancing the human security agenda, and in light of monumental levels of human rights abuses recorded in many countries, a lot more needs to be done to ensure that state security becomes people centred as opposed to backing the security of regimes and political elites. Many regimes in the world still believe the security of the state is made possible through acquiring the latest military hardware on the market and by ensuring that state security agents receive the best training available. Billions of dollars are spent annually in activities and programmes that undermine the fundamental freedoms and basic human rights of the people, all in the name of national security.

However, a closer look at the United Nations Charter supports the notion that the organization was formed to create a climate where individuals can pursue happiness, freedom and prosperity that is built on the principle of mutual respect. In his speech to the UN General Assembly on 10 November 2001, the then Secretary General Kofi Annan reminded world leaders that '[t]he United Nations must place people at the centre of everything it does.' After highlighting pressing issues to be tackled by the UN such as poverty, HIV/AIDS and political violence, Annan added that 'the common thread connecting all these issues is the need to respect fundamental human rights.' Thus there is no confusion at the level of the UN as to what needs to be done in principle to enhance human security and global peace. The biggest challenge to ensuring that the UN vision is transformed into a reality is bringing the UN Charter and the UDHR to the very people for whom the UN came into existence in the first place. An international Bill of Human Rights would serve as an important stepping stone (Sachs, 2003).

The task of putting human rights at the centre of human security should not be left to the UN alone, but rather should be 'mainstreamed' and be part of mechanisms and strategies adopted by governments to improve the security of their people. The problem with 'mainstreaming' is that it mainly focuses on 3rd generation ungrantable rights and particular visions of development that are mainly informed by the Conventional Development Paradigm (Trainer, 2016). This bias limits the potential benefits, and it diverts attention from the grantable social and political human rights that could sorely use some support in many parts of the world. The task of re-focusing on those rights must be spread to many more local and international human rights organizations so as to create sufficient advocacy at the grassroots levels, which can force governments to put human rights on their agenda. Civic education on human rights, targeting grassroots populations and political leaders, is vital in ensuring that any mechanisms and strategies taken by governments to improve human security follow a rights based approach.

The scourge of human rights abuses is not only the preoccupation of dictators under pressure. It can also be argued that the so-called 'war on terror' has created more insecurity for the global citizen than does the threat of terror. Human rights abuses committed by NATO forces in Afghanistan, Pakistan and Iraq, as well as other military forces elsewhere, have matched, if not surpassed, the collective atrocities committed by dictators and paramilitaries against their own people around the world during the same period. Similarly, failure by the International Criminal Court to investigate and based on verifiable evidence, prosecute Western leaders such as George Bush and Tony Blair for their involvement in starting and perpetuating the second Iraq war, which has claimed the lives of approximately 204 000 civilians as of 2019 (Statista, 2019), has undermined the work of the ICC which now stands accused of selective application of international law. Why is it that, ever since Nuremberg, it is only always the losers that are being prosecuted? In his address to the 2011 session of the African Union summit, UN Secretary General Ban Ki moon said the Universal Declaration of Human Rights "is a promise to all people in all places at all times." Obviously there remains work to be done, and it will require substantial pressure from below.

Another category of human rights abuses comes from transnational corporations who take advantage of cheap labour and lax labour laws in developing countries to minimize their costs of production. Often those abuses are supported or at least tolerated by colluding government officials who benefit financially; even if the benefits are in some cases more equitably directed towards the state budget, the temptation is great for the government not to place too great an emphasis on questions about labour conditions and risk that the corporation relocates its operation. Transnational crime is another obvious threat, as Chapter 13 documents. Lastly, it is aid agencies themselves that have largely remained exempt from scrutiny in terms of their own human rights performance (Haslam et al., 2009, p. 253). The common condition to all of those threats is the absence of scrutiny by civil society.

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15.5: Human Rights Education

There are many people around the world, in particular vulnerable groups such as women and children, who are either not aware of the existence of the UDHR or who do not think that it applies to them, or that it could benefit them. It is not possible for people to fight for and defend rights and entitlements, which they are not aware of. The absence of reports of human rights abuses in certain 'stable' countries does not necessarily mean that such abuses are not taking place; rather, it is a consequence of media bias (and possibly its manipulation) and a habituation to violence that has forced people to find security in silence.

The goal, then, is to create an open society where the state respects and protects the rights of its citizens, and where citizens are aware, concerned, and actively involved in governance and vigilance. This requires civic education that aims at teaching the very basic freedoms such as freedom of assembly, association and movement to the grassroots population, in particular the vulnerable groups such as women. This emancipatory kind of education builds on the traditions of critical theory and liberation pedagogy (see Case Study 15.1 and Au [2014]). It embraces all cultures who respect basic human rights and virtues (Banks, 2002).

The United Nations Decade for Human Rights Education and Training (1995-2004) prepared the ground for two subsequent phases. The Plan of Action for the Second Phase (2010-2014) of the World Programme for Human Rights Education emphasized that:

> human rights education can be defined as any learning, education, training and information efforts aimed at building a universal culture of human rights, including:

a. The strengthening of respect for human rights and fundamental freedoms;
b. The full development of the human personality and the sense of its dignity;
c. The promotion of understanding, tolerance, gender equality and friendship among all nations, indigenous peoples and minorities;
d. The enabling of all persons to participate effectively in a free and democratic society governed by the rule of law;
e. The building and maintenance of peace;
f. The promotion of people-centred sustainable development and social justice. (UNHCR, 2010, n.p.)

The renowned cultural anthropologist Clifford Geertz (1972, p. 261) defined culture as "the shared patterns that set the tone, character, and quality of people's lives". Most anthropologists, including Geertz, agree on definitions that refer not to observable behaviour per se but to the "shared ideals, values, and beliefs that people use to interpret experience and generate behaviour and which are reflected in their behaviour" (Haviland, 1996, p. 32). When acted upon by members of a society, culture gives rise to "behaviour that falls within the range of variation the members consider proper and acceptable" (Haviland, 1996, p. 32). This explains why the UN's Action Plan refers to a 'culture of human rights', and a 'universal' one to boot. Without this fundamental and universal entrenchment of underlying beliefs and values, attention to human rights could come and go among the vagaries of fashion. On the other hand, the UN's mandate for multiculturalism unfortunately prevents this universalism from becoming translated into effective action. Multiculturalism is informed by the principles of cultural relativism – the belief that any culture's values and beliefs are as valid as any other culture's. This principle of boundless tolerance is clearly not helpful in the case of cultures that do not recognise human rights; it stands in the way of the UN's goal of strengthening human rights worldwide.

One way out of this conundrum would mean for the UN to recognize that, contrary to popular opinion, culture is not static. We can acknowledge cultural diversity while at the same time expecting cultures to develop over time toward more inclusive attitudes and a broader shared platform of values and ideals. Additional support should come from the other side of every right – much neglected in the human rights discourse—moral obligation or duty. Recognising that, regardless of our cultural differences, each of us has an obligation to buy into certain shared values—we have done so, for example, with the abolition of slavery – might help to make that shared global culture of human rights a reality.

Acknowledging that the creation of a human rights culture is not an event, but a long process that is aided by information dissemination, civic education and the gradual growth of political will, civil society has a big role to play in reaching out to the grassroots population as well as communicate at the intergovernmental level. Through formal and informal human rights education it will influence governments to enact and enforce legislations that further protect and promote the human rights and dignity of citizens. The biggest need exists obviously in countries and communities where populations have suffered state sponsored violence, where there is a general fear of state institutions and their agents by the citizens. For instance, in Zimbabwe, where state 'security'

agents have been the biggest perpetrators of political violence, citizens get unsettled when they see army trucks in the village or any vehicle with government registration numbers. The media are absorbed in self-censorship for fear of forced closure, arson and arrest whilst civil society regularly goes into hiding. In those situations, education must begin through grassroots initiatives, NGOs, and external support by the international community. Following an appropriate change of government, the cycle will gain further momentum.

OECD counties, who generally enjoy a reputation of being beyond such struggles, should by no means be exempted (Banks, 2002). With regards the situation in the US, Au (2014) presents numerous examples of curriculum designs and classroom activities that increase awareness of racism and discrimination, introduce students to role models of resistance and empower students to engage in debates and advocacy. On the Canadian side the legacy of the infamous residential schools for indigenous peoples continues to exert its toll on the human security of First Nations. Beginning in the 1840s, government and churches colluded in policies that amounted to cultural genocide [4], interning more than 150,000 indigenous children after forcibly removing them from their families (Stromquist, 2015). More than 6,000 children perished in those institutions. The last residential school closed in 1996, 38 years after Canada had signed the Universal Declaration of Human Rights and 14 years after the Canadian Charter of Rights and Freedoms had become law. A damning report by a national inquiry commission revealed the lack of government attention into missing and murdered indigenous women and girls, and the government's attempts at covering that up, appeared at the time of writing (National Inquiry, 2019).

Case Study 15.1

Paulo Freire and Liberation Pedagogy

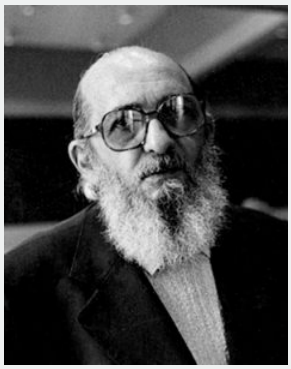


Figure 15.1: Paulo Freire (1977).

During the height of the Cold War, many South American countries were ruled by military juntas that stayed in power through brutal suppression of any political opposition and blatant disregard for human rights. In return for US support they kept their countries free of socialist insurgency movements.

Paulo Freire (1921-1997) was a high school teacher in Brazil with a law degree who had spent much of his youth in poverty. At the time only literate Brazilians were allowed to vote, which he saw as a compelling reason to teach literacy to the poor. After some impressive successes with adult literacy programmes, he was imprisoned as a traitor by a newly risen military dictatorship.

Freire was able to flee into exile in the US and then Switzerland where he worked as an academic and expert for education policy and curriculum reform. His most famous work, Pedagogy of the Oppressed (1968) contributed significantly to the new field of critical theory of education. His particular contribution can be summarised as liberation pedagogy. It provides descriptive models for the ways in which autocratic regimes stay in power by manipulating the education system to the effect that the poor remain undereducated (and often illiterate) which prevents them from attaining any significant political power. More significantly, their lack of education keeps them from realising their own oppressed situation, acting as oppressors over each other on behalf of the powerful elites. His famous remedy was 'conscientisation,' the development of a political awareness and of the analytical skills to contradict and counteract the oppressive system. The basis for their active involvement is the empowerment that conscientisation brings about. His famous insight that the education process is never neutral in terms

> of values, assumptions, and power relationships remains as significant as ever in a time when 'objectivity' is being indiscriminately claimed by (and demanded of) journalists, commentators, trainers, and educators worldwide.
>
> After the end of military rule in Brazil in 1979 Paulo Freire returned to Brazil where he continued his work as a researcher in education and political science and as Secretary of Education in São Paulo. The Politics of Education appeared in 1985. His work contributed substantially to the development of civil society in many postcolonial situations throughout the world and to the counterhegemonic efforts of oppressed and exploited people under all kinds of political systems. Freire served as a role model for thousands of teachers in poor neighbourhoods who understand only too well what irresistible power can come from the right kind of education.

Educational efforts are still ongoing to bring the legacy of racist policies to the awareness of Canada's dominant 'settler' culture, to overcome decades of denial and coverups, and to work towards the active engagement of all sectors of Canadian society in the project of decolonisation. Particular significance in today's multicultural societies is imparted on educational efforts towards the cultural safety of minorities (Lautensach & Lautensach, 2011a).

Education and advocacy for human rights almost invariably meets with resistance, for the same reasons as the circumstances that render it imperative; a society that is perpetuated by habitually violating human rights can hardly tolerate any efforts to discontinue such perpetuation. Often the resistance manifests as right-wing rhetoric, as casual disparagement in everyday discourse, or in passive resistance. [5] However, insofar as the education is perceived to threaten status quo power relationships such resistance tends to become violent. The example of the human rights movement in the US has been widely publicised but the focus across North America has still not widened enough to include other cultural minorities besides the obvious African and Latino ones, least of all the survivors of the continent's indigenous populations. Violent resistance can emanate from non-governmental organisations such as the Ku Klux Clan—which shows that civil society by no means always sides with progressive movements—or it can through various covert and overt means be sponsored directly by the state. In 1960s Brazil this is what occurred in response to the efforts by the prominent counterhegemonic human rights educator Paulo Freire (see Case Study 15.1).

The all-important first step towards sustainable human rights in a worldwide framework will have to be a frank and open discussion of the issues at hand. Global limits, needs and capacities, rights and duties, means and ends must be made explicit and placed on the table in panel discussions, parliamentary debates, academic conferences, classrooms at all levels, governmental organisations, election meetings, public hearings, council meetings and any other public forum that promises leverage with the wider public. The longer the issues remain below the public horizon the greater will be the possibility that events will overtake deliberations.

Two particular issues seem especially pertinent and urgent for these discussions. One is the balance between moral relativism and moral universalism. Global human rights obviously represent the latter, but they also protect the right of cultural minorities to preserve and practice their traditional customs. In practice, this calls for the careful negotiation of compromises where traditions impinge on rights. Secondly, the discussion will have to address the obligations that come with rights, as we mentioned above, beyond the general provisions in Article 29 of the Universal Declaration of Human Rights (UDHR). Spelling out and respecting what obligations come with each generation of human rights might help resolve the problem of grantability and expedite the process of education towards more effective action plans.

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15.6: Resources and References

Review

Key Points

- Calls for greater human security in a given situation are often based on claims that certain human rights are being neglected.
- The legitimacy of such arguments depends on what generation of human rights are being invoked; first and second generation rights work well for this purpose.
- Third generation human rights are not grantable and can therefore only be used to demand greater equity, not entitlements.
- The strengthening of grantable human rights requires a functional civil society.
- Liberation pedagogy represents a powerful tool for strengthening human rights and civil society under socio-political conditions that oppress people.

Extension Activities & Further Research

1. What is civil society? Who is part of it? What is it good for? Explain with examples.
2. The dilemma between rights and security can be addressed by weighing two opposing considerations: the extent to which human rights and liberties will have to be curtailed if the security is to be accomplished; and the extent that rights and liberties will be lost amidst anarchy, chaos, famine, disease and incessant warfare over diminishing resources, if security is not achieved (Homer-Dixon, 1999). Where do you stand in this debate? What assumptions, beliefs and values inform your position?
3. In discussions around overpopulation, pro-natalist groups have emphasised, backed by considerable popular support, the 'human right to reproduce.' How do you assess this purported right in terms of its grantability? What ethical considerations apply in such an assessment?
4. Human rights have been gradually accepted as a guiding universal moral norm that transcends cultural differences. This has culminated in the worldwide abolition of slavery in the 19th century, the proscriptions of cannibalism and infanticide, and other goals. Another innovation that human rights advocates are fighting for now is the proscription of the ritual mutilation of infants and children on religious or other cultural grounds. Opponents claim that such a sweeping measure would violate the rights of cultural groups to enact their treasured traditions. Where do you draw the line in this debate? What practices would you protect and what would you have outlawed? What are your distinctive criteria relating to human security?
5. The gradual acceptance of human rights in Canada and other countries has been paralleled by the rise of numerous 'humane' societies for the protection of animal welfare. What do animal rights and human rights have in common? How can differences be justified, if at all? What other entities should also be imparted with rights, in your view?
6. In British Columbia, human rights advocates focus on such issues as the plight of First Nations, refugees and other migrants, as well as the homeless. Choose one regional human rights issue relevant to your community and discuss to what extent the rights in question are grantable or ungrantable. How does this difference affect the ethical and political argumentation?

List of Term

See Glossary for full list of terms and definitions.

- civil society
- cultural relativism
- cultural safety
- grantability of a right
- right

Suggested Reading

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Footnote

1. Speech given 1 August 1993 at Soochow University, Taiwan; published at http://www.mandela.gov.za/mandela_speeches/1993/930801_taiwan.htm (accessed 20 July 2019)
2. It is interesting to note how exclusively human rights are restricted to the human species, but include even the most incompetent and disabled individuals (such as newborns and comatose patients) while excluding even the most sentient members of other species (such as the great apes and cetaceans). This ‘speciesist’ distinction seems rather arbitrary and lacks logical justification (Singer, 1975) but is nevertheless implicitly accepted by most authors in the literature on rights, as well as by the public at large in many cultures.
3. For example, a nationwide shortage of food might force a government to enforce a rationing system, as happened in WWII Europe. Such a system forces people with access to food, such as farmers, to deliver most of their produce to the state who distributes the food equitably as needed among the population. Transgressions, as by black marketers, are prosecuted and punished severely. Privileges are sacrificed and autonomy curtailed in order to maximise the common good and to minimise the effects of malnutrition.
4. Particularly revealing for those who know European history is the phrase “final solution” of the “Indian problem” in the summary of the legislation (Stromquist, 2015).
5. Popular excuses for historical human rights violations tend fall into the following three categories: “it wasn’t all that bad”; “others did it, too”; and “all perpetrators and victims are long deceased.” (Lautensach, 2018)

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CHAPTER OVERVIEW

16: Developing Good Governance

Learning Objectives

- Distinguish between environmental conflict and environmental insecurity, using concrete examples.
- Describe how the environmental security of a population, community, or country can be increased.
- Discuss how ecocentric thinking can be useful in the pursuit of environmental security, even though the latter is an anthropocentric concept.
- Critique the conventional interpretation of sustainable development as it is represented in the Brundtland report.
- Give some examples from your own country that illustrate the influence of weak interpretations of sustainable development in government policy.
- Describe the principles of good environmental governance using examples (real or hypothetical) of policy decisions.
- Describe how your personal values reflect (or how they could be changed to reflect) at the personal and external levels the ideals of Earth democracy.
- Explain how the principal values in the Earth Charter support good governance.

Klaus Bosselmann

The consequences of excessive consumption and resource exploitation at the global level are growing inequity and environmental degradation. Each of these two factors amplifies the other, leading to a ‘double exposure’ of spiralling insecurity. The mutual reinforcement between these trends can only be interrupted if active steps are undertaken towards environmental security.

The problem with conventional interpretations of sustainable development is that they do not promote environmental security. Reasons include the separation in space and time between perpetrators and victims; the inability to arbitrate between economic, social, and environmental agenda in the popular ‘triple bottom line’ approach; and the indiscriminate claim that all humans, present and future, can ‘have it all’ without attention to the requirements. Underneath that convention lies a weak model of sustainability that regards the natural environment as ‘the other.’ Conversely, workable “strong” definitions of sustainability and sustainable development must rest on the primacy of ecological integrity as a requirement for environmental security and thus human security.

Current models of governance rest on the weak model of sustainability, as far as they recognise its importance at all. This indicates a failure of states and of citizens in exercising their responsibilities. Good environmental governance would be based on the strong notion of sustainability and on a non-anthropocentric responsibility and care for the community of life. Its normative principles include respect for ecological integrity in decision-making; intra and inter-generational equity; the precautionary principle; internalization of environmental costs; and responsibilities of guardianship. It also employs the process principles of transparency, participation, and accountability, and in order to achieve good environmental governance, the global civil society (NGOs) needs to extend from NGOs to include entire electorates and to get them to accept their responsibility to ensure human security. This requires a model of Earth democracy that relies on a profound normative change.

The Earth Charter outlines a blueprint for Earth democracy and global environmental governance (Earth Charter Initiative 2000). It consists of four themes that form the foundation for a global sustainable society: respect and care for the community of life; ecological integrity; social and economic justice; and democracy, non-violence, and peace. It does not address methodologies and arbitration of contradictions. Subsequent steps include a global constitution and the entrenchment of sustainability in international law.

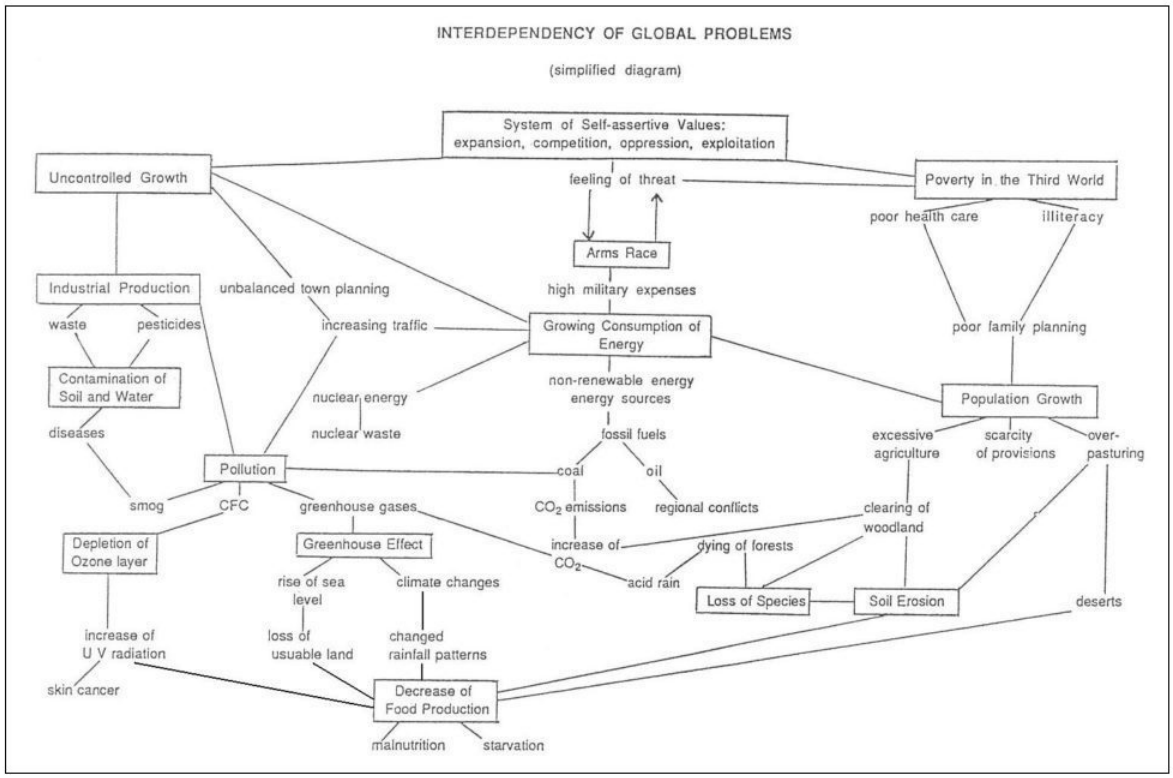


Figure 16.1: Human security and the environment (Bosselmann, 1995). [Long Description]

16.1: Introduction
16.2: Sustainable Development and Human Security
16.3: The Principle of Sustainability
16.4: Governance for Sustainability
16.5: The Role of Civil Society
16.6: The Earth Charter: A Framework for Global Governance
16.7: Conclusion
16.8: Resources and References

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16.1: Introduction

The concept of 'human security' has expanded conventional visions of security beyond the sovereign state actor, national interests, militarism and warfare, to also include the multitude of other threats experienced by individual human beings and their communities (Shani, 2007; see also Chapter 1 and Chapter 3). The term was first articulated in 1994 by the United Nations Development Programme (UNDP) in the annual Human Development Report which identified seven categories of threats to human security: economic, food, health, environmental, personal, community, and political. The concept transforms both the referent objects of security and the means of achieving security from states to humans, and from military action to human development (UNDP, 1994, p. 24). The UNDP defines human security as 'freedom from fear' and 'freedom from want' (UNDP, 1994). The UNDP concept of human security reflects the split focus in human rights discourse between civil and political, as well as between social and economic (development) concerns (Shani, 2007). It draws previously distinct issue and policy areas into a common discourse, principally concerned with human well-being. This reconceptualization can be seen as an acknowledgement of the interdependency of global problems. Ideally this holistic approach to human security would provide an invitation for innovative inter-sectoral cooperation and integrated policy responses (Tadjbakhsh & Chenoy, 2007; Cherp et al., 2007). Accordingly, the UNDP advocates 'sustainable human development' as the means of addressing the various threat areas (UNDP, 1994).

In his article "The Coming Anarchy", Robert Kaplan (1994) wrote "it is time to understand the Environment for what it is: the national security issue of the early 21st century." (Kaplan, 1994, p. 54). But beyond being merely another national security issue, human security is concerned with both personal violence and 'structural violence' (Galtung, 1969; Tadjbakhsh & Chenoy, 2007; Barnett, 2007). In what Eriksen (2010) calls a shift to a qualitative approach, security can no longer be viewed objectively as merely the absence of violence. Rather, security is subjectively determined and refers to the various locally experienced social, economic, and environmental realities that affect human well-being (Eriksen, 2010, p. 1; Voigt, 2008, p. 187). The shift recognises the limitations of traditional conceptions of security to fully capture the human (men *and* women) experience and mirrors the issues raised by critical security and gender scholars (Detraz, 2010).

In view of the attention being given to the links between the environment and human insecurity, two concepts warrant mention in the context of this chapter. The first, *environmental conflict*, refers to the conflict over resources (Detraz, 2010). As Kaplan envisioned, this concept reflects traditional notions of security with the environment being viewed as an 'interest' to be pursued through national security. *Environmental security*, on the other hand, refers to the impact of the environment on people (Detraz, 2010). This might include the impact of man-made degradation and natural disasters. Related to both these concepts is also the impact of warfare and conflict on the environment (Hulme, 2008).

In his discussion of environmental security, Jon Barnett (2007) identifies the impact of environmental change on human wellbeing as a form of structural violence. Vitally though, he demonstrates that the environmental 'threat' is essentially caused by humans beings. Barnett (2007) explains how patterns of consumption and resource exploitation in pursuance of industrial capitalism in the developed world have two effects. First, they are the cause of social injustice—an ever widening gap between rich and poor, developed states and developing states, often referred to as the north-south gap. Second, the impact on ecosystems has resulted in unparalleled environmental degradation. Climate Change, biodiversity loss, land and forest destruction, resource depletion, air, soil and water pollution are among the myriad of environmental issues we are currently facing. People in poorer, developing states lack material and social 'adaptive capacity' to cope with environmental changes and hence social injustice and anthropogenicanthropogenic environmental degradation combine to have an even greater impact on human well-being in less developed states. Not only are the impacts disproportionately felt, but environmental degradation further exacerbates structural violence (Barnett, 2007). This cyclical illustration of human insecurity is labelled "double exposure" by O'Brien and Leichenko (2000). Such examples allow us to begin to see the rationale of the human concept of security confronting multiple, interconnected issue areas (O'Brien & Leichenko, 2000).

Voigt (2008) explains how environmental factors act as "tipping points." Environmental change acts as a "threat multiplier" because the effects of shortages (of food, water, and other resources) lead to, and intensify, poverty and migration, which in turn has social and political implications (Voigt, 2008; European Commission, 2008). Environmental problems increase the risk of tensions, instability, and intensify existing conflicts in fragile areas (Cherp et al., 2007; Voigt, 2008; European Commission, 2008). Moreover, structural violence also leads people to engage in unsustainable practices and resource use – attempting to develop but being unable to do so sustainably because of an inability to meet even basic needs. We can understand then, why Barnett describes

environmental insecurity as “the vulnerability of individuals and groups to critical adverse effects caused directly or indirectly by environmental change” (2007, p. 5). Conversely, ‘security’ includes adequate provisions for adaptation or prevention so that changes exert limited impact on well-being (Barnett, 2007).

What is problematic about this definition is that if we were to take Barnett’s definition of security and apply it to the global south it would mean enhancing the adaptive ability of the global south to environmental changes. Barnett illustrates the problem but in his conception of security he does not confront the fact that increasing the adaptive capacity of the developing world is futile so long as unsustainable consumption and growth continue unabated to create conditions of degradation and social injustice. Any definition of security is incomplete unless it acknowledges the necessity of addressing the status quo. We need to modify the concept in order to make sense of the link between the environment and human security.

Ecological securityis concerned with the negative impacts of human behaviour on the environment (Detraz, 2010). Such a concept of security requires the preservation of ecosystems for their own sake, not only for their usefulness to humans (Liftin, 1999). This definition contains the recognition that since the environment is the referent object of security ultimately human beings, as part of ecosystems, are also referent objects. The security of human beings is premised on ecological security – that is, the viability of the biosphere. Social and political variables in human insecurity cannot be addressed unless the very basis of human life, the environment, is secure. Therefore, at the very heart of achieving human security is the need to address humans’ relationship with nature (Myers, 1993; Detraz, 2010; Page & Redclift, 2002). To exclude this relationship would reproduce the imbalances that cause environmental crisis, structural violence and their mutually reinforcing negative consequences for overall human security (Voigt, 2008, p. 167).

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16.2: Sustainable Development and Human Security

The UNDP envisioned “sustainable human development” as the means to achieving human security (UNDP, 1994). Unlike conventional approaches to security, this approach appreciates that security depends on long term conditions for human well-being, realized in various interconnected areas. It is an application of the model of sustainable development stated in the 1987 Brundtland Commission Report ‘Our Common Future’ and reaffirmed at the 1992 Rio Earth Summit.

Sustainability as a basis for humans’ relationship with the environment is an ancient idea and has a history of successful implementation in public systems according to the ecological conditions of the time (Bosselmann, 2016, pp. 3, 83; Weeramantry, 1997). The turning point in the relationship was the industrial revolution where humans’ perception of nature changed from recognising the intrinsic value and integrity of ecosystems to viewing nature as a machine and as a resource base to be exploited for human gain and prosperity. Importantly, this was also the era of private property and the diffusion of liberal economic free-market enterprise giving rise to “a relationship of individual power over the land” (Bosselmann, 2016, p. 13).

The first reference to sustainable development occurred in the 1980 World Conservation Report of the International Union for the Conservation of Nature (IUCN). Then the World Charter for Nature, adopted by the UN General Assembly in 1983, included a model of sustainable development in which the management of natural resources was deemed necessary in order to “achieve and maintain optimum sustainable productivity” (para. 4) but not “in excess of their capacity for regeneration” (para. 10a). This model reflected the sustainability dimension that “every form of life is unique, warranting respect regardless of its worth to man” (preamble). However in the 1987 Brundtland Report (WCED, 1987) sustainable development lost its core ecological meaning due to the development concerns and lobbying efforts of ‘southern’ states in the World Commission on Environment and Development (Bosselmann, 2016, p. 26). The priority of human needs was upheld. Then in 1992 the Rio Declaration was adopted as a non-binding agreement during the United Nations Conference on Environment and Development (UNCED), which states as its first principle that “human beings are at the centre of concerns for sustainable development” (Principle 1; UNDP, 1992).

Despite overwhelming scientific evidence of unparalleled anthropogenic environmental degradation, patterns of wasteful production and consumption remain deeply ingrained in human behaviour (Bosselmann, 2016, p. 9). The continuance of these attitudes and behaviours is largely due to the externalization of the costs of environmental change. The negative consequences of current practices are often less likely to affect the human security of those causing the most degradation. They are separated by distance in *space* because these socio-economic activities take place globally, and they are separated in *time* because the effects of degradation primarily affect the resource base of future generations rather than their own. Hence, the demands of the current generation exceed the regenerative ability of nature (Bosselmann, 2016, p. 9).

Sustainable development has been presented as a three pillar model in which environmental, economic and social needs are all balanced (OECD, 2005). Sustainable development moved away from the intrinsic value of nature and became terminologically vague so as to simply maintain the status quo despite the irrefutable knowledge of how this negatively impacts the environment. Ways of protecting the environment were mainly informed by technical solutions and economic models, which resulted in environmental problems being simply co-opted into the current economic world order, without actual cognizance of what is being secured and what endangerments it is being secured against (Dalby, 2002). Thus the model of sustainable development in the Brundtland Report (1987) and its three pillars is an attempt to ‘have it all’—economic prosperity and a healthy environment.

The vagueness of the UNDP (1994) formulation of sustainable human development means that we cannot even be sure whether concern for the environment actually features as a balance to development in other areas, or whether the environment is viewed purely as a threat. Much depends on how the relationship between environment and security is perceived. The difference between strong and weak sustainable development is that the environment is conceived either as ‘everything’ or as ‘the other’ (Bosselmann, 2006, p. 44). The human security literature, with its many equally weighed threat sources, largely reflects a limited understanding of the environment as a basis for insecurity. As a means of ensuring human security, this weak model of sustainability (as it has been referred to), is insufficient. Sustainable development, as it is now understood, is based on the irrationally held assumption that growth of human populations and economies can be reconciled with environmental preservation (Bosselmann, 2016, pp. 2, 41).

Sustainable development and indeed the satisfaction of human security are inevitably about human needs. Human security recognises the needs of current and future generations to be free from fear and want, which reflects the notion of sustainable development proffered by the Brundtland Report: “the ability of future generations to meet their own needs” (WCED, 1987, p. 43).

So, we are left wondering what needs these may be since the effects produced by interconnected threats to human security will surely adjust across time (Bosselmann, 2016, p. 28). Fundamentally though, the ability of future generations to be free from insecurity and to satisfy their material needs will depend on basic environmental services, without which no human life is possible (Bosselmann, 2016, p. 29). Fear and want can only ever be met within ecological boundaries—"there is no alternative to preserving the Earth's ecological integrity" (Bosselmann, 2016, pp. 2, 28).

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16.3: The Principle of Sustainability

As we have seen, if sustainable human development is employed as the guiding objective behind revolutionary approaches to human security it does not go far enough, and expanding the sources of human insecurity is meaningless unless we genuinely call into question the very basis for our perceptions and behaviour in the world. For those people in the developing world to whom poverty is a pervasive security threat the pursuit of social justice and economic improvement are not only valid goals, but essential. However, "if we perceive human needs without regard to ecological reality we are at risk of losing the ground under our feet" (Bosselmann, 2016, p. 31). If human security is truly concerned with the security of future generations then the environment must be the underlying consideration in any of its paradigms. Without the realization that ecological integrity is paramount, social and economic interests have nowhere to go and justice and security will remain elusive (Bosselmann, 2016, p. 21). Only with the principle of sustainability can we establish a means of 'doing' security which can lead to genuine, lasting human and ecological well-being.

The principle of sustainability thus reflects the idea of 'strong' sustainable development—development that does not undermine ecological integrity (Bosselmann, 2016, p. 52). Instead of three pillars, 'strong' sustainability follows a 'temple of life' paradigm wherein ecological integrity is the foundation, social and economic welfare the two pillars, and cultural identity the roof (Bosselmann, 2008). Fundamental to this is the understanding that economic growth conflicts with ecological sustainability. Economic 'rationality' assumes a patriarchal and dominating relationship over nature. The principle of sustainability encompasses the idea of Johann Gottfried Herder, of the Earth as "wohnplatz" or a living space or house (Bosselmann, 2016, p. 19). Humans' role as housekeeper and guardian of future generations is an idea reflected in various ecologically oriented societies (Manno 2010). In Maori culture the people are *kaitiaki*—stewards—of natural resources. For them the relationship is not one of patriarchal dominance but preservation of the ecological integrity of nature, and is guarded through means such as a "rahui" – ban – which can be placed over a resource to prevent use beyond its regenerative capacity. This idea of living from the yield rather than the substance is aptly illustrated (Bosselmann, 2016, p. 20). The economy is a sub-discipline of housekeeping; a nested egg rather than a parallel pillar (Bosselmann, 2016, p. 19; Bosselmann, 2013, p. 104), and to allow the interests of those dealing in the extracted value of nature to dominate over the well-being of nature itself is irrational. Hence sustainability is not a suspicious rejection of progress but "in its most elementary form [it] reflects pure necessity" (Bosselmann, 2016, p. 8).

As mentioned, ecological insecurity is the result of a dysfunctional relationship between humans and nature. As a means to achieving ecological and human security, sustainability requires essentially an ethical discourse about values and principles (Bosselmann, 2016, p. 8). The principle of sustainability is an appropriate guide for present and future security because it focuses on the common essential elements of all life (Bosselmann, 2016, p. 29). The challenge for creating lasting security is to ensure that the principle of sustainability is firmly embedded in good global governance.

The opportunity to secure this principle internationally was missed at the 1992 UNCED conference in Rio, where no definition and no binding treaty for sustainable development were achieved (Bosselmann, 2016, p. 32), and with states proving ineffective as drivers to re-integrate the principle of sustainability into sustainable development thinking, another driving force is needed—civil society. At the 1992 Earth Summit NGOs and civil society groups formed the "Global Forum" alongside the conference and identified the necessary connections that were omitted in politicized state documents: "ecological sustainability was referred to as central to everything: poverty eradication, socio-economic development, human rights and peace" (Bosselmann, 2016, p. 32). Work began on creating an Earth charter to elucidate respect and care for the community of life and ecological integrity. The Earth Charter, launched in 2000 at the Peace Palace in The Hague and created solely by civil society groups, "represents a broader consensus on the principle of sustainability than has ever been achieved before" (Bosselmann, 2016, p. 34). The Earth Charter was endorsed by over 1000 NGOs at the Millennium NGO Forum, and despite the absence of any specific reference in the Johannesburg Declaration of the 2002 World Summit on Sustainable Development (WSSD) (2002), the language used therein is almost identical to the Earth Charter—notably referring to the "community of life." Although the Johannesburg texts are vague, there is a heightened sense of ecological responsibility, signalling a move beyond mere social and economic foci into an ethical understanding more aligned with the principle of sustainability (Bosselmann, 2016, p. 34). This shift in ethical awareness was further strengthened at the 2004 IUCN World Conservation Conference where a resolution endorsing the Earth Charter as an ethical guide and an expression of vision was adopted by 67 of the 77 attendant states and 800 NGOs.

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16.4: Governance for Sustainability

Then the vital question is, how do we shift from the status quo model of anthropocentric environmentalism, which is subsumed within the neoliberal economic agenda, to an understanding that is based on the principle of sustainability? One answer lies in creating systems of good governance at local, national and global levels wherein the underlying concern is protecting the integrity of the Earth's ecological systems as essential to all other human concerns (Bosselmann, 2008). We need *governance for sustainability* (Bosselmann, 2016, p. 191; Bosselmann et al., 2008).

What is Governance?

Young (1997: 4) defines governance as "the establishment and operation of social institutions—in other words, sets of rules, decision-making procedures and programmatic activities that serve to define social practices and guide these interactions." Governance does not require organizations or government per se, although these certainly help to facilitate actors into coordinated, cooperative decision-making (Young, 1997). A need for governance arises out of interdependence and the understanding that the actions of one affect the welfare of others (Bosselmann et al., 2008; Young, 1997). Therefore, good governance aims to ensure that people can organize their affairs in the most effective way (Young, 1997; Bosselmann, 2008). At the international level, regimes are systems of governance in specific issue areas, usually with states as members, and founded on constitutive documents, binding or non-binding (Young, 1997).

Current Models of Governance

The two central problems with current forms of governance concern their ethical basis and their institutional arrangements. Current models have been borne from western values and from priorities such as neoliberal economic 'rationality' and consumption (Bosselmann et al., 2008). Economic 'rationality' is regarded as the basis of ethics of governance and this pervades all of its levels (Bosselmann, 2016, p. 205). Even 'weak' sustainable development models are a relatively new inclusion in regime design, where ultimately the neoliberal conception of justice as property rights and mutual advantage prevails over other long term goals of social equality, human security and ecological sustainability (Okereke, 2008; Bosselmann, 2010a; Bosselmann, 2016, pp. 9, 102). Okereke (2008) explains how current forms of environmental governance are dominated by the neoliberal agenda and that 'ecological modernization' as the status quo is the solution to environmental problems. This is essentially 'defensive, reactive, expert-based, problem solving' governance which attempts to dampen calls for normative change within the neoliberal framework for sustainable development; essentially, it is expected that technological solutions, economic instruments, and government voluntarism will facilitate uninterrupted growth (Bosselmann, 2016, p. 205; Okereke, 2008). For the future of ecosystems, this reads that "our present form of governance finds care for ecological integrity too costly" (Bosselmann, 2008, p. 329). Current forms of international environmental governance "aim…to preoccupy and pacify aggrieved sections of the international community while leaving the fundamental structural causes of environmental injustice unchanged" (Okereke, 2008, p. 182).

As in the mainstream model of sustainable development, the design of our governing institutions reduces 'the environment' to a concern alongside other 'competing' concerns—an agenda distinct and usually subordinate to growth, productivity and profit (Bosselmann et al., 2008; Bosselmann, 2016, pp. 88, 125, 172). Yet, the noticeable change in focus of multilateral environmental agreements (MEAs) from ad hoc solutions to more comprehensive treaties should be seen as an attempt to strengthen forms of international cooperation (Roch & Perrez, 2005). The international environmental regime is still hampered by fragmentation and by a lack of synergy between agreements and issue areas. It is institutionally weak because the UN Environment Programme (UNEP) lacks the authority, membership and resources to provide comprehensive policy guidance (Roch & Perrez, 2005). Within this context we can understand the terminological vagueness and lack of binding international agreements (and the lack of ratification and implementation of those agreements that *are* binding) as a deliberate tactic to keep environmental governance peripheral to more immediate concerns. Roch and Perrez (2005) describe an 'institutional imbalance' between the environmental regime and other regimes (trade, finance), caused by a lack of procedural mechanisms, resources and most importantly, political weight. These realities at the international level reflect similar patterns at the domestic level. Current models of governance are designed to "maximise human freedom to use the Earth, intervening only when that use threatens or undermines the rights of other humans" (Bosselmann, 2008, p. 324). And even then, some human security scholars might argue, the ever widening gap between rich and poor seems to suggest this might be the exception rather than the rule.

Good environmental governance demands a sound management system for the environment. In light of what amounts to current management "there is little dispute that better governance is required." However it is "a precise definition of what this means or what it required that is elusive" (Elliot, 2004, p. 94).

Governance for sustainability, as a means to ensuring human security, is about establishing core ecological ideals as the building blocks of any solution to human problems. Central to this project will be establishing the strong model of sustainability as a *meta-narrative* in all areas of social, political, economic and environmental interaction. Sustainability, that is the perspective of the whole Earth community, must be the reference point in much the same way as foundational ethical ideas such as justice inform a legal system (Bosselmann, 2016, p. 206). The idea of ecological justice and the principle of sustainability are sufficiently clear to serve as guiding principles of law (Bosselmann, 2016, pp. 9, 126; Bischoff, 2010). Human security is about securing daily living by mitigating the threats to lives and livelihood (Tadjbakhash & Chenoy, 2007). This can only be achieved through a profound shift in thinking to an ecological, life-centred perspective that appreciates the health of the planet as the first step to secure human lives (Bosselmann et al., 2008; Bosselmann, 2008). The immediacy and diversity of individual human security is linked to the commonality of the threat of environmental breakdown. A credible model of governance must reflect the global nature of this problem (Bosselmann et al., 2008). Consequently a system of good governance cannot be western, nor can the subjects be limited to human life (Bosselmann, 2008). Good housekeeping is the preservation of all communities of life. Hence governance for sustainability is value based and about a holistic awareness that non-anthropocentric responsibility and care for the community of life is central and vital if humans are to function as productive 'beings' (Bosselmann, 2016, pp. 96, 131, 204; Bosselmann, 2008). We can summarise the normative principles of sustainability as follows: considering ecological integrity in decision-making; intra and inter-generational equity; the precautionary principle; internalization of environmental costs; and responsibilities of guardianship (Bosselmann et al., 2008).

Good environmental governance will need to be multidimensional. The building blocks are principles, rules, norms and practices—a robust ethical foundation. This begins with people. Similarly, institutions are an important part of ensuring procedures for the formulation and implementation of policy. Finally agreements and established policies are important as guides and measures in compliance (Weale et al., 2000). Similarly, advancing sustainability will require openness, participation, accountability, predictability and transparency of institutions. To achieve governance for sustainability we need to integrate different areas of governance; we need governance which is multi-level, incorporating actors at all levels: corporate, local, national, regional and global (Bosselmann, 2010a). Only through a multi-dimensional, multi-level governance framework will contemporary security and survival issues be adequately addressed (Voigt, 2008; Bosselmann et al., 2008). The system wide problems of environmental degradation and the direct and indirect consequences for human life need to be confronted by broad principles of law, not issue specific legal and policy regimes, as is the current approach (Young, 1997). Multi-level governance requires a commitment from states and from citizens; "only a common effort by those who govern and those who are governed could bring about the necessary behavioural changes" (Bosselmann, 2010a, p. 93). Effective policy-making is a combination of effort from the governed (citizens) and the governors (states) (Bosselmann et al., 2008).

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16.5: The Role of Civil Society

Judge Weeramantry (1997) famously called sustainability foundational to civilization. What is particularly alarming about the current environmental crisis is that people are profoundly aware that their current behaviour is illogical, yet lack the vision and the motivation to address it (Bosselmann & Engel, 2010). In the years since sustainable development first entered the international arena, the resultant lack of solid commitment from states – even to the 'weak' model of sustainability – demonstrates how the "world today is even further away from effective global governance than two decades ago" (Bosselmann & Engel, 2010, p. 15).

The failure of current environmental governance cannot be seen as purely a failure of states. Even in the unrealistic event that states and policymakers wholly embraced sustainable development and decided to issue a radically new national policy agenda the effect would be short lived. Individual behaviour is extremely difficult to regulate when it has deeply held normative foundations (Vandenbergh, 2004). States are the sum of their constituent populations and their lack of commitment reproduces the broader complacency of civil society. Democratic governments are elected by the *demos*—citizens (Bosselmann, 2010a). Hence "it is only by virtue of citizens that governments are able to reaffirm the idea of economic growth… missing the point of sustainability" (Bosselmann, 2010a, p. 97). This means that "civil society can either be indifferent or proactive with respect to sustainability" (Bosselmann, 2010a, p. 97).

Importantly this illustrates that norms and institutions are socially constructed. The prevalence of economic rationality as the normative basis and the source of institutional bias is historical, and for this reason it can be changed (Bosselmann, 2010a). The question is *how* to change it. Essentially the future of ecological wellbeing (and thus human survival, security and well-being) comes down to choice.

For this reason the success of the principle of sustainability will rest on how it is "(re)discovered, explained, defined and applied" and conceived of at the level of basic values (Bosselmann, 2017, pp. 4, 10). If current models of environmental governance are lacking then the onus is ultimately on civil society to be the vehicle for change (Bosselmann, 2017, p. 4; Bosselmann, 2010a). All institutions and forms of governance take their mandate from citizens acting individually as well as cumulatively, so civil society will determine whether and to what degree public concerns enter the democratic process (Bosselmann, 2010a). A fundamentally new mindset must be catalysed (Voigt, 2008). The real challenge then, and the vital element of moving forward toward ecological sustainability and overall human security, is how to shift the attention of governance from the status quo to 'strong' sustainability (Bosselmann, 2010a).

Earth Democracy and Earth Trusteeship

Although global civil society has been instrumental in the promotion of sustainability values, there is a disjoint between the mobilised and ecologically aware elements of that society that interact with environmental regimes, and the ordinary citizens in states. Governance for sustainability requires that we are all clear about the kind of citizenship that is required (Bosselmann, 2008). Any system of Earth governance must emerge from 'Earth democracy' which includes global or ecological citizenship (Bosselmann, 2010a). Ecological citizenship describes the normative foundations of governance for sustainability. It 'poses a new relationship between humans and the natural world and stresses non-reciprocal obligations and responsibilities' (Bosselmann, 2010a, p. 105; Bosselmann, 2017, p. 227). These kinds of responsibilities are those of stewardship and trusteeship. In the Anthropcene, they amount to Earth trusteeship.

Earth trusteeship reflects the view—held in virtually all religious and cultural traditions—that humans must be stewards and guardians of the land and the natural environment that they belong to. Earth trusteeship involves, however, more than individual moral obligations. It has also legal implications: rights and responsibilities of citizens have corresponding rights and responsibilities of the state. Earth trusteeship functions are therfore not confined to citizens, but include the state acting as a trustee of Earth (Bosselmann, 2017).

Interestingly, international environmental law has increasingly acknowledged such a responsibility of states. Earth trusteeship is the institutionalization of the responsibility of states to protect the integrity of Earth's ecological systems.

The 1987 Brundtland Report referred to Earth trusteeship and care for the integrity of ecological systems in many passages (Brundtland, 1987). The Preamble of the 1992 Rio Declaration describes *the integrity of the global environmental and developmental systems* as an overarching goal of states and Article 7 of Rio Declaration postulates: "States shall co-operate in a

spirit of global partnership to conserve, protect and restore health and integrity of the Earth's ecosystem" (Rio Declaration, 1992). The duty of preserving the integrity of ecological systems is expressed in more than 25 international agreements – from the 1982 World Charter for Nature (1982) right through to the 2015 Paris Climate Agreement (Kim & Bosselmann, 2015).

A Norm of Ecological Citizenship?

All forces that can influence behaviour are potential tools of governance, thus we must consider normative change. Norms are "standards of appropriate behaviour for actors with a given identity" (Finnemore & Sikkink, 1998, p. 891). They regulate behaviour and constrain actions through peoples' reference to what is socially acceptable. Norms can be divided into personal norms (a personally perceived obligation) and external norms (societal obligation) (Babcock, 2009). The corresponding consequences of breaking norm behaviour are guilt and shame, respectively. The costs of non-compliance determine the attention and resources that are given to complying with a norm or with 'soft' law (Page & Redclift, 2002). An environmental norm could be both personal and external, though arguably the more personally construed the norm, the more compliance will follow (Babcock, 2009).

Despite the scientific evidence and widespread awareness of environmental degradation, levels of consumption and pollution in developed states continue to testify to the dominant notion that economic prosperity is paramount. Babcock (2009) suggests that, in fact, individuals do not make the necessary connection between their economic behaviour and environmental degradation, instead believing that industry is the primary cause of pollution. Babcock rejects regulation as resource intensive, politically untenable, and too at odds with the prevailing norm of privacy and choice (Babcock, 2009, pp. 119-122). The term 'citizen-consumer distinction' describes how societies can seem outwardly supportive of environmentalism, yet engage in behaviour that contradicts it (Vandenbergh, 2001). This demonstrates that the environmentalist norm is subservient to other norms (choice, independence) which validate status quo behaviour. Babcock reviews the many complex reasons for this, as well as the difficulties in using norms as an alternative to government coercion, but ultimately advocates in favour of norm change (Babcock, 2009).

In 1998 Finnemore and Sikkink (op.cit.) developed the norm life cycle which explains how norms change over time. The first stage of the cycle is norm emergence, followed by a 'tipping point' when the critical mass of people (or states) adopt the norm. The second stage is acceptance, or a 'norm cascade', and the third stage is norm internalization when the norm is taken for granted and no longer the subject of public debate, but an automatic dictate of behaviour. If we consider a 'green norm' both domestically and internationally, it is highly debateable whether we have progressed beyond stage one. Ingebritsen (2002, p. 15) argues that the sustainable development norm has taken hold and survived the first two phases—finding salience at local, national and regional levels of governance. However, the wider subscription to the latter idea certainly indicates that the principle of sustainability (and its corresponding requirements of radical behavioural changes) has a long way to go in terms of pervading public consciousness. The "good news is that the inescapable reality of human dependence from nature can only be ignored to a point" (Bosselmann, 2010a, p. 104). Perhaps the first step to diffusing a norm in developing states is to bring the reality back to the polluters and reduce the amount that environmental costs can be externalized. This is why 'the shift from an abstract acceptance of sustainability to actual policies of sustainability is possibly the biggest challenge of our time' (Bosselmann & Engel, 2010, p. 16).

Participatory Rights

Parallel to the vital project of propagating ecological citizenhip and Earth trusteeship, institutions must be re-designed to ensure that citizens can be heard. Citizens can only be effective vanguards for change to the extent that regimes allow citizens' participation and provide channels for pressure to be exerted (Bosselmann, 2010b). Hence genuinely democratic systems can be effective conduits for cooperation (Gleditsch & Sverdrup, 2002). The need for procedural and participatory rights of citizens is enshrined in principle 13 of the Earth Charter (2000). International organizations are state-controlled, "elitist, technocratic and undemocratic" (Okereke, 2008, p. 9). Often only limited participatory rights are given to NGO groups.[1] Rights are conferred vertically, so civil society has an important task in insisting that states act as trustees for the environment and this includes allowing the participation of civil society (Bosselmann, 2016, pp. 4, 10, 231). Moreover, to the extent that global civil society is not 'democratic' per se, institutions must allow for all voices to be heard, not only western coalitions (Bosselmann, 2010b). Being allowed to contribute to the chorus of global civil society is a privilege not extended to all since it necessitates material resources (technology, multilingual communication) and a large amount of time (Young, 1997; Bosselmann, 2010b). An important part of fortifying a truly 'global' civil society, capable of responsive adaptation to competing norms, will be fostering civic plurality and association (Rayner & Malone, 2000).

The relationship between civil society and institutions is one of mutual dependence – civil society organizes the material and ideational resources of institutions, and institutions help to shape behaviour (Wapner, 1997). In order to ensure that institutions do not undermine any grass-roots normative project, civil society members must act as agents for institutional change. This means ensuring that norms reach institutional level. This task requires the inclusion of an overarching ethical value into doggedly formalistic legal systems (Weeramantry, 1997, p. 18). Barresi (2009) suggests an approach called the “mobilization of shame”. He advocates that socialising key groups to new ideas about nature and the implications of sustainability could re-shape and transform legal culture (Barresi, 2009). The normative approach operating at state and corporate level would mean that civil society could “prod states into dramatic policy changes by making any other course of action seem shameful” (Barresi, 2009, p. 30). This is essentially an articulation of sanctions for non-compliance with external norms. The difficult task with state representatives and businesspeople would be ensuring that ecological norms also resonate from within. Unless and until states and corporates are responsible actors and environmental trustees, organizations and institutions are not effective tools of sustainable governance (Bosselmann, 2016, p. 90).

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16.6: The Earth Charter: A Framework for Global Governance

The Earth Charter (2000) represents a popular expression of these normative elements at the global level. As an ethical framework the Earth Charter enshrines the code of conduct that is necessary to observe the principle of sustainability (Bosselmann & Engel, 2010). As a declaration which is transnational, cross-cultural and inter-denominational the Earth Charter projects a truly global vision despite different cultural value systems and positions in the political economy (Bosselmann & Taylor, 2005; Okereke, 2008). The Charter has four main themes which form the foundation of a sustainable global society: respect and care for the community of life (principles 1-4); ecological integrity (principles 5-8); social and economic justice (principles 9-12); democracy, non-violence and peace (principles 13-16). The Earth Charter still assumes the legitimacy of state-centric international regimes and international law but asserts that only multilevel cooperation between government, civil society and business can achieve effective governance (Bosselmann, 2008).

The definition of human security that is used in this chapter draws on environmental, social and economic areas. The Earth Charter achieves what the UNDP (1994) definition does not. Human security, as affected by interdependent and indivisible challenges, relies on a categorical imperative that "we, the peoples of Earth, declare our responsibility to one another, to the greater community of life, and to future generations" (Earth Charter Initiative, 2000, Preamble). The Earth Charter reflects 'strong' sustainable development with the three fundamental elements (environment, social welfare and economic welfare) but organises them to reflect the 'temple of life' paradigm (see Section 16.3) and the fundamental understanding that ecological integrity is not one of three equally important goals, but the basis of all life (Bosselmann, 2008; Bosselmann, 2010b). Central to environmental and social equity is the concept of common but differentiated responsibility. The Earth Charter does not develop this concept fully, but it will be crucial for human security regimes and global governance that the ethic of responsibility manifests in a way which acknowledges the realities of the international political economy.

An important means of spreading the ecological norm is to publicly declare the intent (Bosselmann, 2008). The Earth Charter is a universal covenant of global responsibilities (Engel, 2007; Bosselmann, 2008). Genuine behavioural change can only be achieved when people commit to their role as an ecological citizen and the responsibilities that ensue. Covenants represent a promise and a deeply felt commitment (Bosselmann, 2008). "A declaration can be a very powerful manifestation of changed awareness and morality" and like other soft law may "be very effective in 'lifting the game' and increasing pressure on governments" (Bosselmann, 2008, p. 322; Bosselmann & Engel, 2010, p. 23). In terms of our norm life cycle this could be an important development in the first stage of norm emergence. As more individuals, organizations and states endorse the Earth Charter the norm becomes stronger and more influential. The goal is for the principle of sustainability to overtake three-pillar sustainable development and inform all policy areas including security. We might interpret the Earth Charter and its visionaries as 'norm entrepreneurs', and at the very least as fulfilling an educative function that is fundamental to socialization and norm diffusion (Finnemore & Sikkink, 1998; Ingebritsen, 2002; Bosselmann & Engel, 2010).

Ultimately we still see the predominance of economic 'rationality' in the core rules of environmental regimes despite the ethical and normative aspirations of global civil society (Okereke, 2008). However, in our project of changing the 'ought' to the 'is', a universal covenant such as the Earth Charter which "represents the most profound and powerful social bond we know" represents a promising platform for future action (Bosselmann, 2008, p. 322).

The Earth Charter is silent as to the techniques and methodologies that we should use to implement ecological governance but it is a useful starting point for a 'global constitution' (Bosselmann, 2010b). The Earth Charter already sets the benchmark for human behaviour – that it is just, participatory, sustainable, and peaceful (Earth Charter, 2000, principle 3). A constitution is a higher level of law which sets forth the fundamental rules of a political community (Bodansky, 2009). A global constitution would lay out the dimensions of ecological citizenship with the legal certainty of substantive rules. Other discussion about how best to implement good governance generally fluctuates between evolution and reform of existing governance, and developing entirely new governance structures (Bosselmann, 2016, p. 192). Roch and Perrez (2005) proffer the 'double c / double e approach' as key to the success of environmental governance (Roch & Perrez, 2005, p. 18). This refers to coherence (coordination between policies and actors), comprehensiveness (of environmental policy), and efficiency and effectiveness (Roch & Perrez, 2005). Perceptions that the UNEP is ineffective have led to calls for a more centralized environmental body such as a World Environmental Organization, or a Security Council for the Environment (Roch & Perez, 2005). Ultimately, it seems doubtful that we need an overarching global governance structure, but what is crucial is that sustainability be overarching and the common element among a network of

governance levels (Bosselmann et al. 2008). We need to be realistic without sacrificing ambition and vision (Roch & Perrez, 2005). We urgently need states to implement measures identified in the Global Ministerial Environment Forum in Cartagena 2002 (Roch & Perrez, 2005). However in the long term, strengthening governance is a dual process of local empowerment, engagement and socialization to ecological citizenship, as well as working to establish the principle of sustainability as a principle of national and international law (Bosselmann et al., 2008). Underlying this process is infusing the principle of sustainability with the tangible authority to affect actual change in the way humans interact with nature. Power, in this sense, will come from its social and legal recognition and implementation.

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16.7: Conclusion

Good governance can only be perceived as value-based; in the ecological age those values are primarily ecological. Accountability, transparency and public participation are essential requirements for good governance but they do not suffice to ensure governance for human security. In the 21st century, human security and environmental security are deeply intertwined. Good governance, therefore, needs to adopt an understanding that the human sphere is ultimately dependent on the natural sphere. To capture the ecological realities involved here, good governance must be based on an ethic of care and responsibility for the Earth, best perceived as Earth trusteeship.

The Earth Charter reflects and defines Earth trusteeship. The challenge will be for our communities, for local and national governments, for the entire multi-layered system of governance to spell out what actions it involves and how it must guide us all in our search for human security.

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16.8: Resources and References

Review

Key Points

- Environmental degradation exacerbates structural violence, which leads to increased social injustice, which further exacerbates poverty and environmental degradation.
- Environmental change acts as a 'threat multiplier' because it amplifies scarcities.
- Environmental security is the foundation on which human security stands. It requires adequate provisions for adaptation and prevention so that environmental changes exert less impact on well-being.
- Conventional 'weak' notions of 'sustainable development' cannot succeed in increasing human security because they do not recognise the primacy of ecological integrity among the requirements. Unfortunately they show no sign of abating in their influence on governance.
- Good environmental governance rests on normative principles and process principles that include all of civil society in the decision-making process.
- Good environmental governance is an essential component of Earth democracy, which also requires profound changes in people's values.
- The Earth Charter outlines the major values and principles that can lead to a global democratic regime of good environmental governance.

Extension Activities & Further Research

1. In Section 16.3 it was argued that economic security should not be regarded as a 'pillar' for the principle of sustainability. In your view, does this also apply to the 'four pillar' model of human security? What are the arguments for and against that proposition?
2. Section 16.4.2 outlines some principles of 'good governance.' To what extent does good governance also mean democratic governance?
3. An important component of the process of Earth democracy will have to be the disenfranchisement of the bloated corporate power groups who currently dominate decision-making processes at so many levels without any mechanism of accountability. Section 16.5.2 leads to the question, "To what extent can a civil society capable of such good governance also be capitalist?" – the corollary being "to what extent does it have to be?" Any suggestions?

List of Terms

See Glossary for full list of terms and definitions.

- anthropogenic
- Earth Charter
- ecological security
- ideational
- strong sustainability
- Three Pillars of Sustainable Development
- weak sustainability

Suggested Reading

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Long Descriptions

Figure 16.1 long description: A diagram that aims to demonstrate the complexity and interconnectedness of global problems. This diagram has been turned into an ordered list to allow for self-exploration.

A system of self-assertive values of expansion, competition, oppression, and exploitation lead to uncontrolled growth (see #1), poverty in the so-called Third World (see #2), and a feeling of threat (see #4a).

1. Uncontrolled growth leads to
    a. Unbalanced town planning and increasing traffic, which leads to a growing consumption of energy (see #4) and pollution (see #5).
    b. Industrial production, which leads to pollution (see #5) and waste and pesticides that contaminate soil and water and cause diseases.
2. Poverty in the Third World leads to
    a. Poor health care and illiteracy, which results in poor family planning and population growth (see #3).
3. Population growth leads to
    a. A growing consumption of energy (see #4).
    b. Excessive agriculture, which leads to the clearing of woodlands, which in turn leads to soil erosion and loss of species and forests dying.

c. A scarcity of provisions.
d. Over-pasturing, which leads to deserts and a decrease in food production (see #6) as well as soil erosion.

4. Growing consumption of energy, which is
   a. Caused by increasing traffic, population growth, and high military expenses due to the nuclear arms race, which both feeds into and is compelled by a feeling of threat.
   b. Related to the use of non-renewable energy sources, i.e., fossil fuels like coal and oil, which contribute to pollution, CO_2 emissions (see #4d), and regional conflicts.
   c. Related to the use of nuclear energy, which leads to nuclear waste.
   d. Related to an increase in CO_2, which is partially caused by the clearing of woodlands and contributes to acid rain.
5. Pollution, which is
   a. Caused by increasing traffic, use of fossil fuels, and industrial production.
   b. Responsible for smog, which causes diseases.
   c. Responsible for chlorofluorocarbons (CFCs) that deplete the ozone layer and increase UV radiation, which can cause skin cancer and decrease food production (see #6).
   d. Responsible for greenhouse gases, which have a greenhouse effect that causes changes in the climate and a rise in sea level, which in turn result in changed rainfall patterns and a loss of usable land, all of which lead to a decrease in food production (see #6).
6. Decrease in food production, which is
   a. Caused by deserts due to over-pasturing, changed rainfall patterns, loss of usable land, and an increase in UV radiation.
   b. A precursor to malnutrition and starvation.

[Return to Figure 16.1]

Footnote

1. The Global Forum at the 1992 Rio Earth Summit is a case in point. It was comprised of the NGOs that were not permitted to attend the Summit alongside State representatives.

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CHAPTER OVERVIEW

17: Health Security in the Context of Social-ecological Change

Learning Objectives

- Demonstrate an understanding of determinants of health, health security and social-ecological systems and the roles they play in supporting health.
- Explicate the inter-relationships between political and economic power, environmental change, and health security in particular places/watersheds/ecosystems/ecoregions through the use of different frameworks and theories. Explain how these dynamics operate at, and across, different scales.
- Illustrate the particular challenges that the diversity, breadth and complexity of health security problems and responses pose to understanding, practice and research. Select and apply different approaches and use a suite of observational and analytic tools to address health security problems.
- Draw on critical understanding of concepts, relationships, and tools as well as their values, motivations and place in the world, to formulate responses (actions, interventions and practice or policy changes) to promote health security. Consider the ways that these may be applied in different professional and organizational settings.

Chris G. Buse, Donald C. Cole and Margot W. Parkes

The focus of this chapter is to demonstrate interlinkages between changing ecological and social systems and health security. Moving beyond dynamics of disease spread and bioterrorism, we draw attention to the reciprocal relationships between living and social systems to exemplify how health security operates at this interface. We clarify key concepts of health, public health, the determinants of health, health security and social-ecological systems, demonstrating their implications for how we understand and respond to health security issues. In doing so, this chapter critically analyzes the health security discourse, and forwards new tools and approaches to expand our understanding of the multiple ways in which health is impacted by changes to ecosystems and resulting social change.

17.1: Introduction
17.2: What Are Health and Health Security?
17.3: Coupled Social-ecological Systems and Implications for Health Security
17.4: Case Examples Linking Social-ecological Insights with Human Security in Particular Bioregions
17.5: Discussion
17.6: Conclusion
17.7: Resources and References

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17.1: Introduction

In an era of rapid social and ecological change, the interfaces of health, human security, and global environmental change warrant particular attention. Accordingly, this chapter foregrounds the notion of health security in relation to social-ecological change. The World Health Organization constitution states that “the health of all peoples is fundamental to the attainment of peace and security and is dependent upon the fullest co-operation of individuals and states” (WHO, 1948, p. 1). Health security therefore exists at the interface of the health and security sectors, and is typically thought of as the activities required to mitigate risk or respond to acute events that endanger population-level health across international boundaries.

This conventional definition of health security therefore privileges concerns of disease outbreaks of epidemic proportions with risks of international transmission, deliberate acts of bioterrorism, and responses to disease in contexts characterized by war or violent conflict. Global health security is arguably more important now than ever before. For example, an influenza pandemic could affect up to 1.5 billion people, be responsible for up to 150 million deaths, and produce USD $3 trillion in economic damages (Hoffman, 2010). While the acute public health and emergency management response is laudable to respond to such direct biophysical threats, one topic that has received limited attention in human and health security discourses is the role of global environmental change.

Leveraging from more traditional definitions of health security, this chapter conceptualizes how global environmental change can impact health security, and builds upon other chapters in this volume that engage with threats to human security (Chapter 5), climate change (Chapter 9), resource scarcity (Chapter 10), human rights (Chapter 15) and global environmental governance (Chapter 20). First, we provide definitions for key terms, highlighting the historical context that led to emergence of health security. Second, we establish the importance of social-ecological systems as an essential component in considering the interface of health security and global environmental change. Third, we profile some of the greatest ecological challenges facing the planet in the 21st century in relation to their implications for health security, and demonstrate the relevance of these challenges through several applied case studies. Finally, we present and discuss the implications of a broader definition of health security, its relationship to globalized equity and ecological considerations, addressing time and scale considerations that span the local to the global, and which point to emerging priorities for public health practice, research and policy moving forward. Our chapter foregrounds essential theoretical and practical considerations to drive future innovation on health security in an era of environmental change. While this chapter is not intended to be an exhaustive review of the concept of health security or the myriad social-ecological challenges facing the human population, we anticipate it will be helpful for audiences from health and non-health sectors in clarifying key terminology, and establishing connections between seemingly unconnected health issues as security challenges.

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17.2: What Are Health and Health Security?

This section provides an overview of the concept of health and its determinants to set the stage for an introduction to the concept of health security. We provide an overview of key terminology and discuss the implications of health security in relation to health not only as an outcome, but in terms of its broader determinants.

Health and Its Determinants

Health refers to "a state of complete physical, mental and social well-being, not merely the absence of disease or infirmity" (WHO, 1948, p. 1). Health is therefore both a state, outcome and process that plays out at the level of an individual (i.e. when we get sick or experience an injury), but also at the level of populations. Individual health is typically treated by health professionals across health and social systems of care, whereby health systems are typically considered a front-line response to protecting against disease population health (Kutzin & Sparkes, 2016). Preventative aspects of population-level health are the responsibility of public health—which, as a field of research, policy and practice, has the role of protecting and promoting health, preventing disease and injury, and reducing health inequities. Public health is therefore directly informed by the cross-disciplinary study of, but also practice and policy directed towards, population health and its determinants. Health is not only a product of individual choice and genetics, but is the direct result of social, political, economic and environmental determinants (Marmot 2009). These determinants of health modify and influence who bears the burden of a disease or chronic condition and the extent of the impact on both individuals and populations, and explain group differences in health status (Marmot, 2009; Mikkonen & Raphael, 2010).

Including the determinants of health in a conversation about health security is incredibly important. The determinants of health refer not only to the things which negatively influence our health over time, but also our adaptive capacity to respond to threats. By broadening our understanding of health beyond any single impact to recognize the broader context(s) of ill-health, we are able to connect health and security to questions of livelihoods, geopolitics, social relationships, and ecological systems. For example, a modelling study estimated the cost of a hypothetical infectious disease outbreak to be between $13 million to $64 million for one country, to $8 billion to $41 billion for nine countries, placing between 1500 to 1.4 million export-related jobs at risk (Bambery et al., 2018). Not only does an infectious disease pandemic therefore impact individuals and populations in terms of their health, but it will also affect the systems of care treating those affected, and have massive economic impacts that may slow economic development at best, or threaten economic and regional destabilization at worst, ultimately influencing the security of a population to afford the basic necessities of life (Cameron, 2017). Thus, health in a security context, must necessarily account not only for health-related outcomes, but also the features that determine, modify or mediate those outcomes.

Health Security: Overview and Challenges

According to McInnes (2015, p. 7), there are "… four terms widely used in debates over health security in the global context… global (public) health security, national security, human security and biosecurity" and that they are not synonymous, reflect different interests and agendas, and have different implications for how we understand the health and security nexus (Lo Yuk-ping & Thomas, 2010). National security typically refers to securing the borders of a country and the welfare of the citizens within its bounds. Biosecurity is a field of study intended to protect humans, plants and animals against harmful biological agents, and in some contexts such as New Zealand, has been interpreted to include entire ecosystems. Human security, as outlined throughout this text, and as defined by the United Nations, is an approach for "identifying and addressing widespread and cross-cutting challenges to the survival, livelihood and dignity of their people" (UN General Assembly Resolution 66/290, Article 3, p.1). Related to each of these three concepts is the notion of health security or global public health security which are often used interchangeably.

For example, let us briefly return to the WHO constitutional mandate for achieving health for all through security and peace. In this context, and as articulated by Aldis (2008, p. 370), "'security' seems to refer to 'health and security' (the contribution that health makes to global security) rather than to 'health security' (securing health itself)." Importantly, there seem to be no universally agreed upon definitions for health security (Lee & McInnes, 2004; Rushton, 2011). There are, however, several recurrent themes across the health and human security literatures emerging from a published literature review, which include:

- Protection against threats (e.g. disease, poverty, oppression, hunger, etc.)
- Emergence of new global conditions under which past approaches produce diminishing returns (e.g. rise of failed states, emerging environmental threats, etc.)

- Engaging new allies (e.g. public health collaboration with military establishments)
- Linking health to foreign policy interests (e.g. HIV/AIDS pandemic as a national and international security threat).[1]

Following Lee and McInnes (2004), a global health issue can rise to prominence on international security agendas if it is international in scope, threatens economic destabilization, impacts the stability of a region, and/or when health issues are part of trade negotiations. Feldbaum and Lee (2004) similarly highlight that a global health security threat typically impacts *populations* of people rather than individual health, produces a high incidence of death or disease, produces acute rather than long-term or chronic health impacts, and are experienced by more than one country. Much of the health security literature echoes these criteria, whereby extreme threats of international proportion establish legitimacy for a substantial political response.

Indeed, the discourse of health security dates back centuries as a reflection of historical disease outbreaks, more recently converging around the increasing importance of public health security in a highly globalized world (Kamradt-Scott, 2015; Novotny, 2007). Hoffman (2010) characterizes global health security according to four regimes:

1. Unilateral quarantine regulations (1377-2851)
2. A series of Sanitary conferences beginning in 1851 to develop international agreements around infectious disease response
3. The establishment of several international sanitary conventions and international health organizations (1892-1946)
4. Under the leadership of the WHO (1946-present).

This last regime which has been challenged by an increasingly globalized and interconnected world, recently culminated in *The International Health Regulations* (IHR) created by the WHO in 2005 and its member states (Kamradt-Scott, 2011; Katz et al., 2014; Kennedy et al., 2018; Paranjape & Franz, 2015; Wilson et al., 2008). Driven largely by the severe acute respiratory syndrome (SARS) outbreaks in Canada and China, but also increasing concerns over variations in pandemic influenza and heightened security concerns over terrorist activities, the IHR “aim to prevent, protect against, control and provide a public health response to the international spread of disease” (Article 2), with the intent of incorporating “biological, chemical and radio-nuclear events, as all as zoonotic diseases and threats to food safety” (Gostin & Katz, 2016, p. 267).

Thus, health security under the IHR encompasses not only traditional biological threats such as the spread of disease either naturally or otherwise, but also terrorist attacks (Eisenman et al., 2004; Khan, 2011), and nuclear and biological weapons (e.g. engineered pathogens or otherwise) (Carus, 2015; Colf, 2016). Perhaps overlooked elements of health security under the IHR may include human trafficking and other disease transmission pathways (Worsnop, 2019), antimicrobial resistance (Toner et al., 2015), mass migrations (MacPherson et al., 2007; Viettie et al., 2013; Zimmerman et al., 2011), and other so-called global catastrophic biological risks which include climate change and violent conflicts (Barnett & Adger, 2007; Percival & Homer-Dixon, 1998; Schoh-Spana et al., 2017; see also Chapter 5).

These trends reflect an increased focus on global governance in relation to health security, and how security discourses have become a dominant response to global health threats (Chen & Narasimhan, 2003; Fidler, 2007; McInnes, 2005). These developments have arguably led to a privileging of infectious diseases as central issues in the health security discourse (e.g. pandemic influenza, Ebola, HIV/AIDS, Zika), which has engendered a particular emphasis on improving global health surveillance platforms for data sharing, enhancing laboratory testing, workforce development, and promoting rapid humanitarian and emergency response (Balajee et al., 2016; Belay et al., 2017; Borchert et al., 2014; Fitzmaurice et al., 2017; Sikka et al., 2016; Tappero et al., 2017). This necessarily includes building effective systems of care and associated emergency management protocols in order for primary health care to be an effective contributor to health security and associated reactive and proactive responses (Chan, 2009). Indeed, local health departments play significant roles in responding to the immediate and longer-term recovery from health security threats, and require programming to support training, safety, public preparedness, planning for emergency response and evaluation (Errett et al., 2015; Taylor et al., 2018). Moreover, policy frameworks such as the IHR necessarily stress the importance of international collaboration and the need for diplomacy to achieve policy coherence that supports the promotion of health security in a rapidly globalizing world (Bond, 2008; Frieden et al., 2014).

Although these developments in health security bring new perspective through renewed foci on governance, conflict, diplomacy and disease, we find these approaches to health security and associated responses problematic for at least three reasons. First, much of what is outlined above is reactive in nature, rather than proactive in mitigating the risk of the threat to health security in the first place. A second concern is that these approaches to health security do not engage fulsomely or directly with our earlier definitions

of health in relation to its broader determinants. A third, interrelated concern, is the growing need to address the converging implications of both social and ecological change for health security.

This last concern in particular has been raised by authors such as Ostergard and Kauneckis (2014) who examine research on climate change impacts to human health security. The overarching concern raised here is that the health security literature has tended to emphasise and exemplify acute events that create health emergencies, but larger, slower-moving emergencies such as global environmental change—which pose significant health threats, but also an existential threat to the human species—have typically been neglected. Instead, health security discourses seem to primarily respond to emergent implications of global environmental change such as changes in the distribution and patterning of disease vectors, or emergency response following extreme climate events (e.g. hurricanes), without adequate attention to preventing the upstream drivers of these threats. In the following sections we seek to rectify this shortcoming by drawing attention to converging social and ecological drivers of change influencing health security, through the fast and slow-moving influences on broader determinants of health.

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17.3: Coupled Social-ecological Systems and Implications for Health Security

We now turn our attention to the interface between social and ecological systems and implications for health, acknowledging foundational work with direct relevance to health security, and moving to describe the value of considering health security in relation to social-ecological systems and the discourse of resilience. Some would argue that the Ottawa Charter for Health Promotion (WHO, 1986) offers a precursor to a more integrative approach to health security, with its emphasis that improvements in health required a secure foundation in the basic prerequisites for health, listing these prerequisites as: peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice and equity. This emphasis led to the Ottawa Charter's call for a "socioecological approach" to health, noting:

The inextricable links between people and their environment constitutes the basis for a socioecological approach to health. The overall guiding principle for the world, nations, regions and communities alike is the need to encourage reciprocal maintenance – to take care of each other, our communities and our natural environment. (WHO, 1986, Section 2, Article 2 'Create Supportive Environments', n.p.)

The value of combined social and ecological orientation to health has been echoed and reiterated through subsequent decades of public health efforts. Along with efforts to fulsomely engage with both the ecological *and* the social determinants of health (see Cole et al., 1999; Edwards & Davison, 2015; Horwitz & Parkes, 2019; McLaren & Hawe, 2005; Parkes et al., 2003), a combined emphasis on the social and ecological determinants of health can be seen across emerging fields of public health research and practice such as ecohealth, environmental health equity, One Health and planetary health (see Buse, Oestreicher et al., 2018). As well as efforts focused on health of humans (and other species), an important concurrent body of work has generated expanding attention to social-ecological systems (SES), change and resilience, and offers a very helpful complement to an integrative understanding of health security. The remainder of this section, provides an overview of the dynamics of coupled social and ecological systems before linking these to the emergent health security dimensions of ecological change, and returning to the benefits of an integrative, social and ecological orientation to health security.

What Are 'Resilient' Social-ecological Systems?

SES are complex assemblages of social actors, institutions and bio-geo-physical units, that adapt and respond to shocks or changes based on their composition, function, and spatial and temporal orientations (Berkes et al., 2003; Levin, 1998). In other words, SES refer to the relationships of social systems (i.e. society) to the ecological systems and ecosystem services which provide conditions for life to sustain and flourish (Holling, 2001). Thus, not only are ecosystem processes essential to the functioning of social-ecological systems, but so too are the human relationships, institutions and power dynamics that govern social and ecological systems alike (Cote & Nightingale, 2012; Cretney, 2014; Smith & Stirling, 2010).

SES tend to be nested within multiple hierarchical systems, where smaller systems move rapidly through processes of exploitation, conservation, release and reorganization (Holling, 2001). Holling (1986) famously used the example of forest fires to depict how a forest system would grow, exploiting available resources of oxygen, land and nutrients from the soil, ultimately crowding out other elements and producing competition over resources that requires the forest to ultimately conserve those resources. When triggered under the right conditions, sometimes by an exogenous event such as lightning from a thunder storm, a fire could release the massive amounts of stored energy and potential of the system, ultimately creating opportunities for reorganization into a similar system (e.g. a forest), or into an entirely new system altogether. Termed what Gunderson and Holling refer to as 'panarchy,' adaptive SES rely on an ability for systems that operate at different spatial and temporal scales to experiment with novel assemblages at small scales while larger, slower moving systems protect against catastrophic systems change while still benefitting from the innovation, creation and conservation of smaller systems (Gunderson & Holling, 2002; Holling, 2001).

SES rose to prominence primarily when considering the resilience of ecological systems and human communities in relation to natural disasters and resource management issues (Folke, 2006; Gunderson, 2010). SES are often discussed in terms of their resilience, vulnerability and adaptability across time and geographic space (Young, 2014). The resilience approach emphasizes that systems are characterized by non-linear dynamics, thresholds and tipping points for change, uncertainty, and have multiple interactions across time and space (Folke, 2006; Walker et al., 2004). Resilience typically reflects a system's ability to respond to shocks so as to return to its original function, but has increasingly been recognized that 'bouncing back' to a system that is inherently unsustainable may be problematic in the context of SES, and therefore, much conventional scholarship emphasizes the

learning of systems and the actors within it and their ability to 'bounce forward', learn from shocks and ultimately self-organize to produce a more effective systems response (Berbes-Blasquez et al., 2014). Accordingly, a resilient system is more able to adapt to shocks and could either proactively or reactively respond to systems vulnerabilities to minimize the impacts of the shock across the system or for its specific components. Alongside resilience, a focus on social-ecological change is fuelling necessary attention to understanding processes of transformation in communities and societies (Andrachuk & Armitage, 2015; Chandra et al., 2010; Kull et al., 2018) in ways that are highly relevant to our future health and security.

Recognition of the links among SES resilience, change and the determinants of health is expanding (Berbes-Blasquez et al., 2014; Bunch et al., 2011). Indeed, it has been argued that, within specific SES contexts—for example, catchments and watersheds—that "promotion of health and resilience converge towards a common goal: to cultivate enduring capacity to respond positively to change and challenges" (Parkes & Horwitz, 2009, p. 100). Given that health security will always need to address shocks, change and challenges, we argue that understanding of both resilience and health in SES will be essential if health security is to be understood in a way that actively addresses combined and converging social and ecological change.

Ecological Drivers of Health Insecurity in Coupled Social-ecological Systems

The 21st century has presented dramatic natural and anthropogenic environmental changes that pose unique risks to human health. For example, climate change has raised global temperatures where 17 of the 18 warmest years on record have occurred since the turn of the 21st CE (NASA, 2018). As a result of increasing carbon pollution, ocean acidification threatens all forms of marine life, and in 2015 the Great Barrier Reef experienced the largest single bleaching event to ever occur with deleterious effects on marine biodiversity in that area. Further, the use of non-biodegradable consumer items has led to other forms of ecological marine stress. There are now at least five massive garbage patches across the planet's oceans comprised almost entirely of microplastics and plastic products. This pollution exists on a previously unimaginable scale, impacting marine life and impacting biodiversity of the ocean. On land, deforestation—the permanent destruction of a forest to make way for other land uses—results in an estimated 18.7 million acres of forest loss every year (WWF, 2018) contributing to approximately 15% of global greenhouse gas emissions. Other forms of large-scale resource 'development' (e.g. the construction of hydroelectric dams, mines, fracking natural gas, etc.) also contribute to these trends, while creating massive linear disturbances on the landscape for supporting infrastructure, and often contributing to poor air quality and water contamination.

These changes to marine, terrestrial and atmospheric environments are so great, that geologists maintain we now live in a new geological epoch named the Anthropocene where the human species is the driving bio-geo-chemical force for ecological change; (Crutzen, 2006; Lewis & Maslin, 2015). So great is human influence on the planet that some scientists describe our influence on the natural order of the planet as the 'great acceleration' (Steffen et al., 2007), whereby at least five planetary system boundaries including climate change, biosphere integrity measured by planetary genetic diversity under what is currently the world's sixth largest mass extinction, land-system change (i.e. altering natural systems and land cover into other forms that may be incommensurable with the provisioning and regulating services of any given ecosystem), and disruption to biogeochemical flows of nitrogen and phosphorus which regulate numerous processes required to support life on the planet (Steffen et al., 2015).

Growing attention is being paid to the pathways by which environmental or ecological change influences health through the disruption or alteration of ecosystem services (Fisher et al. 2009). Ecosystem services refer to the things that nature provides which allow life to sustain on the planet (De Groot et al., 2002). Food security and water security depend on ecosystem services. Typically, ecosystem services are grouped into several categories of services. *Provisioning services* refer to the production of food and water for human and non-human species, but also the production of genetic resources and energy. *Regulating services* regulate control ecosystems and biophysical systems so that they operate within safe limits, such as the regulation of the climate system through carbon sequestration, waste decomposition, or pest and disease control. *Supporting services* make it possible for services to continue to function through nutrient cycling, habitat provision or pollination, enabling ecosystems to provide other services including both provision and regulation. *Cultural services* refer to the spiritual, cultural, therapeutic and recreational services provided by nature, predominantly to human populations (Duraiappah et al., 2005).

It can be argued that those fortunate enough to live in countries in stages of advanced capitalism (e.g. primarily the so-called 'Western' or 'Industrialized' countries) are buffered from the ecological pressures that modify ecosystem services, through infrastructure, social and health services and emergency response management build adaptive capacity to adverse ecological change. Even so, the rate and scale of social and ecological change in a range of contexts is driving growing attention to ecosystem

services as a way to understand health impacts across scales (Horwitz & Parkes, 2016) and examples of the health impacts of altering and protecting ecosystem services are expanding (McFarlane et al., in press). Despite the fact that ecosystems are non-negotiable foundations for health and well-being across the planet (Horwitz & Parkes, 2016), much of the attention to, and most pronounced health impacts of, altered ecosystem services will unfold (like the health security discourse) in lower- and middle-income countries. In these contexts, health security challenges are compounded by the fact that capacity for addressing health and its determinants may be more limited compared to The Organisation for Economic Co-operation and Development (OECD) nations, further undermining efforts directed towards the Sustainable Development Goals (see Chapter 3).

For example, Yemen's on-going humanitarian crisis stems largely from drought conditions that have left 17 million people without adequate nutrition leading to both malnutrition and outbreaks of cholera. The humanitarian crisis in Syria, that—at the time of writing this chapter—continues to unfold, was largely driven by civil discontent stemming from the confluence of dissatisfaction with President Bashar al-Assad and the most intense period of drought Syria had ever recorded resulting in crop failures, rising food prices and migration from the countryside to the city. This ultimately led to a civil war and the need for a mass relocation of 13.5 million Syrians requiring humanitarian assistance, further highlighting the human security dimensions of prolonged environmental change (i.e. drought) which can lead to violent conflict (Barnett & Adger, 2007). Less dramatic has been the situation of Capetown in South Africa, the first city to approach 'Day Zero'—the day when the city would run out of potable water due to prolonged drought—triggering a series of water restrictions and the need to visit local pumps through a quota system.

Western Africa's economy was crippled during the 2014 Ebola crisis that killed 11 000 and resulted in US$3 billion in economic losses across the region (Nkengasong et al., 2017). Ebola was driven by fragmentation of West African rain forests through expansion of resource development projects, increasing interaction among animals and humans resulting in incident cases (Rulli et al., 2017) and subsequent rapid rise in incidence (Jones et al., 2013). The spread of infectious diseases such as Ebola also requires significant multilateral containment efforts to be coordinated across the region and internationally (Davies et al., 2015; Kalra et al., 2014; WHO, 2016).

Potential Synergies: Linking Social-ecological Insights with Health Security

Each of the examples listed above demonstrate the complexity in linking large scale, slow moving ecological changes to processes of social change and its impacts on human health in particular global regions. However, no place on the planet is entirely devoid of the health risks from ecological change, but many of the impacts to health security will be place-specific whereby ecological change will interact with unique social and ecological contexts, along with inequities between and within population groups according to the determinants of health and interactions therein (MacIntyre et al., 2018). In other words, the social and ecological components of SES will influence place-specific vulnerabilities and adaptive capacity which ultimately influence the resilience of that system to promote good outcomes for people, other species and the environment (Ellis et al., 2018; Stokols, 1996). Examples of these variations includes the range of responses across Australia, Canada, Europe and the United States, to the expanding impact of significant forest fires in the last decade in association with changing climate (Abatzoglou et al., 2018; Tett et al., 2018). These fires result in loss of life, property and livelihoods with significant implications for mental health and accessing health services during emergencies (Dodd et al., 2018). Climate change further drives extreme heat events, violent weather, and floods and storm surges that are increasingly affecting coastal communities, which each bear impacts that are disproportionately felt by those already most disadvantaged in our society (Watts et al., 2017; Watts et al., 2018).

Thus, the coupled social and ecological change will precipitate further concern for the health of individuals and populations, including a range of equity concerns (consider social and environmental equity, intergenerational equity and interspecies equity), which will, in turn, challenge governance responses to build adaptive capacity among the most vulnerable (Quinn & Kumar, 2014). Not only will these health issues be differentially distributed across population groups and non-human species (environmental and ecological injustice (Low & Gleeson, 1998)), but they will accompany job insecurity and significant psychosocial risks which constitute additional health security threats through direct morbidity and mortality within and between population groups, resulting in rising health and social system costs as we struggle to adapt and respond to ecological change.

These examples underscore a key insight for health security that can be gleaned from understanding of contextual challenges and implications of SES: that is a need for more nuanced attention to the challenge of health security concerns across different scales (see Buse, Smith, et al., 2018), and—in particular—the need to consider social-ecological change and health security concerns, not only at the planetary, or the most local, but also at mesoscale (Galway et al., 2016; Horwitz & Parkes, 2019.

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17.4: Case Examples Linking Social-ecological Insights with Human Security in Particular Bioregions

Building on the examples above, we now turn to two specific examples at the meso-scale to grapple with the complexity of health security in particular social-ecological contexts. The meso-scale here refers to intermediate scales that tend to include unique micro-climates, watersheds or specific ecological biomes, but which may cross multiple human jurisdictions including local governance. Here, we utilize meso-level examples due to their inherent linkages between both the social and the ecological in manifesting health security risks.

Food Security in East Africa

Food security and human security are intimately related, with both having direct implications for health security (FAO, 2016). Some human security specialists have argued for "redefining food security in terms of securing vulnerable populations from the structural violence of hunger" (Shepherd, 2012, p. 28). Global food riots are a particularly strong exemplar of coupled social-ecological systems. As Berazneva and Lee state:

a sharp escalation in worldwide commodity prices precipitated the global food crisis of 2007–2008, affecting the majority of the world's poor, causing protests in developing countries and presenting policymakers with the challenge of simultaneously addressing hunger, poverty, and political instability. (2013, p. 28)

Examining the inter-country variability in Africa, where a majority of the population are episodically food insecure, and about one quarter are chronically food insecure, they found that "higher levels of poverty (as proxied by the [country's] Human Poverty Index), restricted access to and availability of food, urbanization, a coastal location, more oppressive regimes and stronger civil societies were associated with a higher likelihood of riots occurring" (p. 28).

Yet ongoing climate variability (environmental insecurity) and conflict (socio-political insecurity) also have effects on food prices, and hence food security. Raleigh and colleagues (2015) honed in on markets of the main trading town of first level administration districts in 24 African states with reported political violence January 1997 to April 2010. They found that "feedback exists between food price and political violence: higher food prices increase conflict within markets, and conflict increases food price. Lower than expected levels of rainfall directly increase food price and indirectly increase conflict through its impact on food price" (p. 188).

The Integrated Food Security Phase Classification (IPC) integrates complex analyses of food insecurity and malnutrition situations. Their website features a Famine Early Warning System (FEWS) network map of East Africa. An interactive zoomable versionof this map can also be accessed that shows regional food insecurity classifications in acute and chronic contexts.

These quantitative empirical findings are reflected in maps of ongoing acute food insecurity produced by the Famine Early Warning System Network (FEWS, 2019). Focusing in on East Africa, the update shows areas of both intense conflict and emergency levels of acute food insecurity (i.e. South Sudan), along with areas of ongoing crisis (e.g., Somalia), and those that are stressed (e.g. Kenya).

Particularly in such contexts, United Nations organizations have agreed to human security approaches to food security (FAO, 2016). In a narrative review on conflict and climate change, Brown and Crawford (2009) note that "reductions in crop yields and increasingly unpredictable weather patterns around the world may lead to higher prices for food and greater food insecurity" labelling climate "a 'threat multiplier' that makes existing concerns, such as water scarcity and food insecurity, more complex and intractable" (p. 2).

Huish (2008) has argued that "In the process of building common language between researchers and policy-makers, the agreed definition of food security [has] excluded many important issues. As a result, the excluded, more radical issues have been pursued by off-shoot movements that do less to directly engage the policy-making process with existing policy-making technocracy" (p. 1386). An example would be combined multinational corporation – government aid approaches which focus primarily on technology and markets, often not reaching the more vulnerable, African smallholder agricultural producers nor responding to their concerns (Rajaonarison, 2014).

The requirements for food security and environmental sustainability over the longer term have been set out globally (Cole et al., 2013). They include access to land, water, appropriate agricultural inputs, fair markets and supportive governance. Specific

challenges and opportunities have been explored in East Africa in both urban (Yeudall et al., 2007 and more rural contexts (Braitstein et al., 2017), where the role of access to land, diverse agricultural production, promotion of dietary diversity, and human rights, including the right to food, have been given stronger emphasis. The latter are more consonant with some of the more radical approaches which Huish mentions, such as food sovereignty (Torrez, 2011) which explicitly frame the achievement of food security in social movement terms.

Cumulative Impacts of Multiple Resource Development Operations in Northern British Columbia

As indicated above, global land system change is significant, and largely occurring as a result of industrial agriculture and large-scale resource development projects. Resource development impacts human health through a variety of biophysical, but also social, ecological, cultural and economic pathways (Aalhus, 2017). This is a challenging conundrum for communities which are predominantly rural and remote, and rely almost exclusively on resource development pathways for local economic development (Bowles & Wilson, 2015; Halseth, 2015; Halseth & Markey, 2009).

Figure 17.1 demonstrates how changing environmental conditions can produce reciprocal and interrelated changes across local contexts. These impacts to the determinants of health (DoH) thereby modify existing relationships between people and the land in ways that may create differential exposure to harm (i.e. living within close proximity to newly developed sour gas wells, or relying on an aquifer that risks contamination from multiple natural gas fracking operations) or modify risk factors in a local context (Buse et al., 2019). For example, the boom and bust dynamics of resource development can create large influxes of workers to a community without necessarily increasing services (Mactaggart et al., 2016; Shandro et al., 2011). This can lead to service-based stress, rising rates of substance use, homelessness and risks for women and children. During a bust, health services that were already functioning with limited capacity may see cuts that limits the ability of a community to address the social impacts left behind by resource development booms (Amnesty International, 2016; Buse et al., 2019).

These issues become relevant to health security when and where local systems are unable to protect and promote human health. This is particularly salient in regions with multiple forms of resource development operating on the same land base which may produce cumulative environmental, community and health impacts (Gillingham et al., 2016). Cumulative impacts have been referred to as “death by a thousand cuts” or the “tyranny of small decisions” (Noble, 2010), and conceptualize how past, present and future development projects can interact with pre-existing land-uses in ways that create both positive and negative impacts for people, their health and the broader environments in which they are situated.

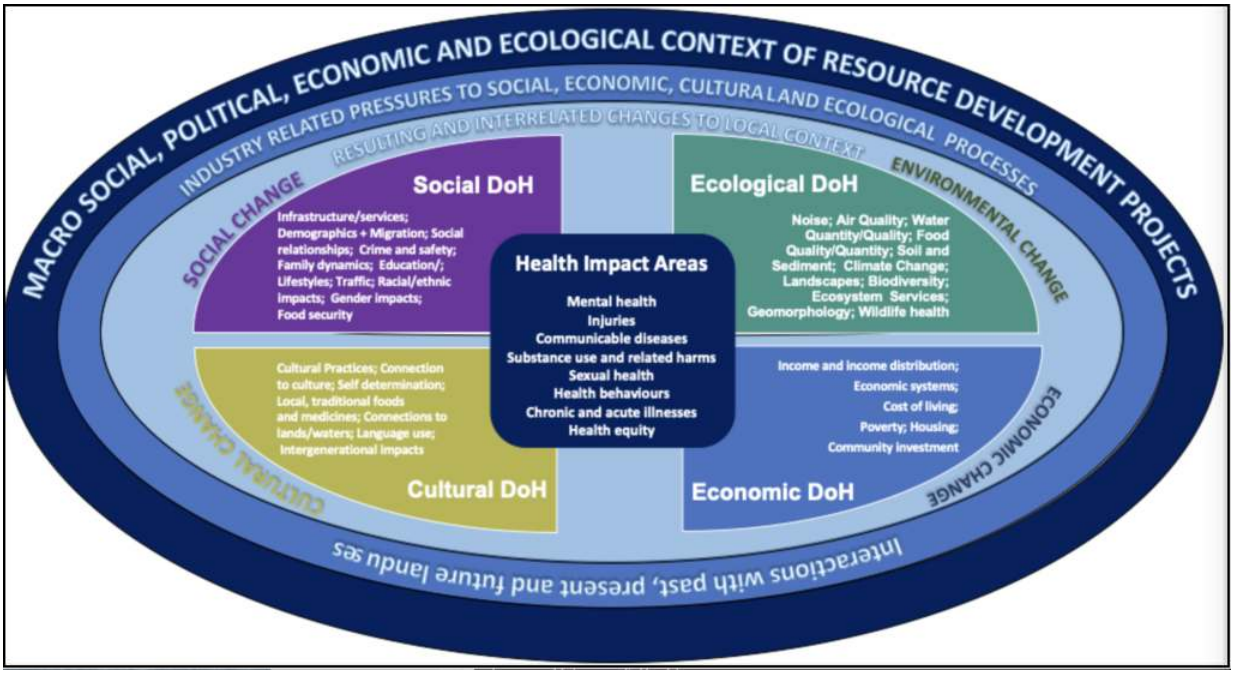


Figure 17.1: The relationships between environmental, social, cultural and economic change in producing health impacts of resource development. [Long Description]

For example, Figure 17.2 illustrates an array of natural resource projects and supporting infrastructure developed across Northern British Columbia, Canada. Not only do each of the individual projects—whether a mine, hydroelectric facility, natural gas well or pipeline, and associated right of ways in the form of roads, railways and power lines—produce individual risks to human health, it is the confluence of multiple projects that poses new and emergent risks for health and the overall economic, political, social and health security of a population at a regional level, but particularly those regions that have a high dependency on natural resource operations as a principal economic driver, and where the land provides opportunities to exploit multiple types of natural resources.

Consider a simple example: the air quality and resulting respiratory health impacts of living adjacent to natural gas wells may put an individual at a certain degree of risk, living in a community that already had a smelter, pulp and paper mill, or a history of poor air quality can create new cumulative exposures for individuals and populations alike. However, these physical impacts can also be unpacked and understood in relation to other forms of cumulative impacts that have accumulated over decades and sometimes even centuries. For example, colonial impacts to Indigenous communities across the world are well-understood, and manifest in a variety of health impacts stemming from violence, trauma and a loss of culture (Greenwood et al., 2015). When combined with new environmental exposures from the earlier air quality example, a double injustice occurs, whereby determinants of health come into direct interaction with biophysical exposures producing new types of health impacts, challenges for health services delivery, or for the ability to access and benefit from ecosystem services that are inhibited by industrial change processes.

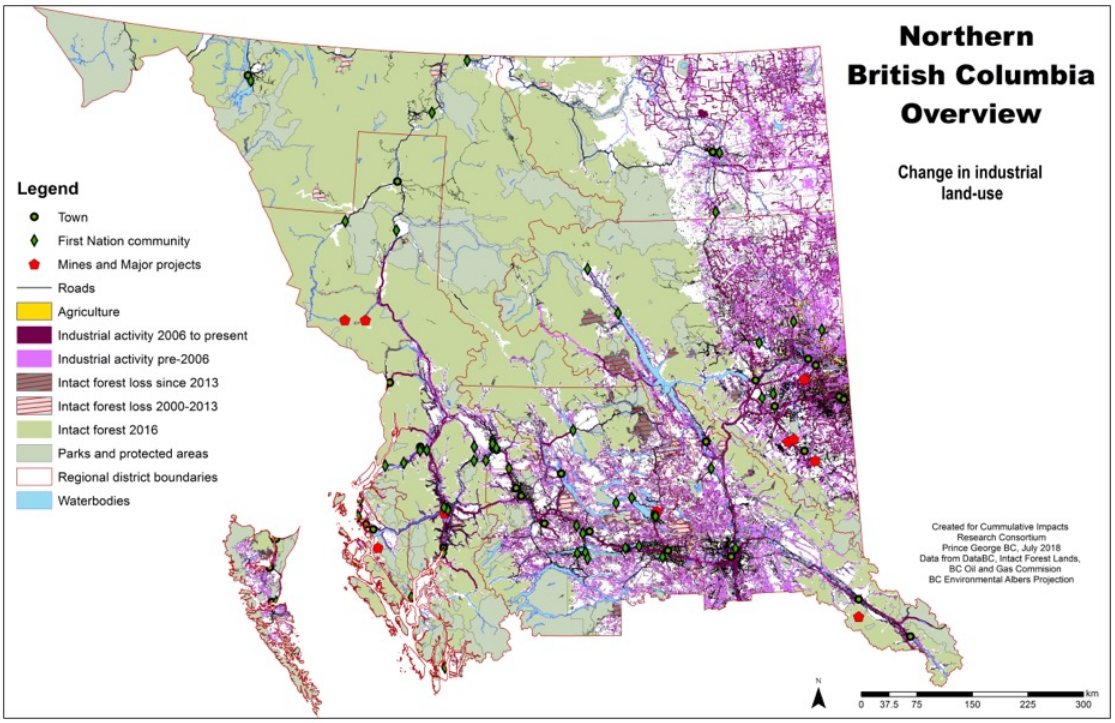


Figure 17.2: Changes in industrial land-use across Northern British Columbia: Visualizing the cumulative anthropogenic footprint of multiple industries. [Long Description]

The two meso-scale case-examples presented here, offer multiple entry-points from which to explore both health security and SES. Related meso-scale case-examples have been found to be useful in a range of teaching and learning contexts that both directly and indirectly address issues relevant the interface of health security and SES, as exemplified the decade of work in the Canadian Community of Practice in Ecosystem Approaches to Health (CoPEH-Canada) (see Cole et al., 2018; Parkes et al., 2017). Since 2016, CoPEH-Canada has run a multi-institutional hybrid course (Cole et al., 2018), and has consistently used the meso-scale of watersheds as a social-ecological systems context from which to explore course themes, connecting across institutional contexts in relation to themes of “The role of universities in progressing health within their watersheds” in 2016-2018 and “Health of humans and other species in their watersheds” in 2019. Both conceptual and field-based examples and experiences can be used to explore and appreciate the SES features of these meso-scales, and also to ‘zoom-in’ and ‘zoom-out’ to consider the benefits of examining related issues at multiple scales, including the use of ‘extension activities’ and exercises such as those presented below (see also Buse, Smith, et al., 2018; Galway et al., 2016; Parkes & Horwitz, 2016).

17.4: Case Examples Linking Social-ecological Insights with Human Security in Particular Bioregions is shared under a CC BY-NC-SA 4.0 license and was authored, remixed, and/or curated by LibreTexts.

17.5: Discussion

Environmental changes can modify health and its determinants in ways that produce security and governance challenges from the local to the global scale. From the standpoint of human security, this chapter has exemplified that security risks related to health have primarily been conceptualized in relation to emergent biological threats, but that a conceptualization of social-ecological systems encourages us to consider dimensions of time and space in manifesting systems vulnerabilities and its ability to adapt to change.

Environmental change will exacerbate existing inequities, and will also produce emergent implications for human health and the public and acute care response system to identify threats that may not be immediate, but long term and unfolding over broad geographic areas rather than resulting from a single point of origin. The time and space considerations here are significant, given that environmental change will continue to unfold in perpetuity, affecting different bioregions of the planet and the populations that reside there in nuanced and highly contextual ways. Moreover, it raises significant questions about how to promote environmental health in ways that are just and fair, thereby requiring an ethical analysis of the equity impacts of change across different scales (i.e. local, regional, national, international, planetary), but also the governance responses to promoting sustainability and mitigating or adapting to associated health impacts (Buse, Smith, et al., 2018). If normative dimensions of the health security discourse remain focused on the emergence and treatment of direct, biophysical risks to human populations, we risk limiting our response to much larger, slower-moving emergencies that will undoubtedly affect all life on the planet.

Towards Integrative Approaches to Health Security and Social-ecological Change

Fortunately, scholarship linking environmental and ecological contexts to the health of human and non-human entities has grown considerably over the past 150 years (Buse, Oestreicher, et al., 2018). For example, Buse, Oestreicher, et al. (2018) outline the emergence of seven ‘fields’ of environmental public health practice that simultaneously seek to address the disease/host interface present across much of the health security discourse, but to consider those interactions across nested ecological scales in ways that are attentive to equity and justice (see Figure 17.3). These fields are further built upon by Oestreicher et al. (2018) to conceptualize a variety of scholarly and applied disciplines actively working to understand and respond to the health risks posed by environmental change.

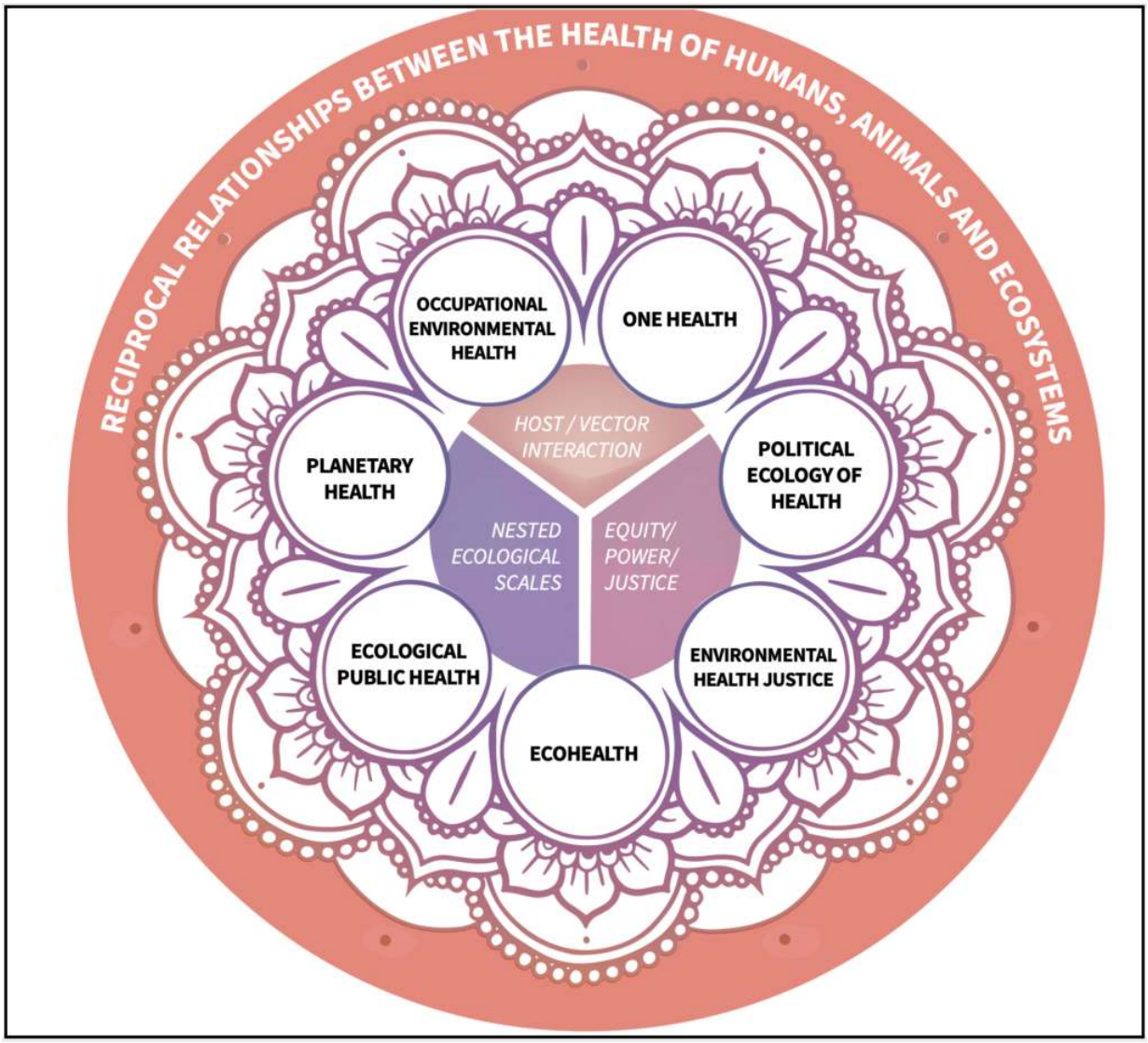


Figure 17.3: Emerging fields of environmental public health practice linking the health of humans, animals and ecosystems. [Long Description]

Human and health security has not necessarily been at the fore of any one of these field developments, but is implicit to their study. In the above section on health security, we see that it is often framed in response to an emerging threat (e.g. climate refugees and mass migrations, exposure to pandemic influenza) that rely on the interaction between a broader physical context and the human body. However, understanding how fields and systems are nested within one another encourages the consideration of the determinants of health, and how health promoting and protecting resources may unfairly benefit some segments of society relative to others. In other words, each of these fields, by virtue of their engagement with health and its determinants, implicitly understands that the health and security of a population is a fundamental and orienting goal of many public health responses to various crises.

Recommendations for Future Research, Education and Practice

What is clear from the analysis above is the emergence of several trajectories and priorities for research and capacity-strengthening to support policies and practices that can promote health security in a time of profound environmental change. First, there is an analytic requirement for health security to more fulsomely engage with existing definitions of health security in ways that account for its social, political, economic and environmental determinants. Conventional definitions overly privilege direct, biophysical risks to human health, perhaps risking considerations of the emergent, distal, and indirect risks to health and well-being posed by unique interactions among specific places and determinants of health. Broadening the health security definition is particularly helpful in recognizing environmental change as a considerable threat to health security in the 21st century. Not only will humanity

continue to struggle to adapt to the impacts of climate change and a host of other bio-geo-chemical change processes that threaten our very existence if left unaddressed, but such a definition would necessarily broaden the spatial and temporal purview of health security. Indeed, many of the ecological threats to human health discussed in this chapter are playing out on timescales that not only create direct and immediate health risks, but they will continue to do so, changing and evolving in form and severity, over the course of generations. Recognizing slow moving emergencies as inherent risks to health security that unfold over diverse parts of the planet is essential given the spatial and equity dynamics at play.

Second, concerted research attention needs to be directed towards the equity dimensions of health security responses to the health impacts of environmental change, but also conventional biosecurity threats such as weapons of mass destruction and biological agents. Many of the health security threats unfolding around the world disproportionately affect low and middle-income countries due to significant capacity and infrastructure challenges, despite much of the world's pollution and ecological threshold exceedances being driven by high-income countries' past rapid industrial growth, and middle-income countries' current growth. The health equity impacts of environmental change are well-studied, but further policy guidance on promoting equitable responses to health security issues, including weighing multiple trade-offs across multiple emergencies operating at different regional and temporal scales, is desperately needed. Research that seeks to unpack the equity dimensions of a just and equitable response to the health security implications of global environmental change must ask important questions about the distribution of resources and populations serviced by interventions. This is of particular relevance in contexts defined by colonial histories of physical and cultural violence, particularly against Indigenous populations, or where pre-existing population groups are differentially exposed to an environmental harm through unjust land-use or zoning policies. Ensuring a fair and equitable process is therefore central to the pursuit of environmental health justice, and is a rich area for future research on health security.

Third, there is considerable need for capacity-strengthening efforts that promote integrative understandings of health, human security and the drivers and impacts of environmental change. The discussion throughout this chapter has demonstrated the myriad ways in which health outcomes manifest from ecological change processes, but also the ways in which they produce security threats for individuals, regions, nation states and the broader international community. In embracing a definition of health security that includes the determinants of health, we draw attention to the integrative imperatives that cross-cut spatial, temporal, sectoral, value-based and disciplinary responses to security threats (see Table 17.1).

Table 17.1 Examples of integrative imperatives to be addressed in health security research and practice.

INTEGRATED ELEMENTS	DIMENSION	EXAMPLES
Multiple scales	Spatial	Local, regional, national, international, planetary
Multiple points in time	Temporal	Past, present, future
Multiple sectors	Sectoral	Industry, healthcare, public health, social services, environment, housing, social and economic development, military and national defence
Multiple land-use values	Value-based	Environment, community, health, culture
Multiple methods/approaches	Disciplinary	Qualitative, quantitative, biomedical, veterinary, social determinants, public health, political science

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17.6: Conclusion

This chapter has explored the interface of health security, social-ecological systems and environmental change in order to draw connections for the human security implications of changes to social-ecological systems and the resulting impacts on human health. We have aimed to provide an overview of a topic that is worthy of numerous volumes of text, seeking to draw attention to a range of key features to the extent this is possible in a single book chapter. A key challenge for health security, particularly in an era of growing natural and anthropogenic environmental change, is to promote effective action across sectors and disciplines to promote intersectoral action in ways that support just and healthy outcomes for all; being mindful of interactions between an existing security concern and those that have existed historically but may also manifest into the future; incorporating multiple ecological, community and cultural determinants of health into an analysis of security by engaging with diverse land-use values; and leveraging lessons from multiple fields of research and practice in order to engender a nuanced understanding of health security that promotes human rights, equity and sustainability.

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17.7: Resources and References

Review

Key Points

- Health security is typically conceived of as the activities required to mitigate risks, or to respond to acute events that endanger population-level health across international boundaries.
- Social-ecological systems are inextricably linked to health security, whereby both natural and anthropogenic environmental changes have cascading impacts on an array of health security issues, with some unresolvable uncertainty as to their timing, scale and distribution.
- A key challenge for health security is to promote effective action across sectors and disciplines to promote intersectoral action on the multiple environmental and community determinants of health in ways that support just and healthy outcomes for all species and humans (i.e. respecting ecological as well as environmental rights).
- Integrative approaches to understanding ecology and society and their implications for health resonate with the early conceptualizations of health security.
- Global environmental change will exacerbate existing inequities across dimensions of human security, but particularly in health status.
- A key challenge for health security, particularly in an era of growing natural and anthropogenic environmental change, is to promote effective action across sectors and disciplines to promote intersectoral action in ways that support just and healthy outcomes for all; being mindful of interactions between an existing security concern and those that have existed historically but may also manifest into the future; incorporating multiple environmental, community and cultural determinants of health into an analysis of security by engaging with diverse land-use values; and leveraging lessons from multiple fields of research to engender nuanced understandings of health security to promote human rights.

Extension Activities & Further Research

1. How is climate change related to health security? Describe some examples.
2. Pick a bioregion (e.g. in the lower Great Lakes or the Salish Sea in the Pacific Northwest) and describe what elements of its composite ecosystems and social systems contribute to health security or health insecurity?
3. In what ways might governments work to redress the health security implications of global ecological change?
4. What do you think the most important ecological and social determinants of your health are at this point in your life?
5. Who is most impacted by global environmental change as it relates to health security issues?
6. Scales are important and can be illustrated by a “zoom in, zoom out” mental exercise (adapted from Parkes & Horwitz, 2016):
    a. Think of your current environment and try to imagine both the living (biotic) and non-living (abiotic) parts interacting with another living thing, such as yourself? How do social dynamics influence these interrelationships?
    b. Zoom out from that specific interaction to your neighbourhood. Do you see more life yet? What other species do you see that make up this social-ecological community? What species do you not see? What things move and interact the most? How might they affect your health security?
    c. Zoom out farther, to the borders of the bioregion in which you are currently located. Does what you are seeing look more or less alive? Do you visualize this view as a roadmap or as a satellite image? Can you see evidence of social-ecological crises from this vantage point?
    d. Once you have a large-scale (regional in a continent) view in your mind’s eye, consider three questions:
    e. How would this view have looked different five years ago? And potentially look 10 years from now?
    f. Identify two positive and three negative determinants of health security for each of these time frames at this scale.
    g. Give three examples of where you can see (imagine?) the atmosphere (air), geosphere (rock, land) and hydrosphere (water) interacting to support life within the view you see.
    h. Websites that can help you experience these features of zooming in and out through social and ecological contexts include what is your ecological footprint? and The Scale of the Universe. Specific papers also explore the ways in which these dynamics may assist interdisciplinary learning (e.g. Galway et al., 2016).

List of Terms

See Glossary for full list of terms and definitions.

- bioregion
- biosecurity
- ecosystem services
- food security
- health security
- livelihoods
- meso-scale
- social-ecological systems
- water security

Suggested Reading

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Long Descriptions

Figure 17.1 long description: Graphic composed of three layers of ovals enclosing each other. The outermost oval is labelled “Macro social, political, economic and ecological context of resource development projects.”

The second oval reads “industry-related pressures to social, economic, cultural and ecological processes” and “interactions with past, present and future land uses.”

The third and innermost oval is labelled “resulting and interralated changes to local context.” This oval contains four boxes that detail the determinants of health in the areas of social, environmental (or ecological), cultural, and economic change. They are described in an unordered list below:

- Social determinants of health
  - Infrastructure/services
  - Demographics and migration
  - Social relationships

    - Crime and safety
    - Family dynamics
    - Education
    - Lifestyles
    - Traffic
    - Racial/ethnic impacts
    - Gender impacts
    - Food security
- Ecological determinants of health
    - Noise
    - Air quality
    - Water quantity/quality
    - Soil and sediment
    - Climate change
    - Landscapes
    - Biodiversity
    - Ecosystem services
    - Geomorphology
    - Wildlife health
- Cultural determinants of health
    - Cultural practices
    - Connection to culture
    - Self-determination
    - Local, traditional foods and medicines
    - Connections to lands/waters
    - Language use
    - Intergenerational impacts
- Economic determinants of health
    - Income and income distribution
    - Economic systems
    - Cost of living
    - Poverty
    - Housing
    - Community investment

There is a fifth box that partially overlaps the four others. It is labelled “Health Impact Areas” and contains the following:

- Mental health
- Injuries
- Communicable diseases
- Substance use and related harms
- Sexual health
- Health behaviours
- Chronic and acute illness
- Health equity

[Return to Figure 17.1]

Figure 17.2 long description: Map labelled “Northern British Columbia Overview: Change in industrial land-use.” The map shows approximately the most northerly two-thirds of British Columbia, including the islands of Haida Gwaii to the west and a

small section of the eastern border with the Rocky Mountains and Alberta. This map was created in July 2018 for the Cumulative Impacts Research Consortium in Prince George.

The map shows that the northeastern section of the province, from the corner to the area approximately Fort St. John, saw a lot of industrial activity pre-2006. The central part of the province, radiating outward from Prince George, also saw significant industrial activity pre-2006. Along a few key pathways in the province, where a number of towns and First Nations communities are clustered, there has been industrial activity from 2006 to the present.

[Return to Figure 17.2]

Figure 17.3 long description: Circular chart titled “Reciprocal relationships between the health of humans, animals and ecosystems.” In the centre of the circle is a three-piece pie chart that is surrounded by bubbles describing various health concerns. The pieces of the pie chart are at the top level of the following unordered list, while the bubbles are described in the sub-bullets:

- Equity/power/justice
  - Political ecology of health
  - Environmental health justice
  - Ecohealth
- Nested ecological scales
  - Ecohealth
  - Ecological public health
  - Planetary health
- Host/vector interaction
  - Occupational environmental health
  - One health

[Return to Figure 17.3]

Footnote

1. Adapted from Aldis, 2008, pp. 371-372

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CHAPTER OVERVIEW

18: Empowering International Human Security Regimes

Learning Objectives

- Compare and contrast *jus ad bellum* (the legal right to go to war) and *jus in bello* (laws that restrict behaviour in time of war).
- Understand the Convention on the Prevention and the Punishment of Genocide.
- Outline the legality of using nuclear weapons and anti-personnel landmines.
- Describe the functions of the International Criminal Court and the International Court of Justice.
- Summarise functions, prerogatives and limitations of the United Nations Security Council.
- Describe and evaluate the limits of the self-defence concept.
- Understand the Geneva Conventions (1949, 1977): goals, accomplishments.
- Describe the functions of ad hoc war crimes tribunals (IMT, ICTY, ICTR).
- Understand concepts associated with human rights: their ethical underpinnings, scope, emphases.
- Understand the scope and limits of the Universal Declaration of Human Rights.
- Understand the agreement of Responsibility to Protect (R2P) and its goals, potential, limitations.

Jeffrey Morton and Samantha Maesel

This chapter outlines the basic principles found in modern international law that serve to empower international security regimes. Legal efforts to reduce the occurrence of war, restrict behaviour in time of war, and place limits on certain weapons of armed conflict are central to promoting human security. Further, the development of international human rights since World War II is reviewed as well as the new concept of Responsibility to Protect (R2P), which allows the international community to intervene on behalf of endangered citizens of other countries. Central to the empowerment of human security regimes are the international organizations that populate the international arena. Chief among those considered in this chapter are the United Nations Security Council, the International Court of Justice, the International Criminal Court, and temporary war crimes tribunals.

18.1: Introduction
18.2: Modern International Law
18.3: Making International Law
18.4: Laws of War
18.5: Laws of Peace - Human Rights
18.6: International Legal Institutions
18.7: The Responsibility to Protect (R2P)
18.8: Conclusion
18.9: Resources and References

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18.1: Introduction

A central and defining feature of international relations is the condition of anarchy, a term that means the lack of world government. Without an overarching supranational force to constrain the behaviour of states and individuals, the anarchic system is inherently conflict prone. Since reordering the international system in an effort to avoid anarchy is highly unlikely, states promote order and clarity in world politics by developing and maintaining rules of behaviour. International laws have been developed in virtually every area of international relations, ranging from trade to diplomatic immunity, air space to the law of the sea. An area of consistent concern and of utmost importance to countries is war. As a result, a significant amount of time and energy have been devoted to drafting international laws that regulate armed conflict. This chapter seeks to explain efforts by the international community to eliminate, mitigate, or reduce the destructive behaviour of states towards one another and towards their own citizens through the adoption and application of international law. Attention is divided into three main areas: the laws that regulate the use of force, human rights laws that protect individuals from repressive treatment, and the institutions that are used to enforce these standards. Contemporary developments, including the concept of Responsibility to Protect (R2P) and the International Criminal Court (ICC), are considered helpful stepping stones.

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18.2: Modern International Law

The formal establishment of the modern nation-state system through the Treaties of Westphalia (1648) gave birth to modern international law. At its onset in the 17th century, international lawyers and philosophers debated the essence of international law and its principal source. Naturalists argued that international laws should flow from natural law, which draws on sources in nature or religion and, therefore, should be based in morality.[1] Positivists countered by arguing that international laws, as contracts among states, are so-called positive law, produced by negotiations and have a political rather than moral basis. [2] The implications of this early jurisprudence debate were significant, in effect pitting the rights and needs of individuals (protected by nature-based laws) against the power of states (promoted by negotiated laws). Over the course of the 18th century, the positivist philosophy of international law prevailed. As a result, the global legal order is one in which states are independent and negotiate the international rules that regulate their own behaviour. While international law may reflect morality, it is not a requirement in a positivist legal order. It should be noted, however, that since the Second World War moral principles have increasingly been the subject of binding international agreements. This is most prevalent in human rights treaties, in laws that protect refugees, and in the more recent R2P concept.

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18.3: Making International Law

International laws in the positivist era are created in one of two ways—treaty law and customary law. Treaty law involves a formal process by which sovereign states negotiate written agreements that are legally binding upon all states which enter into them and the treaty process involves distinct stages. In the drafting stage, diplomats engage in debate that results in a draft document. The document is not a binding treaty until it has been ratified by a specified number of states. Ratification represents the second stage of the treaty process. Each state, based upon its domestic laws, determines whether or not to ratify the proposed treaty. After ratification, the state submits its instrument of ratification as evidence of its commitment to the principles enshrined in the document. It is not, however, until the third stage of the process, entry into force, that the document becomes a binding treaty. Entry into force occurs when a prescribed number of nation-states submit their instruments of ratification. For a bilateral treaty, an agreement between two states, entry into force occurs when both states ratify. For a universal treaty, the ratification threshold may be sixty states, 100 states, or any other number of states, depending on the treaty requirements agreed upon at the drafting stage. Treaties provide explicit restrictions on state behaviour. Since international treaties infringe upon the sovereignty and freedom of states, it is logical to assume that governments only endorse treaties that entail more benefit than cost. The challenge, therefore, for international lawyers and diplomats is to arrive at treaty language that is acceptable to the largest number of nation-states while sacrificing as little as possible of the purposes of the treaty.

Customary international law is different from treaty law in that custom emerges over time from the uniform behaviour of states. Custom, a recognized norm of behaviour, remains unwritten but may be transformed into treaty law if a formal document is negotiated and ratified. Unlike treaty law, which is consensual in that it is only applicable to those states which have expressly accepted it, customary law is considered binding on all countries, with or without their explicit endorsement. Until the 20th century, most international law was in the form of custom. Since 1900, however, a more systematic process has tipped the scale in favour of treaty law. While treaty law and customary law are distinct in form, some treaties have been deemed to be customary international law. The Hague (1899, 1907) and Geneva Conventions (1949) are examples of treaties that are considered to be custom. As a result, Hague and Geneva laws are binding on all states, including those, which have ratified neither. Even though there are other, secondary and tertiary, sources of international law, treaty and custom represent the two primary sources of international law in the modern era. [3]

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18.4: Laws of War

The laws of armed conflict are broadly divided into two branches—restrictions placed on the right to initiate war and regulations on the conduct of war. Jus ad bellum determines when military intervention is legal, while jus in bello, outlines the legal behaviour of soldiers on the battlefield. Up until the end of World War II, most emphasis was placed on the development and refinement of *jus in bello* and its core restrictive principles. Due to the historic level of human and physical destruction caused by the Second World War, along with the onset of the atomic age, attention since 1945 has been principally focused on *jus ad bellum* restrictions on the right to go to war. The separate standing of *jus in bello* and *jus ad bellum* translates into two legal questions for every armed conflict, namely (1) Was the war entered into legally? and (2) Was the conduct of soldiers during that conflict legal? To determine that a state legally entered into a war does not absolve the state and its military from scrutiny over its conduct during the war. For a state to remain within the confines of the laws of armed conflict requires both a legal entry into war as well as the use of force within the parameters established by *jus in bello* principles.

Jus in Bello

At the onset of the modern international legal system (1648), the core principles that define *jus in bello* today were already in place, the product of centuries of efforts aimed at reducing the horrors of war. The main *jus in bello* principles established over time remain in force and are codified in specific international treaties, including the Hague Conventions (1899, 1907), Geneva Conventions (1949) and a series of issue specific treaties dating to the 19th century. Each principle restricts conduct on the battlefield in an effort to humanize and standardized armed conflict. The Geneva Convention and its Protocols are also discussed in Chapter 5.

Discrimination

The first legal requirement placed on soldiers in the field is to differentiate, or discriminate, between lawful targets and unlawful targets. In time of war, soldiers and those who plan the conduct and oversee the behaviour of soldiers are legally required to separate targets into two categories—combatant and non-combatant. Combatants, those who actively take up arms, are legal targets. They may be killed, wounded, or taken captive at any time during the course of the war. Non-combatants, a category that includes civilians, humanitarian relief personnel, journalists, and international observers, among others, may not be targeted. While non-combatants may be detained, restricted or moved, they may not be intentionally injured or killed. The discrimination principle places an enormous burden on soldiers engaged in armed conflict, especially in urban settings. A wilful violation of the principle, however, runs counter to prevailing international law and may constitute a war crime that is punishable by a national or international court.

Prohibition on Unnecessary Suffering

International law allows for the lethal use of force against combatants. Professional soldiers are trained to capture instead of injuring, injure instead of killing, and to kill only as necessary. What soldiers are not allowed to do is inflict injury with the express intent of causing suffering that is unnecessary. The prohibition on unnecessary suffering impacts both the actions taken by soldiers as well as the weapons that are used in armed conflict. Twisting the blade of a bayonet in the leg of an incapacitated enemy combatant for no purpose other than to inflict additional pain and suffering violates the principle. Employing weapons that are designed to cause unnecessary suffering, equally, constitute violations of the laws of armed conflict. Customary international law and treaties have restricted the use of weapons whose sole or primary purpose is to cause suffering. An example of one such prohibited weapon of war is the expanding bullet, which due to its hollow head and soft jacket is designed to expand once it enters the body.

Proportionality

The principle of proportionality requires forces in the field to achieve a balance between the expected level of harm caused to civilians or civilian property and the anticipated military benefit of the proposed attack on a military asset. While it may be legal to target a combatant with a drone air-to-surface attack, those authorizing the operation must take into account the level of civilian harm that will likely be caused by the attack. This is especially the case if the individual being targeted is in the midst of a civilian population at the time of the attack. Proportionality is one of the most difficult *jus in bello* principles to apply to armed conflict because it requires foresight that may be difficult, if not impossible, to calculate prior to a military operation.

Perfidy

Using deceptive tactics to expose the adversary in armed conflict may constitute an illegal act of perfidy. While outsmarting the adversary is an essential element of war planning and execution, there are limits imposed upon combatants by the laws of armed conflict. False surrender, entering an enemy compound dressed as humanitarian personnel, hiding bombs in children's toys and feigning non-combatant status, are examples of perfidy and are deemed to be illegal. The perfidy principle is also violated when soldiers intentionally use civilians as shields.

The Martens Clause

Found in the preamble of the 1899 and 1907 Hague Conventions is the Martens Clause, which states that:

Until a more complete code of the laws of war is issued…populations and belligerents remain under the protection of international law, the laws of humanity, and the requirements of the public conscience.

The Martens Clause is designed as an underlying net to legally ensnare violations of the spirit of *jus in bello* principles that may not be specifically outlawed by custom or treaty. The use of civilian captives for medical experimentation by the Nazis during World War II is one of many examples of an act that is prohibited by the Martens Clause.

In addition to the general restrictions placed on the conduct of soldiers in the field outlined by the *jus in bello* principles outlined above, states have sought to deem certain weapons of war illegal. International treaties have been drafted to eliminate, for example, anti-personnel landmines (APL)), lasers that cause blinding, cluster bombs, asphyxiating gases, napalm and tumbling bullets. Efforts to ban other weapons of war have yet to reach a sufficient international consensus such that a treaty banning them could be produced and implemented. Attempts to renounce nuclear weapons as illegal have been undertaken for more than fifty years, yet due to objections from the nuclear weapons states such efforts have not produced a legal ban on either the existence or use of nuclear weapons.[4] Depleted uranium shells, which are highly effective in destroying heavily armed vehicles such as tanks, have similarly been shielded from international condemnation by those countries that continue to employ them, despite the probable long-term dangers that the weapons pose to civilian populations.

Jus in bello, its principles and supporting legal documents, have greatly restricted conduct in the field and continue to be revised to take into account the new realities on the battlefield. Attention is now turned towards international efforts to restrict the right of states to enter into conflict, known as *jus ad bellum*.

Jus ad Bellum

The right to wage war has captivated the attention of policymakers, philosophers, moralists and lawyers for centuries. Up until the drafting of the United Nations Charter in 1945, most efforts since 1648 have resulted in only marginal restrictions on the legal ability of nation-states to enter into war. The Treaties of Westphalia (1648), for example, determined that a religious difference between states was no longer a valid reason for going to war. After the Napoleonic Campaigns concluded, the Concert of Europe (1815) dictated that territorial expansion in Europe required approval from the Concert, which was composed of the five most powerful European countries at the time. Thus, in the years leading up to the First World War nation-states possessed a nearly complete compétence de guerre, or right to wage war. This defining principle of international law at the time was referred to as the Doctrine of Intervention. Except for the few restrictions placed on nation-states in 1648 and 1815, sovereign states possessed the legal right to go to war any time that their leadership concluded it was necessary.

This broad *compétence de guerre* of states began to erode after World War I. The League of Nations (LON) was empowered to authorize sanctions against states, which threatened international peace and security in violation of its Covenant. The Kellogg-Briand Pact (1928), which was ratified by 65 states, restricted states to the use of force only in response to an armed attack, elevating the concept of self-defence in world politics as the sole legitimate standard for waging war. The failure of the League of Nations to prevent the Second World War, along with the destructive nature of that conflict, lead to a major revision of the laws that regulate entry into war. The United Nations Charter introduced the principle of non-intervention principle in article 2, paragraph 4, which states that:

All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations.

A revolutionary concept, non-intervention nearly eliminated the *compétence de guerre* of states. Only under the conditions of self-defence, collective self-defence and Security Council authorization could member states of the United Nations (UN) legally enter into war. In 2011, 193 nation-states were members of the United Nations. Since membership in the United Nations requires ratification of the UN Charter, including Article 2, paragraph 4, virtually every state in the international system is bound to the restrictions of the Charter as they relate to the legal entry into war.

Self-defence is a concept that dates to antiquity, holding that nation-states possess the legal right to enter into war in response to an armed attack. When Iraq invaded Kuwait on 2 August 1990, Kuwait possessed the legal right to defend itself. Collective self-defence extends the self-defence to other nations, giving them the legal right to come to the assistance of victim states. The United Nations Charter does not legally require third parties to intervene in response to armed aggression against a victim; however, it provides them with the legal right to do so. As such, not only did Kuwait possess the legal capacity to respond to the Iraqi invasion in 1990 with armed force, so, too, did all other states. Security Council authorization is the third legal justification for entering into war. The Security Council, a permanent organ of the United Nations, is composed of fifteen member states. Five of those members —China, France, Russia, United Kingdom, United States—are permanent (P5), while the remaining ten Council members are present for two-year appointments. In addition to a permanent presence on the Security Council, the P5 enjoy veto power over any Council resolution. At any time the Security Council decides that one nation's invasion of another constitutes aggression, it may authorize any or all UN member states to go to war on behalf of the victim state. As such, when Iraq invaded Kuwait in 1990, automatically Kuwait possessed the legal right to militarily defend itself (self-defence) and all other UN member states enjoyed the right to come to its defence (collective self-defence). When the Security Council authorized force against Iraq to liberate Kuwait, the third (and separate) legal recourse to war was extended to states to go to war against Iraq. [5]

The willingness of the UN Security Council to authorize war has varied greatly since the organization's inception. Only twice has the Council explicitly authorized war in response to an armed invasion, with both instances of Chapter VII war authorization happening under unique circumstances. In 1950, the Council deliberated the Korean War without the Soviet representative present, removing the veto from the calculation. Later, when the Security Council convened to consider expanding its original war mandate to include the reunification of the Korean peninsula, the Soviet representative returned to the Council and vetoed the effort. In 1990, the Security Council addressed the Iraqi invasion of Kuwait during an historic period of cooperation between the superpowers resulting from the peaceful end of the Cold War. The result was an authorization for war and a diverse international military coalition that forced Iraq's military from Kuwait. Despite numerous opportunities during and after the Cold War for the Security Council to take action in response to inter-state conflict, in most instances it either declined to do so or was unable to as a result of the veto. As such, Security Council authorization for war historically has been the exception rather than the rule.

The legal right of states to go to war, therefore, has been dramatically and qualitatively reduced by the revisions to *jus ad bellum* introduced in 1945 by the United Nations Charter. No longer may states legally attack other states except under the narrow confines outlined in the Charter. The purpose of the Charter's restriction on the legal right of states to go to war is to reduce the indiscriminate use of force. The fact that states continue to opt for war without legal cause, including waging undeclared wars, indicates their ability to sidestep the Charter's restraints.

Future Challenges

The laws that regulate international conflict are in constant need of revision and updating as the global environment changes. Technological innovations create situations that traditional international law struggles to fully address. This is the case with both *jus ad bellum* and *jus in bello* rules. For example, Article 51 of the United Nations Charter authorizes states to use force in self-defence when an armed attack occurs against the state. Cyber attacks, which can cause devastating consequences for the targeted state, do not technically qualify as an 'armed attack.' The first 'cyber war' occurred in 2008 when Russia attacked the financial infrastructure of Estonia, crippling the country's banking and credit system.

Jus in bello principles face equally daunting challenges on the 21st century battlefield. Robotic soldiers, and other forms of Automated Robotic Killing Machines (ARKM), attack drones that are controlled through satellite feeds, and the use of sound waves and other non-lethal defensive weapons are minimally regulated by existing treaty law. In order to maximize its role in the regulation of armed conflict, international law must quickly and consistently evolve to apply to new circumstances on and off the battlefield.

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18.5: Laws of Peace - Human Rights

The building block of the international system and modern international law is the sovereign state. Traditionally, international relations and the laws that it produced dealt with the regulation of external state behaviour, or foreign policy. Beginning in the 20th century, however, increasing attention was focused on the domestic behaviour of states. While some progress was made under the guise of the League of Nations after World War I, it was not until after the Second World War that human rights became a subject of international regulatory efforts. The result was a dramatic shift in international relations that transformed the individual from a mere object of international law to one of its subjects.

Until the emergence of international human rights, individuals enjoyed personal liberties and protections only to the extent that their governments afforded them. In some countries, citizens were granted generous civil liberties while in others citizens remained largely powerless and unprotected. The process aimed at ensuring basic liberties and conditions of human decency began with the framing of the United Nations Charter (Donnelly, 2006). The Charter's preamble signals the organization's commitment to establishing individual rights by affirming faith in fundamental human rights; Article 55 provides a clearer commitment to individual liberties by stating:

With a view to the creation of conditions of stability and well-being which are necessary for peaceful and friendly relations among nations based on respect for the principle of equal rights and self-determination of peoples, the United Nations shall promote… universal respect for, and observance of, human rights and fundamental freedoms for all without distinction as to race, sex, language, or religion.

The broad statements put down in the United Nations Charter started a process of specifying individual rights that were shared universally. In 1948, the Universal Declaration of Human Rights (UDHR) was adopted by the UN General Assembly, recognizing the inherent dignity and the equal and inalienable rights of all members of the human family as the foundation of freedom, justice and peace in the world. The UDHR's thirty articles provide a strong basis upon which numerous human rights treaties have been drafted. Key human rights documents include the Convention on the Prevention and the Punishment of Genocide (1951), Convention to End Racial Discrimination (1965), Covenant on Civil and Political Rights (1966), Covenant on Economic, Cultural and Social Rights (1966), Convention on the Elimination of All Forms of Discrimination Against Women (1979), Convention Against Torture (1984) and the Convention on the Rights of the Child (1989). Hundreds of other treaties and documents bring the legal regime on human rights to its current form.

In order for human rights to meaningfully impact international relations, more than the drafting of treaties is required. In a perfect world, states would internalize human rights protections and police themselves to ensure that individual liberties and rights are respected. In a world of sovereign, independent nation-states, the international community must collectively ensure that states act in accordance with prevailing international human rights documents. Economic sanctions are the most commonly applied pressure placed on states that violate human rights. Rhodesia (present day Zimbabwe) was the subject of the first comprehensive sanctions policy authorized by the UN Security Council. Over the course of the post-World War II era, the Security Council has implemented sanctions regimes on other human rights violating states, including South Africa, Iraq, Liberia, the Democratic Republic of the Congo, the Ivory Coast, The Sudan, and, most recently, Libya.

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18.6: International Legal Institutions

The focus, thus far, has been on the drafting of international rules that regulate the behaviour of states aimed at empowering and protecting the human condition. The formulation of international norms and treaties reflects a growing consensus in the international community that the rights of states are not unlimited and that the protection of individuals, in time of war and peace, is essential to global peace and security. While foundational, the mere drafting of agreements represents only the first stage in the attainment of a more humane and peaceful world. The necessary corollary to drafting the restrictions is their enforcement. Attention, therefore, now turns to the institutions that have been developed and utilized to ensure that the laws of war and peace are properly and effectively applied.

United Nations Security Council

Before the Second World War was concluded, the Allied powers began the process of creating the post-war international system by drafting the rules that would clarify relations among states and by establishing the institutions that would enforce them. Chief among the institutions was the Security Council of the United Nations. Empowered by the Charter, the Council operates with few legal restraints. The high threshold required for resolutions to be adopted (nine of fifteen yes votes), along with the ability of its five permanent members to veto resolutions, have created significant political obstacles to the Council's success. Efforts by the Security Council to regulate international affairs and effectively address threats to international peace and security generally fall into one of three categories. First, the Security Council can authorize economic sanctions against countries that it determines are in violation of the UN Charter and by virtue of their actions constitute a threat to peace. These sanctions may be tailored to target specific individuals or may be comprehensively applied to an entire country. Second, the Council can authorize peacekeeping operations (PKO) made up of contributions from multiple member states. PKOs may be authorized to oversee a disputed region, deliver humanitarian aid to people in distress, observe elections or monitor human rights compliance, or physically separate warring sides. Because the concept of peacekeeping is not found in the UN Charter, the Council's ability to authorize such operations represents an inferred, rather than explicit, power. The UN Charter empowers the Security Council to make adjustments to promote peace in Chapter VI and allows the Council to authorize war in Chapter VII. Since peacekeeping falls between those two points, it is often referred to as a "chapter six and one-half" action. [6] Finally, the Security Council can authorize war against violators. In 1950, when North Korea invaded its neighbour to the south, the Council authorized member states to use all force necessary to liberate South Korea. In 1990, in response to Iraq's invasion of Kuwait, the Council again authorized an international campaign to repel Iraqi military forces and restore the sovereign integrity of Kuwait. The Council is not limited, however, to authorizing war against states that invade another state. In 2011, the Council authorized member states to use force in order to establish a no-fly zone over Libya in an effort to prevent that North African country's military from physically suppressing its own people who were rebelling against their government.

The history of the UN Security Council can be divided into three distinct eras: Cold War, end of the Cold War, and post-Cold War. During the Cold War (1945-1989), the Security Council was increasingly ineffective in responding to global threats to peace and security due to the animosity of the era's two principal antagonists—the United States and the Soviet Union. As the Cold War evolved, competition between the two nuclear superpowers rendered the Council virtually dysfunctional, with one or the other superpower casting a veto to prevent a resolution's passage. From 1978 until 1987, in fact, the Security Council was unable to authorize a single peacekeeping operation due to the Cold War divide. The end of the Cold War, however, presented an opportunity for the major powers to cooperate and collectively respond to global threats to the peace. A series of successes resulted in a Nobel Peace Prize for peacekeepers, Kuwait was liberated from Iraqi occupation, and epic missions in Cambodia, Bosnia and Somalia were undertaken by the Council. From 1987, when the Cold War began to thaw, until 1993, the Security Council was both active and ambitious. Its decision to send heavily armed peacekeepers into on-going conflicts in Cambodia, Bosnia and Somalia represented its supreme confidence in mitigating international conflict and human suffering. Failures in those epic missions, along with a decline in the euphoria associated with the Cold War's end, marked the beginning of the current era in Security Council history. Since the mid-1990s, the Security Council has been more careful in the operations that it authorizes and less willing to take on the risks of involvement in on-going conflicts.

International Court of Justice (ICJ)

The first permanent international court was created as a semi-autonomous organ of the League of Nations in 1919. The Permanent Court of International Justice (PCIJ) was seated in The Hague (Den Haag), Netherlands, and was limited in its jurisdiction to considering contentious cases brought by nation-states and issuing legal advice to international organizations. While its rulings were legally binding, the PCIJ relied upon states to appear before the Court and grant it jurisdiction. As such, the PCIJ was a reflection of international law in that it was consensual instead of mandatory. When the United Nations was established after World War II, its International Court of Justice (ICJ) replaced the PCIJ. Except for the fact that the ICJ was made a principal organ of the United Nations, it functioned exactly like its predecessor. The ICJ is highly effective when two or more states come before it requesting legal adjudication, less so when states exercise their right to reject its jurisdiction. In an effort to compel states to come before the Court, the ICJ encourages states to sign a compulsory jurisdiction clause. Those that do make a legal commitment to appear before the ICJ any time that another state files a suit against them. Less than one-third of all UN members have signed the compulsory jurisdiction clause, and many of those have attached reservations that make the clause less compulsory. Like the PCIJ, the ICJ may issue advisory opinions, which represent non-binding legal advice that may be requested by the UN General Assembly or Security Council. This legal advice can be highly influential, such as in 1951 when the Court ruled that reservations applied to treaties impact only those states which had attached them at the ratification stage. Before that ruling, reservations changed the legal meaning of treaties as they applied to all parties.

The ICJ, like its predecessor, is greatly limited in that it may only issue legal rulings on disputes arising among nation-states. The Court has no jurisdiction over non-state actors, such as terrorist organizations, corporations, quasi-states or individuals. It was not until 2002 that a permanent international court was established for the purpose of prosecuting individuals for their violations of international law. Until then, efforts to hold individuals accountable resulted in the establishment of temporary, or ad hoc, tribunals.

Tribunals

International legal tribunals serve two distinct, yet inter-related, purposes. First, they bring to justice those individuals who have violated core principles of international law. In that regard, international legal tribunals may prosecute violators of the laws of war and the laws of peace. Additionally, international legal tribunals, through their existence and success, serve as deterrents to future bad behaviour. If individuals, ranging from soldiers engaged in combat to political leaders, are convinced that their violations will be prosecuted, they will be less likely to commit such violations. As such, the second purpose of the tribunals, deterrence, logically flows from the first.

International legal tribunals take two basic forms, depending on their intended longevity and focus. They may be created for a particular purpose and for a limited amount of time. Such tribunals are ad hoc. They may also be created to serve, in a long-standing capacity, the general needs of the international community. Such tribunals are permanent. While the list of international tribunals, ad hoc and permanent, is far too lengthy to discuss here, several merit particular attention.

International efforts to hold war criminals responsible for their violations of the laws of armed conflict date, in the most meaningful sense, to the close of the First World War. After that conflict, the victors compiled a list of Germans war criminals. Rather than establishing a tribunal for prosecution, it was decided to call upon the new German government to assume responsibility for the prosecution of its own nationals. The results were dismal. Of the more than 900 Germans listed by the victors as war criminals, 888 were either acquitted of their charges or had their charges dropped. The lesson learned was that an international tribunal would be needed to effectively prosecute those alleged with the commission of war crimes. Shortly after the conclusion of the Second World War, the victorious allies established the International Military Tribunal (IMT) through the London Charter (1945). Two principal ad hoc tribunals, in Nuremberg and Tokyo, were created for the purpose of prosecuting Axis war criminals. The complaint that the IMT focused exclusively on the losing side was valid – World War II marks the historic low point in terms of respect for the laws of armed conflict – however, it did not prevent the tribunal from successfully prosecuting scores of war criminals. As ad hoc tribunals, the Nuremberg and Tokyo courts ceased to exist after their dockets were cleared of cases. It was not until after the end of the Cold War that the international community established another war crimes tribunal. In response to the conflict in the former Yugoslavia, the UN Security Council established the International Criminal Tribunal for Yugoslavia (ICTY). Seated in The Hague, Netherlands, the ICTY possessed the legal power to issue indictments and prosecute war criminals from that series of wars. The most famous indictment was issued against former Yugoslav president Slobodan Milosevic, who was accused of a wide range of violations of international law, including aggression, crimes against humanity and genocide. A long and complicated trial began in the ICTY in

2002, it concluded in 2006 when Milosevic died before the tribunal issued its ruling. The ICTY formally ceased operations in 2017 after completing all cases pending before it. A total of 161 individuals were indicted by the Court, 111 trials were completed and 90 war criminals convicted. Many cases were transferred to other courts for prosecution and 17 indicted individuals died before their cases were completed.

In 1994, the Security Council established another ad hoc tribunal. In response to the catastrophic loss of life in the African state of Rwanda, the International Criminal Tribunal for Rwanda (ICTR) was created. With its chief prosecutor in The Hague, the ICTR's court was located in Tanzania. The ICTR discontinued operations in 2015 after bringing fifty cases to conclusion.

The two ad hoc tribunals (ICTY, ICTR) established by the Security Council at the dawn of the post-Cold War era contributed greatly to the development of international humanitarian law. Important advances include the designation of rape as a form of genocide and/or torture, the ability of prosecutors to charge individuals with crimes against humanity prior to the onset of armed conflict, and the development of a more precise code of laws of armed conflict.

There are several problems associated with the use of ad hoc tribunals to hold individuals accountable for their actions. First, ad hoc tribunals, by definition, must be created as their need arises. As such, interest in creating a war-crimes tribunal for a particular conflict or country may not be shared by other countries, creating a political obstacle to its establishment. Since recent tribunals have been established through the United Nations Security Council, legal objections have been raised over the legitimacy of the tribunals. Second, ad hoc tribunals, as their name implies, are created for a particular event or location. This means that an existing tribunal is limited in its jurisdiction to alleged crimes that occur only within its geographic and temporal scope. Injustices that occur outside of the jurisdiction of the tribunal, therefore, are not subject to its review and adjudication. For that reason, new ad hoc tribunals must be created for each circumstance resulting in the third major problem associated with ad hoc tribunals, fatigue. When states grow weary of creating one temporary tribunal after another, they are less likely to invest the time, energy, and resources required to create a new tribunal. Thus, while ad hoc tribunals may be effective in addressing localized violations of human rights and the laws of armed conflict, the only way to evenly and successfully apply international laws to the international community is through the establishment of a permanent criminal court.

International Criminal Court (ICC)

Throughout the 20th century world leaders, international lawyers, academics and others called for the establishment of a permanent international court with the ability to prosecute individuals. It was not, however, until after the Cold War's end that sufficient global consensus developed to turn the idea of a global criminal court into a reality. Meeting in Rome, Italy, in 1998, diplomats drafted a statute that was designed to create the world's first permanent international criminal court. In 2002, after the sixtieth instrument of ratification was deposited, the court officially came into existence. Located in The Hague, Netherlands, the ICC has a membership of 123 countries. [7] Additionally, more than thirty countries have signed the ICC Statute and are in various stages of the ratification process. As such, more than 75% of countries are either Party to the ICC or have signed the court's statute and indicated an on-going interest in being bound by the court. The most prominent non-member of the ICC is the United States, which is ironic since President George H.W. Bush was the first head of state to call for the court's creation. President Bush's successor, Bill Clinton, signed the Statute of the ICC, but did so at the very end of his presidency, leaving the ratification process to George W. Bush. Contending that the ICC would not fairly treat Americans, President Bush "unsigned" the International Criminal Court Statute, ensuring that the United States would not join the Court during his presidency.

Unlike the ICJ, which has jurisdiction over states, the ICC's jurisdiction is limited to individuals. Its chief prosecutor has the authority to undertake investigations and to issue indictments against individuals whose actions constitute grave violations of international law. As it enters its sixteenth year in existence, the ICC has issued indictments of thirty-four people, all of them for alleged illegal actions taken in Africa. Included among those indicted are heads of state from Cote d'Ivoire, Kenya, Liberia, Libya and The Sudan.

While creating international laws that define the permissible behaviour of states and individuals, along with the establishment of a permanent international court, represents milestone developments in international affairs, efforts have recently been undertaken to provide the international community with even greater capacities to respond to human suffering. Reflecting an interest in endorsing the right of states to intervene on humanitarian grounds is the emerging Responsibility to Protect (R2P) principle.

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18.7: The Responsibility to Protect (R2P)

In September, 2000, Canada announced the creation of the International Commission on Intervention and State Sovereignty (ICISS). Its central concept, the Responsibility to Protect (R2P), acknowledges a primary responsibility of states to protect their own citizens. In the event of a failure to do so, the responsibility to protect reverts to the international community. The December 2001 ICISS Report embraces three specific responsibilities:

- The responsibility to prevent the root causes and direct causes of internal conflict and other man-made crises putting populations at risk
- The responsibility to react to situations of compelling human need with appropriate measures, which may include coercive measures like sanctions and international prosecution, and in extreme cases military intervention
- The responsibility to rebuild, particularly after a military intervention. [8]

While the ICISS Report calls upon states to seek approval for military intervention from the United Nations Security Council, it leaves ample room for extra-Council authorization for military intervention in the event that the Security Council fails to address the issue. Such alternative authorizations, accordingly, include the General Assembly of the United Nations and regional organizations.

Several points of critique of the Responsibility to Protect should be noted. First, allowing states to militarily intervene to protect foreign nationals gravely undermines the non-intervention enshrined in the UN Charter. Referencing R2P allows states to sidestep the legal restrictions found in *jus ad bellum* rules. Second, R2P interventions can make a bad situation worse if the introduction of foreign military forces attracts domestic protest. Finally, there is a concern that the Responsibility to Protect will be used by major powers to contain Third World problems and prevent them from spilling over rather than using R2P to solve those problems.

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18.8: Conclusion

International efforts to reduce levels of violence among states and between people are based upon the drafting of international treaties and the creation of institutions empowered to enforce them. Hampering efforts to curb the destructive behaviour of states is the sovereignty of the modern state, which makes international law consensual rather than obligatory. In the absence of a world government with the capacity to limit the actions of states, the system relies largely on either the self-restraint of states or the collective action of nation-states through international institutions.

While it is very difficult to project into the future the likely success of international laws and institutions in their efforts to promote a more harmonious and less destructive international system, a few observations can be made with some degree of confidence. Regarding human rights, it is clear that the momentum that led to the drafting of scores of important human rights documents since 1945 has not abated. Public interest in the protection of human life and individual liberties remains extraordinarily high and, it seems certain, will lead to even more human rights treaties. Further, the immunity traditionally reserved for heads of state, such as presidents or prime ministers, is less applicable as human rights treaties increasingly erode it. The crime of aggression, i.e. authorizing an illegal war, exposes heads of state to prosecution by a foreign or international court, and the Convention Against Torture (CAT) explicitly rejects head of state immunity. As such, not only can we anticipate that further advances will be made in developing more human rights provisions, but also the capacity to hold violators accountable is increasing.

In terms of the laws of war, the trend lines appear to be negative. Since the end of the Cold War, certain powerful states have indicated an increased willingness to go to war without legal authority. The United States used military force in Bosnia in 1995, waged an extensive aerial bombardment campaign in Serbia in 1999 and invaded Iraq in 2003, all without invoking self-defence or obtaining Security Council authorization. In 2008, Russia invaded Georgia and in 2014 annexed Crimea from Ukraine, also without pretext or authorization. Members of the North Atlantic Treaty Organization (NATO) expanded upon a Security Council resolution in 2011 that authorized a no-fly zone over Libya to justify a six-month aerial bombing campaign that toppled the Ghaddafi government.

Actions by the major powers can have a sustained impact on the rest of the international community. The willingness of certain powers to use force with little reservation is an indication that the legal prohibition on the use of force may be weakening.

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18.9: Resources and References

Review

Key Points

- Empowering human security requires both the limitation of armed conflict as well as the development of international human rights.
- International law attempts to reduce the arbitrary use of armed force by upholding *jus ad bellum* rules that limit war to instances of self-defence, collective self-defence and Security Council authorization. During conflict, soldiers are limited by *jus in bello* rules that outlaw inhumane or unnecessary destruction.
- Certain weapons of war have been deemed illegal due to their inability to discriminate between targets or their tendency to cause unnecessary suffering.
- International organizations have empowered human security regimes by enacting laws, authorizing peacekeeping operations or adjudicating disputes.
- Human rights challenge the sovereign autonomy of nation-states by restricting their domestic behaviour.

Extension Activities & Further Research

1. How successful has international law been in its efforts to reduce armed conflict?
2. To what extent do *jus in bello* restrictions reflect the naturalist perspective of international law?
3. Should the Responsibility to Protect (R2P) be authorized by the UN Security Council or International Court of Justice (ICJ) before it is deemed lawful?
4. The international legal system has been based on the sovereignty of the state. To what extent does human rights law erode the sovereignty of states?
5. Should nuclear weapons be deemed illegal due to their inability to discriminate between combatants and civilians?
6. What role should NGOs play in the formulation of international law, its monitoring, and its enforcement? Explain your reasons.

List of Terms

See Glossary for full list of terms and definitions.

- ad hoc war crimes tribunals
- aggression
- anarchy
- anti-personnel landmine (APL)
- Chapter VII
- Cold War
- *compétence de guerre*
- Concert of Europe
- Convention on the Prevention and the Punishment of Genocide
- Customary International Law
- cyber attack
- Geneva Conventions
- human rights
- International Court of Justice (ICJ)
- International Criminal Court
- International Criminal Tribunal for Rwanda (ICTR)
- International Criminal Tribunal for Yugoslavia (ICTY)
- International Military Tribunal (IMT)
- *jus in bello*
- *jus ad bellum*
- Kellogg-Briand Pact (1928)

- London Charter (1945)
- non-intervention principle
- natural law
- nuclear weapon
- peacekeeping operation (PKO)
- positive law
- responsibility to protect (R2P)
- security council
- self-defence
- Treaties of Westphalia (1648)
- treaty law
- United Nations
- United Nations Charter (1945)
- Universal Declaration of Human Rights (UDHR)

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Footnote

1. Examples of scholars who are considered Naturalists are Francisco Vitoria (1480-1546) and Samuel Pufendor (1632-1694).
2. Early positivist scholars include Richard Zouche (1590-1660) and Cornelis van Bynkershoek (1673-1743).
3. Article 38, International Court of Justice Statute.
4. Legality of the threat or use of nuclear weapons, International Court of Justice, 8 July 1996.
5. Resolution 678, adopted by the UN Security Council XE “United Nations Security Council” , 2963rd meeting, 29 November 1990.
6. Later, when peacekeeping operations became more heavily armed due to on-going conflicts, and thus more closely resembled Chapter VII war operations, the term “Chapter 6&3/4” was used.
7. As of 2 July 2012, the ICC’s 10th anniversary.
8. Report by the International Commission on Intervention and State Sovereignty (ICISS XE “International Commission on Intervention and State Sovereignty”), December 2001.

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CHAPTER OVERVIEW

19: Conflict Transformation and Peace Processes - Peace Without Justice Is Just a Ceasefire

Learning Objectives

- Understand what is meant by conflict transformation, how it differs from conflict resolution and conflict management and why it is critical to sustainable peace.
- View peace agreements and peace processes in historical perspective and see how the concept of peace at the conclusion of violent conflict has changed during the 20th century, especially the second half.
- Consider that the contemporary state is an institution distinct from small-scale societies and empires and learn what distinguishes it from these other forms of socio-political order.
- Interrogate the relationship between peace—the cessation of armed conflict—and justice, which addresses the underlying grievances of parties to a conflict.
- Learn about four conflicts that concluded with efforts to transform the conflict into a sustainable post-conflict peace by negotiating new terms of relationship between the former parties to a conflict (South Africa through a new constitution, and Bosnia, Northern Ireland and the Middle East through peace processes).
- Identify similarities and differences in these four negotiated processes.
- Assess current conditions in the four cases from the perspective of whether progress was made toward conflict transformation.

Franke Wilmer

Conflict resolution, conflict management, and conflict transformation are all important concepts in the area of peace research, but what makes conflict transformation different and how does it fit in with peace “processes” that seem to be more common than “peace agreements/settlements?” When leaders of parties to a conflict are unwilling to engage in dialogue and process through action, can grass roots initiatives create a demand for conflict transformation, if not a transformation themselves? Must people wait for their leaders to act or can citizen-led diplomacy and dialogue create a “demand” for peace and conflict resolution? This chapter will consider the cases of South Africa, Bosnia (former Yugoslavia), Indigenous-settler relations, and the Middle East (Israel and Palestine). When there is no effort to effectively transform the root grievances into dialogue and constructive engagement with an aim to at least talking about issues of justice (and injustice), parties to conflict continue to harbor grievances that either render the conflict intractable or, ultimately, erupt into future cycles of violence.

19.1: Introduction - What Do We Mean by ‘Transforming’ Conflict?
19.2: From Peace Treaties to Peace Processes - Conflict and Peace in Historical Perspective
19.3: Four Peace Processes
19.4: Post-conflict Conditions Today
19.5: Assessing Conflict Transformation in Four Peace Processes
19.6: Resources and References

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19.1: Introduction - What Do We Mean by ‘Transforming’ Conflict?

Conflict resolution is not new, historically speaking. Small scale, local societies predating the European system of states and Indigenous communities extant today often have processes for bringing closure to injuries inflicted upon one another by community members. Palestinian peacemakers in Palestine and Israel, for example, engage in a process of conflict resolution and transformation that is common among many Arab societies known as *Sulha* and a related practice called hudna. Sulha is usually used to resolve a conflict involving a murder or murders. The parties to the conflict, normally, the families, must choose, voluntarily, to enter into s*ulha*.

The point is that people have commonly devised social practices to manage conflicts arising in their societies in order to avoid violence or escalation to violence, or redress grievances arising out of injuries caused by violence. In this scenario, conflict is resolved in the sense that everything surrounding it, the issues that gave rise to it, the grievances that followed, the perception of injustice, are “erased.” In *Sulha*, anyway, entering into the process and coming to an agreement on compensation for injury means that the families and people involved never speak of the conflict again, as if it never happened.

Large-scale, bureaucratic (organizationally complex and hierarchical), western, militarized societies, however, took a different path, from the Roman to the British empires, and most of the nation-states now-states formed as they declined, developed systems of retributive justice to deal with internal conflict, and regarded the use of coercive force as an instrument of influencing and dominating others in their external relations. Internal or domestic processes for channeling or managing conflict we and still are largely, retributive and punitive although there are parallel civil and criminal systems and some opportunities for alternative dispute resolution or ADR, bargaining, and negotiation. In that regard, it is also worth pointing out that some of the practices, including ADR, developed specifically as a means of resolving conflict in labor relations, which in turn arose out of a period in the history of labor movements when they were more inclined to act collectively, and sometimes violently.

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19.2: From Peace Treaties to Peace Processes - Conflict and Peace in Historical Perspective

Here we will focus on the idea that peace in interstate or international relations was, for most of western history from the Roman empire to World War I, understood as the outcome of armed conflict in which one side conceded to the other's superior force or coercive capacity. This resulted in asymmetrical peace agreements or treaties, where actual concessions were made by the party that surrendered to the will of the victor. The result was, with grievances unreconciled, the losing party had every motive to mobilize for a future conflict that might lead to a victorious or "different" outcome. Of course in cases where the asymmetry of power between the victorious and submissive party was so great that no future overturning of the outcome seems possible, the result was simply to institutionalize oppression, which creates its own set of problems while not setting the stage for a future armed conflict.

War was a social practice in a society of western, bureaucratic states. Peace treaties were agreements based on surrender and asymmetry. Where possible, losing parties often mobilized for future armed conflict (war) in order to renegotiate an outcome more favorable to their interests and objectives.

World War II changed that. For one thing, of course, unprecedented atrocities perpetrated against civilians who were primary targets, not collateral damage in both the Holocaust and the use of nuclear weapons by the US against civilian population centers in Japan. These atrocities no doubt also contributed to the other thing that changed the way western and western-style states handled the terms of peace that ended the armed conflict. For the first time, they made justice in the form of a judicial process a part of the peace process. Yes, it was a judicial process predicated on retributive and punitive norms, but it was not entirely a set of terms dictated to the losing parties by the winning parties, although it was also mostly that. Peace agreements 'end' conflicts without necessarily resolving them and definitely without transforming them. A peace process that includes provisions for participation, for utilizing a judicial process to assign responsibility, for public witnessing of accusations, evidence, convictions, and punishments, this was all new. And the provisions also allowed for continuing the judicial process through domestic courts even after the international tribunals were disbanded.

This does not in itself constitute conflict resolution, management, or transformation, but it did usher in a new approach to the settlement of violent conflict by adding justice to the process. As a contemporary field of study and practice, conflict resolution applied principles of negotiation more widely practiced in labor relations to international and interstate relations. You know the names of the conflict resolution pioneers: John Burton's human needs theory and his two-track diplomacy (Burton, 1990a, 1990b, 1993, 1997); Louis Kriesberg's Constructive Conflicts (1998, 2011); Lewis Richardson's early models of arms races aimed at achieving an intervention to de-escalate before reaching the outbreak of armed conflict (1960), Anatol Rappaport's application of mathematical biology to questions of conflict, Ted Gurr's theory of revolution and civil violence, Rudolph Rummel's quantitative analysis of conflict, the Causes of War project at the University of Michigan and others (Singer & Small, 1982).

Conflict resolution is a rather broad term that, at least initially, meant negotiated peace in which all parties to a conflict came away feeling that their grievances had been addressed. Conflict management is more concerned with channeling, as Kriesberg puts it, constructive conflict. Conflict is a normal feature of social life, so the challenge is to channel or manage conflict without resort to violence.

But what do we mean by conflict transformation? One of the most prolific contemporary conflict theorists, John Paul Lederach had this to say in 2003:

I have been using the phrase "conflict transformation" since the late 1980s. I remember that timeframe because it came on the heels of intensive experience in Central America. When I arrived there my teaching vocabulary was filled with the terminology of conflict resolution and management. But I soon found that many of my Latin colleagues had questions, concerns, even suspicions about what such concepts meant.

Their worry was that quick solutions to deep social-political problems would not change things in any significant way. "Conflicts happen for a reason," they would say. "Is this resolution idea just another way to cover up the changes that are really needed?" Their concerns were consistent with my own experience.

The ideas that inform much of my work emphasizes peace as embedded in justice, the building of right relationships and social structures through a radical respect for human rights, and nonviolence as way of life. (Lederach, 2003, n.p.).

Owen Frazer, Center for Security Studies in Zurich and Lakhdar Ghettas of the Cordoba Foundation of Geneva put it this way:

Conflict transformation is about transforming the way that societies deal with moving them from violent to nonviolent means. Its goal is to build just, sustainable societies that resolve differences non–violently. To achieve this it must address the direct and structural causes of conflict. It assumes that conflict is inevitable aspect of social change same time it assumes that the way with conflict need not be violent reason violent conflict emerges or because parties do not have agreed mechanisms for resolving conflict non-violently. (Frazer & Ghettas, 2013, p. 6)

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19.3: Four Peace Processes

We turn now to an examination of four cases where conflicts ended with peace accords, agreements, or processes – The Oslo Accord in the Middle East, the negotiations leading to the new 1994 South African constitution; the Dayton Accords the ended the wars in former Yugoslavia, and the 1998 Good Friday Accords that ended the "Troubles" in Northern Ireland.

The Middle East Peace Process

The *Oslo Accord* was signed by Israeli Prime Minister Yitzhak Rabin and Palestinian Negotiator Mahmoud Abbas in September 1993. The official name of the accord is the Declaration of Principles on Interim Self-Government Arrangements. The PLO renounced terrorism and recognized Israel's right to exist, and the two sides agreed on a system of governance in which a Palestinian Authority would be created and have some exclusive authority within the West Bank and Gaza, and other areas would be administered jointly or by the Israeli government and did not fundamentally alter the occupied status of the territories. Differing statuses were created for three areas in the West Bank. Area A is under full civil and security control of the Palestinian Authority and includes the eight largest cities and areas including Nablus, Jenin, Qalqilya, Tulkarem, Ramallah, Bethlehem, Jericho, and 80% of Hebron. Area B is under civil control of the PA and joint Israeli-Palestinian security control. Area C is completely under Israeli civil and security control. Area B comprises about 22% of the land in the West Bank and 450-500 villages. Area C has a Palestinian and Bedouin population of about 150,000 but contains about 90% of the natural resources in the West Bank. There are about 300,000 Israeli settlers living in Area C, and some of Area C is also considered state land and some is appropriated for military outposts. The Palestinian population in Area C has declined by about half since 2013, primarily due to demolitions carried out by the Israeli government. Palestinians are denied permits to building Area C. The international court considers Israeli settlements there to be illegal. Demolitions are ordered for a range of reasons including as punishment of the families of those accused or convicted of carrying out attacks against Israelis or failure to produce documentation of their occupancy, even though they have occupied these areas primarily as goatherders and agriculturalists, since they fell under the rule of the Ottoman empire.

Today, the fastest way to make friends in Palestine is to open a conversation with "Whoever signed Oslo should be shot."

From Apartheid to Democracy: South Africa's New Constitution

Although the UN called for an arms embargo and subsequent expansions of sanctions against South Africa from 1977-1986, the US and UK did not actively support the sanctions regime until 1985. Within only a few years, the white supremacist government in South Africa felt the international pressure, and the ruling National Party entered into negotiations with the African National Congress (ANC) that led to the creation of a new constitution in 1993, the first democratic all-race elections in 1994, and the creation of the Truth and Reconciliation Commission (TRC) in 1995. The TRC was actually authorized by the Promotion of National Unity and Reconciliation Act of 1995 and created three committees – one on amnesty, one on reparation and rehabilitation, and one on human rights violations. The TRC was very clear about two things in its deliberations. One was that in order to be considered for amnesty, the crimes in question had to be fundamentally motivated by politics, and the other was that people committed crimes and atrocities in part because they lived in an ideological environment that normalized the dehumanization of Black and non-white South Africans. Victims' families were invited to attend and offer their support for or opposition to applications for amnesty, and while their testimony and positions carried a lot of weight, the decision to grant amnesty or not was not solely based on the support or opposition of victims' families.

The Yugoslav Wars of Secession

The "Ten Day War" of Slovenian secession and the response by Yugoslavia's Belgrade government marked the beginning of an armed conflict in connection with the post-Tito status of Yugoslav republics and autonomous regions. Although the *Dayton Accords* of November 1995 brought to an end the armed conflict between the Serbs, Croats, and Bosniaks (Bosnian Muslims), subsequent efforts by the Serbian government to expel Albanians from Kosovo provoked a NATO response that has since been considered subject to the same judicial process for war crimes accusations arising out of the 1991-1995 conflict that took place mostly in Bosnia-Herzegovina. The Dayton Accords, formally titled a "General Framework Agreement for Peace in Bosnia and Herzegovina," created two 'entities' while ostensibly maintaining the territorial integrity of Bosnia and Herzegovina as a single state. The western part sharing a border with the Dalmatian region of Croatia, became the 'Bosniak-Croat federation' and the boomerang shaped eastern entity bordering Croatia in the north and Macedonia and Albania to the east, became the Bosnian Serb

Republic, or Republika Srpska, as Serbs call it. Essentially, this arrangement rewarded the main protagonists, Serbia and Croatia, by dividing Bosnia into two territorial and jurisdictional entities with linguistic, economic, and political ties to the Croatian and Serbian states. Those living in the federation to the east were allowed to hold passports for Croatia as well as for the federation "entity," thus reinforcing dual citizenship with a potential to become a single Croatian state. A twenty-six state alliance supported the post-conflict peace by participating in a Stabilization Force known as SFOR, and following the signing of the accords, a military 'Implementation Force' under NATO command would supervise and keep the peace.

The main provisions were that the three states – Croatia, Serbia, and Bosnia and Herzegovina—would respect one another's sovereignty and maintain their borders as international borders. An annex to the accords were designated as the constitution for the Bosnia-Herzegovina state. It provides for a tripartite presidency with one representative from each of the three main identity/communal groups. Those with binational identities are excluded, for example, a Croat, Serb, or Bosniak who also identifies as Jewish would be excluded. A 42-member parliament are elected through a system of proportional representation with 28 from the Federation and 14 from Republika Srpska. A second house consisting of 15 members is elected by the Parliament with two-thirds from the Federation and one-third from the Republika Srpska. Both entities have a great deal of autonomy and each has its own national assembly, Prime Minister, and 16 ministries. There have been as many as 60 or more political parties participating in the statewide elections (Nardelli et al., 2014).

Ending the Troubles in Northern Ireland

On 10 April 1998, the *Good Friday/Belfast Agreement* ended nearly 30 years of violent conflict over the status of Northern Ireland and provided a framework for normalization and nonviolence (by ultimately decommissioning paramilitaries active in Northern Ireland was really two agreements – one between the British and Irish governments, another among the eight major parties to the conflict itself: the Ulster Unionist Party (UUP), the Social Democratic and Labour Party (SDLP), Sinn Féin (linked to the Irish Republican Army or IRA), the Alliance Party, the Progressive Unionist Party (PUP) (linked to paramilitary Ulster Volunteer Force (UVF)), the Northern Ireland Women's Coalition (NIWC), the Ulster Democratic Party (UDP) and Labour. The agreement acknowledged two contradictory political realities – that the majority of those living in Northern Ireland wished to remain part of the UK, and that a substantial number of people in Northern Ireland as well as a majority on "the island of Ireland" wanted a united Ireland. Northern Ireland would remain part of the UK until or unless a majority of those living both in Northern Ireland and the Republic of Ireland chose otherwise, in which case the two governments, British and Irish, would be obligated to implement a united Ireland. On the decommissioning of paramilitaries and normalization of British relations, particularly as embodied in the presence of British troops, the parties to the multi-party agreement committed to using "any influence they may have" to bring about the decommissioning while the British government agreed to reduce the number of troops there "to levels compatible with a normal peaceful society." The agreement also created a commission to oversee policing and work to garner public support for these goals. The agreement also created a Northern Ireland assembly and a power-sharing executive utilizing a form of proportional representation.

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19.4: Post-conflict Conditions Today

The Oslo Agreement outlined a path to peace for Israelis and Palestinians in 1993, ending the First Intifada begun in 1987 following the deaths of four Palestinians in a car hit by an Israeli Defense Force truck in the Jabalia refugee camp. South Africa began its transition to democracy in 1994. The Dayton Accords ended four years of civil war among former Yugoslav republics marked by violations of the Geneva conventions, the laws of warfare, and the Convention on the Prevention and Punishment of the Crime of Genocide. The Troubles in Northern Ireland ended with the negotiation of the Good Friday Agreement in 1998. Twenty to twenty-five years have now passed. How much progress toward conflict transformation has been made in these four cases? What follows is a view from 15,000 feet.

South Africa Today: Two Countries, Two Stories

As most people know, under apartheid, Black South Africans were forced to live in townships in dormitory-style housing originally built for same-sex (male) workers but later even more overcrowded when their families were moved in with them. Many others lived in informal housing or makeshift shanties. The post-apartheid government built more housing in the townships and many people moved to informal settlements on the outskirts of urban areas. The government defines formal and informal dwellings this way:

Formal dwelling refers to a structure built according to approved plans, i.e. house on a separate stand, flat or apartment, townhouse, room in backyard, rooms or flatlet elsewhere. Contrasted with informal dwelling and traditional dwelling… [An] Informal dwelling is a makeshift structure not erected according to approved architectural plans, for example shacks or shanties in informal settlements or in backyards. (Stats SA, 2016, p. 73)

The number of people living in informal housing is in decline, from 16.2% in 1996 to 13% 10 years later. About half of the Black South African population lives in townships, with Soweto, near Johannesburg, being the largest at 1.3 million. Black South Africans make up about 80% of the total population. Nearly 34% of South Africans lack reliable access to sanitation and for 6.8%, access to safe drinking water is a concern (World Population Review 2019). The Centre for the Study of Violence and Reconciliationreported in 2010 that “the country is exposed to high levels of violence as a result of different factors.” These include the normalization of violence which is viewed as a way of resolving conflict, a criminal justice system struggling with inefficiency, corruption and a subculture of criminality. These factors together with economic and community distress, including high rates of poverty, the report said, put many Black South African children at higher risk of becoming involved in criminality and violence. The report also notes that males are inclined to believe that coercive sexual behavior toward women is legitimate (Centre for the Study of Violence and Reconciliation, 2010).

An online weekly newsletter entitled *South Africa: the Good News*, paints a rosier picture with its “Fast Facts” covering thirteen categories of data including political, economic and business, education, environmental, and corruption. It reports improvements in literacy rates, steadily increasing from 90% in the early 2000s to 94.3% in 2017; a drop in the percent of the population with no formal education; and a majority of South Africans regarding their health as “good or better” over the past 15 years. They also report that the number of households with electricity is growing (from 76.7% in 2002 to 84.4% in 2017) and improvement in access to sanitation with “the number of households with no toilet” declining from just over 12% to around three percent between 2002 and 2017. The ‘good news’ is also that hunger-vulnerable households has been cut by more than half, from 24.2% to 10.4% over the same period.

Are things better? When the author visited Kkayelitsha township near Cape Town in 2001, many people said that “for all I know *apartheid* has not ended. I don’t see any change in my living conditions.” At that time, in that township, there was one source of running water for about 19,000 people. More recently, a township resident said, in 2017, that she had:

> envisioned escaping the townships, where the government had forced black people to live. She aimed to find work in Cape Town, trading her shack for a home with modern conveniences.

More than two decades later, Ms. Sikade, 69, lives on the garbage-strewn dirt of Crossroads township, where thousands of black families have used splintered boards and metal sheets to construct airless hovels for lack of anywhere else to live.

> “I’ve gone from a shack to a shack,” Ms. Sikade says. “I’m fighting for everything I have. You still are living in apartheid.” (Goodman, 2017, n.p.)

In 2014, Archbishop Desmond Tutu had this to say about the success of conflict transformation:

> I didn't think there would be a disillusionment so soon. I'm glad that (Nelson Mandela) is dead. I'm glad that most of these people are no longer alive to see this," a reference to a host of chronic problems such as corruption and poverty. (More, 2014, n.p.)

And here is a story from Khayelitsha just a few years ago, 20 years after the end of apartheid:

> Outside her makeshift home in the sprawling township of Khayelitsha, on the eastern edge of Cape Town, barefoot children play on the banks of an open sewer, while cows roam next to an overflowing rubbish heap. Panyaza shares this tiny cabin with her two daughters and four grandchildren, a family of seven with two beds between them. "We can't sleep at night because of the smell," she says, speaking in Xhosa, a language peppered with clicks that echo the droplets beginning to drum on the corrugated metal roof. "I'm worried that the children are always getting sick."

Twenty minutes' drive to the west, the seventh course is being served at a banquet of assembled journalists, here to celebrate Cape Town's title of World Design Capital 2014 on the terrace of a cliff-top villa. An infinity pool projects out towards the Atlantic horizon, as the setting sun casts a golden glow across the villa's seamless planes, their surfaces sparkling with Namibian diamond dust mixed into the white concrete. Guests admire how the bath tub is carved from a solid block of marble, while security guards keep watch in front of a defensive ha-ha down below, ringed by an electric fence.

Apartheid may have ended 20 years ago, but here in Cape Town the sense of apartness remains as strong as ever. After decades of enforced segregation, the feeling of division is permanently carved into the city's urban form, the physical legacy of a plan that was calculatedly designed to separate poor blacks from rich whites. (Wainwright, 2014)

Bosnia and Herzegovina and Republika Srpska: Two Entities, One State

The conservative US think tank, the Heritage Foundation, gave Bosnia and Herzegovina (including both entities) a score of 61.4 out of 100 on its economic freedom assessment in 2018 and ranked it 91st out of 186 countries, showing an unemployment rate of 25.8%. Factors influencing the Foundation's assessment including that the country's economy has been driven primarily by reconstruction, its government's complexity and continued ethnic divisiveness has deadlocked political institutions, which has inadvertently fostered a "large informal economy," and that nationalist parties exert too much influence over both the judicial and executive branches of government (Heritage Foundation, 2018).

The two entities use two different scripts, Cyrillic and Latin, and, for all purposes, two languages—Bosniak and Serbian. Although banned by the national Constitutional court and condemned by the EU and US, Bosnian Serbs celebrated "Statehood Day" on 9 January 2018. January 9 was the date in 1992 when Bosnian Serbs declared the founding of Republika Srpska and a precipitating event in the violence that escalated into the multi-front, multi-party civil war and wars of secession. Republika Srpska's President Milorad Dodik who has repeatedly said that the Bosnian Serbs' remain committed to eventual secession from Bosnia and Herzegovina, declared that "The Serb people have two states – Serbia and Republika Srpska – and we want to be one," according to a Radio Free Europe report (RFE/RL Balkan Service, 2018). Nationalist rhetoric and "open questioning of Bosnia's continued existence as a state" also marked the 2018 elections (Higgins, 2018).

Things are not much better in Serbia's relations with Kosovo, which in many ways is where the flames of toxic nationalism were first inflamed by Slobodan Milosević. In December 2018, Kosovo's legislative assembly voted unanimously to convert its emergency response force into a professional armed force with the 15 minority Serb members of the body boycotting the vote. While Kosovo's sovereign independence is widely and internationally recognized, many consider this move to be provocative toward its former enemy, Serbia (RFE/RL, 14 December 2018).

A public opinion survey commissioned by the United Nations had this to say about how Bosnian Muslims, Croats, and Serbs assess present conditions when asked about reconciliation:

> Almost 20 years after the end of the war, ethnic tensions are still immanent in BiH society. Within the survey, respondents were asked some questions in regards to this process – how they perceive the current state on this issue, what they think that needs to be done to end it successfully and how much time this process would take.

In general, respondents do not think that the process of reconciliation in BiH has been completed. The majority of the respondents think either that there was no reconciliation in BiH, or they describe the extent of reconciliation as small or partial. Serbs are more

prone to state that reconciliation had no or had only a little progress in BiH, in comparison to Bosniaks and Croats. On the contrary, Bosniaks and Croats state more often than Serbs that there is a certain progress in reconciliation in this country, whereby Croats are more convinced in this than Bosniaks. (Prism Research, 2013)

Northern Ireland

One of the great challenges to conflict transformation in Northern Ireland is the de facto economic and social segregation of the two groups party to the conflict brought on by the independence of the Republic of Ireland and the partitioning of the North under the control of the United Kingdom. Irish Catholics and Irish Protestants still think of themselves as 'Indigenous Irish' and 'citizens of the UK.' For example, in the 2011 census, 39.9% of respondents identified as "British only" 25.3% identified as "Irish only," and 20.9 identified as "Northern Irish only" (2011 Census, Northern Ireland, 2012). Catholic/Irish and Protestant/British inhabitants often live in segregated neighborhoods, attend different churches, and are often economically segregated by jobs that correspond with more or less education – labor and management, for example. In other words, people have few opportunities to interact with one another in normal roles of daily and civic life – churches and neighborhoods, shopping districts and in their working lives.

In a study of 18 young people from Northern Ireland over the period from 1997 to 2010, the Joseph Rowntree Foundation found that:

> In the context of Northern Ireland, the concepts of security and risk take on meanings that are historically and locally specific, associated with conflict, policing, paramilitarism and territorialism. Although the ceasefire remained in place, sectarianism and paramilitary activity continued to have a significant impact on the lives of young people, particularly those living in working class areas. Their experience of space, place and mobility is often coloured by the fear or threat of violence or sectarianism, or the legacy of such experiences in their community. How they are able to use and move through the spaces and places of their local environment is central to their coping and survival strategies while growing up, and – as data from this project suggests – early experiences of conflict and sectarianism can influence future transitions. (McGrellis, 2011, p. 5)

The same report disturbingly notes the strong connection between the conflict – the Troubles – and present day identities:

> There is evidence from this study and from other reports (BBC News, 28 July 2010) that some young people believe they have 'missed out' on the Troubles. Listening to older members of the community romanticizing or glorifying this period in Northern Ireland's history (or, as Cynthia put it, "lapping up" the stories about the "good old days"), young people are being enticed into paramilitary groups and gangs, hoping to attain similar status, respect and position within their community thirty years from now. Community workers in Belfast report hearing young people wish they had been in jail, and observe that sections of society in Northern Ireland are becoming more divided and sectarian over time. (McGrellis, 2012, p. 26)

Ironically, one effect of the UK's struggle with the Brexit move has spawned increased support for a united Ireland, according to an Irish Times story on recent polling: "The most recent opinion polls taken in the North shows…support ranging from 45 percent to 55 percent, and averaging around the 50 percent mark" (White, 2018).

Israel-Palestine

It is hard to imagine that any Palestinian, including Mahmoud Abbas, would have signed an agreement to allow an Israeli military occupation of the West Bank (and until 2005, Gaza as well), much less an occupation that would last 26 years so far and shows no sign of ending. True, Areas A and B are not internally occupied, but movement out of most of those areas when they border Area C, particularly, is entirely controlled by the Israeli government.

While the first, relatively peaceful intifada is often credited with bringing parties to the Oslo table, the failure of the Oslo Accords to move Palestinians toward self-determination and eventual statehood certainly played a role in precipitating the second, more violent intifada that started in September 2000. By 2002, the Israeli government responded full force in Operation Defensive Shield, which the Israeli government initiated following a suicide attack in Netanya that killed 30 vacationers. The Israeli government arrested some 2500 people in February and another 6000 by the end of March (Whitaker 2002). The Israeli Defense Force (IDF) entered and occupied six major cities in the West Bank, declaring them to be militarily closed and, according to a UN Report, both sides put Palestinian civilians at high risk, in some cases with civilian deaths equal to the deaths of combatants. Over 17,000 were left homeless with 878 homes destroyed and another 2800 damaged in the refugee camps.

The same year, Ariel Sharon approved the building of the wall or barrier, now 70% complete. In the words of Moshe Arens, the Prime Minister authorized the wall in “a moment of panic, a time of hysteria” (Arens, 2013). The former Minister of Defense opined that the decrease in Palestinian attacks on Israelis since then was more attributable to Operation Defensive Shield and the continued presence of the IDF in Areas B and C. The military offensive and occupation, he said, were “quite possibly the primary, and possibly the only reason, for the suppression of terrorist activity” (Arens, 2013, n.p.).

The two state solution is increasingly elusive in light of the “swiss cheese” jurisdictional arrangements in the three areas. Some on both sides advocate a one-state solution, though for varied and sometimes antithetical reasons. The Israeli right-wing no doubt would like to annex all of Area C and this is a strong motivator for continuing illegal settlements including roads from settlements directly to urban centers in Israel that entirely bypass and prohibit use by Palestinian villagers. But this would leave Areas A and B in a more or less Bantustan status. Others, including some of the more radical Israelis, support a single secular and democratic state.

Most or even all attacks in recent years were not carried out by any organized Palestinian opposition, according to the Israeli intelligence service the Shin Bet. Rather, individuals are motivated by despair. Although there is a committed and growing peace movement led and supported on both sides, it is difficult to see how its anti-occupation activity can be translated into political action since no center-left or left coalition in the Knesset has been able to produce a majority that can viably challenge the right-wing government of Benjamin Netanyahu. Looking to the future, there seems to be no end to occupation, denial, and despair.

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19.5: Assessing Conflict Transformation in Four Peace Processes

Many looked to South Africa as an exemplar of nonviolent conflict transformation, or at least transition from a white supremacist non-democracy to an all-race democracy. Ending decades of *apartheid* under domestic and international pressure seems to have been easier than transitioning to a post-apartheid democracy where political and economic opportunities are open to all without regard to race. The key here is that ending or remedying the effects of the structural violence of economic inequality has hardly occurred at all, at least not perceptibly for most black South Africans, as the burgeoning shanty towns demonstrate. The vulnerability of single-party rule to corruption is taking a toll and what Tutu described as disillusionment is overtaking the hope and aspiration that characterized the initial democratization process.

In Bosnia things are not much better than they were at the end of the armed conflict, if at all. The Dayton agreements legitimized two entities with two languages, two governments, two identities, two economies, and affiliations of the entities with those who started the conflict as a means of dividing and annexing Bosnia and Herzegovina to their newly independent states. Right-wing secessionists control Republika Srpska, right-wing parties and leaders control Serbia and Croatia, and the only signs of unrest are from those further right or who advocate further right policies than those who currently hold power.

In spite of the persistent de facto socio-economic segregation in Northern Ireland and continuing signs that non-dualistic conflict identities remain relatively influential, especially among young people, there does also seem to be a ray of hope that, as the Good Friday agreements allowed, if or when a majority of those living in Northern Ireland support unification or at least union with the Republic rather than the UK, such a nationalist transition might take place and peacefully at that. How peacefully such a change might be would depend in large part on exactly how Protestant North Irish negotiate a relationship with their Catholic neighbors both in the North and in the North's relationship with the Republic. This is not meant to suggest that such a change is inevitable, but both parties in the north (i.e. nationalists and unionists) seem at least open to a relationship with the Republic that continues to allow the fairly unhampered movement of people and goods across a border that Brexit would or could impede. This is an example of positive peace, encompassing consensus on social justice issues in addition to arrangements to end hostilities (negative peace).

Like South Africa, despair is a defining feature of the political climate in Palestine as well as among liberal Israeli Jews and peace activists who oppose the occupation and support Palestinian rights. The main difference here is the longevity of that despair. No less than the Shin Bet has identified despair, not organized political resistance, as the primary motivation for Palestinian attacks on Israelis over the past several years. Most of these attacks, by the way, are against uniformed officers of the Israeli state, not against civilians. Among the civilians who are attacked, a large number live in settlements in Area C and are regarded by most if not all Palestinians as instrumental to the occupation. As the reality for a two-state solution on the ground is, literally, slipping away with the "swiss cheese" looking jurisdiction in Area C and the increasingly Bantustan situation of the cities and towns in Areas A and B, there seems to be no way forward. At the same time, the occupation cannot go on forever, although as yet there is not a center or center-left coalition clearly opposed to it that could wrestle power from Netanyahu's Likud-led ruling right-wing alliance.

Failure to achieve conflict transformation has social, political, and economic costs. Low-intensity conflict fueled by unreconciled or unacknowledged grievances continues with an ever-present potential to escalate. Politically, the failure to transform a conflict post-violence leaves the situation unstable with problems related to the perception of legitimacy (or illegitimacy) or the post-conflict political institutions (all four cases including anti-PA demonstrations in the last two years). The economic costs are primarily that human capital remains undeveloped, unemployment is high, people are undereducated, and a failure to address the structural violence that almost always or always accompanies direct violence means that many people do not see any difference in their quality of life during and after the violent conflict has ended. A key question here – one that could be taken up in a more thorough and comparative study, concerns the role of Nongovernmental Organizations or NGOs and grassroots peacebuilding organizations and whether their efforts to transform a conflict through people-to-people peacemaking might be able to succeed where institutions and political leaders fail.

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19.6: Resources and References

Review

Key Points

- Our current understanding of conflict transformation as applied to peace processes is not well-developed.
- Conflict transformation involves both negative and positive peace; without positive peace in the form of economic opportunity and economic justice its chances of success are limited.
- Conflicts often implicate identities, and identities consist of narratives that may reflect who people are in relation to the conflict; new identities and narratives that are inclusive are critical to transforming conflict.
- Acknowledging and engaging dialogue about grievances is important in transforming conflict, but it is not enough without addressing the need for positive peace.
- Without transforming conflicts, despair can undermine negative peace.

Extension Activities & Further Research

Choose one of the conflicts covered in this chapter and:

1. Propose amendments to or an alternative agreement at the time of the peace agreements or, in the case of South Africa, to the new constitution and/or accompanying laws.
2. Show how your alternative or amendments remedy deficiencies as the process has played out over the next several decades.
3. Suggest how international organisations or non-governmental organisations could play a supporting role in achieving conflict transformation.

List of Terms

See Glossary for full list of terms and definitions.

- alternative dispute resolution (ADR)
- African National Congress (ANC)
- Alliance Party
- apartheid
- asymmetrical peace agreements
- asymmetry of power
- Bosnia
- Brexit
- conflict management
- conflict resolution
- conflict transformation
- de facto socio-economic segretation
- formal dwellings
- *hudna*
- Indigenous peoples
- Indigenous-settler relations
- informal housing
- intifada
- Irish Republican Army (IRA)
- nationalist (Northern Ireland)
- negative peace
- Norther Ireland Women's Coalition (NIWC)
- Operation Defensive Shield
- peace process
- Palestinian Liberation Organization (PLO)

- positive peace
- Progressive Unionist Party (PUP)
- retributive justice
- secession
- shanty towns
- Shin Bet
- Sinn Féin
- Social Democratic and Labour Party (SDLP)
- *sulha*
- townships
- the Troubles
- Truth and Reconciliation Commission (TRC)
- Ulster Democratic Party (UDP)
- Ulster Unionist Party (UUP)
- Ulster Volunteer Force (UVF)
- unionists
- West Bank
- white supremacist government

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CHAPTER OVERVIEW

20: Human Security and Global Environmental Governance

Learning Objectives

- Global environmental governance (GEG) is the collection of governmental and non-governmental individuals and institutions that aim to influence individual and collective human behaviour regarding the global environment, including the drafting, implementation and enforcement of local, national and international law and policy
- GEG is also a broad multi-sectoral approach to environmental protection that advocates for its consideration into other policy concerns (e.g. trade, transportation, agriculture, criminal justice, human security, national security, etc.), through different methodologies and from different places of priority.
- The general aims of GEG are to protect the foundations of life; to provide food, economy, opportunities, development and security; and to prevent harm, inequity, and suffering.
- The underlying principles of GEG are democracy, justice and science: democracy in dialogue, diversity, and representation for decision-making; justice in protecting the vulnerable and pursuing accountability for harms; and science in understanding humanity's utter dependence on, and systematic relations to, the natural environment.
- GEG has direct and indirect implications for all aspects of human security—economic security, food security, health security, environmental security, personal security, community security, and political security—as well as the capabilities that all humans need to survive and flourish.
- GEG addresses several current global environmental crises that directly and indirectly impact human security, including: climate change and resource scarcity that causes or exacerbates natural disasters or mass migrations of refugees; the illegal trade in wildlife and endangered species – as well as legal and illegal resource extraction—that exacerbates corruption and conflict, including through the funding of arms-sales; legal and illegal land-grabs that take away the lives, livelihoods, and cultures of indigenous populations; the global trade of recyclables and hazardous waste to vulnerable countries, or vulnerable people within those countries; and the mass-scale legal and illegal over-fishing of our oceans, and the harmful practices that are used, that foster human trafficking, endanger traditional fishing practices, and harm regeneration of natural habitats and populations.
- Some of the challenges to GEG include: (a) the sectoral approach of GEG that places the environment in competition with other sectors; (b) narrow interpretations of state sovereignty and state responsibility that prevent or limit accountability for global harms; (c) the rise of nationalism and isolationism among states; (d) the limits or absence of global institutions to provide guiding principles, regulation and enforceable laws and policy; (e) power imbalances among members of global institutions in negotiations and decision-making; (f) the sense of anonymity or remoteness of global governance approaches and global issues; and (g) the absence of justice in GEG.
- The role of GEG in human security can be strengthened by promoting *ubuntu*, the South African ethical principle of inter-relatedness, interdependence, rooted cosmopolitanism, reconciliation and restorative justice.

Kathryn A. Gwiazdon

This chapter discusses the role of global environmental governance (GEG) in human security. It will provide an overview of the purpose, principles, parties, and process of global environmental governance, as well as the challenges that GEG faces in responding to global crises. It will explain the particular relevance of GEG to human security, the foundations of human stability and security in environmental stability and security, and some current human security issues within the GEG framework. In discussing its challenges, it will also offer suggestions on how to strengthen GEG to better protect human security. The overarching purpose of this chapter is to provide a glimpse into the current nature of GEG and its fundamental role in human security, and to begin to unpack ideas for a more effective approach to addressing our global crises. This chapter builds upon the first edition chapter on this same topic, which focused more on the legal and technical aspects of GEG.

20.1: Introduction
20.2: Defining Global Environmental Governance

20.3: Global Environmental Governance and Human Security
20.4: The Future of Global Environmental Governance and Human Security
20.5: Resources and References

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20.1: Introduction

In its most basic sense, global environmental governance (GEG) is an attempt by civil society, governments, and even private entities, to address environmental issues that must be addressed collectively, if we hope to address them at all. For example, with climate change action it is crucial for states—who have regulatory authority over their citizens' actions – to commit to greenhouse gas (GHG) emissions reductions, and the absence of any one state in agreements to do so, particularly a state with high GHG emissions, can harm all global efforts. For global governance, where collective action is required for the stability and security of individual persons and the global community, the unwillingness of certain states to engage in global dialogue can cause egregious individual, state, and global harm.

Similar to state governance actors, mechanisms, and institutions, global governance is influenced and implemented by a variety of parties, with a variety of methodologies, and within a variety of institutions. If governance literally means, 'the action or manner of governing', a hierarchical structure of formal government institutions is implied. However, with global governance, there is a lack of a central, governing body with an equal representation of members. There is also a lack of a guiding document or constitution with principles to guide behaviour and law, a lack of a regulatory body to ensure and oversee implementation of those rules, and an enforcement body to hold members accountable for any transgressions. Although the United Nations (UN) exists as a global governing body, as explored below, the power of its members is unequal, its resulting documents are often unenforceable, and within all branches of the UN, state's rights still reign supreme.

For global governance, and thereby GEG, the term governance is interpreted more broadly than local or state governance. Global governance incorporates all individuals and institutions that work together to help guide global behaviour on a particular issue, or local behaviour that has global impacts. The term 'global' is indicative of the breadth of its scope, as opposed to the limits of its institutions (i.e. only institutions that have a mission to address global issues). Global governance is informed by and represented in local, national, and regional governance institutions.

Put simply, GEG addresses global environmental issues. However, as it is understood that all life is interconnected, and all humanity is utterly dependent upon the natural environment, so even seemingly local issues are important to consider for their broader impacts. This alone makes the scale and scope of applicable issues difficult to identify. What happens in one state, or even by one industry, can rarely if ever be contained within man-made, legal boundaries. However, GEG attempts to address these global issues—created by bounded states—to prevent global crises, and with mixed results.

Our global environmental crises cannot be separated from our global governance crises, and the sectoral, piece-meal approach of GEG, and even traditional national and international environmental law to date, is not responding with the seriousness and the urgency that our current crises require. And we are witnessing its failure: a rapidly changing climate, the increased frequency and severity of natural disasters, mass biodiversity loss, the acidification and depletion of our oceans, and plastics and pharmaceuticals found in nearly every waterway, and nearly every species, on Earth. The foundations for human community and security, such as combatting poverty, hunger, and inequality, or promoting health, education, and sustainable consumption and production, cannot be separated from clean water, sanitation, and climate change action. As was explained in Chapter 3, Chapter 11 and Chapter 12, our governance systems, created to provide society structure and security, cannot be separated from our environmental foundations.

Our global environmental crises, indeed, all global environmental issues, have direct implications for individual and collective human security. A foundational document to the global dialogue on human security, and the inseparable role of the environment within it, is the 1994 Human Development Report, prepared by the UN Development Programme (UNDP, 1994). The document opens with guidance "Towards sustainable human development," followed immediately by a discussion on human security, its components, and its global nature. The seven dimensions of human security that UNDP identified include economic security, food security, health security, environmental security, personal security, community security, and political security.

It is important to understand that in the Anthropocene all of the components of human security are inter-related, and each ultimately relies upon our natural environment. Depleted natural resources, conflict over resources, and corruption that stems from resource extraction and competition creates economic insecurity. Depleted oceans, depleted soils, and polluted or scarce freshwater creates food insecurity. Poisoned soils and waters, the increase of diseases and pests due to a warming climate, and the targeting of poor and vulnerable populations for waste and industry creates health insecurity. High consumption of resources, mass biodiversity loss, and the loss of ecological integrity harms the foundations of all life, and our evolutionary processes, which creates environmental

insecurity. The militarization of resources (as well as enormous military budgets and levels of pollution stemming from military activities), the conflicts that arise over resources, desertification, the lack of clean food and water, national and international land grabs for development, the increase in severe weather events creates personal insecurity. Resource scarcity harms economic, social, and cultural development and opportunities, and fosters corruption and the predation of the vulnerable, which creates community insecurity. And all these factors, and the inability or unwillingness of governance institutions to adequately address them, creates apathy, disempowerment and political insecurity.

Human security is inextricably connected to our natural environment, and global crises require a global response. This chapter will take a closer look at how GEG is responding to our global environmental crises, and the implications for human security. It will define GEG by looking at its purpose, principles, parties, and process. The chapter will then turn to the inseparable relationship between GEG and human security, and the challenges and opportunities for our ever-evolving notions of justice, law, and governance. Lastly, the chapter will offer the ethical and legal principle of *ubuntu* as guidance on how to strengthen human security, within and beyond GEG.

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20.2: Defining Global Environmental Governance

Governance is an amorphous term that generally implies social constructs created to govern, or regulate, human behaviour. They are rooted in societal norms and values, sometimes translated from and into civil society, institutions, and laws, and implemented by individuals, families, societies, governments and non-governmental organizations. Local and national governance typically refers to hierarchical government-sanctioned institutions and the rule of law, but for global governance, where a single, global governing body is absent or limited, it takes the shape of local, national, and international individuals and institutions, governmental and non-governmental, that seek to influence either local behaviour that has a global impact (e.g. endangered species are of global concern for biodiversity, culture, and evolutionary processes), or collective global behaviour that has a local, regional, or global impact (e.g. collective GHG emissions contribute to global warming which causes rising waters in small island nations and migrations of people across borders).

Governance, when done for just purposes (as opposed to totalitarian, authoritarian, or fascist governance models), focuses on the fundamental relationships needed for harmony, for stability, for sustainable security: harmony between individuals living together with other individuals, and harmony between societies that live together with other societies. Some recent scholars have extended this prerequisite, or even this goal, of good governance–harmonious relationships—to the entire community of life (e.g. the UN Harmony with Nature programme). The recognition and respect for these relationships, and the rules that govern these relationships —or at least attempt to govern these relationships—provide safety, security, and stability for individuals, states, and the global community. As Chapter 16 presents in more detail, good governance is the foundation of our human and societal existence, so it must be part of the response to our most existential crises, such as climate change.

Global environmental governance is global governance as it relates to the environment. As humans upon this planet, we share a genuine universal responsibility to the planet and to one another. In 1992, at the Earth Summit in Rio de Janeiro, the Dalai Lama spoke that “universal responsibility was the key to human survival.” (Dalai Lama, 1992). He believed that, “This need for a sense of universal responsibility affects every aspect of human life. Nowadays, significant events in one part of the world eventually affect the entire planet. Therefore, we have to treat each major local problem as a global concern, from the moment it begins.” (Dalai Lama, 1992, n.p.). Therefore, good global environmental governance recognizes interconnectedness and requires responsibility.

The heightened role of civil society, as seen in individual action and the work of non-governmental organizations, in helping shape global behaviour is unique to global governance; and indeed it could be considered the blood-line for GEG. Civil society helps to fill the gap left by the absence of a central governing body, a gap that needs to be filled due to the human and societal need to govern relationships, even across borders. These individuals and organizations are consultants, advisors, scholars, and practitioners to GEG, in principle and practice. They help develop, guide, and inform behaviour at universities and with governments, they inform conferences of the parties for treaty bodies, and they help draft national laws and policies related to local issues that impact the global environment, or global issues that affect local or state governments. They build trends and build solidarity. For example, their scholarly research and arguments can provide the reasoning and text for a state to include the right to a healthy environment in their laws, policies, cases, and constitution, that will then be shared with other scholars and policy-makers for incorporation in their laws, policies, cases, and constitutions. These individuals and organizations even have an important role in the private sector, whether shining a light on corruption, such as the work of Transparency International, or advancing corporate social responsibility and environmental stewardship.

This trend-setting, momentum-building, and information-sharing is currently being seen in youth climate change cases, where children are striking and arguing for their rights and the rights of future generations to a healthy environment (Gwiazdon, 2018). It is also seen in the rights of nature movement, where rivers and ecosystems are being afforded legal personhood in constitutions, legislation, and case law. [1] Policy-makers and judges are looking for guidance, reasoning, and decisions outside of their jurisdiction, and—as GEG is cross-sectoral and cross-disciplinary – there are park rangers and writers, educators and philosophers, lawyers and scientists, environmental defenders and economists, journalists and linguists around the world helping them develop and move law and policy. These individuals and organizations share knowledge, share successes, share failures, and recognize their strength in numbers. It is much easier for a judge to decide a case, or a state to adopt a constitutional amendment, if they see that others are doing it, and they can also learn exactly how others are doing it (e.g. modelling the particular language, the particular administrative and legal processes, etc.).

GEG, as an extension of global governance, has the same weaknesses as global governance, explored in detail in Section here. A number of challenges exist, including the power of state sovereignty, and of particular states, to control or not participate in global negotiations, or to not be held accountable for harms outside their borders; the rise of nationalism among states; and the difficulty to motivate citizens to care about abstract issues or people far away. Particular to GEG is the sectoral nature of global 'environmental' governance that places it in competition with other issues; the absence of urgency, seriousness, and even justice for environmental harms; and the absence of a governing body for global environmental jurisprudence, its drafting, implementation, and enforcement. However, even without a single, central governing entity, common values and principles can be induced from the institutions and norms across nations, their cases, national laws, and treaties.

The Purpose and Principles of Global Environmental Governance

It is sometimes said that the only constant is change, and like the constantly evolving environment on which it relies, GEG is constantly evolving, constantly being informed, and constantly being affected by numerous actors and information. Nearly five decades ago, in 1972 (when *The Limits of Growth* was published by the Club of Rome), the UN Conference on the Human Environment in Stockholm, Sweden made explicit the connection between humanity and the environment, and the need for a global approach to address the harm to life on Earth. This has been called the watershed moment for GEG, a clarion call for global action. Maurice Strong, the Secretary General of the conference, opened the proceedings with a plea for this new approach, "This… must be the beginning of a whole new approach to the situation. For the environmental crisis points up the need to review our activities, not just in relation to the particular purpose of interest they are designed to serve, but in their overall impact on the whole system of interacting relationships which determines the quality of human life." (Strong, 1992, n.p.). He also linked bad human governance (here, governance resulting in inequality and injustice) with environmental harms, "Our subject is the human environment. Broadly interpreted, the human environment impinges upon the entire condition of man and cannot be seen in isolation from war and poverty, injustice and discrimination…" He understood that "all nations must accept responsibility for the consequences of their own actions on environments outside their borders" and argued that this is "the fundamental principle" that establishes "a minimum basis for effective, international cooperation." (Strong, 1992, n.p.). He saw the crisis, the cause, the interconnectedness of humanity and harms, and the need for responsibility for those harms.

GEG is an all-inclusive endeavour, and so includes all levels of participation and decision-making, local to global, governmental and non-governmental, individuals and private entities. As diverse actors, the methodologies of the institutions of GEG differ, as well as their reasons for seeking to mould behaviour concerning the environment. However, the general aim of GEG, in its broadest sense, is to protect, provide, and prevent: (a) GEG *protects*, conserves, and sustains the global environment for human flourishing and for the inherent value of nature; (b) GEG aims to *provide* the necessities of life for human and social development, including providing stability and security to human individuals and societies, as well as the entire community of life, for current and future generations; and (c) GEG aims to *prevent* harm, inequity, and suffering, as well as the crossing of catastrophic tipping points for life on Earth.

The many purposes for GEG are seen in organizational mission statements, local, national, and international charters, bi-lateral and multi-lateral treaties (most often in the preambles, where beautiful, aspiratory—and non-binding—language is common), principles of international law, customary international law, state constitutions, and domestic law and policy. They may be subject-matter specific, as broad as climate change adaptation or as narrow as the protection of a particular species; or they may be methodology-specific, such as the educational programmes of the Earth Charter Initiative or efforts to incorporate the rights of nature in law and policy, as seen through the work of the Community Environmental Legal Defense Fund. [2]

Maurice Strong, as well as the Dalai Lama, believed that the fundamental principle of GEG was responsibility, or justice, and that is extended here to include principles of democracy, equity and care. GEG advances care for the vulnerable people, places, and species in this world, and care for the past and future generations of those people, places, and species. Care is evidenced in the protection of natural parks, in the designation of biosphere reserves, in the programmes to save endangered species and their habitats, in the laws and policies for clean air and water and soil. Care requires that we extend our compassion to other humans, and also to other species, and the natural foundations upon which all life rests. An important aspect of GEG is expanding our circles of care, from the most intimate to the entire community of life.

When things we care about are harmed, we are moved to act – and this forms the roots of justice. Unfortunately, most if not all great movements were a response to a great injustice, and GEG is no different. The Earth is wholly being harmed by human action,

yet few are being held accountable for any harms committed (or at least, as data shows, not enough are being held accountable to prevent future harms or correct harmful behaviour). Is this due to an absence of laws, of enforcement, of political will – or all three? Justice demands we address, who or what is harmed, why and by whom, how can it be made whole again, and how can we prevent future harm? What is true, and what is fair? And who has a voice that determines the rules, regulations, the harm, and the recovery? This is where democracy joins the conversation in GEG. As discussed in more detail below, a fundamental component to GEG is dialogue and diplomacy, informed by many disciplines, from science to philosophy. States, with the assistance of NGOs, come together to address global concerns, yet sometimes these harms are caused, sometimes disproportionately, by particular nations. In the interest of democracy and justice, who has a voice at the decision-making table, and in the interest of equity, are all voices of equal political power? Why are there so many binding (i.e. enforceable by an adjudication body) international trade laws, and so few binding international environmental laws? Why is the continuation of our existence not afforded the same seriousness as our global trade regimes? Who decides this—and why?

The Parties and Practice of Global Environmental Governance

What is exciting about GEG, yet can also be overwhelming, is the sheer number of voices that can and do inform its development. Without a single, centralized governing entity or secretariat body, nearly anyone can have a voice in its organization and movement. The power of that voice, however, is another concern, and will be discussed more thoroughly below when exploring the challenges to GEG.

The environment is the foundation of all life on Earth; therefore, when discussing its protection, and depending on how narrow or broad a particular entity's understanding of the term 'environment' is, all sectors, all disciplines, any individual, any private or public organization, and all nations—in their local governance and in their involvement in global governance, if any – are all potential parties to GEG. Some are explicit in their involvement, like the United Nations Environment Programme and the International Union for the Conservation for Nature, while others can be incorporated into the research, development, or advocacy of GEG by third parties, such as comparative review and research of domestic laws by practitioners, academics, or consultants.

For example, to the latter point, 'the human right to a healthy environment' is being asked to be adopted by the United Nations, and so the appropriate bodies of the UN and their consultants—many from non-governmental organizations – are reviewing the laws of nations to see the arguments, cases, and legislative developments in this area. When these laws were being created by nations, they did not have to know or explicitly state that they were informing GEG, but in practice, they are. And data collection for the development of environmental norms and policies will go into all areas of research and development. For example, for an article on human security and GEG, it is important to look to governmental and non-governmental national security bodies that may never or rarely mention the environment, but yet the connections can still be made. If the South China Sea is the largest trade route in the world, and that area is being militarized through artificial island development and the illegal expansion of borders, this not only affects global trade, but also the resources in those waters, the people who rely on those resources, and the increased tensions of the states and the people of the entire region. Because of the actions of one state for national security interests, the economic, environmental, food—human security—of millions of others is now at risk. [3] GEG connects these issues, in all of their complexity and comprehensiveness.

To have a full picture of GEG and all that it entails, and also understanding the inter-relatedness of all life on Earth, then all human activities on Earth can and should be considered potential material for its development. For the implications of public health to human security, including climate-related vectors, we can look to the Center for Disease Control (US) or the World Health Organization. For the effects of global trade, including endangered animals or hazardous waste, on human security, we can look to the World Trade Organization, anti-poaching units, or national security bodies. For the importance of the conservation, culture, and natural history to human security, we can look to organizations like the Royal Society for the Conservation of Nature (Jordan) or the Paris Muséum nationale d'histoire naturelle. For data on the impacts of climate change on human security, we can look to the US Department of Defense or the World Meteorological Organization. To understand GEG and human security, we can look to some small entity that focuses on women's empowerment in some small city, or some major entity that focuses on micro-lending in some major city. Everyone has the potential to inform GEG—and this is an exciting thing.

Just as the parties of GEG differ, so does their preferred practice. The procedural and substantive methodologies of GEG take several different approaches, depending on their stated aims and audience. A common thread to GEG procedure, however, is the central tenet of dialogue, diplomacy, and negotiations. This is necessary due to the nature of GEG, where each state is its own

sovereign entity, and there is no single global governance institution that administers or enforces a particular global law. Nations must speak to one another and nations must compromise if there is to be any viable governance of global issues.

The state is responsible for protecting the conditions of life for its citizens and their personal and communal development, and is at least somewhat accountable to its citizens to do so (i.e. elected officials can be voted out, or citizens can—if pushed far enough—revolt); however, GEG goes beyond the relationship between nations, and into the relationships between all entities and all humans. Yet, the states, with self-imposed limits in justice and jurisdiction, at least when environmental harms are concerned, continue to be the real power-holders. As they consolidate power or refuse to act, or refuse to act enough or quickly enough, others step up to fill the gap. For GEG, those are largely non-governmental entities. However, and most visible with climate change, cities and youth activists around the world are starting to lead the conversation and policies, as well as demand state action on global harms.

Another important procedural aspect that is largely unique to GEG is the heightened role of non-governmental organizations (NGOs) and universities in its research, development, and decision-making. GEG includes binding and non-binding laws, and NGOs play a part in all its parts. They offer comparative review and analysis of national laws, looking for trends and new approaches; they review the philosophical underpinnings of current actions in attempts to understand environmental crises, how we have reached them and how we can move beyond them; they offer the scientific underpinnings to many of the principles of GEG, including the utter dependence of humanity on the natural world, as well as the inter-relatedness of all life; and they help to build bridges and solidarity between nations during negotiations and diplomacy efforts. For many intergovernmental organizations, like the UN or IUCN, they also serve as parties, observers, or experts and are able to inform dialogues, treaties, and investigations. The importance and particular role of NGOs in GEG in this age of social media cannot be understated. However, they still lack a key element to global justice for environmental harms—enforceability.

There are several different substantive approaches to GEG in practice, including but not limited to economic, education, ethical, scientific, and law and policy approaches. There are even market approaches to GEG, such as efforts that advance natural capital, ecosystem services, and cap and trade regimes. This chapter does not attempt to pass judgment on particular approaches, but it is important to be aware that institutions that fall under the GEG umbrella are not of a uniform type, and there are even disagreements among the institutions. For example, there are global conservation organizations that use trophy hunting as a conservation practice, and there are those who vehemently oppose such methods. There are those who argue for the commodification of nature to motivate states to better protect it, and those who see putting a price on nature as morally repugnant and ultimately more damaging. It is also important to understand that not a single approach should be seen as necessarily the right, or the only, approach – a point particularly relevant in global governance where all peoples, all nations, and even all species and habitats are taken into consideration.

Another substantive approach that allows for variations in GEG is the positioning of humans. Some entities place humans as the central argument for protection (e.g. human rights approaches), while others take a more systematic, Earth-centred approach (e.g. Earth jurisprudence), and yet still others who seek to address the tension between the two approaches (e.g. trusteeship approaches). Human-centred approaches can be seen in climate change action and land use law, as well as policies that affect biodiversity and endangered species (noting their role in human evolutionary processes and development), freshwater use and access, agricultural practices, disaster preparedness, responses to mass refugees, and military operations.

There are also efforts to transform the human-centred approach, which can be interpreted as utilitarian and largely sectoral, to a more systemic, holistic approach. In 2016, the Ecological Law and Governance Association was launched at the University of Siena as a global, multi-disciplinary network of academics and practitioners that seek to transform ‘anthropocentric, fragmented’ environmental law to a more holistic, scientifically accurate ecological law, understanding that human rights—or even humanity—cannot exist without the natural foundations of life.

A step further is taken by efforts to give legally-recognizable rights to nature completely separate from their value to humans. Such ecocentrism is seen at the local and state level, such as the Constitution of Ecuador which recognizes Pachamama, or nature, as a legal entity, with rights to its own evolutionary processes; the 2017 Te Awa Tupua Act that affords the Whanganui River and ecosystem legal standing; the 2017 ruling in the High Court of Uttarakhand in India that recognized that the Ganges and Yamuna rivers, the Gangotri and Yamunotri glaciers, and their related ecosystems have ‘the status of a legal person’; and, in 2019, the Lake Erie Bill of Rights Charter Amendment in Toledo, Ohio that gives legal standing to Lake Erie, one of the Great Lakes between Canada and the United States that together account for 20% of the world’s freshwater.

Human rights arguments and the rights of nature movement are just a couple of many justice approaches to GEG. This may be the most difficult approach as there is no single global governing entity to implement global environmental law, let alone enforce it, therefore, action and enforcement is dependent upon the will of a particular state. Local, regional, and national courts do hear cases on environmental harms, and those decisions are incorporated within the GEG movement, but there is yet to be a global environmental court to hold states or entities responsible for violations of a global environmental constitution within a global rule of law. Sometimes environmental cases will arise before the International Court of Justice (ICJ), but its parties and its jurisdiction are limited. The ICJ will hear disputes between member states if there is a perceived treaty violation or a violation of a principle of environmental law or customary international law, or they will offer advisory opinions if there is a question of international law. [4]

In addition, in 2016, the International Criminal Court, an intergovernmental body that hears cases against individuals from member states for crimes of genocide, crimes against humanity, war crimes, and crimes of aggression, expanded its prosecutorial remit to include environmental crimes (ICC Office of the Prosecutor, 2016). Although there have not yet been any environmental criminal cases seen before the court, it was seen as a promising development in GEG as an effort to take environmental harms more seriously. Another justice-based approach that is gaining global momentum is the recognition and defence of the rights of future generations. It has been incorporated in numerous charters and constitutions and has been argued successfully in some national courts.

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20.3: Global Environmental Governance and Human Security

GEG is fundamentally about the survival and flourishing of life; human security is fundamentally about the survival and flourishing of life. Since the first edition of this publication, in 2013, a formal debate was held on human security by the UN President of the General Assembly. The resulting document was Resolution 66/290, "Follow-up to paragraph 143 on human security of the 2005 World Summit Outcome" (UNGA Res. 66/290, 2012). The document recognized that "human security is an approach to assist Member States in identifying and addressing widespread and cross-cutting challenges to the survival, livelihood and dignity of their people," and continued with a common understanding of human security based on eight points, with, as is typical of multi-national documents (at least those where human rights or environmental protections are concerned), very clear lines drawn concerning responsibility and state sovereignty: (1) "The right of people to live in freedom and dignity, free from poverty and despair," in particularly vulnerable people, with equal opportunity to develop their potential; (2) a people-centred approach that is context-specific, comprehensive, and prevention oriented; (3) peace, development, and human rights, as well as political, economic, social, and cultural rights, are all inter-linked; (4) human security is separate from the responsibility to protect (the UN understanding of Responsibility to Protect is very specific, it provides a framework for state intervention, including the use of force, to prevent genocide, war crimes, ethnic cleansing and crimes against humanity); (5) human security does not entail the use of force and "does not replace State security;" (6) human security is based on "national ownership" and global efforts are meant to strengthen state efforts; (7) States retain "the primary role and responsibility for ensuring the survival, livelihood, and dignity of their citizens," and the role of the global community is to provide support to Governments, upon their request; and (8) human security must be implemented with full consideration to the UN Charter, "with full respect for the sovereignty of States, territorial integrity and non-interference." (UNGA Res. 66/290, 2012). This crucial definition section concludes, "human security does not entail additional legal obligations" on States (UNGA Res. 66/290, 2012). So much of this understanding of human security shows the weakness of any global response to anything that threatens human security – state sovereignty trumps all else, and the global community places no legal obligations to secure humanity, outside of what states choose or choose not to provide. Here, we have perhaps the most legitimate global governance body effectively neutering global action to respond to crises that affect the security of humanity. Is the only reason for dialogue and diplomacy to limit states involvement with other states? Is this the only model of global governance that we have? One founded upon complete submissiveness to State's rights that global action—and global justice for harms committed—is rendered impotent? Is global governance nothing more than advice 'upon request'?

While the idea that human security is within the 'national ownership' of states (as stated above) may be the standing national or international legal understanding, that does not make it right, or just. Yet, it does perhaps shine some light on why so many humans are insecure today. We are trying to govern as if humans are not affected by other humans, as if citizens are not affected by issues outside of their borders, or with some states, as if the way humans are treated within their borders – good or bad – is justifiable due to state's rights. Human security is the concern of all humanity, even if global governance has not yet evolved to provide the processes or structure to support this understanding.

Human security is also fundamentally reliant upon healthy ecosystems. The starting point to all GEG should not be state's rights, but the basic scientific truths that humanity is utterly dependent on the natural environment and that all life is interrelated and interdependent, irrespective of any man-made, artificial boundaries. The state of humans cannot be separated from the state of their environment, yet we see the divisions and separations of the environment from all else every day: 'environmental' law, 'sustainable' development approach, 'climate change' policy, as if the state of the environment and its systemic relations with all life and all human activities can or should be placed on a negotiation table in competition with the economy, or jobs or national security.

And even within these compartmentalized approaches are additional compartments. For example, sustainable development is still seen as three pillars: economic, social, and environmental. Yet, how can society or economy exist without its environmental foundations? As our scientific charts for life on Earth are spiralling downwards (e.g. 83% of wild mammals have become extinct, and microplastics are found in the air, in water, and in nearly every life-form tested—as detailed in Chapter 12), because our frameworks do not speak to scientific truths. There are not three pillars to sustainable development – there is one foundation upon which all else rests, and upon which all else is inter-related, our natural foundations. This is just another example of man-made, artificial borders, but this time within our law and governance systems.[5]

It is important to also note that those who frame the arguments in terms of compartmentalized and competitive sectors, most often seen as environment versus economy, are sometimes those who are doing the most harm. In this false equivalency and forced competition of environment versus [insert any important issue here, such as national security or human security], the environment will never win; indeed, neither will the issue in competition, as failing to protect the foundations of life ultimately harms all else. GEG helps to re-frame the argument that human security is firstly and fundamentally reliant upon the natural environment, whether it is mass migrations of refugees due to resource scarcity or civil wars caused by climate change, or slave labour used by the shrimp industry due to the high consumptive demand for inexpensive shrimp, alongside corruption and/or a lack of political will to defend human rights. When the environment is separated from security, we are all less secure, we are all more vulnerable.

Twenty years after the seminal UNDP Human Development Report on human security was released, the 2014 UNDP Human Development Report, "Sustaining Human Progress: Reducing Vulnerabilities and Building Resilience," focused on broadening the human security approach to vulnerability – vulnerability of individuals, communities, and states, and the inherent, systemic, or structural issues that impede human development progress and threaten people's capabilities and choices (UNDP, 2014). The authors noted that since 1994, several interpretations of human security were too narrow, such as viewing it solely as freedom from physical assault. Vulnerability is "defencelessness, insecurity and exposure to risks, shocks and stress," and "one way to reduce vulnerability is to prevent disasters," such as the global approach to climate change or the organization of global financial systems. (UNDP, 2014, p. 15). The following section elaborates on the particular concerns behind the notion of vulnerability and the threats we are facing in the Anthropocene.

Global Environmental Crises and Human Security

In 1994, it was understood that human security was safety from hunger, disease, crime, and repression, as well as protection from sudden and harmful disruptions in our lives, whether at home, at work, in our communities or in our environment (UNDP, 1994). The effects of environmental harms, and most importantly climate change, are much more visible today than 25 years ago, including their direct and indirect repercussions on hunger, disease, crime, and repression, and their ability to cause sudden, harmful disruptions on our lives. Not only are natural disasters increasing in strength and frequency, but a warming planet is decreasing biodiversity and increasing pests and pestilence. Climate change is creating resource scarcity, desertification, and fostering civil unrest, crime, corruption, and power-grabs, all which is precipitating mass migrations of refugees across borders. A warming, acidifying ocean is also bleaching corals and destroying habitats for innumerable species upon which entire food systems, cultures, and economies rely. The causes of climate change are known, the methods to prevent or halt a warming planet are known, and the steps needed to build resiliency are known – yet states are not acting urgently or effectively enough.

All humanity is vulnerable to the state of the environment, but some more so than others. This is why justice and equity are crucial to understanding human security and GEG, to protecting humanity and their foundations of life. The impacts of environmental harms, and so their correlating impacts on human security, occur disproportionately to the poor and marginalized, to women, elderly, and children, to people of minority faiths, limited opportunity, and indigenous peoples. Not everyone has the same opportunity to succeed, the same access to justice, the same resources or abilities to build personal or communal resilience, or the same infrastructure to be educated, to progress, and to become active citizens. There are direct links between air, water, and food pollutants and disabilities, between public health and environmental health, between access, opportunity, and income. Human security can be achieved through the protection and empowerment of the most vulnerable—for if the most vulnerable are protected, we are all protected.

For a general overview of global environmental crises that threaten human security, it is helpful to look to the seventeen Sustainable Development Goals (SDGs). In the 2012 Resolution noted above, immediately following the section that defines human security, it states that human security should "contribute to realizing sustainable development" (UNGA Res. 66/290, 2012). In September 2015, almost exactly three years after the passage of that resolution, Resolution 70/1, "Transforming Our World: The 2030 Agenda for Sustainable Development" was adopted by all member nations of the UN (UNGA Res. 70/1, 2015). The Agenda "is a plan of action for people, planet and prosperity." (UNGA Res. 70/1, 2015).

For human development, for societal development, for national development, for global development, the SDGs link priority areas that must be urgently addressed by all nations on Earth. They address all issues where GEG and human security are intimately linked: poverty; hunger; health; education; gender equality; water and sanitation; affordable and clean energy; decent work and economic growth; industry, innovation, and infrastructure; inequalities; sustainable cities and communities; consumption and

production practices; climate action; consideration for the life below our waters and life on land; peace, justice, and strong institutions; and partnerships. The SDGs show the inter-relatedness of all issues that promote human security, yet even focusing on one – climate change – shows the weakness of GEG. Humanity is in an existential crisis, yet there is an absence of global leadership and global action to address it. This almost seems to be the intended design for GEG, where state's rights govern state action, and state's rights govern global action, and with no accountability for global harms. What does that say about the state of GEG if it cannot even respond to the most important global environmental—global life—issue of our time?

Addressing the Challenges to Global Environmental Governance and Human Security

There are several challenges, some already highlighted, to effective GEG (noting that effective GEG helps to achieve human security). Yet challenges are also opportunities for change, and so both will be addressed in this section. Any inquiry into the effectiveness of GEG, or even more broadly global governance, must begin with an analysis of state sovereignty. They are the actors and the inhibitors to global action, and the citizens and industries under their jurisdiction are the perpetrators of and the victims to global harms. They create the systems and laws that govern those within their borders, as well as the systems and laws that govern their relationships with other states. And in global governance bodies, they have chosen to govern by asserting state's rights. But what about the duties of a state?

The primary duty of the state is to protect its citizens—this is its raison d'être—and as its citizens are directly and indirectly affected by the actions of individuals and industries outside of its borders, and the actions or inactions of other states, a state must engage in global dialogue on global crises to satisfy that duty. In other words, the failure of a state to seriously engage in GEG is a dereliction of its primary duty to protect its citizens. For example, with the climate change talks, powerful emitter nations may simply refuse to seriously engage in global negotiations, or they may actively manipulate negotiations to weaken the resultant agreement. This affects national emission reduction commitments and accountability for present or historical harms outside their borders.

The state protects and provides the foundation for humanity to flourish—and integral in this, is the recognition that all humanity, and all states, are interconnected. The foundational understandings of humanity's utter dependence on the natural environment, and the inter-connectedness of all life, are directly at odds with the current understanding of a sovereign nation defined within man-made geopolitical boundaries. Harm does not stop at borders and humanity is not made more secure by walls. Our security is dependent upon the actions of one another, and no action can be seen in isolation. Scientific truths must be integrated into law and governance frameworks.

It is crucial that states see themselves as integral parts to the whole, and existing only because of the whole and its relationships within that whole. Thomas Hobbes stated in *Leviathan*, "He that is to govern a whole Nation, must read in himself, not this, or that particular man; but Man-kind." (Hobbes, 1651, p. 3). Each state is that protector of the whole—the people, the land, the waters, and the air. They must not only protect their citizens from internal and external harms, but also guarantee that the whole is well cared for, providing the best foundations for which their citizens can flourish and exercise their fundamental rights. The state must also provide the goods and services that individuals cannot provide for themselves, such as a healthy environment, water, and sanitation. They must also provide the infrastructure of care that allows citizens to flourish economically and socially, providing checks on corruption and injustice (Gwiazdon, 2018, p. 9).

Martha Nussbaum is a lawyer, philosopher, and a principal architect of the Human Development Approach, now used by such global institutions as the World Bank and the UNDP. Nussbaum underscores that the duty of a state is to provide its people the ability to pursue a dignified and flourishing life, and highlights ten Central Capabilities: life (being able to live a full life and not die prematurely); bodily health (being able to have good health); bodily integrity (being able to move freely and be free from violence); senses, imagination, and thought (being able to imagine, think, and reason, nurtured by education and training); emotions (being able to love and grieve); practical reason (being able to understand the good and critically reflect); affiliation (being able to live in harmony with others, and with one-self); other species (being able to care for and in relation to nature); play (being able to play); and control over one's environment, political and material (being able to participate in choices that govern one's life, have property, and work) (Nussbaum, 2011, pp. 33-34). If states are not protecting their own citizens, air, land, and waters, they are harming the whole; if states are not protecting the whole, they are harming their own citizens, air, land, and waters – and are making all of humanity less secure.

Human security is achieved through justice. Wendell Phillips (1811-1884) was an American lawyer and social reformer dedicated to the abolition of slavery. Confronting this grave inhumanity, he argued, “the first duty of society is JUSTICE.” (Phillips, 1891: 6). [6] The very purpose of the justice system is to provide the rules and institutions for governing sustainable and stable human societies, and inasmuch as possible, for preventing cruelty and great harm. To the Greek philosopher Epicurus (341–270 BC), “Justice never is anything in itself, but in the dealings of men with one another in any place whatever at any time it is a kind of compact not to harm or be harmed.” (Epicurus, 1926, p. 103).

People need to know that when harms occur, the perpetrators will be held to account, and the victims will be made whole. Yet, as discussed above, there is no consistent mechanism to seek justice for global environmental harms. There is no global environmental court, and even the ICJ and ICC are limited by procedural and subject-matter jurisdiction. If states ratify a treaty, however, there is usually a set legal recourse, and some states do adopt international agreements through local policies or national legislation, which are more directly enforceable. But for the most part with GEG, states can always rely on their state sovereignty—they can always ultimately choose not to be a party to any global agreements, no matter their contributions to global harm or to other nations or vulnerable peoples. They can choose not to recognize the jurisdiction of a foreign or global court. They can retreat from their global responsibilities behind their artificial, man-made walls.

The lack of accountability for global harms and the lack of enforcement of international environmental agreements—in other words, the lack of justice in GEG—is a, if not the, major challenge to its effectiveness and its ability to foster human security. Even when data is clear that, for example, the emissions from these nations are major contributors to global climate change, that those emissions harm others outside of their borders, and that those being impacted most severely are the poor and vulnerable, and also the ones who are not causing the harm, there is no accountability. If states can cause measurable harm to individuals outside their borders without accountability, then is there truly no justice in global environmental governance?

The inquiry into justice is eternal. The noted German philosopher Georg Wilhelm Friedrich Hegel (1770-1831) knew that “there must be continually be new legal determinations.” (Hegel, 1991, pp. 212-213, explained throughout §216).[7] Justice can never be perfect or complete; it is alive, evolving, progressing. As such, and as Amartya Sen, the noted philosopher and author of *The Idea of Justice*, argues, “We need *justitia*, not *justitium*.” (Sen, 2009, p. 74). In other words, we need a living, evolving justice process, not a stagnant, obstinate justice principle. If the primary duty of the state is to protect, and the first duty of a society is justice, then it is no surprise that we are facing so many global environmental crises. GEG affords no duty to protect, there is no duty to provide justice. After all, without a global governing body, who would own and enforce that duty?

Another challenge to GEG is the anonymity of global governance in general. In seeking common principles, in seeking universality, the particular – the biodiversity, the culture, the languages, the environment that makes us particular, individual persons often disappears, and so does their power to motivate and lead to real change. It is simply more difficult for people to relate to a larger, amorphous, unknown whole than the particulars of their own home, community, or nation. It is argued that the further we go out from our most intimate circles of care, the less we care. It is much easier to not respond to harm thousands of miles away, than harm immediately in front of us. This can be overcome, however, through the understanding and application of *ubuntu* and rooted cosmopolitanism. Rooted cosmopolitanism is the idea that we can be informed and rooted by our local experiences, without losing sight of our global place, of our global relationships. We must see our humanity in others, and because of others. We must see our security in others, and because of others—not as defence from others.

A Way Forward: A Relational Approach to GEG and Human Security

Ethics is the foundation of the rule of law, and we need an ethical principle to guide the future of GEG. *Ubuntu* is a relational ethic from tribes across Southern Africa that has been explored and advanced in great depth by some of the world’s most thoughtful political and spiritual minds, such as Archbishop Desmond Tutu and Nelson Mandela. Ubuntu is an ethic – or a set of values – of care and interdependence. And it is an ethic that directly confronts all of the major challenges of GEG, from strict interpretations of state sovereignty that foster nationalism and isolationism, to power imbalances and predation or disregard of the vulnerable, and even the disconnect from far-away harms.

Ubuntu roughly translates into, “I am because we are,” and places our identity, our humanity, within our relationships to others. It understands that “my humanity is caught up, is inextricably bound, in yours” and “a person is a person through other persons.” (Tutu, 1999, p. 31). This is not at the expense of the diversity of local people, places, and cultures, but through that diversity. The principles and values behind *ubuntu* should be extended to the state; after all, a state is only a state because of other states.

Embracing *ubuntu* could also help us confront another challenge to GEG, the rising trend of hyper-nationalism as an excuse to refrain from global dialogue on our global crises. We see this most notably in the withdrawal by the US – the world's largest emitter – from the climate change talks, and indeed, their President's self-proclamation as a nationalist. Nationalism and hyper-individualism more easily allow for harms to the 'other' occur, and this may be a root cause to many of our global crises. The true, relational aspect of state sovereignty must be brought to the forefront instead of the harmful hyper-individualism fostered by hyper-nationalism.

Ubuntu has also been used as a legal and governance principle to heal broken relationships, inequalities, insecurities, the root causes of many of our global conservation, security, and governance crises. Archbishop Tutu believed that through *ubuntu*, democratic South Africa was "right to deal with apartheid-era political crimes by seeking reconciliation or restorative justice." (Metz, 2017, n.p.). If "social harmony is for us the *summum bonum* – the greatest good' then the primary aim when dealing with wrongdoing should be to establish harmonious relationships with wrongdoers and victims." (Tutu, 1999, p. 35). Could this be a new framework for GEG?

We may learn much in ethics, law, and global governance from South Africa's apartheid and their transition into a democracy. "Apartheid not only prevented 'races' from identifying with one another or exhibiting solidarity with one another. It went further by having one 'race' subordinate…" and allowing that race to harm others (Metz, 2017, n.p.). It made people "less human for their failure to participate on an evenhanded basis and to share power, wealth, land, opportunities, and even themselves." (Metz, 2017, n.p.). This provides uncomfortable parallels with how states globally govern today. Some have more power than others and use that power to cause harm or shield themselves from responsibility. And some are more vulnerable, and often made-so at the hands of the powerful, such as with colonialism and climate change. Opportunities are unequal, power is unequal, life is unequal. Is our current system of global governance a model of global apartheid?

We see these power imbalances in nearly every global negotiation. Indeed, it is embedded within the very structure of the UN, whereby even the collection of 134 developing nations known as the G-77 (it was founded in 1964 with 77 member nations), does not carry the weight of any one of the five permanent members of the Security Council. Power imbalances create unjust laws and foster inequity and inequality – they create instability and insecurity, and these imbalances are not the sole province of states. This is seen when powerful industries flood money into lobbying to control legislation or even to determine how arguments are framed, including campaigns to deliberately disinform. We must commit to re-define how we negotiate laws if we ever hope to address the inequities and injustice that these agreements create or allow.

We must extend the ethic of *ubuntu* to the community of states. A human is a human because of, and among, other humans; humanity is defined by, empowered by, constrained by, and conditional upon others, and our relationships to others. A nation is a nation because of, and among, other nations; sovereignty is defined by, empowered by, constrained by, and conditional upon others. And in no just governance system can one harm another without consequence.

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20.4: The Future of Global Environmental Governance and Human Security

It is time for global governance to evolve. The charts show our trajectories and the data is clear: a rapidly changing climate, mass species extinctions, the acidification of our oceans, the collapse of fisheries – our current approach to global environmental crises is not enough and the foundations of human life, of human security, are crumbling. It is time to look at its purpose, its principles, its parties, its practice, to see what is working and not working, and to move forward courageously and comprehensively.

Most movements for justice have been a response to witnessing great injustices – and great injustices are everywhere. We live in a global geopolitical climate where powerful nations and organisations unduly control the dialogue, the negotiations, and the rules which govern them, and govern us all. We live in a world where states, and those entities under their jurisdiction, can harm without consequence, a world where vulnerable people are made more insecure, not by their own actions, but by the actions of consumers and producers thousands of miles away. We live in a world where nationalism is rising as high as the walls these nations are trying to build, purposefully denying aid to those seeking refuge due to climate-exacerbated emergencies – emergencies that they have not even caused. This is not fair, this is not just, this is not sustainable. States are turning inward at the very moment that life on Earth demands them to look beyond themselves, and to the relationships with those around them.

Our notions of state sovereignty must be re-assessed. Our notions of global justice must be re-assessed. Our notions of care, community, and responsibility must be re-assessed. A global environmental body, constitution, or court could help move GEG, but it would not be enough. It would still be a disconnected 'environmental' approach that is in competition with other sectors, and it likely would not rise to the seriousness that our existential environmental and human crises require. The environment is cross-cutting, and foundational to all else. A global governance body that sets the protection of the environment – the foundations of life – as its fundamental concern could possibly work, if the environment is made central to all other decisions and if states are willing to re-define or limit their own sovereignty out of concern for the global whole, in light of their relations to one another, as opposed to the power of their single self.

Ubuntu has been used as an ethical and legal principle to help address great injustices in a state. It is now time to expand these principles of inter-connectedness and reconciliation to our global environment, natural and geopolitical. For the future of life, we must embrace a more systematic, relational understanding of not only the environment or security, but of humanity, of the state, and of the global community.

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20.5: Resources and References

Review

Key Points

- The scientific understandings that humanity is utterly dependent on the natural environment,and that all life is inter-connected, needs to be incorporated in law, policy and governance.
- All components of human security are inter-related, and all components of human security are directly and indirectly affected by the natural environment.
- Human security is the concern of all humanity, even if global governance has not yet evolved to provide the processes or structure to support this understanding.
- Justice and equity are crucial to understanding human security and GEG, to protecting humanity and the foundations of life. The impacts of environmental harms, and so their correlating impacts on human security, occur disproportionately to the poor and marginalized, to women, elderly and children, to people of minority faiths, limited opportunity and indigenous tribes.
- GEG, as an extension of global governance, has the same challenges as global governance, including the power of state sovereignty, and power of particular states, to control or not participate in global negotiations, or to not be held accountable for harms outside their borders; the rise of nationalism among states; and the difficulty to motivate citizens to care about abstract issues or people far away. Particular to GEG is the sectoral nature of global 'environmental' governance that places it in competition with other issues; the absence of urgency, seriousness, and even justice for environmental harms; and the absence of a governing body for global environmental jurisprudence, its drafting, implementation and enforcement.
- A more relational approach to global governance, as seen through the ethical and legal principle of *ubuntu*, and a less sectoral approach to environmental protection, could address some of the current challenges of GEG.

Extension Activities & Further Research

- What are the duties of the state, and how do those duties relate to others outside their borders?
- If you could re-construct the GEG framework, how would you do so to be most effective to protect the natural environment and human security? For example, how would you incorporate limits to growth?
- Why is GEG not afforded the same seriousness as more enforceable international treaties and agreements—such as world trade regimes? What would it take to heighten the seriousness of GEG agreements?
- How do you think states can or should be held accountable for harms that they create outside their borders?
- Identify two conflicting approaches within GEG and explain why you think one is a more effective approach than the other in advancing the general aims of GEG (e.g. the arguments around trophy hunting, cap and trade regimes, etc.).
- Please identify a global environmental crisis and explain how it relates to human security, why you believe it has become a crisis, and how you would advise the parties of GEG to confront it.
- Please identify five local, five regional, and five international non-governmental or governmental organizations that directly or indirectly inform GEG, and provide a brief background of their purpose, their guiding principles, and their methodology.
- Referring to the seven challenges to GEG (second last item on the initial list of Big Ideas), describe some illustrative examples from the current news.
- What do you personally foresee as the future evolution of GEG?

List of Terms

See Glossary for full list of terms and definitions.

- global environmental governance (GEG)
- global governance
- governance
- rooted cosmopolitanism
- *ubuntu*

Suggested Reading

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Footnote

1. See generally the UN Harmony with Nature programme (www.harmonywithnatureun.org) which is the most complete compilation available of city and state action to incorporate legally-recognized rights for nature.
2. For more information on the Earth Charter, see, http://www.earthcharter.org, http://www.celdf.org and Chapter 16.
3. For an article that explores this topic, see Gwiazdon, Kathryn. (2017). International Law and Human Security: The Environmental and Geopolitical Impacts of China's Artificial Island-Building at Fiery Cross Reef. In: Westra L., Gray J., Gottwald FT. (eds), The Role of Integrity in the Governance of the Commons. New York, New York: Springer International Publishing.
4. See Chapter 6 for a detailed description of the ICJ's activities and powers.
5. In Chapter 11 such artificially constructed boundaries are referred to as ontologically subjective; they are contracted against ontologically objective concepts such as the abovementioned 'scientific truths'.
6. Note: This quote is often improperly cited to Alexander Hamilton. The accurate citation is Philipps, Wendell. (1894). Speeches, Lectures, and Letters. Volume 1. Boston: Lee and Shepard. For a thorough exploration of the theory of justice, see also John Rawls, "Justice is the first virtue of social institutions" in Rawls, John. (1971). The Theory of Justice. Cambridge: Belknap Press of Cambridge University.
7. Hegel concludes §216, "It is patent to the most idle reflection that the most excellent, noble, and beautiful can be conceived of as still more excellent, noble, and beautiful. A large old tree branches more and more without becoming a new tree in the process; it would be folly, however, not to plant a new tree for the reason that it was destined in time to have new branches." (Hegel, 1991, p. 214).

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CHAPTER OVERVIEW

21: Conclusions, Prospects, Futures

Learning Objectives

- Explain how comprehensive models of human security can yield effective solutions to the challenges of the Anthropocene while the perspectives, values and ideals that informed traditional security models largely contributed to those challenges.
- Integrate the diverse areas of inquiry and ways of thinking that constitute the field of human security.
- Outline a concise definition of development that is completely compatible with long-term human security.
- Critically engage with the contents of several chapters in this textbook and formulate a personal position on those topics.
- Revisit the introduction and compare and contrast in your own words the six core scenarios presented by Raskin (2016); then relate to them your own vision, informed by current events, of where the world and your country or region are going and why.
- List sources of human insecurity that arise out of our lack of social, economic, cultural and environmental sustainability.
- List sources of human insecurity that are independent of sustainability issues and relate them to your home community.
- Identify opportunities for increasing human security in your community, region, and country; address all four pillars.
- Deliberate about the strengths and weaknesses of democratic governance in the context of the Anthropocene.

Alexander Lautensach and Sabina Lautensach

To help the reader gain a vantage point over the stunning diversity of challenges to human security, this chapter begins with a survey of challenges moving from the global dimension to the regional and national ones. The global challenges are dominated by the imperatives to move towards sustainable impacts and to address the many manifestations of the global environmental crisis to ensure the acceptable survival of a maximum population. Prospects for human security on that front seem daunting when one takes into account that many powerful actors in world affairs are only just now beginning to take the challenges seriously. Others are deliberately deprioritising them. Goals and ideals, and entire ways of thinking about development and progress are in limbo at this stage of coming to terms with the new situation of the Anthropocene. The widespread protests against irresponsible climate policies, as well as the 2020 pandemic, have further unsettled those ways of thinking and newly emphasized the global dimension.

At the local, regional and national levels the challenges to human security that dominate the political agenda still tend to emanate from three pilars—socio-political issues (e.g. law enforcement, human rights, governance, international relations), health security (e.g. organisation, financing and distribution of services) and economic security (e.g. employment, ‘growth’, industrial performance, inflation and investments). Until recently, the major media organisations kept environmental insecurity, including even its most obvious manifestation, climate change, well out of the mainstream focus, despite efforts from the social fringes and by NGOs to change that. Powerful lobby groups hindered any substantial progress in emission reductions or energy policy. Then a 15-year old student from Sweden decided that enough was enough; and within one year the tide seemed to have turned. In 2019 millions of striking young people filled the world’s streets, demanding action against climate change and its consequences; governments declared climate emergencies; support for green parties and environmental NGOs surged in many countries; corporations took initiatives to carefully sidestep around, or to actively participate, in a transition that may well make a decisive difference in world history. But as the political will towards action mounts, so do the challenges – and with every year that they remain unmitigated, the necessary solutions will need to be even less compromising, more costly and hurtful, and increasingly too late as far as the extinctions of species is concerned. The Australian wildfires of 2019 painfully confirmed that insight (Komesaroff & Kerridge, 2020).

The other event that profoundly changed peoples’ view of the world was initiated by a humble virus that spread over all inhabited continents within weeks and claimed, by the time of writing, almost 400,000 lives. For the first time in our collective memory, a security threat exploded globally, leaving no place to escape and confronting rich and poor alike. Whether one interprets the COVID-19 pandemic as the first of many global ‘transition events’, or as a one-off global inconvenience, it underscored the collective realization that the world is changing rapidly, deeply and menacingly.

The second section of this chapter surveys the opportunities for human security as proposed in the various chapters. It moves again from the global towards the local, beginning with the most urgent agenda of sustainability. A vivid discrepancy appears between the numerous opportunities for international intitatives and the widespread absence of the political will to engage in them cooperatively. More than once in the recent past were we assured by international relations experts that a groundbreaking declaration such as the Universal Declaration on Human Rights would never be produced in today's fragmented United Nations; neither the political will, nor the global consensus, nor the necessary leadership among the Security Council is evident. Even the SDGs, the first international effort at addressing some of the challenges arising from accelerating global change, are falling short of their targets. In contrast to that disillusioning prospect stand the numerous examples of individual countries achieving impressive gains in the environmental basis for the human security of their citizens, and of citizens taking the initiative on their own security concerns. We arrive at the puzzling conclusion that the sovereign state presents as both a major source of the challenges and of the opportunities.

In the third section a vision of human security is presented that exceeds the merely environmentally sustainable and addresses challenges that operate independently of sustainable physical limits but that nevertheless contribute to crucial aspects of human security. Separate subsections deal with the future of social justice; the clash of cultures (which are not 'civilizations') against the backdrop of mass migrations; the complex political futures arising from tendencies towards political fragmentation and irredentism; ethical limitations to the rule of law and civil disobedience in favour of human security; and the crisis of governability indicating pitfalls and strengths of democratic governance in future scenarios. The chapter ends with some extension activities of a more complex type to encourage the student reader not to stop where the book does.

21.1: Human Security in World Affairs: Challenges

21.2: Human Security in World Affairs: Opportunities

21.3: Besides Environmental Sustainability, What Other Aspects of Human Security Need Improvement?

21.4: Resources and References

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21.1: Human Security in World Affairs: Challenges

The arguments presented in the introductory chapters amount to two main propositions. *First*, the present situation and our prospects for the immediate future cannot be adequately addressed by traditional security thinking. In fact, traditional security policies and their underlying beliefs and values are partly responsible for our current predicaments. As argued in Chapter 3, Chapter 10 and Chapter 11, those underlying beliefs and values included an uncritical confidence in limitless growth, in the ability of technological progress to solve all our problems, and in certain essential characteristics that distinguish humans from all other living beings and render us 'sapient,' responsible and rational, enlisting the resources of our entire planet in order to create the perfect world for untold billions. Of course, we were overdue for some sobering up.

This applies to citizens of developed countries in the sense that their addiction to cheap abundant energy and inequitable consumption creates security risks that are not easily recognised under the dominant ideologies of the Conventional Development Paradigm (CDP), political realism, and cornucopianism. The proposition also applies to citizens of developing countries insofar as their dependence on exploitative trade relationships and counterproductive development schemes make it difficult for them to gain the necessary latitude for addressing their specific security challenges. Their incessant pursuit of fossil-fuel-based 'development' renders the global 'climate emergency' next to intransigent. Chapter 11 and Chapter 12 show how our uncompromising pursuit of a narrow and biased interpretation of progress has led us into a gruesome, unstoppable war against non-human 'nature', our very own support base, that has now escalated to grotesque dimensions: Of the entire mammalian biomass on Earth, domestic animals constitute a whopping 60%, humans as a species make up 36%, while the Earth's entire inventory of wild mammals has shrunk to a mere four percent (Bar-On et al., 2018). Those problems are not even recognised under traditional security models or any 'hard' interpretation of human security.

The *second* proposition states that human security in its multidisciplinary interpretations and multidimensional models can in fact inform effective policies that could vastly improve humanity's prospects across cultures and around the world. Such policies could address massive security threats that have largely escaped attention because of ideological blinkers, lack of information or inappropriate value priorities. Extending the scope of human security in its comprehensive sense to include future generations can also address the particular dangers indicated in future scenarios involving various combinations of collapse and reform. In this chapter we will again refer to Raskin's (2016) six scenarios discussed in Chapter 1 (summarised in Table 1.1) because they admirably cover the possible range. The models and the experts behind them are telling decision makers what must be done, and have done so for decades (as documented in the series of World Scientists' Warnings: Ripple et al., 2017). The problem is that so far those messages have fallen on deaf ears. Instead, the Great Acceleration continues unabated and the war rages on – despite protests and pandemic.

Various chapters reinforce those two propositions with evidence from the areas of conflict studies, international law, the situations of individuals within and without the state, the failing and rebuilding of states, the depletion and scarcity of resources, and from climate change. In Chapter 6 Hennie Strydom explained how International Humanitarian Law developed and mirrored the transition from state-centered to human-centered security thinking and the replacement of inter-state armed conflicts by internal ones. Hence, the causes for internal violent conflict have joined the list of traditional reasons for war as major challenges to human security. Those causes include intolerable socioeconomic inequity, tensions between ethno-cultural or religious factions, displacement of ever larger populations, and the failure of states in exercising their obligations towards the citizenry. Those causes also drive numerous other aspects of human insecurity besides armed conflict, which underscores again the basic fact that avoiding violence (i.e its direct, structural, and cultural types) only constitutes a necessary, but by no means sufficient, condition for security.

'Ultimate Security' Is Receding from Our Reach

What also emerges from those first two thirds of the text is that many threats to human security are rooted in humanity's relationship and interactions with the rest of nature, according to Myers' (1993b) dictum of 'ultimate security.' The global environmental crisis in its numerous dimensions is largely driven by humanity overshooting the capacity of ecological support structures. Collectively we are quite literally 'living beyond our means', as the UN's Millennium Assessment Board (UNEP-MAB, 2005) put it. Much suffering, hardship, and loss of biodiversity could have been avoided had the international community arrived at this realisation a few decades earlier when the Club of Rome (Meadows et al., 1972, 2004), and others issued their first warnings about the world approaching limits to growth (Ripple et al., 2017). The Club of Rome's multivariate computer simulations yielded

scenarios that varied in the amounts of non-renewable resources, and in the extent and timing of international countermeasures. Though their assumptions and arguments were never refuted in principle, their critics made much of the fact that the timing of many of their predictions proved off target – an aspect that the authors had clearly declared as neither realistic nor relevant for drawing fundamental conclusions from their forecasts, namely that humanity's course is unsustainable. Subsequent studies (e.g. Bardi, 2011; Meadows et al., 2004; Turner, 2008; Rockström et al., 2009; Ewing et al., 2010; WWF, 2018) confirmed their conclusions: Global limits to growth are quantifiable and 'ontologically objective' (see Chapter 11), they manifest as discrete ecological boundaries, and human activities are variously approaching or transgressing them.

The trouble with overshoot, be it ecological or socioeconomic, is that its manifestations become worse with every year that it remains unmitigated. In the case of ecological overshoot those manifestations include desertification, soil erosion, salination, pollution, loss of biodiversity, resource depletion and pandemics. That self-reinforcing principle means that the necessary measures to address it effectively will need to be even less compromising, more costly and hurtful, and more drastic with every year that is wasted. In any case, for many non-human species at the brink of extinction those measures would arrive entirely too late. Not only do the negative consequences of overshoot increase over time, its self-reinforcement means that they grow exponentially, which means that we tend to overestimate the amount of time left to implement counterstrategies. Moreover, prolonged overshoot engenders the likelihood that tipping points are passed, triggering sudden systemic readjustments, which can manifest as a collapse. With every year that effective solutions are delayed, the likelihood of collapse (and its severity) increases. As most of the negative trends contributing to the Great Acceleration (i.e. emissions of GHGs and other pollutants, consumption, technological expansion, income inequality and military expenditures) are not only proceeding but still accelerating, we can state with confidence that whatever efforts to counteract overshoot might have been attempted, they have not met with evident success. The only two trends in the set that seem to have passed their inflection points, meaning that their rates of increase are no longer increasing, are global population growth and global economic growth; however, their slowing was less the result of deliberate policies but of inadvertent transition effects.[1] The SDG agenda as the only global initiative towards sustainability were hampered from their inception by misguided expectations of 'development', by internal contradictions and by ignoring overshoot (O'Neill et al., 2018). On the whole, we conclude that overshoot continues to proceed virtually unmitigated by any effective countermeasures. This renders some limited collapse increasingly likely (Kolbert, 2006; Bendell, 2018; Rees, 2019).

Collapse: When and How?

From the foregoing we conclude that a certain extent of collapse seems all but inevitable. The reasons have been discussed throughout this book; they may be summarised as humanity's failure to ensure environmental security through a timely reduction of our ecological overshoot and of our growth. Because environmental security underpins the other pillars to such a large extent, its absence is likely to destabilise most other aspects of human security. On that premise, the important questions are when and how collapse can be expected. Unfortunately, chronological predictions have tended to prove false. Retrospectively the failure of such predictions can be explained by the unknown influence and location of tipping points (Galaz et al., 2014). A more productive approach would be to ask what aspects of global change might operate as proximal triggers and how 'bad' those changes will need to get before their manifestations will be perceived as collapse. In order to address those questions, we need to first clarify what we mean by 'collapse.'

From its beginnings, human history has been marked by ups and downs in the extent of human security that was enjoyed by regional populations. Severe declines in one or several pillars were interpreted as 'collapses.' Although the present threats are unprecedented in their global extents, they are being perceived inequitably and their impacts are experienced inequitably around the world (with the exception of COVID-19). This was made clear with regards to climate change in Chapter 9. Invariably it is the world's poorest who have suffered the brunt of collapses, and it will be no different next time; the planetwide extent of the present crisis will merely result in a planetwide variation in the extent of victimisation. In most of its manifestations, collapse will eventuate regionally.

What will be the most likely triggers of collapse? In an updated forecast Jorgen Randers (2012), a member of the original Club of Rome team, suggested that of all manifestations of overshoot, global warming will play the most decisive role in determining humanity's future during this century. As a result of international inaction, CO_2 concentrations in the atmosphere will continue to rise and cause at least +2 °C by 2052. This warming by two degrees has been widely considered a critical threshold, beyond which non-linear increase ('runaway greenhouse') might take over. [2] Randers further suggested that the more benign scenarios described in the Club of Rome's original analysis, in which humanity manages to control production and population increases [3], are

probably no longer within our reach because humanity has failed to act in time (Grossman, 2012). Some data suggest that the projections of the IPCC habitually underestimate the actual climate impact (McKibben, 2010).

As discussed in the introduction and Chapter 9, a range of diverse secondary threats to environmental security arises from global warming and associated climate change. They include flooding of coastal lowlands, more severe weather events, floods and droughts, epidemics, and further constraints on the supplies of food and water, as well as associated health threats (O'Brien, 2010; WWF, 2018). Leading economies will stagnate while some emerging economies will grow which will exacerbate overshoot (in 2019 at 170%), though more slowly. The resulting economic losses, food insecurity, mass migrations and health crises would weaken economies and social orders to a degree that compromises the rule of law and the authority of central governance. Chapter 5, Chapter 9 and Chapter 10 focus on the many challenges to socio-political security, health-related security, and economic security that arise from that general malaise. The increasing global inequity in terms of consumption, resource allocation, and reproductive rate that exists among countries, cultures and classes contributes to this susceptibility (Davies & Sandstrom, 2008; Dobkowski & Wallimann, 2002; Heinberg, 2013). Paul Bellamy's detailed account in Chapter 5 of the connections between poverty and insecurity makes that abundantly clear.

One knock-on effect of climate change that seems particularly prone to trigger collapse is the depletion of natural resources, especially food and potable water. As explicated by Richard Plate in Chapter 10, human nature predestines us for resource depletion, and the rate at which cultures deplete their resources tends to outpace the rate at which they become aware of that fact. Climate change and the regional threats it poses to agriculture come on top of that constitutive source of food insecurity, at a time when unprecedented population sizes and cultural trends towards increasing meat consumption are already straining the Earth's biocapacity (Brown, 2011; Grossman, 2012). Historical precedents suggest that food shortages and widespread malnutrition engender violent conflict, social upheaval and health insecurity (Heinberg, 2013). In the same vein, climate-induced shortages of other resources will exacerbate the risk of violence that resource depletion always engenders (Morales, 2002; Parenti, 2011; Homer-Dixon, 1999); most wars of the future will be over resources.

A further effect that is likely to contribute to regional incidents of collapse is the displacement of large populations from inundated coastal plains, from arid or flooded former agricultural regions, and from areas threatened by armed conflict (Myers, 1993a). Those refugees will strain the services and infrastructures of host countries and give rise to intercultural conflicts of the kind that are now plaguing the European Union (Lautensach, 2018a).

The global spread of misplaced notions of free-market laissez-faire policies raises another threat to human security (Chua, 2003). Conditions of weakened governments and widespread public disaffection and destitution favour the emergence of false prophets and demagogues who seek to mobilise followers for their own sinister political purposes. While some might conclude from the present situation that we have already arrived at that point – kakistocracies have been multiplying on the North American continent and elsewhere – historical precedents suggest that the danger from populist autocrats continues to grow, as the other variables increase.

From 'Feeding the Hungry' Towards the 'Minimum Sufficient Welfare for the Greatest Sustainable Number'

Because of the contingencies of overshoot these problems cannot be effectively remedied by efforts that only focus on 'eliminating poverty' as the humanitarian ideal, along with SDG #1, demands—independently how one defines poverty. [4] The contingencies of overshoot impose a tragic inversion on the traditional humanitarian agenda of 'development'. Mere equitable redistribution of food no longer suffices, even if it were politically feasible. At this point in time, if a global dictatorship allocated exactly equal amounts of resources to every human being, we would still all starve, albeit rather slowly (see footnote 5). Secondly, the fact that our current demand amounts to at least 1.7 planets (WWF, 2018) means that in spite of perfect equity two of every five people would be consuming part of the food producing machinery itself (WWF, 2018). Next year it would be a few more, and so forth. People living in more extreme biogeographical regions and latitudes would be hardest pressed because they tend to rely on greater amounts of animal protein. The fact that humanity, together with all domesticated mammals, already constitute 96% of all mammalian biomass on this planet could not speak more loudly on the subject of overshoot. Moreover, the population continues to grow even while food prices rise and fresh water and soils grow scarcer (Brown, 2003; Dobkowski & Wallimann, 2002). This means that neither the redistribution of resources, nor a new global diet (Hirvonen et al., 2020), nor the magical production of more food from thin air by

some technical innovation, can be the sole prescription for food security [5], even though they would certainly help to temporarily alleviate some of the worst shortages.

In order to ensure lasting environmental security for all, and with that fulfil an essential condition for the other pillars of human security, humanity must reduce its total environmental impact before nature does this for us in painful ways, and before many more species are lost. Richard Plate and Ronnie Hawkins argue this in Chapter 10, Chapter 11, and Chapter 12. The difficulty with integrated plans that could address the multifaceted range of problems, such as Lester Brown's (2003) 'Plan B', is that they demand an unprecedented extent of political will that can only be regarded as unrealistic. After years of squabbling over such plans to address poverty and hunger, the international community has now been confronted with an even bigger challenge: the likely possibility that irreversible climate change sharply decreases agricultural productivity and sets us back even further.

Regardless of how severe climate change will turn out, it will mean that the Earth will produce not more food for a growing humanity but less – perhaps substantially less. This will be a result of established agro-ecosystems functioning less well or collapsing entirely, while new agro-ecosystems that could cope with the new conditions of *Eaarth* (McKibben, 2010) will be slow in developing. Overshoot and climate change are trashing the holy grail of utilitarianism, usually phrased as 'the greatest good for the greatest number.'

The *I=PAT* relationship (McCluney, 2004; see Chapter 1) clearly indicates that we can choose among a range of *solution states* that encompass numerous combinations of global population sizes and per capita affluence and technology use; all those solutions that are sustainable include population sizes *below the current level* (how far below depends partly on how long it will take us to get there and how severe the climate changes) (Grossman, 2012). Furthermore, Potter's (1988) hierarchy of survival modes suggests that some of those solutions are morally preferable to others—e.g. miserable survival for all at five billion vs. acceptable survival for all at two billion. Others (e.g. Cohen, 2005; Ehrlich & Ehrlich, 2004) came to similar conclusions years ago. All that points to the question of how many people below the maximum the Earth *should* support (Pimentel et al., 1999). This is primarily a moral question, weighing welfare against numbers.

The need to reduce our numbers does not only arise from our excessive impact but also from the amount of misery that is already being experienced by much of humanity. The growing scarcity of key resources, particularly food and potable water, causes suffering that would be avoidable with a smaller population. Cohen (2005) framed the challenge of global food security in the analogy of a communal dinner table where some guests go hungry; the problem can be solved in three ways: (1) make a bigger pie, (2) put fewer forks on the table, (3) teach better manners. Ehrlich et al. (1995) reduced the challenge to a 'race between the stork and the plough' that is being won by the stork. The chapters on scarcity as well as abundant literature (e.g. Cribb, 2010; Roberts, 2008; Dobkowski & Wallimann, 2002) indicated that little, if any, room remains to increase food supply (i.e. speed up the plough, or make a bigger pie). In effect, reducing the global population and changing our 'manners' are our only remaining options, and neither seems satisfactory—the former on ethical grounds, the latter for its limited potential. We will discuss what limited opportunities might remain open in the next section. The upshot is that the holy grail of utilitarians now amounts to *the minimum sufficient welfare for the greatest sustainable number*. This number is probably no more than about four billion people, and perhaps less than one billion (Pimentel et al., 1999; Cohen, 2005; McCluney, 2004); either way, they will not be consuming much animal protein.

Under the new imperative to tighten our belts it becomes clear that not all conceptions of human security are equally helpful. Those that take into account the primacy of environmental security and the population problem can contribute to constructive solutions and show the way out of overshoot. In contrast, those conceptions that are mainly informed by the Conventional Development Paradigm (represented, e.g. in Bindé, 2001) can only help in the short term (as evident in GDP increases) and will in the long term do more harm than good by reducing natural capital (as evident in decreases of other statistics, e.g. the Inclusive Wealth Indicator, IWI) and by further increasing humanity's collective impact (IHDP, 2014). Rising GDP and shrinking IWI have been observed with some 'emerging economies' such as Brazil and India. Another case in point is the much acclaimed Green Revolution that vastly boosted food production during the 1970s. In the short term it relieved shortages and prevented impending famines; in the long term, however, it will be regarded a disaster, as Plate argued in Chapter 10. The couple of decades of time that it bought us were not used wisely; instead, they were squandered in pursuit of further growth under the belief that this revolution would never end. Now we are again facing famines – except that our numbers have tripled, our ecosystems are weaker, tens of thousands of species have disappeared, natural resources are further depleted, pollution has become worse, and the global climate is changing in uncertain

ways. No other misadventure of conventional development policies illustrates the failings of the CDP better than this missed opportunity. Its humanitarian goals were rendered unattainable by our obsession with economic growth.

So much for conventional 'development.' What about more idealistic conceptions of human security? The UN's principle of 'freedom from needs' becomes even less meaningful if the hierarchy of human needs is in fact culturally contingent as Brown and Gehrmann argued in Chapter 4. A culture that subscribed to a long term view of human welfare would have rejected external food aid because they would have correctly regarded it as merely adding to their problems (Hardin 2011). But even Sen's (1999) more flexible principle of 'development as freedom' is unable to accommodate ecological constraints. Rather, *development needs to be understood as any measure that furthers the transition to sustainability* (Keiner, 2006; Lautensach & Lautensach, 2013). This includes a general commitment to non-violent resolution of conflicts as Wilmer explained in Chapter 19.

The most informative and comprehensive description of sustainable human security is represented in Kate Raworth's (2017) Donut Model, describing a safe operating space for humanity. This operating space is presented as the space between two concentric rings of boundaries. The outer ring is formed by nine environmental boundaries that limit our ecological impact; the inner ring is formed by twelve sociopolitical boundaries that represent basic needs. Combining the requirement for environmental sustainability with those for sociopolitical and cultural sustainability makes intuitive sense, as a grossly unjust and inequitable society will prove to become unstable before long, no matter how ecologically sound its policies may be. At the time of writing, not a single country meets all those conditions for situating itself within the 'safe operating space'; close approximations were shown by Vietnam and Cuba (O'Neill et al., 2018).[6]

Reinterpretations of 'development' often meet with objections based on human rights. The tension between human rights and human security is discussed in Chapter 4 and Chapter 15. Rights become limited not only by other rights but also by the inconvenient fact that insisting on some rights (i.e. rights that are not grantable) will create insecurity, as is explained in Chapter 15. In her critique of dominant interpretations of human rights Thomas (2001) blamed the enshrining of property rights under human rights law, which can, under conditions of limited resources, work at the expense of disenfranchised minorities. In the light of overshoot certain other human rights seem similarly counterproductive, such as the right to a 'clean environment,' 'safe drinking water' or 'adequate nutrition.' Given an excessively large global population (today's seven billion plus would qualify) and a single planet at our disposal, no government can grant such privileges to all. One additional 'right' that has arguably proven not only ungrantable but outright harmful is the right to procreate at will (Lautensach, 2015).

Overshoot not only necessitates that we change some of our notions about rights—it forces us to dig deeper into the human psyche. In Chapter 11 Ronnie Hawkins asserts that humanity's relationship with the rest of nature is not only shaped by ecological contingencies but also from within every one of us and from within our cultures. By labeling nature as the non-human 'other', an inanimate heap of 'resources' for the taking, consisting of marvellously useful little automatons just waiting to prove their utility to human endeavours, we ultimately set ourselves up for moral bankruptcy and ecological suicide. Others have observed this as well (Crist, 2017; Curry, 2011; Gorke, 2003); but Hawkins also explores the cultural, historical, and metaphysical grounds from which this attitude sprouted. In her "Letters from the Front" (Chapter 12) she exposes the cruelty and arrogance behind the atrocities in our war against nature. What emerges are not just the deeply questionable ramifications of the dominant environmental ethic behind such development schemes as the UN's Millennium Goals and Agenda 2030, but a thoroughly unsettling critique of what it means to be 'modern' and what constitutes progress.

Besides the obvious need to change our notions about human security, about rights, about nature, and about modernity, another moral imperative that arises from the foregoing is to change our value priorities with respect to each other. As ecologies simplify and economies falter, centralised governance and the rule of law will become more tenuous. This means not only that most of us need to re-learn how to run self-sufficient, resilient communities. It also means that we exercise compassion for those whom the crisis will have displaced from their homes, destitute masses with no recourse (Brito & Smith, 2012). The citizens of failed states run the danger of becoming stateless which at this time severely compromises their security and autonomy as Anna Hayes documents in Chapter 7. Other aspects of human insecurity in failed states are described in Chapter 6, Chapter 8, and Chapter 16. The ranks of displaced multitudes are certain to swell once rising sea levels have inundated some of the world's heavily populated coastal lands. In the absence of decisive initiative by the UNHCR that would impart on environmental refugees the status of 'world citizens' (or at the very least accord them full official refugee status) (Pearce, 2011), their fate depends on the charity of other countries and charitable NGOs—which, in the midst of shortages and economic downturns, cannot be taken for granted. Limited

collapse will also mean that a considerable portion of humanity will not survive to their normal life expectancy (Lautensach, 2020). Clearly the human conscience represents as important a ‘tipping point’ as do geophysiological variables.

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21.2: Human Security in World Affairs: Opportunities

What, then, would constructive solutions and effective human security policies entail under those circumstances? In this section we review the suggestions made by the chapter authors and venture some ideas of our own, moving from the global level through the national to the local. We will focus mainly on ways to address overshoot and to achieve sustainability. Other avenues toward human security that reach beyond the merely sustainable will be discussed in the final section.

Opportunities at the International Level

Globalisation presents the paradox of power relationships being redirected, reinvented and modified under the banner of a misguided vision of development that leads to inevitable collapse, which will affect both victims and beneficiaries of globalisation (Lewis, 1998). Some major manifestations of globalisation, notably the increased movement of goods and people and the hyperconsumption in OECD countries, contribute massively to the emission of greenhouse gases; yet other aspects provide opportunities. The two causative areas, economy and technology, also provide the opportunities for the two major actors, international corporations and international intergovernmental institutions. Some analysts consider corporate social responsibility an important factor towards making use of globalising processes to increase human security. On the other hand, many of the threats to human security also involve corporations; as organisations they are not actually capable of sentiments like responsibility or empathy, which renders the phenomenon fortuitous at best (more on corporate responsibility in Section here). This leaves us with intergovernmental institutions, and the example of the UN shows both how much has been accomplished, and how much more could be. The SDGs represent the first concerted effort by the international community under the auspices of the UN to pursue sustainable human security worldwide. This represents a huge step forward—or at least it would, if the goals did not contradict each other, if they were reconciled with the demands of Donut Economics (Raworth, 2017), if they took into account global overshoot, and if they recognized the pervasive inter-species injustice and our war against nature. The accomplishments and shortcomings of the SDG agenda are discussed in Chapter 3.

Much intergovernmental initiative seems continually thwarted by the opposition of a few influential maverick countries—which raises the question to what extent the principles of national security and of sovereignty hinder such global efforts towards sustainable human security; and could those principles also be of help? Many states obviously do a passable job at ensuring their own citizens' human security, and some present stellar examples of international leadership. But is that sufficient reason to allow states so much autonomy under the Geneva Conventions and their Protocols as to enable them to opt out of the process or to hijack its outcomes, to the extent of claiming the right to use nuclear weapons if their 'survival of the state' were threatened? If citizens are expected to put up with the legal system around them, why cannot states live up to the same expectation, especially if it benefits their citizens? The present situation amounts to human security by subscription, which allows those states off the hook whose citizens probably most require the commitment. A prestigious body of academics has proposed for the UN to switch from consensus rule to majority rule (Biermann et al., 2012).

The recently proposed Responsibility to Protect (R2P) regime might also help alleviate this difficulty by sufficiently weakening the hegemony of the sovereignty principle. It might still not have enough teeth in the absence of a global law enforcement branch with powers that override sovereign states and bypass the veto in the UNSC. In Chapter 18 Jeffrey Morton and Samantha Maesel express some optimism in the light of recent trends towards supranational regulation. Likewise, Chapter 6, Chapter 9 and Chapter 20 indicate a slow movement by the international community towards a more communitarian perspective on human security, at least in legal terms. Wilmer's account of nonviolent means for conflict resolution in Chapter 19 expresses the hope that the shared challenges loom large enough to unify the international community to render major armed conflicts less likely.

However, it is equally clear that there are influential groups that would not regard it in their interest if armed conflict simply went out of favour. Those interests are distributed much beyond the US military-industrial complex (which is still the largest supplier of arms) into key industries of virtually all developed countries. Few would dispute that the world's major armament industries have both the motivation and the power to jeopardise any major swing towards pacifism in world affairs. On the one hand, they thus threaten human security, while on the other those new intergovernmental regimes are unlikely to work without a measure of enforcement—which requires some military muscle. Chapter 5 and Chapter 10 make it clear that the competition among countries for ever scarcer resources will intensify, which might well lead to a reversal of the humanitarian gains made since WWII. The

danger lies equally in the possibility that the policing gets out of hand, leading towards a 'Fortress World' type future (Raskin, 2016) with extreme inequities, and in the possibility of intensified global anarchy.

The diverse field of international NGOs such as Greenpeace, the World Wildlife Fund, and Amnesty International shows considerable potential to help with global security regimes, particularly in their influence on everyday decisions of citizens aided by electronic social media. As the international version of civil society, they, too, play an important role in globalising processes and have accomplished much in exerting grassroot pressure on reticent governments. If their number and power continue to grow as they have over the past decades, those organisations and social networks represent significant opportunities for swaying the prime actors towards sustainable human security, and particularly towards the kinds of legal reforms suggested in Chapter 16, Chapter 18 and Chapter 20. Sustainable human security is achieved once the activities of societies and countries produce impacts and performances that can be localised in the sustainable operating space described by Kate Raworth's Donut Model (2012)—below environmental boundaries and above sociopolitical minima.

To summarise the prospects for global initiatives, the chapter authors have identified two major obstacles that limit opportunities towards sustainable human security. The first was the lack of international consensus and the absence of means to reign in dissenting countries and to enforce regimes. The international order is fundamentally anarchic, as Morton and Maesel point out in Chapter 18. Any step towards regimentation of national conduct requires inordinate amounts of effort by individual committed countries. The second obstacle arises from a serious blind spot with the most powerful decision-makers in recognising priority problems. As Chapter 6 and Chapter 18 show, international law and the agenda of the UNSC cover almost exclusively the socio-political and economic pillars of human security; even collaboration on health security is not universally accepted, as the US-American withdrawal from the WHO showed (in the middle of a pandemic, no less). Environmental security is governed to a much lesser extent or not at all by any internationally recognised legal regime, least of all the sustainability imperative. In comparison to Syria, Iran, and the state of the world economy, environmental security and sustainability issues are relegated to sideshows in security debates. The successive high-level conferences at Rio, Kyoto, Copenhagen, etc. indicated the world powers' unwillingness to compromise what they perceive as their national interests for the benefit of sustainable global environmental security, even in the face of overwhelming consensus among the experts (Brito & Smith, 2012; Brundtland et al., 2012; Ripple et al., 2017).

What would be required to ensure sustainable global environmental security is a concerted effort to secure the minimum acceptable amount of welfare for the greatest sustainable number, in the form of a universal agreement on global goalposts and equitable burdens. Staying below the maximum sustainable impact (which can be expressed as a maximum footprint) gives a per capita goal of 3.6 gha that could provide moderate comfort for a population of about 3 billion, but decreasing because of overshoot.[7] Based on the observations made in the preceding section, three strategies would help humanity move towards the goalposts of sustainability: (a) increasing the equity of impact, (b) halting (and then reversing) population growth as quickly as possible and (c) preparing for incidents of partial collapse.

The practical problems with those strategies are obvious. On the one hand, numerous international NGOs represent vision, responsibility and initiative towards sustainable human security at the global level (albeit not very democratically)—what Bosselmann in Chapter 16 refers to as the global civil society, represented by platform documents such as the Earth Charter (Earth Charter Initiative, 2012) and the Earth Manifesto (Mosquin & Rowe, 2004). On the other hand, the chapters on governance and international law clearly suggest that the goal of international equity is thoroughly unpalatable to the governments of developed countries as well as to transnational corporate powers, and it cannot be enforced anyway under the current global order. Fertility is being addressed worldwide mainly through the empowerment of women but family planning programmes still face the opposition of powerful religious and cultural prejudices, spearheaded by collusive governments (Ehrlich & Ehrlich, 2009). The benefits in terms of fertility reduction trickle in much too slowly compared to the progressive damage being caused by worsening overshoot.[8]

In view of those obstacles the prospects for timely and effective intergovernmental action seems rather dim. International development aid, too, is hampered by that blind spot to the sustainability imperative (Lautensach & Lautensach, 2013). The pitfalls of the conventional development paradigm were discussed in the preceding sections. Also, as Clements and LaMonica point out in Chapter 8 and Chapter 14, respectively, prioritising the building or re-building of centralised state institutions in developing countries seldom provides enough support for human security. The global imposition of democratic mechanisms of empowerment is also likely to create new problems in some developing countries because it destabilises market-dominant ethnic minorities, which often leads to violent upheaval (Chua, 2004, p. 12). In a nutshell, the handicap arising from linear models of development and

unidimensional notions of progress jeopardises success of many well-intentioned efforts at improving the lot of the world's poorest. Social change is driven by technological advances (as proposed by Schumpeter, 1950, pp. 81-87), environmental change (as described by the field of environmental history, discussed in Chapter 11), and by shifts in dominant ideas (Kuhn, 1962), which makes linearity seem a rather far-fetched notion (Bowers, 1993; Rees, 2017). The real opportunity of 'development aid,' then, is to recognise that many developing countries can make their inhabitants more secure within the context of a hybrid state of the kind Clements advocates in Chapter 8, but incorporating a locally sustainable economy. This would be most relevant for countries rendered 'fragile' by the effects of adverse environmental change. The upshot, however, suggests that the sovereignty principle is not entirely dispensable after all.

We conclude again that limited collapse is all but inevitable: the current state of international (dis)order renders unlikely the timely success on the two strategies of increasing socioeconomic equity and reversing population growth at the global level. Even catastrophic scenarios are not likely to change quickly enough this scene of general disunity and corruption of influence, as the COVID-19 pandemic demonstrated. With that dismal prospect on the sustainability front comes the sobering conclusion that initiatives in the socio-political, economic, and health-related pillars of human security cannot achieve much lasting success at the international scale. This follows from the primacy of environmental security as the underlying condition for lasting human security as argued in Chapter 1 and Chapter 3. The conditions for the transition to Earth democracy and ecological citizenship, as explained by Bosselmann (Chapter 16), seem unlikely to come about in time, considering the rate at which the crisis is worsening. We are left with the hope that sovereign states or blocs of states might take the initiative. One encouraging phenomenon arose in 2018 with the advent of impactful protest movements like Fridays for Future, Extinction Rebellion, and Sunrise (Scharmer, 2019).

Opportunities at the National and Local Levels

We now summarise the potential of regional and national levels as possible arenas for progressive initiatives towards sustainable human security. Human security has been proposed as the main raison d'être of the nation-state (Pitsuwan, 2007). It stands to reason that many place their hopes in the state for progressive initiatives towards sustainable human security by providing the necessary guidance for behaviour change (e.g. Orr, 2018).

Criteria and requirements for improving human security at the national level are explicated in several chapters: resource management and coping with scarcity in Chapter 10; dominant views of nature are discussed in Chapter 11; the importance of the rule of law, conflict resolution, human rights, understanding of overshoot and other criteria are discussed in Chapter 6, Chapter 13, Chapter 14, Chapter 4, and Chapter 3, respectively. Table 21.1 summarises those criteria and requirements and compares their fulfilment at the global and national-regional levels. From the juxtaposition of the two levels, notable differences become apparent in terms of the unmitigated exercise of self-interest, short-term priorities, chauvinism, the lack of enforcement and solidarity, the absence of requirements for effective resource management, and mitigation of scarcity. These differences partly explain the shortfall at the global level as summarised in the preceding section; but they also indicate some positive potential at the national-regional level.

The worldwide trend towards increasing socioeconomic inequity and disparity includes developed as well as developing countries and seems particularly reticent to mitigation. It has created a new class of aristocrats who wield enormous power behind the scenes and outside of electoral politics (Piketty, 2014). The World Economic Forum (2020) considers this trend a grave danger for human security. Reversing it through legislative change may well lie beyond the power of any democratic system.

Table 21.1 Comparison of obstacles and solutions towards effective human security regimes at the global and national/regional levels; relevant chapters are referenced (Date sources: Lautensach, 2010; Homer-Dixon, 1999).

OBSTACLES	GLOBAL LEVEL SolutionS	NATIONAL/REGIONAL LEVEL SolutionS
Mental Habits and Ideological Traps 1. Short-term priorities (Chapter 10) 2. Cornucopianism (Chapter 3) 3. Political 'realism' 4. Chauvinism 5. Moral ineptitudes (irresponsibility, scruples) 6. Exploitative view of nature (Chapter 11)	1. No mitigation 2. Hegemonic 3. Untempered, causing Tragedy of the Commons 4. Overt exceptionalism, intransigent 5. International Humanitarian Law (IHL) and human rights inconsistently enforced (Chapter 6) 6. Global culture of exploitation (Chapter 9)	1. Mitigated somewhat through responsibility to the electorate 2. Hegemonic as well 3. Tempered by liberal institutionalism, communitarianism 4. More egalitarian and hierarchical ideals 5. Rule of law, executive, independent judiciary (Chapter 13, Chapter 8) 6. Varies with culture but often tempered by local and traditional values
Social Traps (Chapter 10) 1. Ignorance 2. Externality and time delay	1. Rare among delegates 2. Conceptual difficulties with holistic responsibility	1. Depends on education (Chapter 12) 2. Nationalist responsibility vs. colonialist neglect towards other countries
Criteria for Effective Resource Management (Chapter 10) 1. Responsive to users 2. Cooperation across scales 3. Adaptive to changes 4. Users trust in system	1. Great inequities in power 2. Delegates represent governments 3. Reform is cumbersome 4. Mixed track record	1. Responsiveness varies with electoral system 2. Nested levels of governance 3. Varies with culture; some successes 4. Generally moderate trust, depending
Risk of Conflict (Chapter 10) 1. Resource capture by powerful groups 2. Ecological marginalisation	1. Very prevalent as neo-colonialism 2. Very prevalent as displacement of people (Chapter 7)	1. Varies with society, culture, electoral system 2. Not as prevalent; tempered by rule of law

Four Objectives that Promote Sustainable Human Security Regionally

Given the poor international consensus on virtually all important issues, and the extent to which sovereign governments still dominate and define what is possible in the political arena, competent administrations empowered by sufficiently engaged and enlightened electorates could accomplish much at the national level in terms of the four sustainability objectives of efficiency, restraint, adaptation, and structural flexibility (Lautensach, 2010). This applies to both developed and developing countries. We will summarise the four objectives here briefly.

The literature abounds with proposals how the *efficiency* could be increased with which resources and energy are consumed. This would increase regional carrying capacity, minimise harmful environmental impacts and it would buy some time. Efficiency is a major factor in the development of resilience. Countrywide increases in efficiency would require profound and widespread technological innovation, the elimination of many government subsidies, which are becoming unaffordable anyway, and changes in cultural practices. For example, towards improving energy efficiency, Dessus (2001) suggested that governments provide the right infrastructure choices (e.g. public transport), re-model the manufacture of energy-consuming machinery, and help developing partner countries avoid the mistakes made by the developed ones.

The rate of consumption of resources will have to be *restrained* in developed nations. Cherry Tsoi argues this in Chapter 9 on the example of GHG emissions. This will not be possible without adequate legal incentives to make do with less and counterincentives against overconsumption. More importantly, it would require a profound restructuring of the culture of consumerism and a reassessment of what constitutes growth, progress, sufficiency, and quality of life for individuals, for communities, and for entire societies. This amounts to an all-out effort to elevate the performance of a society, and ultimately of all of humanity, above the socio-political boundaries in Raworth's (2017) Donut Model. The state is in a position to equalise consumption and to address the disparity in people's capacities to cope with resource scarcity. Restraint would also have to extend to reproductive habits, which presents an altogether different challenge for health care policy. For example, infertility or low sperm counts would no longer be considered a cause for medical intervention, nor would medical budgets cover costly reproductive technology. Restraint is an important component in the agenda of Deep Adaptation (Bendell, 2011).

Reform efforts will have to facilitate *adaptation* of political, social and technological practices to the new conditions created by the crisis. This includes the scarcity of certain resources (e.g. metals), pollution and the resulting unprecedented health hazards (e.g. UV levels), reduced biodiversity and the associated destabilisation of ecosystems, and problems related to extremely high regional population densities (McKibben, 2010). For instance, national health care systems will be required to adapt to the predicted cancer epidemics which would certainly overtax their health care budgets, and re-focus towards preventive and palliative care. [9] The precautionary principle is particularly significant for the design of proactive adaptation measures (Myers, 2002). Taking into account the prospect of limited collapse imposes some changes on the agenda of adaptation, which is addressed in the Deep Adaptation agenda.

Efforts toward adaptation, efficiency and restraint would require *structural flexibility* of political and economic institutions of countries. The eco-socialist school of thought focuses particularly on such a wide-reaching programme of structural reform with specific focus on mitigating the worst of the environmental crisis (Curry, 2011). Their main argument states that global capitalism represents the major culprit in the crisis and that therefore in its present form it cannot be part of the solution (Kovel, 2002). In the absence of global reforms, capitalist economies could be adapted in a top-down direction at the national level. For example, Sala-Diakanda (2001, p. 107) suggests six structural changes towards food security of developing countries, surpassing the SDGs in foresight and insight: Produce staple crops instead of export products, re-orient development policies towards rural communities, eliminate discrimination against women, re-enforce productive traditional values, reform anachronistic agricultural practices, and develop a long-term vision for the future. Other proposed agenda include the reduction of food waste, the rationing of petroleum products, a switch to zero carbon energy, and the restoration of ecosystem services (Rees, 2014; Brown, 2003; Monbiot, 2007; Cumming & Petersen, 2017). The main objective of such reforms is to discontinue the system's addiction to growth, to work towards implementing a steady-state economy (Daly, 2013), and to develop resilience—all primarily at the national level. The kind of structural change required for those measures obviously transcends the political and reaches into the cultural realm.

Developing Countries: How Much Room for Sustainable Human Security?

Examples of island states illustrate how the contingencies of sustainability could inform national human security policies in developing countries (Lautensach & Lautensach, 2010). In January 2010 a major earthquake displaced about 2.3 million Haitians (almost one quarter of the total population) and killed or injured over half a million. The UN's relief programme, following the conventional development paradigm, focused on the restoration of the island's economy and entirely ignored the obvious physical limitations imposed by climate, soil conditions, environmental trends, population dynamics and simply the geographical size of the island (UN Office of the Secretary-General's Special Advisor 2012). Even though the country's isolated situation reveals those limitations quite unequivocally, discrepancies are evident between official development priorities and ecological limits. (See Extension Activity 1.)

The example of Haiti illustrates a disconnect between ends and means in conventional development aid. Many international aid efforts are in fact meant to function both as disaster relief and as development, to help the recipient country help itself, at least in the long term. Well intentioned as they often are, their benefits seem to manifest mainly in the short term and hardly address the wider context or the long term. What measures the average developing country should take at the national level in order to ensure the sustainable security of citizens is addressed in Chapter 5, Chapter 9 and Chapter 10. They address as broad contingencies resource scarcity, chronic economic downturns (including the collapse of export markets), increasing population pressure and global environmental change. It hardly needs to be pointed out that those contingencies are seldom given adequate attention in aid programmes such as the one implemented in Haiti.

Many developing countries show characteristics that act in their favour. Most of their inhabitants carry the memory of frugal lifestyles, the kind that disappeared in Europe with the WWII generation. The capacity for frugality and restraint will be of enormous help in face of the coming collapse events; surely the level of food waste in Somalia is already minimal! Acting against that potential benefit of frugality is the trend towards increasing socioeconomic inequity, shown by the growth of affluent middle classes who are working hard to forget the frugality of their forebears in pursuit of the ideal of 'Western' affluence. The example of rising meat consumption in developing countries with its detrimental consequences for food security, biodiversity, and emission quota speaks volumes about the counterproductive interpretations of 'development' under the CDP. The growing inequity within developing countries also illustrates how the use of national averages can mislead quantitative analyses.

Most developing countries in Haiti's situation are at risk of becoming failing states, which means that their survival depends largely on external aid, as Strydom (Chapter 6) suggests. That means that much responsibility will rest on the countries that weather a global crash. At the regional and multilateral level, groups of such determined countries could make a decisive difference, depending on how much clout they can muster internationally. They would decide which faltering states are worth defending or supporting and which should be allowed to disappear. This touches on Raskin's (2016) 'Fortress World' and 'Eco-communalism' scenarios, under which global regimes are enforced through trade embargoes and other sanctions; but it also indicates opportunities for counterhegemonic, collaborative self-sufficiency in developing regions.

Addressing the Cultural Foundations

Given that neither geographical expansion on this planet, nor boosting procuring efficiency, nor resource substitution offer much room for the further increase of the human carrying capacity, it seems clear that resource scarcity is beginning to act as a major brake on the growth of national economies (Dobkowski & Wallimann, 2002; see also Chapter 10). Increasing scarcities not only bereave corncucopianism of the last vestiges of empirical justification, they require people to unlearn myths about what constitutes progress and to replace them with new beliefs and values.[10] As several authors in this text have pointed out, resource depletion and the tragedy of the commons are consequences of psychological and cultural determinants of consumption behaviour. In Chapter 10 Richard Plate discusses perception bias, cognitive disabilities, and counterproductive mental habits that contribute to the unsustainable use of resources. Cultural differences in value priorities also affect our treatment of natural 'resources' to a crucial extent. This begins with the question what constitutes a resource for us, and what gives us the right to harvest, mine, deplete, and exploit it to our heart's delight.

The significance of the cultural context relates to observations by several chapter authors (e.g. Chapter 3 and Chapter 11, also Table 21.1) that the global environmental crisis, and the tragedy of the commons in principle, really represent crises of human thinking. They therefore cannot be addressed without some fundamental changes in the human psyche (Jones, 1993; Rees, 2017). This points to other factors that tend to sway people towards unfair consumption behaviour—attitudes such as selfishness, tribalism, ethnocentrism, chauvinism—behaviour that was selected during our evolutionary past and gave rise to powerful myths; mental habits such as wishful thinking, self-deception, groundless optimism, weakness of will (akrasia), and the social traps discussed by Richard Plate in Chapter 10; and certain moral ineptitudes such as denying one's moral responsibility [11] and lacking moral scruples (Lautensach, 2010).

Those behaviour determinants need to change, and they are modifiable (Rees, 2014, 2017; Orr ,2018). The state can help with that but the onus is on individuals, families, and communities. In a democratic society such drastic incentives towards behaviour changes could not succeed without sufficient electoral backing or at lest acquiescence, which in turn relies on the development of certain conducive attitudes in societies and individuals. In the absence of such groundswell support, resource management laws and regulations based solely on biological considerations often fail because they did not take into account cultural obstacles (Johannes, 2000).

Culturally contingent behaviour determinants are primarily passed on and perpetuated within cultural groups through formal and informal education. Much of that education takes place through what educationists refer to as the null curriculum and the hidden curriculum, which tend to be intransigent to control or modification (Contenta, 1993; Bowers, 1993). [12] Nevertheless, educational reform presents a huge, largely untapped, potential opportunity for changing the behaviour of coming generations towards sustainable living (Bowers, 1993; Orr, 2004; Lautensach, 2010, 2018b). This is because among all the influences that contribute to the development of values and beliefs in a young person, formal education alone is carried out as a meticulously designed programme, constantly monitored, and under centralised control. The UN recognised this in their Decade of Education for

Sustainable Development (2005-2014) and their SDG #4, but without addressing the cultural priorities discussed here. In contrast, the media have largely abandoned their educational responsibility as will be discussed below.

Effective education reform follows three groups of agenda (Lautensach, 2010, 2018b): The transmission of counterproductive beliefs and values has to be stopped; educational shortfall in areas vital to sustainability has to be mitigated; and the learner must be liberated from constraints that prevent him/her from taking independent action. Those agenda are covered by six major educational aims: re-defining progress, replacing anthropocentrism with ecocentrism, remediating crucial skill gaps, imparting a vision for the future, eliminating parochialism, and empowering the learner to take action (Lautensach, 2010; 2020). Those outcomes have been subsumed under the concept of environmental literacy (Orr, 2004) but their significance extends to all aspects of human security.

The empowerment of the learner can benefit from some of the contributions made by the Freirian school of liberation paedagogy (Freire, 1986). However, in contrast to the Freirian focus on sociopolitical constraints, the kind of reform we discuss here aims at the constructive critique of the conceptual constraints presented in consumerism, in the ideology of economic growth, and in the anthropocentric value base. Beyond these agenda of liberation, the reform is directed to favour the development of a communitarian ethic of ecocentric holism, and to finally enable the education system to accomplish what it is envisioned and obligated to do – to empower the learner to build a better world (Jaeger, 2012). Empowerment also protects against propaganda. A glitzy campaign of massive public divertissement of the kind that was financed by BP in the wake of the Deep Water Horizon Gulf oil spill could only have had its desired effects inasmuch as that public had been suitably undereducated and misled, preferably for several generations.

Despite its potential, educational reform is not a universal remedy; in the context of the crisis it can only serve to buy time and to empower future generations to avert the worst. Yet it is a powerful tool for reaching the ‘unaware, unconvinced, and unconcerned’ (Raskin, 2016). It could make the difference between Raskin’s scenarios of ‘Breakdown’ versus ‘Eco-communalism’ or ‘Fortress World’ versus ‘New Sustainability Paradigm’—huge differences in terms of overall human security and welfare. It can also change values and deconstruct stereotypes. [13] Without a modicum of ecocentric valuing, the last nature preserves might fall to our ravenous appetite for ‘resources’ when shortages really begin to bite. Thousands more of endangered species will disappear like African ‘bushmeat’ in exchange for a few months of extra time. Education also has been valued for its contributions in the development of values, worldviews and requisite civic skills—learning that does not necessarily promote environmental sustainability but that certainly contributes to human security. In the concluding section of this chapter we shall explore those aspects of human security that do not rely on environmental sustainability.

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21.3: Besides Environmental Sustainability, What Other Aspects of Human Security Need Improvement?

Our discussion of future prospects for human security has so far shown a certain preoccupation with the dictates of sustainability, especially in its environmental sense, a priority that in our view is well justified but should not lead to the exclusion or neglect of other sources of human insecurity. This is where those organisations and projects come into their own that offer important contributions to human security but whose success does not much depend on addressing overshoot, nor do they necessarily recognise such a dependence. For example, in their 15th *Global Risk Report*, the World Economic Forum (2020) identified six global areas of insecurity: economic stability, social cohesion, climate, biodiversity, 'digital fragmentation', and health systems – covering approximately the four pillars, as well as addressing proposals from similar high-ranking bodies such as the Nobel Laureate Symposium (2011). While their estimations of likelihood and impact (measured in billion US$ only) seem somewhat questionable [14], their analysis of interconnections and current trends allowed them to address most of the risks that were discussed in the chapters of this book. In a similar vein, but with slightly different priorities, Table 21.2 summarises the major 'risks to watch' as identified in this book, as they concern the four pillars. The challenges to sustainability are not included as they were already covered in Section 21.1.

As we argued in the introduction, such analyses of specific risks and threats can allow governments to better facilitate direct intervention and provide better justifications for such action than can superficial efforts to promote 'freedom from fear' and 'freedom from want'. They tend to be motivated by concerns for distributive justice, procedural justice, the minimisation of harm and suffering, and other values that inform grantable human rights (see Section here).

Economic security should no longer be measured in terms of daily income or per capita GDP (as done e.g. by the UN and its affiliates) but by means of other standards, such as gross per capita happiness (Lane, 2000; Kasser, 2006) or inclusive wealth (IHDP, 2014) . Because of overshoot, recommended measures must not rely on further net economic growth or GDP increase (Costanza et al., 2014) but should include efforts to redistribute existing resources more equitably, to increase the efficiency of resource use, and to decrease birth rates. Ronnie Hawkins presented this argument in detail in Chapter 12. Those imperatives form the basis for a steady-state economy which is characterised by zero growth at national and global levels (Daly & Farley, 2004; Rubin, 2012). Zero growth means that only productivity and the quality of products can increase, not the input of resources. This model would allow post-crash economies to avoid wasteful roller-coaster cycles and relapses into overshoot (Brown, 2001). There is ample evidence that this transition would neither necessarily compromise human happiness or the quality of lives, nor would it decrease human security—on the contrary (Rubin, 2012). After all, zero growth has been the default situation throughout most of human history.

Table 21.2 Major risks to watch for each pillar of human security as discussed in this book; relevant chapters are referenced.

PILLAR	LEVEL	RISK	COUNTERMEASURES
Economic Security	Global	1. Continuing economic recession 2. Growing economic disparity 3. Resource scarcity (Chapter 3, Chapter 10)	1. Steady state economy; aid and redistribution programmes 2. Cooperative regimes (Chapter 10) 3. Control globalising processes (Chapter 10)
	National, community	1. Continuing economic recession 2. Growing economic disparity 3. Resource scarcity (Chapter 3, Chapter 10)	1. Reorient to zero growth 2. Reorient to zero growth 3. Bioregional self sufficiency
Environmental Security	Global and most regional	1. Growth of population, environmental impact (Chapter 3) 2. Climate change, pollution, loss of biodiversity; loss of ecosystem services (Chapter 5, Chapter 9) 3. Aggravation of above (Chapter 11, Chapter 12)	1. Family planning, voluntary simplicity movements 2. Efficiency/restrain/adaptation; structural reform; ecological restoration 3. Relocate displaced people (Chapter 7); educational reform (Chapter 11, Chapter 12)
Health Security	Global	Pandemics and resistant pathogens (Chapter 17)	Immunisation, screening, prevention
	National, community	Aging populations; growing demand and shrinking supply	Preventive, low-cost healthcare for all (Chapter 17)
Sociopolitical Security	Global	1. Retrenchment from globalisation; 'Fortress World' scenario 2. WMD[15] and terrorism (Chapter 7, Chapter 18) 3. Transnational crime (Chapter 13)	1. Maintaining global communication (Chapter 16, Chapter 20) 2. Global inclusive governance and nonviolence (Chapter 16, Chapter 17, Chapter 20) 3. International cooperation (Chapter 6, Chapter 19)
	National, community	Weakening of central government; fragmentation	1. Ecocommunalism; freedom of and from religion (Chapter 4) 2. Hybrid and local governance (Chapter 8, Chapter 14)

The Future of Health Security

Health security across a population, measured in disability-adjusted life years (DALYs) as discussed in Chapter 5, can only be improved for the long term if current trends are taken into account in healthcare policy. Those trends include the following:

- As reproductive rates decrease, demographic profiles will shift towards older ages; different prevailing kinds of conditions will require a shift towards funding of different treatments.

- Demand for health care will rise as populations continue to grow and gentrify, and as environmental quality declines; as the range of pollutants increases (e.g. endocrine disruptors, carcinogens and mutagens) new disorders are likely to appear.
- Quality, safety, and availability of food will decline as problems with industrialised production methods (spoilage and contamination, toxicity of additives and packaging, rising costs of production, transport and distribution, economic decline) intensify. Organic and local production can help to some extent but preventive health care will need to take the forefront.
- As economies and state budgets shrink, costly high-tech treatments will be in shorter supply. The more affordable 'ounce of prevention' will dominate.
- As population densities rise in many regions, and as previously undamaged ecosystems are increasingly invaded and their fauna traded worldwide, epidemics and pandemics become increasingly likely. The 2020 COVID pandemic was probably only the first, and relatively mild, example.

Taking those trends into account will necessitate a greater emphasis on preventive care (particularly immunization and removal of pollutants) and screening programmes as noted in Chapter 17. The latter has gained particular importance as major pathogens become increasingly resistant to antibiotics and emerge newly in globalised, modified environments inhabited by an aging population (Montagnier, 2001; Epstein, 2000). After the meltdown and explosion at the Fukushima nuclear plant on 11 March 2011 public concern was alerted by reports claiming that initially officials underestimated and misrepresented the extent of the danger. [16] The fact that the country responsible (Japan) decided to abandon nuclear power (only to falter again weeks later) while the countries suffering most from the radioactive fallout (US and Canada) have not and their media remain mute on the subject, indicates that a sound assessment of some health risks does not yet prevail throughout the international community when it contravenes the interests of powerful industrial lobbies.

Case Study 21.1

Corporate Irresponsibility and Human Insecurity: The Case of Canadian Asbestos Mining

Perhaps the most grotesque example of corporate influence on health legislation is the story of asbestos mining and export in the Canadian province of Quebec. Over the past century, evidence has accumulated to implicate all types of asbestos in the causation of asbestosis, lung cancer and mesothelioma, and other conditions. The WHO and other international health organisations decry its use, and in Canada it is hardly used anywhere; yet its mining and export continued unabated for decades. Like the tobacco industry before it, the Canadian asbestos mining industry engaged in a prolonged public relations campaign to delay, deny, and distort scientific evidence on the harmfulness of their product, and to divide or discredit researchers involved (Leuprecht, 2011).

The government of Canada not only refused to allow asbestos to be put onto the Rotterdam Convention's list of hazardous substances, it refused to give any reason either to the Canadian public in whose name it acted, or to the delegates taking part in the Conference of the Parties to the Convention (Soskolne & Ruff, 2012).

The export of asbestos threatened the human security of people in the receiving countries, particularly their rights to life and to health. This shows that threats to health security can arise from the complicity between states and non-state actors such as individuals, groups, and corporations. Finally, a legislative change prohibited all mining, use, manufacture, sale, import and export of asbestos in Canada from 30 January 2019, but exempting military and nuclear facilities as well as the chloralkali industry until 2022. The export market is now left to asbestos producers in Russia and Kazakhstan, and their hapless customers (primarily India).

One of many other case examples involves the pesticide DCBP. Its adverse health effects were proven in 1977 and it was banned from the US domestic market in 1979 while its export continued undiminished. Eventually its manufacturers were forced by a blockade of banana exports to compensate 5,000 Honduran farm workers who had contracted severe reproductive dysfunctions after prolonged exposure. The labour leader who organized the blockade was later assassinated (Bouguerra, 2001).

Corporate social responsibility and the responsibilities of corporations with regard to human rights rank high on the agenda of international institutions, especially the United Nations. As outlined in Chapter 5, non-state actors such as corporations and their leaders, as well as complicit governments, are accountable for human rights violations. Yet neither one are usually brought to justice.

The dubious influence of corporate powers on health security is evident in the industrialised production of foods and food additives. The pernicious side effects of some additives sometimes become apparent only after decades of use, and even then the manufacturer's lobbying efforts may prevent their removal from the market. [17] Other areas where strong corporate interests influence health security policies include toxic waste processing, nuclear waste deposits, and hazardous chemical industries (see textbox above). Most genetically modified crop cultivars require hugely elevated levels of pesticides and fertilisers which are usually sold by the same companies that sell the seeds.

Time and time again, influential corporate groups with an interest in perpetuating the status quo have spent enormous resources to ensure that information about ecological overshoot, global warming and climate change, regional environmental problems or risks, or particular health hazards is delayed, denied, or distorted, and political opposition divided, bought or discredited (Beder, 2006). Those efforts included the co-opting of media conglomerates and of politicians. Examples include the tobacco industry, nuclear industry, oil companies, and pharmaceutical corporations (Oreskes & Conway, 2010). Countries with a 'first-past-the-post' electoral system (e.g. the US, Canada and the UK) seem particularly susceptible to such covert manipulation, as large numbers of votes are never represented in their parliaments.

Clearly it is not enough for society to leave corporations in positions of enormous power and merely hope that they will exercise corporate social responsibility—whatever that may mean in particular cases. Corporations cannot be expected to shape their policies according to the public good; it is neither their duty nor in their interest. It is rather the duty of societies to makes sure that corporations are not placed in positions where their exercise of normal day-to-day business causes harm. That duty extends also to reversing the privatisation of public services and the underlying prioritisation of market forces, that have become worldwide phenomena wherever the neo-liberal ideology dominates. Even though globalisation may directly result from the 'worldwide domination of capitalism' (Desai, 2001), that does not necessarily mould it into the monolithic form of development envisioned by the CDP; rather, the particular shape of globalisation remains subject to the political preferences of societies.

Socio-political Security: The Spectre of Fragmentation

Socio-political security includes the tentative and fragile system of international humanitarian law (IHL) and international criminal law as outlined in Chapter 6 and Chapter 18. Opportunities in those areas arise from the trend to make IHL more inclusive and to adapt it to changing conditions of violent conflict. With the help of the lessons from the UN's questionable decisions in the cases of Rwanda and Kosovo it is to be hoped that a more effective framework can be developed to make global peacekeeping more reliable. Unfortunately, but perhaps inevitably, UN peacekeeping operations have increasingly taken on an enforcer function as a means to maintain and restore security, capacities for which they are ill-equipped and ill-prepared (Sloan, 2011). At the same time, weapons of mass destruction are proliferating and global terrorism shows no sign of abating (World Economic Forum, 2020). A connection between the two trends seems plausible. As in the health care field, preventive measures seem to carry the advantage (Langille, 2015).

As population densities increase and resources decline, new frictions between cultures and states will develop, and many will result in violent conflict (see Chapter 5). An intergovernmental mediation agency of the kind that Franke Wilmer suggested in Chapter 19 would be very helpful to assuage tensions before they build to critical levels. A second level of intervention could be added in the form of a UN Emergency Peace Service (UNEPS) (Langille, 2015). The potential benefits go far beyond preventing wars. Terrorism cannot be defeated by counter-terrorism but only by eliminating its root causes, as Anna Hayes argued in Chapter 7. This means that mechanisms for conflict resolution will not only have to become more proactive, they will have to include everyone, most of all those sectors of society from which prospective and potential terrorists are recruited. To ward off the new threat of eco-terrorism this would require allocating more political power to communities as balance against the interests of corporate groups and centralised governments, especially at a time of economic recession. As Hayes asserts, some people become terrorists because they feel 'alienated by what they perceive to be an unjust and unfair society or political structure'. This danger would become particularly serious if the peacekeeping framework developed towards a 'Fortress World' scenario (Raskin, 2016).

The opportunity in socio-political security lies in reaching an effective compromise between excessively forceful approaches and too much laissez-faire causing fragmentation. With the global influence of US policy waning and economies declining, some concern is emerging about a 'retrenchment from globalisation', defined by the World Economic Forum (2011, p. 39) as "restrictions to global movements of goods, people and ideas". Their concerns about possible economic implications seem unjustified considering the possible benefits of eco-communalism; some of the present-day "insane trade" practices (Keller, 2019) cannot be abolished soon enough. [18] The greater danger from such a retrenchment into 'Fortress World' affects socio-political

security through the spectres of nationalism, tribalism, and xenophobia. Less international cooperation on IHL and ICL could have disastrous consequences for human security, as Chapter 6 and Chapter 18 indicate. A decrease in international cooperation on law enforcement would also allow for transnational crime to expand, with all the associated human security threats explained by Wilson in Chapter 13. He argues that human security cannot be improved in that area without increased cooperation and coordination among countries. As the danger of global fragmentation has not yet been widely recognised, proactive countermeasures at the national level have not entered public discussion. One crucial requirement for the early prevention of intercultural conflict would be guaranteeing freedom *of and from* religion worldwide as Brown and Gehrmann recommended in Chapter 4; official precautions and provisions for cultural safety would be another (Lautensach & Lautensach, 2015). The dangers of intercultural conflict have increased in recent years with the waves of mass migration into Europe, the US and other countries.

In the introduction we also mentioned that worldwide economic decline and deterioration of infrastructures could seriously destabilise the coherence of large countries. To what extent would that compromise human security? Might the opportunities for regional self-determination not present some benefits? The efforts of many international organisations have been motivated by the tacit assumption that the cohesion of a nation-state is always a good thing. Although 'balkanisation', the fragmentation of a federal state along ethno-cultural lines, often leads to bloody civil wars, its forceful prevention can create more harm than good – as the Balkan precedent showed (Pringle, 2012). The forceful attempts by Serbia in 1991 to preserve Yugoslavian integrity caused much suffering without ultimately halting the disintegration. An illustrative counterexample would be the peaceful division of Czechoslovakia in 1992. The recipe for disaster seems to be a multiethnic federal state ruled by a dominant ethnic minority (Chua, 2003; Hale, 2004). Despite the commonly pejorative use of 'balkanization' we suggest that the concept bears the opportunity for a peaceful, ordered disintegration but within the context of a vigilant and helpful international community.

What muddles this issue is that norms of human security are often mixed with trite nationalistic ideals and old-style national security, and also with justified concerns about the effects of patriotic fervour (see Chapter 19). When a country peacefully divides into two, as in the case of Czechoslovakia, this does not automatically compromise the human security of the inhabitants – actually, the results of the Czechoslovakian referendum suggested that the majority believed the opposite would ensue. When the breakup went ahead without any violence, the international community commended Prime Minister Václav Havel for his dedication to human security in a situation where other leaders might have let their anachronistic adherence to nationalistic ideals and so-called 'realist' values tempt them into reacting oppressively. The extent of political fragmentation distinguishes Raskin's (2016) two 'civilised' scenarios of 'Eco-Communalism' and 'New Sustainability Paradigm'; in the latter, sustainable policies are coordinated and arbitrated by a central global governing body, which many would regard as the preferable scenario. Again, the opportunity lies in finding and implementing the right compromise.

Whether the fragmentation of large countries can somehow be reconciled with the consolidation of a global governing authority will have to await the test of history. The World Economic Forum (2011) considered the failure of global governance to be one of the two central risks to human security (the other one being economic disparity). To be sure, in the absence of adequate global or super-regional security regimes and arbitration authorities the threat of rogue states, cyberconflict, WMDs, transnational crime, nationalism and terrorism will persist, no matter how ecologically sustainable the world may have become. Of particular concern in a politically fragmented world would be the future of human rights, especially for groups that are already disadvantaged such as women. [19] As explained in Chapter 15, human rights depend on civil society, which benefits greatly from networking, international monitoring and enforcement, and communication. A retrenchment from globalisation could spell disaster for many world citizens. These pitfalls of a 'de-globalisation' trend are the reason why the latter of the two 'civilised' Raskin scenarios is to be preferred from a human security perspective.

Avenues towards such responsible global governance are proposed by Klaus Bosselmann in Chapter 16 and by Katy Gwiazdon in Chapter 20. Those approaches need to surmount several challenges. The first lies in the transition from the presently existing kind of global hegemony exerted by corporate interest groups and subservient governments towards a form of governance that is inclusive, democratic, and sustainable. Secondly, national sovereignty needs to be reigned in—through nothing less than a consensus of sovereign governments! This would include a change from the dominant ethic of 'realism' to 'enlightened self interest' which would then allow for an empowerment of the UN or some other global governing framework. Morton and Maesel present a convincing argument for this in Chapter 18. Gwiazdon in Chapter 20 emphasises the diversity of levels and modes that can contribute to a compelling consensus towards global governance (which in her sense includes all local levels). Many of those

mechanisms for consensus building on supporting human security are still quite ineffective and undeveloped (see Chapter 6); bringing them up to task constitutes an additional challenge.

What If the Law Is Wrong?

In Chapter 13, John Wilson explored how the rule of law can promote human security nationally and internationally, working on the assumption that state authority always has automatic legitimacy. Likewise, Katy Gwiazdon in Chapter 20 emphasises the rule of law in environmental governance. To be sure, many states derive adequate legitimacy through democratic representation in their legislative bodies and reasonably equitable sharing of power. Equally obvious are the exceptions. One kind of exception is the hybrid political order in 'fragile' states that Clements discussed in Chapter 8; from a human security perspective, argues Clements, such hybrid orders are as legitimate as the typical Weberian state. Thus, in any country where power relationships are deemed too inequitable or state benefits too weak, local communities and traditional orders can legitimately contribute toward systems of secure governance, but with some modifications to what is commonly considered the rule of law.

A very different kind of exception arises from situations where a state abuses its power or where the law does anything but promote human security. The authors' male ancestors served in the German armed forces during two world wars under regimes of dubious legitimacy which at times were engaged in crimes against humanity. Under such circumstances it becomes a moral duty for the soldier or citizen to disobey orders, to ignore such laws as seem unjust *in one's own judgment*, and to thwart the designs of state authority wherever one deems the risks acceptable. Numerous scenarios popularised in the media involved families giving refuge to Jewish refugees during the holocaust, not only breaking the law of the land but risking their own lives in the process. They did so because they refused to regard Jews as "guilty or beyond hope" or themselves as helpless (Oliner & Oliner, 1988). Other examples come from East German border guards defying their shoot-to-kill orders when encountering compatriots fleeing across the Iron Curtain into the West. Surely we can agree that those people acted virtuously defying the absolute authority of an inhumane and brutal state, even if not all of us might have had the stamina to act likewise in their places.

In such unequivocal cases personal moral judgment and possibly a moral consensus among families and communities must override state authority for the sake of human security. But this raises some questions about situations in the moral grey zone where the relative legitimacies of the two opposing positions are less clear, where Clements (in Chapter 8) would note an incompatibility between modern state agenda and customary approaches, but where a decisive moral imperative may not be so easily identified. The situation that US citizens find themselves in under the Trump regime provides a poignant contemporary example.

Before you read on, see Extension Activity 4 and discuss (with yourself at least) what possible criteria could be used to define this ethical boundary.

Clements suggests another reason why reconciliation of such conflicts is important to human security: Countries that succeed in establishing effective hybrid orders of governance tend to be more resilient in emergency situations. The global crisis is bound to present us with plenty of occasions to test this hypothesis. Hybrid modes of governance can also help stabilise the cultural identity of indigenous peoples and address their legitimate claims for political self-determination. The goal of effective hybrid governance lends a new meaning to the concept of sustainable development, far beyond its often overemphasised and questionable economic dimensions. Its significance reaches from international regimes through national governance to the building of secure local communities. One problem area where hybrid governance might be unable to help is the endangerment of environmental security by government inaction on pollution and climate change; civil disobedience is bound to increase in this area.

The Crisis of Governability

The trend, particularly noticeable in North America, of news media and journalism prioritising goals of entertainment rather than public education represents a threat to human security. Even political programmes seem to "provoke more than they inform" (Kupchan, 2012, p. 65). The explosive expansion of social media in recent years added another dimension to that trend. It leaves the public, who is already often woefully undereducated, uninformed about current affairs of significance to their security. At the same time it perpetuates and increases the influence of corporate groups and their agents over public opinion and consumer choices, and it relieves governments of a considerable portion of their accountability obligations (Kaplan, 2007). It raises serious questions about the merits of that sacred principle of democratic liberalism, 'giving the people what they want.' Clearly some of the societal outcomes suggest this principle to be unsuitable for the media and entertainment sector, on grounds of human security. [20] This predicament applies with equal significance to the marketing of consumer goods in general, to food security, to health care,

and to governance and the definition of welfare. Welfare is created, firstly, by the satisfaction of needs. It is the objective of marketing to create human wants and then to make people perceive those wants as needs, no matter how tenuous their connections might be to determinants of happiness (Lane, 2000). It seems clear that 'giving people what they want' does little towards 'freedom from want' or 'need' as long as the same companies who do the giving also advise people what to ask for. But to what extent does this concern extend to governance? Recent political developments in the US, the EU, and Japan suggest that those governments that most closely adhere to the democratic ideal of electoral appeasement are encountering severe problems with economic decline, rising poverty and inequity, ideological polarisation and political paralysis (M'Bokolo et al., 2001).

This problem has been recognised in the mainstream literature as the 'crisis of governability'—a 'mismatch between the growing demand for good governance and its shrinking supply' (Kupchan, 2012, p. 62). Good governance can be regarded as a limited resource when one defines it as government giving the people what they demand in terms of basic needs, justice and protection and to perpetuate its ability to do so. A world in overshoot clearly cannot fully meet that need any further, but that argument is not recognised among the adherents of the conventional development paradigm. Instead they focus—with some justification – on the global phenomena of decreasing governing leverage in democracies, lack of international consensus and solidarity, and the inability of democracies to apportion sacrifice. Most interesting are the recommended remedies, as exemplified by Kupchan (2012): better strategic planning of national economic policy, gaining electoral support through populist appeasement and ideological galvanisation, and counteracting widespread tendencies towards protectionism and isolationism. These remedies do not seem to promote democratic ideals; instead they could spell a general transition towards less democratic governance such as plutocracy or state capitalism, perhaps even a benign dictatorship of some form—which brings us to our closing question.

The two essential characteristics of a democratic society are equitable representation and equitable participation. Most societies in the globalised world aspire to those ideals, but how sustainable are they in the social sense? The 'crisis of governability' points to this question most poignantly. Yet, if they are not sustainable, what good are they for human security?

These are important questions that concern us all because, as has been suggested throughout this book, many current trends, practices and policies in general render the goal of sustainable flourishing less and less attainable for humanity. Aside from Kupchan's (2012) analysis described above, a major reason is our persistent collective inattention to overshoot, to the fact that our demands cannot be sustainably met by the source and sink functions of the Earth's ecosystems. But in this section we focused on social and political sustainability, specifically of forms of governance – and here, too, the emergence of undemocratic or antidemocratic popular movements raises the question how politically sustainable democratic systems will turn out to be in the Anthropocene.

In order to turn this trend around, the authors of this book suggested numerous measures that we summarised in this concluding chapter. It is unclear how much time or latitude remain in order to avert a catastrophic crash that would endanger much of what we value as civilisation. This renders the problem even more important. While much of the challenge of sustainable human security can be described in economic terms (i.e. the allocation of scarce resources), it does include many non-economic issues such as how to evaluate determinants of ecosystem health or how to allocate the right to reproduce in the midst of a population explosion. In this context the question is, to what extent can these issues be solved at the present time through democratic means? (See Extension Activity 5.)

Discussing the limitations of democratic principles is never a comfortable undertaking within the context of Western liberal tradition and its epistemology. Yet we suggest that a genuine effort to ensure human security cannot succeed without questioning the ideological cornerstones that influence human security, and democracy is one of them. Raising those important questions, beyond merely transmitting information, has been among the unifying agendaof this book's authors. It is our fervent hope that the reader will have developed the habits of raising pertinent questions and of challenging dominant assumptions throughout their future professional endeavours.

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21.4: Resources and References

Review

Key Points

- Many of the most pressing challenges to human security in its various dimensions arise from the lack of environmental security.
- At the global level, environmental security can only be ensured if humanity manages to extricate itself from the condition of overshoot. Two major challenges arise from this imperative: (1) increasing the equity of environmental impact and (2) halting (and then reversing) population growth as quickly as possible.
- The lack of international consensus and political will, as well as ideological blind spots, render timely success against overshoot unlikely at the global level.
- At the regional, national, and local levels impressive progress in all pillars of human security is evident in some cases; in other cases the lack of progress causes apprehension.
- Opportunities are more numerous and realistic at those levels because the obstacles are more manageable and solutions more feasible. They fall into the four categories of efficiency gains, restraint measures, adaptation and structural flexibility.
- One essential requirement for sustainable human security is that new educational policies and practices lead to a restructuring of the cultural foundations that inform people's ideas about progress and modernity.
- Some important challenges and opportunities towards human security arise independently of sustainability issues. They include many aspects of health security, political fragmentation and unification, limitations to the rule of law and the crisis of governability in democracies.

Extension Activities & Further Research

1. Consider a concept map summarising the book. Incorporate as many chapters as possible. Where do you see agreement? Where do you see possible disagreement?
2. In the impoverished island nation of Haiti, 58% of the population lacked access to clean water even before the 2010 earthquake. Determine the number of people that could sustainably live in Haiti, based only on the availability of fresh water. You will need to find data on annual precipitation and the minimum per capita requirement. Compare your finding with the existing population (estimated by the CIA World Factbook at 9,801,664 for July 2012) and propose some major agenda for sustainable development in terms of adaptation, efficiency, restraint, and structural changes. Explain why the import of potable water is not part of those agenda but other technology (of what kind?) might be.
3. On 17 October 2018 the cultivation, possession, acquisition, and consumption of cannabis was legalised in Canada. What would the legalisation of some (or all) recreational drugs do for human security? Would it endanger more users to a greater extent and facilitate their progression to ever harder drugs? On the other hand, could it help eliminate gang violence, assure quality control of the products, allow users to openly access medical care, facilitate taxation of the industry, free up resources for other areas of law enforcement? In your view, to what extent is current drug legislation in your country influenced by considerations of human security?
4. (Refer to Section 21.3.3.) Common examples representing this moral grey zone include someone stealing food because they feel unable to feed their family by other means; soldiers deserting their units because they consider their orders inhumane; a passer-by feeding water to cattle on a parked truck, and trespassing in the process; and demonstrators defending themselves against police brutality. In such situations it does not seem so clear with whom the moral authority rests. But if we concede that at least in some cases both the moral authority and the weight of IHL rests with the individual and not with the state, as in the case of the holocaust examples, then the authority of the state becomes subject to ad hoc confirmation by the individual citizen. Where should we draw the line between what is acceptable and unacceptable?Beginning with the examples mentioned above, create some criteria, discuss them with peers, then compare your ideas with the endnote. [21]
5. The challenges for human security under the present circumstances call for drastic policy changes at all levels. The necessary measures could be enacted by a democratic government or by a benign dictator, but to what extent is each side up to the task? In other words, what we are asking you is the following: Will democracies necessarily lose out in favour of ecologically benign dictatorships – or are they indeed the only form of government that has any hope of surviving in the long run? Or might the answer depend on the scale (global / regional / national / local)?Two opposing viewpoints exist on this question.Their main points are represented in the two text boxes below, in the form of an organised moot debate. We encourage you to compare them

and decide which side appeals to you more; we suggest that you do this in teams. You might also wish to consult Chapter 14. Discuss your view with your peers.If you would like to follow a discussion among academics on the future of democracy, read M'Bokolo, Touraine & Walzer (2001).

6. George W. Bush's first executive order after taking office was to stop all funding for programmes designed to put a break on the explosive population growth in Third World countries. This amounted to cancelling all US development aid, as well as US participation in international aid, that was in any way associated with family planning. This single decision noticeably hindered international efforts to help African women reduce their reproductive rates (which are still among the world's highest) in subsequent years.Taking into consideration the definition of crimes against humanity given in Chapter 7, discuss the pros and cons of a hypothetical prosecution of G.W. Bush for crimes against humanity.
7. "In My Canada …"Compile a wishlist of developments that you would like to have seen happen in your country, state or province in order to facilitate a Great Transition towards sustainable human security. Our suggested examples, naturally biased, are:
    - Our newly elected prime minister would have returned from the Paris COP21 summit with an explicit plan for the phased disappearance of all recreational fossil fuel-driven motor vehicles.
    - None of our remaining old growth forests will ever see another chain saw again.
    - No billionaires should exist in my country – what little good they contribute to the commons is arbitrary and unaccountable. Taxation should take care of it, won't it?
    - The packaging industries and the recycling industries would have been amalgamated by law shortly after many plastic consumer articles appeared on the market in the 1950s.
8. The two statements below argue in favour of democratic governance and in favour of benign autocracy, respectively. Take issue with their arguments and choose sides, if you feel so inclined. Be prepared to propose further arguments to support your position and/or to refute the alternatives.

Democracy and Human Security: Two Opposing Viewpoints

The much acclaimed spread of democracy around the world is mostly a matter of superficial appearance, much less one of substantial democratisation. In fact, the globalisation of markets and finance hinders democracy everywhere.Democratic states are obliged to facilitate their citizens' exercise of their rights as individuals and in associations. However, this does not allow effective and timely policy changes as are necessary at this time to ensure a sustainable future. Those new policies will include a new understanding of progress in terms of efficiency, restraint and adaptation, and follow the precautionary principle. In other words, democracies are powerless to prevent the kind of environmental vandalism that is endemic in many countries. Therefore they are doomed.	It is the very capacity of democracies to persist 'at the edge of chaos' that alone allows for sufficient flexibility in a future characterised by rapid and sudden environmental change. This capacity is thought to arise from a propensity of truly democratic societies to spontaneously reorganise and adapt in response to external challenges. We have seen this confirmed in recent history since the authoritarian regimes in South America were replaced with democratically elected ones. Once that happened, those countries were able to develop; there is no true development without the democratic participation of all groups of society. In other words, only democracies can live up to the challenges ahead that demand a new kind of development and resilience.
In contrast, a benign dictatorship could succeed where democracies failed. A benign dictatorship in this context is one that pursues as its ultimate goal not its own perpetuation but the sustainable well-being ('acceptable survival') of humanity in terms of ecological limits (but not in terms of human rights) and the 'creation of wealth' as described in Chapter 14. If it helps African countries, why not others? It is a dictatorship insofar as it does not consult with its citizens on whether or how they wish to be governed. But most people prioritise their day-to-day quest for survival and for happiness over issues of government.	A democratic government by definition engages in periodic consultation with the citizenry, usually through elected representatives. Even though the mechanisms of consulting may be indirect and include delays, any substantially new policies will thus have to be approved by the electorate sooner or later, either directly or through delegates. This is the central principle of political representation. It makes governmental decisions defensible.
A global market economy in the current undisciplined form is unlikely to allow for such drastic changes in a timely fashion. One reason lies in the counterproductive definition of progress that this system relies on. The free market model may serve humanity much better under a radically reformed world order with equitable distribution of resources. But radical redistribution is unlikely to come about by a democratic consensus unless a majority is moved by the certainty of impending cataclysm, by which time it would be too late.	Dictatorships tend to be encumbered by many handicaps. Firstly, any authoritarian system is likely to elicit non-compliance to a greater extent than a system based on consensus. Many of those citizens who disagree with a particular policy, seeing no way to influence it, would be moved towards civil disobedience. The likely outcomes are black markets, an illicit 'shadow' economy, widespread apathy, and possibly more deliberate environmental vandalism. People feel disempowered because local authorities do not represent local governance, only an extension of the central authority. In other words, the door towards liberalism remains firmly closed.
This consensus handicap is the main reason why a dictatorial system would be better able to restrain capitalism and to curb individual freedom to the extent necessary to maintain ecosystem health. While democracies can legislate to impose limits and incentives (e.g. render fuel cells economic by taxing alternatives, fix the price of eco-toilet paper, etc.), their dependence on consensus renders them evidently ill-suited to impose unpalatable but necessary reforms on a consumption-drunk public. This includes problematic decisions about non-economic variables in the crisis, such as population growth. A dictatorship could impose a system of parent licensing without it becoming watered down through a parliamentary process.	Secondly, in order for the required policies to have their beneficial effect they would have to be enforced and perpetuated globally. That requires an Orwellian degree of complexity, reach and thoroughness unprecedented in dictatorial regimes. Few prospects of the future seem as daunting to the humanist as that of a single global dictatorship leaving no place for the dissident to escape to. The consolation lies in the likely inherent instability of such a system. Dictators tend to claim that dictatorial measures would only be necessary for the brief historical interlude until the citizenry recognise the beneficial outcomes, whereupon they would cease to object and begin to actively support the regime, which in turn would no longer necessitate dictatorship. However, this argument often flouted by communist rulers was never borne out by history. Invariably those dictatorships toppled before they could convince enough of their citizens.

Another handicap of democracies lies in their disposition towards political see-saws. Any radical initiative that does manage to pass through the parliamentary process is likely to elicit opposition from powerful lobby groups who perceive it as threatening their interests, economic or other. Those lobbies might well succeed in getting an opposition party elected into government which would promptly reverse those reforms – the net effect being no political change. That would not happen under a dictatorship. We cannot afford to remain stuck within the confines of the Left – Right continuum and its squabbling.	The real strengths of democratic decision making lie at the local and regional levels, where a centralized power would likely err out of ignorance. Therefore a push to decentralise democratic structures may help. The challenge of a democratic regime then becomes the proper coordination of many local initiatives. This is where educational reform could make a crucial difference. The currently dominating value system that prioritises the maximisation of personal property and consumptions is entirely counterproductive. The transition from this value system to one that facilitates sustainability will have to rely on formal and informal education which focuses on values directly.
Thirdly, democracies in their present forms appear ill-suited to meet the challenge because of the almost obligatory short term view of elected decisionmakers focusing on legislative periods. Even if they manage to introduce and enforce benign but radical laws (e.g. on packaging or advertisement) they are frequently obliged to rely on short-term crowd-pleasing measures to survive into the next legislative period. A more ideal democracy where long-term benefits are openly and widely prioritised might do better but we no longer have the time to build it. Dictators, on the other hand, are free to act on the long term view (as illustrated by Lenin's reforms), and their benignity would dispose them towards that view.	A dictatorship is only truly sustainable if the possibility of effective resistance not ever emerges, which means it cannot last forever (keeping in mind Wilmer's points about conflict resolution in Chapter 19). This leaves us with the likely prospect of a temporary dictatorial regime enacting the necessary changes towards a sustainable future for humanity, whereupon they are promptly overthrown and democracy takes over. Can't you just see the movie now?
A transition to a benign dictatorship may be easier than is generally believed as in many respects the present systems of governance already resemble more a dictatorship (of corporations) than a democracy. Such a transition can be furthered through the universal influence of electronic media. A sufficiently catastrophic global environmental event might provide the last straw.	

List of Terms

See Glossary for full list of terms and definitions.

- akrasia
- Conventional Development Paradigm (CDP)
- crisis of governability
- cultural capital
- kakistocracy
- natural capital
- precautionary principle

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Footnote

1. In fact, numerous heads of government insist most fervently, at no cost to their reputation, that further economic growth counts among their most important policy goals. The 2020 pandemic showed how much economic de-growth is actually possible within a short time frame.
2. This limit, which represented a doubling of the orginal safe limit recommended by the UN Advisory Group on Greenhouse Gases, was acknowleged in the Copenhagen Accord. Estimates by UNEP and the University of Oxford's UK Climate Impacts Programme were 3.5 amd 4 °C, respectively. These thresholds are placed where scientists suspect critical 'tipping points'—such as the entire Western Antarctic Ice Shelf sliding into the sea within a matter of months or weeks. There is a further concern based on a phenomenon called global dimming: During the three days following the 9/11 attack, when all US passenger flights were grounded, the levels of particulate pollution in the atmosphere dropped dramatically, and temperatures increased by 1°C (because more sunlight reached the surface) in addition to the 1°C by which we have already exceeded the preindustrial level (BBC 2005). This could spell a disastrous extent of further warming when the particulate level drops for any reason in the future, e.g. from emission reductions. This is the programme transcript.
3. Those scenarios correspond to the 'Eco-communalism' and 'New Sustainability Paradigm' scenarios described by Raskin (2016), as discussed in Chapter 1.
4. Narrow definitions of poverty contribute to the inefficiency of this 'fight' against poverty. A common definition is earning less than the equivalent of two US dollars a day, and for 'absolute poverty' less than one dollar (Bindé & Matsuura, 2001, p. 359). Readers of Hawkins' Chapter 11 will not miss the irony in the image of a starving person being handed two small pieces of green paper.
5. A typical definition of food security is "permanent access by all to the foodstuffs necessary for a healthy and active life" (Collomb, 2001). This rightly excludes the kinds of malnutrition that predominate in overdeveloped countries. However, it only hints at the necessary quality of a person's diet, the lack of which does not lead to starvation but to ill health from malnutrition. The proposed EAT-Lancet diet would be healthier but it remains neither universally affordable nor sustainable (Hirvonen et al., 2020).
6. See the summary and read the data published in O'Neill et al. (2018). The authors point to the challenge that countries performing well with respect to the environmental boundaries tend to under-perform in the sociopolitical and cultural areas, and vice versa. The same conundrum is causing some of the SDGs to clash with others.
7. The unit is global hectares (gha). It is useful to distinguish between two kinds of equity in this context. One is the average per capita footprint in 2008 (2.7 gha); when multiplied by the total 2008 population, it gives the equivalent of 1.5 Earths and thus represents our overshoot in 2008. The other is the average sustainable per capita footprint; its estimates vary about an order of magnitude, around a median of about 3.6 gha (WWF, 2018; Ehrlich et al., 1995). That is the minimum amount of biocapacity

that needs to be allocated sustainably to every living person in order for them to survive under acceptable conditions. The Earth's biocapacity can sustain this for only about 3 billion people.

8. At the 1994 International Conference on Population and Development in Cairo the goal of fertility reduction was dismissed in favour of women's empowerment. Instrumental in this outcome were the international women's movement, the US government, and the Holy See (McIntosh & Finkle, 1995). A reference to reproductive rights was deleted from the Rio+20 report.
9. In the US alone, between one and two thousand untreated 'superfund' sites of toxic waste deposits are leaking pollutants into the water table with catastrophic consequences for local cancer incidence. In some island states such as New Zealand, water pollution is now considered a primary security threat.
10. Some publications still measure a country's 'development' by its number of millionaires, simultaneously ignoring the problems of socioeconomic inequity, capital flight, local resource scarcity, and global overshoot, as well as moral objections to the implication that the exorbitance of a tiny elite somehow renders tolerable the squalor among the rest. The trends towards increasing inequity refute all claims about economic 'trickle-down' effects.
11. Widespread denial of moral responsibility is commonly evident in post-genocide situations, e.g. post-WWII Germany (Jaspers, 2001). In many cases of heroic altruism, the acceptance of moral responsibility made the crucial difference (Oliner & Oliner, 1988).
12. The hidden curriculum includes knowledge, beliefs and ideals that are not explicitly addressed or referred to in formal teaching at educational institutions but that students do learn about through informal and implicit channels such as peer interactions during schooling. It represents a powerful driver for the cultural reproduction of dominant patterns of thought and behaviour. The null curriculum consists of themes that are officially taboo or traditionally ignored (e.g. the ethics of reproductive behaviour).
13. For example, one particular concept that needs to be deconstructed and abandoned is the concept of the environmentalist. It has polarised communities and societies into pro-nature and pro-economy camps, left versus right, conservation versus 'progress', and other anachronistic dichotomies that seem quite counterproductive (Scharmer, 2019). It has also provided some influential groups with tools for 'brownlash' propaganda (Beder, 2006). Such demonization and dividing the field into 'us and them' hinders progress in negotiations and results in stalemates (Haidt, 2012). In truth, anyone who cares for their own long-term welfare, if not the welfare of their family, cannot help but care for the integrity of the requisite ecological support structures. James Lovelock (1995) called this attitude 'enlightened self interest'. There is no reason for anyone to refer to such a person as an environmentalist, for what should we call the other people – suicidal sociopaths? "We are all environmentalists now." (Jones, 1993, p. 55)
14. For instance, economic risks received generally high impact ratings while environmental risks were considered to generally have a low impact. The report does not mention overshoot or imply that it was taken into account.
15. weapons of mass destruction
16. See Onishi, N. & M. Fackler. 2011. Japan Held Nuclear Data, Leaving Evacuees in Peril. New York Times (Asia Pacific), 9 August, A1.
17. For example, the artificial sweeteners aspartmae (a.k.a. Nutrasweet, Equal, Neotame, AminoSweet) and sucralose (Splenda) have been in use since 1981 and 1999, respectively, despite increasing evidence of severe health effects. Aspartame is used by 100 million people worldwide and is present in 5000 products in the US alone. Alleged effects include certain cancers and the mimicking of lupus and multiple sclerosis (Aspartame Consumer Safety Network http://www.aspartamesafety.com/). At the time of writing, the herbicide glyphosate ('Roundup') has attracted much public attention for similar reasons.
18. Under the category of "Insane Trade" Keller (2019) describes practices such as countries simultaneous exporting and importing the same article, or re-importing goods that they previously exported. The associated waste of energy, packaging, emissions, and the destabilising of local climate-resilient agriculture are significant.
19. A 2012 Gallup poll identified the ten countries with the biggest gap between genders in terms of how personally secure individuals feel when going out in their own communities at night. They are, in increasing order, Finland, France, USA, Australia, Albania, Italy, Cyprus, Malta, Algeria and New Zealand. What is striking about this list is that it includes some very affluent societies, with very high personal security ratings, but also with high incidences of violence against women. We can conclude that the causes for women's insecurity are cultural and not socioeconomic, and that international monitoring and 'shaming' in a globalised world might do some good, as such societies tend to care about their international status. http://247wallst.com/2012/07/10/countries-where-women-do-not-feel-safe/ (8 Sept 2019)

20. Witness this famous quote on succesful moviemaking by Samuel Goldwyn: “If you want to send a message, send a telegram!” Of particular concern to the human security of millions at one time were the numerous incidences of casual US media commentaries about the ‘impending strike on Iran’; equally unsettling to us is the paucity of protests against such blatant warmongering.
21. Here are some suggested criteria in the form of critical questions that one could ask about a person’s proposed course of action: To what extent could disobeying the law serve the person’s own interests? Are those interests legitimate and strong enough to justify the proposed act of civil disobedience? To what extent could obeying the law result in unjustifiable harm to oneself or to others (human or non-human)? How reliably could such potential ‘harm’ be assessed? To what extent can the disobedience be excused on religious or conscientious grounds?
22. Although most of its authors are thoroughly ensconced in the CDP, the scope and depth of this book and the range of high-profile contributors is impressive.
23. This book, as well as its predecessor, *The Coming Age of Scarcity*, hardly dates; it is what the UN should have heeded two decades ago.
24. Contains sections on sustainability, climate, water, biodiversity, food, population, culture & behaviour, energy, economy, cities, transportation, waste, health, education, resilience, action plans.
25. His analysis is proving right.
26. All of human security in the form of a single ingenious diagram.
27. This is an excellent educational resource with authoritative academic credentials.

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Global Peace Index
5.2: Assessing Human Security

Appendix

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Glossary

abatement technologies | Technologies that reduce emissions or that decrease their harmfulness by changing their chemical composition (Chapter 9).

acidification | Refers to a change in aqueous solutions (water) where the concentration of hydrogen (H^+) or hydronium (H_3O^+) ions is increased as a result of the dissolution of substances that donate or liberate such ions, such as carbon dioxide, CO_2 (Chapter 12).

ad hoc war crimes tribunals | Temporary courts established to apply the laws of armed conflict to violators (Chapter 18).

African National Congress (ANC) | The largest primarily Black South African anti-apartheid organization before the end of apartheid and after that, the predominant and majority political party in South Africa (Chapter 19).

agency | The ability to engage in action under one's own power and control (Chapter 11).

aggression | Illegal armed conflict (Chapter 18).

akrasia | Weakness of will; engaging in a practice in the full knowledge that it is harmful, as in the example of the smoking doctor. Aristotle described this as one of the impediments to moral behaviour (Chapter 21).

Allee effect | An ecological effect, wherein once the population density of an animal species falls below a certain level, the individuals become less able to reproduce themselves and to recruit new members into their population. The 'anthropogenic Allee effect' is a human-generated feedback loop where reproduction is hindered by human influences (Chapter 12).

Alliance Party | A centrist or moderate political party in Northern Ireland that draws support from both unionist and nationalist communities (Chapter 19).

alternative dispute resolution (ADR) | Methods used to resolve conflicts peacefully through dialogue and outside of judicial processes, such as mediation and negotiation (Chapter 19).

anarchy | The absence of (world) government (Chapter 18).

anentropic | Operating contrary to the forces tending toward increasing entropy or disorganization; self-organizing (Chapter 11).

Anthropocene | Proposed term denoting a geological era following the Holocene in which the geological, climatological and ecological characteristics of Earth have been noticeably changed as a result of the activities of a single species, *Homo sapiens*, which some mark from the onset of industrialization and which greatly sped up after the Great Acceleration of the 1950s (Chapter 1, Chapter 11).

anthropocentric | Centered on the human as the standard case or the locus of value, usually indicative of belief in human moral superiority and right of exploitation (Chapter 11).

anthropogenic | Caused by the actions, policies or decisions of humans (Chapter 11, Chapter 16).

anti-personnel landmine (APL) | Conventional weapon of war that detonates on impact. The Ottawa Convention (1999) deemed APLs illegal for all states that ratified the treaty (Chapter 18).

apartheid | The legal system of racial segregation in South Africa, adopted as a formal policy in 1948 and dismantled in the 1990-91 negotiations between the then white supremacist government and the African National Congress (Chapter 19).

apex predator | A large consumer species that takes a position at the top of the trophic pyramid of an ecosystem; quite often humans are now the apex predators in many ecosystems, having displaced the endemic species, such as bears (Chapter 12).

Asian values | A term used to connote the argument that security and community are more valuable in an Asian context than freedom and democracy, and that this justifies policies and activities that would be considered unjustifiable in the West (Chapter 4).

asylum seeker | A person fleeing persecution that has not yet been formally declared refugee by the UNHCR or other governing body but has applied for formal sanctuary to the state where they currently live (Chapter 7).

asymmetrical peace agreements | Peace agreements or treaties to end armed conflict between two parties of unequal military and political power, normally characterized by the surrender of one party to the other (Chapter 19).

asymmetry of power | When two parties to a conflict have obvious or drastic differences in power, e.g., the United States and Vietnam (Chapter 19).

autochthonous traditions | Native to the indigenous traditions of place and locality (Chapter 8).

autopoietic | Self-organizing and self-maintaining (Chapter 11).

biodiversity | The number, variety and variability of living organisms, and how these vary according to location and change over time (Chapter 5).

biological capacity | The ability of an ecosystem to produce useful biological materials and to absorb carbon dioxide and other wastes (Chapter 3).

bioregion | An ecologically and geographically defined area, or biogeographic unit, that is smaller than an ecozone, but larger than an ecoregion or an ecosystem. (See operationalization by Vilhena & Antonelli, 2015.) (Chapter 17)

biosecurity | Largely applied to agricultural practices, it refers to preventative measures designed to mitigate or reduce the risks associated with transmitting infectious disease to humans from other living organisms (e.g., crops, livestock, invasive species, pests), later broadened to include an array of harmful biological agents including chemical compounds (Chapter 17).

biotic pyramid | Energetic relations among organisms in an ecosystem conceptualized in terms of a pyramidal structure. The base is composed of green plants that trap solar energy via photosynthesis, with smaller and smaller amounts of biomass being supported at successively higher levels of food chains or webs due to energy losses in the process of converting the body of one type of organism into the body of another (Chapter 11).

Bosnia | Bosnia and Herzegovina are the two regions of former Yugoslavia where much of the armed conflict took place between 1991-95 and that today are officially known as 'Bosnia and Herzegovina' although sometimes referred to simply as 'Bosnia' (Chapter 19).

Brexit | The referendum passed by British voters in 2016 that required the United Kingdom to exit the European Union by 29 March 2019. The actual event occurred on 31 January 2020 (Chapter 5 and Chapter 19).

CAFO | Concentrated animal feeding operations (CAFO), typical for the large-scale production of animal products as in the expanded cattle and dairy industries that now dominate the markets in most OECD countries and elsewhere (Chapter 12).

Chapter VII | Section of the United Nations Charter that grants the Security Council the right to authorize war (Chapter 18).

civil society | The social sphere of voluntary cooperation, distinct from the spheres of political and economic competition (Chapter 4). The 'public sector' (public institutions outside of government) and the 'private sector' (for-profit organisations). The former can include any organisation, association, community of shared interests or beliefs that contribute to what might be construed as 'public interest' (Chapter 15).

clientelism/clientelistic state | A state that depends on relations of patronage where its political culture is steeped in corruption and clientelist practices (Chapter 8).

climate justice | Applying the principles of justice (distributive, procedural, punitive, restorative, intergenerational) to address the inequities between culprits and victims of climate change (Chapter 9).

cognitive dissonance | The conflict arising from two strongly held beliefs or perceptions that cannot be reconciled; some theories of learning implicate cognitive dissonance as a strong motivator to reorganise prior knowledge. Its negative potential includes the denial of obvious truths (Chapter 10).

Cold War | Period of intense rivalry between the United States and the Soviet Union following World War II (Chapter 18).

collective intentionality | Intentional states, such as beliefs, desires or intentions that are shared by a grouping of humans or other social animals (Chapter 11).

compétence de guerre | A French term that means the legal right of states to go to war (Chapter 18).

Concert of Europe (1815) | A system designed by the great powers to manage international affairs following the Napoleonic Campaigns (Chapter 18).

conflict management | A process of limiting the negative or open hostilities between parties to a conflict while also working to increase positive peace that focuses on improving social and economic conditions (Chapter 19).

conflict resolution | The peaceful resolution of a conflict (Chapter 19).

conflict transformation | Transformation of the grievances underlying a conflict (Chapter 19).

consensual paranoia | Collective projection by a human group of hostility, aggression and threatening behavior onto another social grouping so as to justify responding in kind (Chapter 11).

conservative révisionnistes | A group of historians of African history, like Bernard Lugan (2004), L.H. Gann and Peter Duignan (1971), that has attempted to put a more positive light on the role of the European colonists. Their work is in contrast to most postcolonial theories and theories of postcolonial state 'dependency' that are universally critical of the colonial era and have tended to dominate African area studies (Chapter 14).

Convention on the Prevention and the Punishment of Genocide | An international treaty that criminalized efforts to destroy a particular group due to its ethnic, linguistic, cultural or religious affiliation (Chapter 18).

Conventional Development Paradigm (CDP) | The belief that the market forces and trends that dominated development during the past centuries will continue to shape global development during the coming decades. The future is conceived as an extension of the present (Raskin et al., 2002, p. 22). The antonym in the literature is the New Ecological Paradigm (Chapter 1, Chapter 21).

conventions | Legally binding instruments under international law (Chapter 2).

cornucopianism | The belief that the growth of populations and economies can continue forever, unencumbered by physical limits (Chapter 1).

crisis of governability | The clash of two trends: one being the growing demand for good governance (justice, equity, fairness, accountability, etc.) and the second the decreasing quality of governments in many countries, to the point of kakistocracy (Chapter 21).

criterion-based human rights | Human rights that can be evaluated according to universal criteria such as those found in the Universal Declaration of Human Rights (Chapter 4).

cultural capital | Pierre Bourdieu described three states of cultural capital: 'long-lasting dispositions of mind and body' (embodied state), cultural goods (objectified state) and original properties associated with certain institutions (institutionalised state). Cultural capital, its display and exchange, plays an important role in the social dynamics of schools (Chapter 21).

cultural relativism | The belief that any culture's values and beliefs are as valid as those of any other culture. This belief gained acceptance as a principle as people became more critical of traditional colonialism and its wholesale oppression of Indigenous cultures worldwide. It went hand in hand with moral relativism, which is equally unhelpful for anyone searching for ways to strengthen human rights (Chapter 15).

cultural safety | "[A] condition perceived by vulnerable recipients (patients or students) that inspires them with the confidence that no psychological harm will come to them in their dependent situation. It includes all the provisions and considerations contributed by the practitioner in meeting that requirement but it is defined by the beholder" (Lautensach & Lautensach, 2011b) (Chapter 15).

customary international law | Unwritten international law that emerges from a pattern of behaviour of states (Chapter 18).

cyber attack | Any type of offensive maneuver that targets computer information systems, infrastructures, computer networks or personal computer devices (Chapter 18).

de facto socio-economic segregation | Segregation in reality, though not by law. This situation characterizes the relationship between Protestant and Catholic communities in Northern Ireland today, and persisted in the United States even after legal racial segregation was struck down by the US Supreme Court (Chapter 19).

dead zone | An area in which oxygen levels in the water are too low to support most marine life (Chapter 10).

declarations | Not legally binding, but as a practical matter often have referential or moral authority that may create de facto political force (Chapter 2).

defaunation | The loss of animals in a bioregion, particularly large animals high on the food web; this can refer to individuals, populations or species (Chapter 12).

degrowth | The strategy to decrease the impact of an economy to the extent that it does not exceed the maximum sustainable threshold of ecological support systems. This concept only refers to growth that requires physical resources subject to such limits, not other, non-material forms of growth such as learning (Asara et al., 2015) (Chapter 3).

demographic momentum | The growth rate of a population at any given time will reflect its current age structure (Chapter 12).

demographic transition | The change a society makes, with the help of modern sanitation, vaccination, and other public-health-related procedures, when it goes from having a high birth rate and a high death rate to having a low death rate and subsequently a low birth rate (Chapter 12).

deoxygenation | Refers a change in to aqueous solutions (water) where the concentration of dissolved oxygen drops as a result of warming or other changes (Chapter 12).

disability-adjusted life year (DALY) | Frequently used to measure deaths at different ages and disability. One DALY basically equates one lost year of 'healthy' life (Chapter 5).

divestment | The movement of invested funds away from a specific industry or business (Chapter 9).

domestic crime | Offences that occur within a single national jurisdiction (Chapter 13).

dualistic thinking | Either/or thinking that allows for no shades of gray, often with an implied good/bad polarization (Chapter 11).

Earth Charter | An ethical framework for building a just, sustainable and peaceful global society in the 21st century; it seeks to inspire in all people a new sense of global interdependence and shared responsibility for the well-being of the whole human family, the greater community of life and future generations (Chapter 16).

ecological integrity | An ecosystem has integrity when it is deemed characteristic for its natural region, including the composition and abundance of native species and biological communities, rates of change and supporting processes. In plain language, ecosystems have integrity when their native components (plants, animals and other organisms) and processes (such as growth and reproduction) are intact (Bosselmann, 2010) (Chapter 3).

ecological marginalization | The displacement of disempowered groups in a society towards lands of poor productivity, caused by the capture of scarce resources by more powerful sectors of society; because those lands often cannot support large populations, the effect is ecological deterioration and sometimes violent conflict and displacement (Chapter 10).

ecological rationality | Holistic rationality that grasps our human place within the biosphere and makes decisions compatible with the long-term survival of life on Earth (Chapter 11).

ecological security | Securing the integrity of ecological support structures (ecosystems and the 'services' they supply) for the purpose of supporting the ecological pillar of human security (Chapter 16).

ecosystem | A dynamic complex of plant, animal and microorganism communities, and the nonliving environment interacting as a functional system (Alcamo et al., 2003) (Chapter 3, Chapter 5).

ecosystem services | The benefits humanity obtains from ecosystems. These include provisioning services such as food and water; regulating services such as regulation of floods, drought, land degradation, and disease; supporting services such as soil formation and nutrient cycling; and cultural services such as recreational, spiritual, religious and other nonmaterial benefits (Alcamo et al., 2003) (Chapter 3, Chapter 17).

emergence | The appearance of large-scale patterns of organization not observable on inspection of the isolated parts of a complex system (Chapter 11).

empathy | The ability to 'feel one another's feelings'; to resonate emotionally with others (Chapter 11).

environment | The set of circumstances or conditions, especially physical conditions, in which a person or community lives, works, develops, etc., or a thing exists or operates; the external conditions affecting the life of a plant or animal (SOED, 2007) (Chapter 3).

Environmental Performance Index (EPI) | This index by Yale University and Columbia University, in collaboration with the World Economic Forum, ranks countries on 24 performance indicators. These run across 10 issue categories covering environmental health and ecosystem vitality (Chapter 5).

environmental refugee | A person who no longer gains a secure livelihood in their traditional homelands because of what are primarily environmental factors of unusual scope (Myers & Kent, 1995: 18); this status is not yet recognised by UNHCR as a refugee (Chapter 7).

environmental security | Defined as security from "critical adverse effects caused directly or indirectly by environmental change" (Barnett, (2007, p. 5) (Chapter 1).

equity and equality | Equity refers to equal access to opportunity and services according to individual needs, whereas equality is the principle of treating every person the same. Only the former takes into account differences in opportunity (Chapter 9).

erga omnes | A Latin phrase used in international law as a legal term to describe obligations owed by states toward the community of states as a whole (Chapter 6).

ethnocentric | Evaluating other peoples and cultures based on the values and understandings of one's own culture (Chapter 4).

exponential growth | Any increase of a variable over time in which the increments steadily increase, such as the compound interest of an investment or a growing population of cells that divide in two at a constant rate. In some cases the doubling time remains constant; in others it, too, shortens over time (Chapter 10).

externality | The cost or benefit of an action that is not felt by the actor in the short term. The number of externalized costs depends on the extent to which the actor's thinking is informed by short-term self-interest (Chapter 10).

extinction debt | Can occur when a species is reduced to few remaining members that find it difficult to reproduce (due partly to the Allee effect); in spite of the fact that the species still exists, it is already doomed to disappear (Chapter 12).

fallacy of misplaced concreteness | Mistaking the abstract for the concrete, taking the concept itself for the underlying reality from which it is derived (Chapter 11).

food security | There are multiple potential definitions (Weiler et al., 2014). One, in relation to human security, is "Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life" (FAO, 2016) (Chapter 17).

food web | Describes the trophic interactions between the species in an ecosystem (producers, consumers, decomposers). While formerly often referred to as the 'food chain,' the recognition that interactions seldom form chains, but rather, are normally interlinked in a highly complex web makes 'food web' a more accurate term (Chapter 12).

footprint | Usually referred to as the 'ecological footprint,' this is the area of productive land (and water) required to meet the demands of a human individual (or group, community, country or global population); its normalized unit is global hectares (gha). It is often compared with the biocapacity of the available territory in order to determine whether overshoot has occurred (Chapter 12).

formal dwelling | In South Africa today, a structure that was originally built according to government approved plans, including much of the housing in townships (Chapter 19).

Four Pillars Model of human security | Sociopolitical security, economic security, health-related security and environmental security (Chapter 1).

fragile state | A state in which a country is unable to guarantee order, security or the well-being of its citizens (Chapter 8).

Fragile States Index (FSI) | The index, produced by The Fund for Peace, includes 12 conflict risk indicators used to measure the condition of a state at any given moment. The index examines four areas – cohesion, economic, political and social and cross-cutting – with three indicators for each of these. Three primary data streams (quantitative, qualitative and expert validation) are triangulated and subjected to critical review to calculate the final FSI scores (Chapter 5).

freedom of religion | As noted in the Universal Declaration of Human Rights, the right to believe and practise one's religion in private and in public, and the right to change one's religion (Chapter 4).

Geneva Conventions (1949) | Four treaties which set the legal standards for the protection of victims of war. In 1977, two Protocols were drafted to extend the provisions of the 1949 Conventions to non-traditional warfare (Chapter 18).

genocide | Conceived in 1944 by a Polish-Jewish lawyer, Raphael Lemkin, in his treatise Axis Rule in Occupied Europe, to denote the destruction of a nation or an ethnic group by means of a coordinated plan of different actions which are aimed at the destruction of the essential foundations of national groups that will eventually bring about the annihilation of the groups themselves (Chapter 6).

global environmental governance (GEG) | GEG is global governance as it relates to the environment; its fundamental principles are democracy, equity and care. The general aim of GEG is to protect, provide and prevent as follows: 1. protect, conserve and sustain the global environment for human flourishing and for the inherent value of nature; 2. provide the necessities of life for human and social development, including providing stability and security to human individuals and societies, as well as the entire community of life, for current and future generations; 3. prevent harm, inequity and suffering as well as the crossing of catastrophic tipping points for life on Earth (Chapter 20).

global governance | As a single, global governing body is absent or limited, global governance takes the shape of local, national and international individuals and institutions, governmental and non-governmental, that seek to influence either local behaviour that has a global impact or collective global behaviour that has a local, regional or global impact. The heightened role of individuals and non-governmental organizations in helping shape global behaviour is unique to global governance (Chapter 20).

Global Peace Index (GPI) | This Institute for Economics and Peace index ranks independent states and territories according to their level of peacefulness. It comprises 23 indicators of the absence of violence or fear of violence in three thematic domains: ongoing domestic and international conflict, the level of societal safety and security, and the degree of militarization (Chapter 5).

globalisation | Defined by Roland Robertson (1992, p. 8) as "the compression of the world and the intensification of consciousness of the world as a whole" (Chapter 4).

governance | An amorphous term that generally implies social constructs created to govern, or regulate, human behaviour. They are rooted in societal norms and values, sometimes translated into institutions and laws, and implemented by individuals, families, societies, governments, and non-governmental organizations. Local and national governance typically refers to hierarchical government-sanctioned institutions and the rule of law. Governance, when done for just purposes (as opposed to totalitarian, authoritarian or fascist governance models), focuses on the fundamental relationships needed for harmony, for stability, for security: harmony between individuals living together with other individuals and harmony between societies that live together with other societies (Chapter 20).

grantability of a right | Whether a right is grantable is determined by the extent that its exercise is free from dependence on physical resources. For example, the right to self expression depends mostly on the amount of tolerance a society is prepared to extend towards individual members and their personal ambitions and aspirations. This renders it quite grantable. In contrast, the right to clean water depends mainly on how much water is locally available, how many people are using it (equitably) and how much infrastructural capacity exists for wastewater processing and recycling. These dependencies render it not grantable in principle (Chapter 15).

grave breaches of the Geneva Conventions and Protocols | A special category of violations which are considered so serious that all states, regardless of where they were committed or by whom, have a duty to apprehend the perpetrators and to prosecute them (Chapter 6).

grounded legitimacy | Coined by Kevin Clements, this term describes values, beliefs and practices that are grounded in traditions, customs and folkways, but capable of legitimating modern political, economic and social institutions (Chapter 8).

health security | The activities that may minimize risks or impacts of acute events on the collective health of a population living within a defined region (Chapter 17).

hemispheric asymmetry | The lateralization of function between the two cerebral hemispheres of the brain (Chapter 11).

hierarchy of needs | A concept of Abraham Maslow (1943), who argued that human needs can be understood hierarchically, and that the 'higher' needs are only pursued if and when the more basic needs are satisfied (Chapter 4).

hors de combat | Out of action due to injury or damage (Chapter 2).

Hothouse Earth scenario | This scenario is based on a global runaway greenhouse effect that may well render the planet uninhabitable to all but microorganisms. The planet Venus is thought to have undergone such a process (Chapter 9).

hudna | In the traditional Palestinian peacemaking process, *hudna* (an Arabic word) is a period where parties to the conflict avoid encountering one another completely, kind of a 'cooling off' period before they enter into the process of Sulha to bring closure to the conflict and injuries that may have followed from it (Chapter 19).

Human Development Index (HDI) | The UN Development Programme's HDI provides a comparative analysis of international human development indicators relevant to human security. This gives a composite measure of a country's average achievements in three basic aspects of human development: health, knowledge and income (Chapter 5).

human rights | Basic rights and freedoms provided for in international treaties since 1945 (Chapter 18).

human security | The proper referent for security should be the individual rather than the state. In this paradigm a people-centered view of security is necessary for national, regional and global stability (Chapter 8).

human trafficking | The recruitment, transportation, transfer, harbouring or receipt of persons by improper means (force, abduction, fraud or coercion) for improper purposes, including forced labour or sexual exploitation (UN, 2000, article 3, para A) (Chapter 13).

humanitarian intervention | A controversial extension of the just war theory to one that legitimises war when it is prosecuted for reasons of human security, e.g. protecting the human rights of people in another country or liberating them from oppressive rulers (Chapter 4).

ideational | Consisting of or relating to ideas (Chapter 16).

illiberal democracy | A term emphasized by Zakaria (1997) that describes the rather sudden post-Cold War rise of states that held elections and declared themselves 'democracies,' but remained illiberal or not free (Chapter 14).

Indigenous peoples | The first or aboriginal inhabitants of an area. Sometimes added to this definition is the establishment of a state by non-aboriginal inhabitants, especially since the beginning of European imperialism in the 16th century, although many discussions today among Africans and others do not consider the establishment of a 'settler' state by Europeans a defining quality of being Indigenous (Chapter 19).

Indigenous-settler relations | Relations between the aboriginal inhabitants of an area and the dominant society of a state created by European imperialism (Chapter 19).

infinite substitutability | The assumption that any resource can be replaced by an alternative resource once its price renders it unattractive to consumers (Chapter 10).

informal housing | In South Africa, makeshift or improvised housing not built according to an approved plan (Chapter 19).

Integrated Food Security Phase Classification (IPC) | Integrates complex analyses of food insecurity and malnutrition situations (Chapter 17).

intentional homicide | The intentional killing of one person by another (Chapter 5).

intergenerational justice | The notion that people who are currently alive have a moral duty to care about the welfare of future generations and to limit their claims on critical resources (Chapter 10).

internally displaced person (IDP) | A person who was displaced within their country of residence as a result of conflict, persecution or natural disaster (Chapter 7).

International Court of Justice (ICJ) | Principal organ of the United Nations that renders legal decisions in disputes arising among nation-states. The ICJ may also issue advisory opinions at the request of the UN General Assembly or Security Council (Chapter 18).

international crime | Offences that are recognised in international law and against the world community, not necessarily involving the profit motive (Chapter 13).

International Criminal Court (ICC) | Established in 2002 as the world's first permanent court with the authority to prosecute individuals who commit serious offences (Chapter 18).

International Criminal Tribunal for Rwanda (ICTR) | Ad hoc war crimes tribunal established by the UN Security Council in 1994 to prosecute human rights violations resulting from the 1994 Rwandan genocide (Chapter 18).

International Criminal Tribunal for Yugoslavia (ICTY) | Ad hoc war crimes tribunal established by the UN Security Council in 1993 to prosecute war crimes associated with the series of wars in the former Yugoslavia (Chapter 18).

International Military Tribunal (IMT) | Tribunals established in Nuremberg and Tokyo in 1945 to prosecute German and Japanese war criminals (Chapter 18).

intifada | An uprising of Palestinians against Israeli military occupation. The first took place in 1987 in Gaza and the West Bank; the second in 2000 (Chapter 19).

Irish Republican Army (IRA) | The paramilitary movement in the 19th and 20th centuries aimed at uniting Northern Ireland with the Republic of Ireland (Chapter 19).

Jevons paradox | A phenomenon in which, in the face of continually improving technological efficiencies, shows us doing nothing but consuming more and more (Chapter 12).

jus ad bellum | Latin for 'law in advance of war,' this term describes laws that regulate the right of states to enter into war (Chapter 18).

jus cogens | A Latin term that refers to a compelling, or highest, law which cannot be violated or abrogated by any other country (Chapter 6).

jus in bello | Latin for 'law during war', this term refers to legal principles that govern the conduct of soldiers in time of war (Chapter 18).

kakistocracy | From the Greek word *kakistos*, meaning "the worst," refers to the phenomenon of a government being recruited from the ranks of those least qualified, leading to governmental failure through incompetence, negligence or hidden interests. Worldwide, kakistocracies seem to have increased in number since the beginning of the 21st century (Chapter 21).

kastom | *Kastom* is a pidgin word used to refer to traditional culture, including religion, economics, art and magic in Melanesia (Chapter 8).

Kellogg-Briand Pact (1928) | Treaty that limited the right of states to go to war (Chapter 18).

keystone species | A keystone species plays a crucial role in how a particular ecosystem functions without which the ecosystem would collapse into a fundamentally different form or cease to exist (Chapter 9).

lethal raiding | A form of intergroup conflict observed in chimpanzees whereby a 'raiding party' from one group attacks and attempts to kill members of another group (Chapter 11).

liberalism | A term that refers to the classical notions of political freedom. In Western liberal democracies, political freedom has been closely tied to the protection of the individual rights of citizens as might be defined in the French *Déclaration des droits de l'homme et du citoyen* or the US Bill or Rights. It contains the ideals of individualism as well as of personal responsibility, as in Rousseau's first line in The Social Contract (1762): "Man is born free; yet everywhere he is in chains." Ultimately, the democratic ideal is that liberalism is an expression of the local citizenry, supported by local governing institutions (Chapter 14).

livelihoods | There are many debated definitions (Carr, 2015), but the classic is "A livelihood comprises the capabilities, assets (including both material and social resources) and activities for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base" (Chambers & Conway, 1992, p. 6) (Chapter 17).

London Charter (1945) | Treaty that established the post-World War II war crimes tribunals in Nuremberg and Tokyo (Chapter 18).

LUCA | The hypothesized Last Universal Common Ancestor (LUCA), marking the origin of life on Earth at about 3.5 million years ago, from which all other life forms evolved. This is sometimes depicted at the centre of the tree of life which displays relationships among living organisms outlined on the basis of genetic similarities (Chapter 11).

marginalized communities | Communities or groups that exhibit significantly lower socioeconomic status, political representation, cultural status or other forms of empowerment than the rest of their social environment (Chapter 9).

Martens Clause | Named after Fyodor Martens, a Russian Diplomat who introduced it at the 1899 Hague Conference, refers to principles of humanity that must guide the conduct of belligerents during armed conflict and the clause now also forms part of the Genevan Conventions and Protocols and several other treaties (Chapter 6).

meso-scale | Any intermediate scale that can be located between larger and smaller systems or scales (Chapter 17).

metaphysical metaphors | Imagery derived from our experiences of living in the world that we imaginatively project into the deep structure of reality, beyond what physics can observe, in order to explain to ourselves 'how it all works' (Chapter 11).

mirror neurons | A select set of nerve cells in the brain that are activated not only when an individual moves, senses a touch or experiences an emotion, but also when that individual perceives another organism moving, sensing or feeling; they 'mirror' the actions or reactions of the other (Chapter 11).

mitigation and adaptation | Strategies for addressing climate change based on the assumption that some climate change is now inevitably taking its course. Mitigation focuses on lessening the impacts while adaptation focuses on learning to live with them (Chapter 9).

nationalists (Northern Ireland) | Those in Northern Ireland who want the whole of the island of Ireland to be one state (Chapter 19).

natural capital | The stock of ecosystems in a region that provides resources and services on a sustainable basis; it also includes all non-renewable resources such as fossil fuels and minerals (Chapter 21).

natural law | Laws that are found in either nature or religion (Chapter 18).

negative peace | The cessation of hostilities or armed conflict (Chapter 19).

neoclassical economics | This school of thought in economics is based on three defining elements: methodological individualism, utility maximization and market equilibrium (Chapter 12).

neoliberalism | A contemporary movement that aims at the liberalization of markets, free trade and, generally, removal of 'the state.' In the contexts of developing countries, the term is generally used to refer to the ideological fervour of economic development practitioners that began in the 1980s (Chapter 14).

neural network | Interconnected clusters of neurons whose coordinated firing produces specific results under certain circumstances (Chapter 11).

non-intervention principle | Restriction on the right of states to go to war to instances of self-defence, collective self-defence and after Security Council authorization (Chapter 18).

norm-based human rights | Human rights that can be evaluated according to whether or not they improve on an existing situation (Chapter 4).

Northern Ireland Women's Coalition (NIWC) | A cross-community political party in Northern Ireland co-founded in 1996 by a Catholic academic and Protestant social worker and active until 2006 (Chapter 19).

NPP | Net primary productivity (NPP), a measure of the rate of formation of plant biomass globally every year, representing the total amount of solar energy captured by photosynthesis after what is utilised by plant cellular respiration has been subtracted from the gross amount produced (Chapter 11).

nuclear weapon | Considered a *weapon of mass destruction (WMD)*, nuclear weapons were first used at the close of the Second World War by the United States against Japan. Today, the spread of nuclear weapons is one of the most dangerous trends in world politics (Chapter 18).

ontologically objective | Having a mode of existence that is independent of what human beings may believe, desire or otherwise intend regarding it (Chapter 11).

ontologically subjective | Having a mode of existence that is entirely dependent upon human consciousness, such as, beliefs, desires and intentions (Chapter 11).

ontology | The branch of philosophy that addresses issues of existence and reality (Chapter 11).

Operation Defensive Shield | The Israeli government's massive military crackdown beginning in March 2002 in response to the second intifada that began in 2000 (Chapter 19).

Orientalism | A way of studying the Orient (principally Anatolia, the Middle East and North Africa) from a European perspective, criticised by Edward Said and others for homogenizing its object of study and making the reality fit the image (Chapter 4).

overshoot | The condition in which a population uses more resources from the available environmental support structures than what those structures can sustainably provide in the form of 'ecosystem services.' This can be viewed as overpopulation or over-consumption or, more accurately, a combination of both (Chapter 1, Chapter 3).

Palestinian Liberation Organization (PLO) | Created at the conclusion of an Arab League meeting in 1964 as an organization recognized as representing the Palestinian people with the goal of liberating them from Israeli rule through armed struggle (Chapter 19).

paradigm | A model or pattern; a framework for structuring thought (Chapter 11).

peace process | Prior to the second half of the 20th century, armed conflicts among European states normally ended with a peace treaty predicated on the surrender of the weaker, and thus defeated, party. In the second half of the 20th century, the term 'peace process' came into use when rather than surrender, parties to a conflict negotiated terms acceptable to both to cease the armed conflict without a formal surrender (Chapter 19).

peacekeeping operation (PKO) | A multinational force authorized by an international organization and mandated to keep the peace in a specific country or region (Chapter 18).

political hybridity | Political institutions and processes which blend or combine traditional and modern forms of governance and legitimation (Chapter 8).

positive law | A law that results from the consent of nation-states (Chapter 18).

positive peace | In a post-conflict environment, efforts focused on addressing and remedying underlying issues of social and economic inequalities or injustices in the living conditions and relationship between parties to the former conflict (Chapter 19).

positive-sum | Mutual benefit (Chapter 14).

ppm | Unit of concentration, parts per million, a common unit in quantitative chemical analysis (Chapter 3).

precautionary principle | This principle states that, given the fact that scientific evidence is bound to remain forever incomplete, serious dangers concerning large parts of populations ought to be addressed not by focussing on the most probable benefits, but with the goal of causing the least probable harm (French, 2000, p. 113) (Chapter 21).

prima facie | A Latin phrase that, in legal practice, means 'at first sight' or taken at face value (Chapter 6).

procuring efficiency | The cost at which a unit of a resource can be extracted, processed, or otherwise brought to market; it is often set in ratio to the financial return from the sale of the unit (Chapter 10). See also, the discussion on peak oil in Chapter 3.

Progressive Unionist Party (PUP) | Particularly in its early history, a primarily working class party in Belfast, Northern Ireland linked to several pro-union paramilitaries and supporting continued union of Northern Ireland with Great Britain (Chapter 19).

RAMSI | The Regional Assistance Mission to Solomon Islands (RAMSI) is a partnership between the people and Government of Solomon Islands and 15 contributing countries of the Pacific region. Its objective is helping the Solomon Islands to lay the foundations for long-term stability, security and prosperity (Chapter 8).

realism | The dominant theory in International Relations that posits that states exist in a condition of anarchy, resulting in a perpetual struggle for power and the pursuit of their national interests. As a result, states are self-interested and must be self-reliant in order to ensure their survival (Chapter 7).

reflexivity | The ability to reflect back upon oneself, including upon one's own beliefs, motivations and actions (Chapter 11).

refugee | Any person who is recognised by the UNHCR as unable to return to the country of their citizenship because they fear prosecution and physical harm on the basis of race, religion, nationality, membership of a particular social group or political opinion (Chapter 7).

resilience | The capacity of a system to cope with change, shocks and disturbances and continue to develop; the ability of a system to deal with disturbance while reorganizing so as to maintain the same overall structure, function and feedbacks (Chapter 9, Chapter 11).

Responsibility to Protect (R2P) | A new concept stating that if governments fail in their responsibility to protect their own citizens, the responsibility is transferred to the international community (Chapter 18).

retributive justice | A system of justice based on the punishment of convicted criminal offenders rather than rehabilitation and/or restoring wholeness to victims and to the relationship between victim and perpetrator (Chapter 19).

right | A moral or legal entitlement to have or obtain a particular good or service or treatment, or to act in a certain way. All rights come with obligations and are governed by limits, which renders them particularly contestable (Chapter 15).

Rome Statute | Refers to the multilateral treaty that established the International Criminal Court (Chapter 6).

rooted cosmopolitanism | The idea that we can be informed and rooted by our local experiences without losing sight of our global place or our global relationships (Chapter 20).

SDG 13 | The thirteenth of the United Nations Sustainable Development Goals which aims to mobilize US $100 billion annually by 2020 to decrease the global carbon footprint and to promote climate change (Chapter 9).

Se débrouiller | In French-speaking African contexts, a term that refers to the desperate efforts of all people to 'get by'; as described by Michela Wrong (2002), to do whatever it takes to survive (Chapter 14).

secession | A new state is formed by withdrawing from an existing state. In the case of former Yugoslavia, Slovenia was the first republic to secede, which led the Yugoslav government to send national army to use force to prevent the secession. As the other republics announced secession the Yugoslav war or wars of secession unfolded between 1991-1995 (Chapter 19).

securitisation | The accusation of imparting security meaning on too many human needs and aspirations that lie outside of the areas of international relations, law enforcement and jurisprudence; this has been suggested as a criticism of comprehensive models of human security, particularly by members of the Copenhagen School (Chapter 1).

Security Council | A principal organ of the United Nations which is empowered to authorize peacekeeping operations, mandatory economic sanctions and military intervention. The five World War victors (China, France, Russia, United Kingdom, United States) have a permanent seat on the Council and the power to veto any of the body's resolutions (Chapter 18).

self-defence | The legal right of states to use military force in defence of their territory and citizens. Since 1945, self-defence is limited to responses to armed attacks on the territory of the state (Chapter 18).

self-organization | The spontaneous emergence of order generated within an energetically open, complex system, largely by means of internal, informational feedback loops (Chapter 11).

seven dimensions | The seven dimensions of human security include economic, food, health, environmental, personal, community and political security; in their totality they cover the same concepts as the four pillars (UNDP, 1994) (Chapter 1)

shanty towns | In the case of South Africa, improvised informal housing has led to the creation of whole towns of such structures in a squatter or settlement area now called shanty towns (Chapter 19).

Shin Bet | The Israeli national security agency with responsibility for counter-terrorist and counter-espionage intelligence and activities (Chapter 19).

Sinn Féin | One of the two largest parties in the Northern Ireland Assembly, Sinn Féin is historically affiliated with and considered the political arm of the Irish Republican Army (Chapter 19).

social construction | The process whereby we humans create collectively shared, ontologically subjective conceptual structures by means of language and other symbols, and organize our social institutions and our patterns of cooperative activity around them (Chapter 11).

Social Democratic and Labour Party (SDLP) | A nationalist political party in Northern Ireland that advocates for reunification with the Republic of Ireland and in 2019 entered into a partnership with the major party in the Republic of Ireland, Fianna Fáil (Chapter 19).

social-ecological systems | A system that represents both biogeophysical units and social actors and institutions (Chapter 17).

sovereignty gap | The incapacity of many states in the developing world to protect citizens and extend basic services to the whole population while being acknowledged by the international community as the sole effective and legitimate authorities in particular places (Chapter 8).

species | A group of individual organisms or populations that share an adequate number of morphological characteristics, that are able to generate fertile progeny with each other, and that share an adequate amount of genetic information (Chapter 12).

state capacity and effectiveness | The capacity and ability of state institutions to deliver the basic economic, social and political functions of governance effectively and legitimately (Chapter 8).

stateless | Any person who is not recognised as a national (or a citizen) of any state in the world. They are unable to obtain citizenship documents from their state of residence because their presence resulted from a conflict, displacement or disaster (Chapter 7).

status quo bias | A bias in perception or in preferences that favours those conditions that one has become accustomed to; it is seen with individuals, groups and entire cultures (Chapter 9).

strong sustainability | Based on the concentric spheres model of social systems being nested within the biosphere, it proposes that social and economic activities are absolutely dependent on sustained support from ecosystem services (Chapter 16).

submerged Lockean consensus | A term introduced by Louis Hartz (1955) to refer to the overwhelming yet unstated agreement among US (and other Western) citizens that one of the primary functions of all local governments is to "protect the things we work for," as classically defined by John Locke (1690) (Chapter 14).

sulha | A traditional Palestinian method of conflict resolution or peacemaking mediated by a traditionally trained peacemaker. Some people would like to apply the method to resolve the Israeli-Palestinian conflict today (Chapter 19).

sustainability | Living within the limits set by global geophysical processes, by ecological support structures and their capacities, by social groups and interactions, and by the basic needs of all living organisms, including *Homo sapiens*; our favourite corollary, attributed to Steve Goldfinger, is "converting resources into junk no faster than nature can convert our junk into resources" (Chapter 1).

sustainable development | A pattern of economic growth in which resource use is aimed at meeting human needs while preserving the environment so that these needs can be met in the present and through time (Chapter 8).

systems thinking | Thinking in terms of the multiple nonlinear interactions involved in the behaviour of complex systems (Chapter 11).

term dead | An area in which oxygen levels in the water are too low to support most marine life (Chapter 10).

terrorism | In accordance with the Geneva Conventions and Security Council resolution 1566 (2004), the UN refers to terrorism as actions intended to cause death, or serious bodily harm, to civilians or non-combatants when their purpose is to intimidate a population, or to compel a government or an international organization to do or to abstain from doing any act (Chapter 5).

The Troubles | A name given to the violent conflict between Protestants and Catholics in Northern Ireland involving attacks by paramilitaries on both sides and a British military occupation of Northern Ireland, beginning in the late 1960s and ending with the Good Friday Agreement of 1998 (Chapter 19).

theory of mind | The ability to understand another's point of view (Chapter 11).

three pillars of sustainable development | This model proposes that sustainability rests on the three pillars of economic, social and environmental sustainability. It implies that the three are equal in their strength and significance, which misrepresents the precepts of basic ecology (Chapter 16).

townships | Specific areas designated for occupation by Blacks and 'Coloureds' under the South African apartheid legal regime, which ended in 1994 (Chapter 19).

transnational crime | Offences "whose inception, perpetration and/or direct or indirect effects involve more than one country" (UNODC, 2002, p. 4); often used synonymously with 'global crime' (Chapter 13).

Treaties of Westphalia (1648) | Treaties ending the Thirty Years' War (1618-1648) which formally established the nation-state system and marked the onset of modern international law (Chapter 18).

treaty law | Written binding agreements among states (Chapter 18).

Truth and Reconciliation Commission (TRC) | A quasi-judicial commission tasked with assessing applications for amnesty under the post-apartheid government for the purpose of promoting restorative justice in the new democracy (Chapter 19).

ubuntu | An ethic — or a set of values — of care and interdependence from tribes across Southern Africa. Roughly translated as 'I am because we are,' it places our identity, our humanity, within our relationships to others. This is not at the expense of the diversity of local people, places and cultures, but through that diversity. Ubuntu has been used as a legal and governance principle to heal broken relationships through reconciliation and restorative justice (Chapter 20).

Ulster Democratic Party (UDP) | The loyalist (unionist) political party created in 1981 by the Ulster Defence Association, a paramilitary and vigilante organization in Northern Ireland (Chapter 19).

Ulster Unionist Party (UUP) | In 2019 the fourth-largest political party in Northern Ireland, but the ruling party between 1921 and 1972 (Chapter 19).

Ulster Volunteer Force (UVF) | A major party to the conflict during the Troubles that lasted nearly 30 years, the Ulster Volunteer Force was a loyalist paramilitary group (Chapter 19).

unionists | Those in Northern Ireland who support continued union with the United Kingdom (Chapter 19).

United Nations (UN) | International organization established after World War II (Chapter 18).

United Nations Charter (1945) | The international treaty that founded the United Nations (Chapter 18).

Universal Declaration of Human Rights (UDHR) | A resolution adopted by the United Nations General Assembly in 1948 which outlines basic and fundamental human rights (Chapter 18).

utility | The benefit or welfare reaped by the members of an economic unit that share or inhabit a particular system of resource use. Different economic systems are designed to maximise either average utility or total utility (Chapter 12).

water security | The capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability (UNU-INWEH, 2013) (Chapter 17).

weak sustainability | Based on the concentric spheres model of social systems being nested within the biosphere, it proposes that gains in economic capital can compensate for declines in natural capital (Chapter 16).

Weberian state | The state in Max Weber's definition is a community successfully claiming authority on the legitimate use of physical force over a given territory. This legitimacy is either rational legal, traditional or charismatic. A Weberian state is characterised by the rule of law and state institutions divided into executive, representative, judicial, administrative and coercive agencies (Chapter 8).

West Bank | An area of former British Palestine that borders Jordan on the east and the Green Line separating it from Israel on the west, north, and south. Three areas were designated under the Oslo Accords with Area A under full Palestinian control, Area B internally controlled by the Palestinian Authority, and Area C under full Israeli control. Many refer to the entire territory including all areas a currently under Israeli military occupation since movement out of Area A into B or C is controlled by the Israeli government under the terms of Oslo (Chapter 19).

white supremacist government | Any government that implicitly or explicitly endows people of European descent with privilege and marginalizes (non-European) people of colour is a white supremacist government, such as South African under apartheid or the United States under Jim Crow laws (Chapter 19).

zero-sum | 'I-win-you-lose'; we have limited resources (Chapter 14).

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