

RESEARCH METHODS IN CRIMINOLOGY: INTEGRATING WESTERN AND INDIGENOUS APPROACHES IN THE CANADIAN CONTEXT



*Shereen Hassan, Rochelle Stevenson, Carroll Boydell,
and Wendelin Hume*

Research Methods in Criminology

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Territorial Acknowledgement

Author Acknowledgement

Shereen Hassan, Rochelle Stevenson, Carroll Boydell, and Wendelin Hume

The editors of this resource live and work in various regions of British Columbia, including Coquitlam, Langley and Kamloops, and also North Dakota. Shereen Hassan worked from her home in Coquitlam, which is located on the traditional, ancestral and unceded territory of the *kʷikwə́ləm* (Kwikwetlem First Nation). Langley, where Carroll resides, is on the traditional, unceded territory of the *q̓í:cəy̓* (Katzie), *q̓w̓ a:n̓l̓ ǎ́ n̓* (Kwantlen), *Mathxwí* (Matsqui), and *SEMYOME* (Semiahmoo) First Nations. Kamloops, where Rochelle resides, is located on the traditional territory of the *Tk'emlúps te Secwépemc*, which is part of the unceded ancestral lands of the Secwépemc Nation. Lastly, Wendelin, one of the editors and also the Indigenous consultant for this resource, lives in North Dakota, which is the ancestral lands of the Ojibwe and Oyate people. We thank the Indigenous peoples who continue to live on these lands and care for them, along with the waters and all that is above and below.

In creating Open Education Resources such as this, we the editors acknowledge the importance of providing educational resources that incorporate and integrate Indigenous ways of knowing and being. We are grateful for the wisdom and insight of the Indigenous authors and co-editors that we have had the honour of working with on this project. Thanks to colleagues at Kwantlen Polytechnic University, Thompson Rivers University and the University of North Dakota who are also committed to Truth and Reconciliation in the many areas of their work. We continue to embrace a decolonial lens to the study of crime and deviance, and to support students by providing such free and accessible resources. In particular, we recognize that Indigenous students face additional barriers to post-secondary education as a result of the ongoing harms of colonization.

Publisher Acknowledgement

This book was published by Kwantlen Polytechnic University, whose campuses are located on the unceded traditional and ancestral territories of the *x̣ẉməθḳẉəỵəm* (Musqueam), *q̓í:cəy̓* (Katzie), *SEMYOME* (Semiahmoo), *scəwaθən* (Tsawwassen), *q̓íq̓éy̓t* (Qayqayt), *kʷikwə́ləm* (Kwikwetlem), and the lands of the *q̓w̓ a:n̓l̓ ǎ́ n̓* (Kwantlen) First Nation, which gifted its name to this university. Resources from the lands in their territories were used in the publication of this book.

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This Open Education Resource (OER) is the result of the tireless commitment and collaborative work of a team of faculty editors from Kwantlen Polytechnic University, Thompson Rivers University, and the University of North Dakota. Ultimately, though, it is the needs of our students for accessible and culturally relevant research learning that has provided the primary source of motivation for the development of OER resources such as this.

A number of people generously provided their expertise and feedback at various stages throughout the creation of this text. Our heartfelt thanks to Chris Giles (KPU) and Garth Davies (SFU) for their expert knowledge and contributions in the area of quantitative data analysis; to Christina Lennox (Capilano University) for their expertise and editorial consultation on Indigenous frameworks; to Dr. Wendelin Hume (University of North Dakota) for her Indigenous expertise and consultation on the entire text; and to Amanda Grey (KPU) for her commitment to guide us and to provide OER expertise at every stage of the development of this open education resource. We also want to thank Mary Lou (KPU student) for her efforts to create accessible graphics for the text, Nadja Lepojevic (KPU student) for her efforts in compiling openly licensed images and summarizing literature, Morgan Schell-Ware (TRU student) for their work in compiling additional open access learning resources for each chapter, and Dr. Jennifer Armstrong (Langara faculty) and Micael Kuate (Langara student) for their work in creating some of the ancillary materials for the book. A special thanks to Chris Burns (KPU) for assisting with citations, Dr. Ari Goelman (KPU) for his expert consultation on research methodologies and Dr. Isabel Scheuneman Scott for her expert consultation on Indigenous research ethics.

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About the Editors

Dr. Shereen Hassan **Kwantlen Polytechnic University**

I am a cis-gender female and the first Canadian-born member of my family, the rest of whom immigrated from Egypt to B.C. in the 1970s. My family home was very close to the Pickton farm, in fact. I vividly remember stories of after-parties being held on his property in the barn, where alcohol and drugs were served after hours.

Growing up in Port Coquitlam in the 70s and 80s was challenging; we were the only family of colour in our neighbourhood for a very long time. Over the years, my hometown has become increasingly diverse, but as a child with different lunches and holidays and skin colour, I always felt like I didn't quite fit in. We certainly did not have many privileges as a poor immigrant family; both parents worked in the service industry and barely made ends meet. Racism was something I experienced first-hand from a very young age; once, a swastika was spray painted on my first car right in our front driveway. It was very confusing for me as my Muslim family really kept to themselves and didn't engage much with our primarily white, settler neighbours.

At the age of 17, I started as an undergraduate at Simon Fraser University where I initially enrolled with the intention of doing a degree in Business. At the age of 19 on a trip with friends to New York, I was stopped and questioned for hours about my intentions for entering the country. I was photographed, fingerprinted and told that they had reason to believe that I was or would become involved in terrorist activity. This experience of being racial profiled, and eventually banned from US travel, has haunted me for decades. But from adversity comes inspiration; it was this initial experience during my university studies that led me to the field of criminology. My passion for justice and equality was born, and it continues to inspire me to provide accessible education and resources for criminology students for years to come.

Dr. Rochelle Stevenson **Thompson Rivers University**

I identify as a white, heterosexual, cisgender woman. I currently live in Kamloops, BC, on the lands of the Tk'emlúps te Secwépemc within Secwépemc'ulucw, the traditional and unceded territory of the Secwépemc peoples. I am honoured to share my home with two wonderful dogs and two mischievous cats, along with my partner in life.

I was born and raised in Oakville, Ontario. My parents were both Canadian-born, as were my grandparents. My great-grandparents immigrated to Canada from Ireland and France, settling in Quebec and Ontario.

I returned to university as a mature student to pursue my degree in Criminology, and my early studies opened my eyes to the stark contrasts in experience within our society, the inequities and harmful actions perpetrated by others. More than once, I questioned whether I was in the right space, but my desire to effect change was the driving force to continue. This was also the foundation of my passion for research and all that it entails.

My research is firmly centred in a feminist space with its anti-oppression framework, paired with the non-speciesism of the human-animal bond. My work over the past 20 years has centred on the intersection of intimate partner violence and animal mistreatment, recognizing that companion animals are family members too, and domestic violence can include abuse towards animals in the home. My research has taken many forms and methods, working with and for survivors of violence. Though this work is emotionally challenging (even heartbreaking) at times, and I consistently wrestle with my own position of relative privilege, my furry family members are my inspiration to keep moving forward to create a safe and inclusive society.

Dr. Carroll Boydell **Kwantlen Polytechnic University**

My paternal great-grandmother emigrated to Canada from England in the early 1900s, and my father was born and raised in the interior of BC. My maternal grandparents arrived in Canada from the Netherlands in 1955. My mother was born in Alberta shortly thereafter, the 8th child of 11 in her family but the eldest child born in Canada. I was born in a small town in British Columbia to

a middle-class family in the 1980s, the eldest of three children. I have had the privilege of living in both rural and urban areas throughout my life. I am a white, cis-gendered female and also a person with disabilities, most of which are invisible but have a profound impact on how I function in and view the world.

From the age of 12 until 22, I was determined to become a Crown Attorney but was also fascinated by the discipline of psychology. Completing an MA and PhD in Law and Forensic Psychology at Simon Fraser University, and joining the Criminology Department at KPU to teach psychology and law courses has afforded me the opportunity to work in both psychology and criminal justice fields.

Dr. Wendelin Hume

University of North Dakota

Since the way we ask questions and the way we interpret the answers are often influenced by our own unique social lenses, we would like to share our social perspectives with the reader before delving into the discussion of research methods.

I—Wendelin Hume—was born in northwestern Minnesota but grew up in northwestern Ontario on land that is part of the Whitefish Bay Reserve/Naotkamegwaning Nation where I and my dad are enrolled. We have no idea of my mother's ancestry as she was adopted as an infant and no records have been located. I experienced both the horrors of repeated violence and victimization in my youth as well as wonderful traditional teachings under Baptiste, a respected spiritual elder who has since journeyed on.

I experienced the Father Moss boarding school briefly, and then from grade 6 onwards I completed my schooling at home on my own with lessons provided by the provincial government. Later, my family moved back to the United States, and eventually, I attended high school for a year and a half before I graduated. I got married and had children while very young. Later, to better support my family, I completed a college degree at Black Hills State College in Spearfish, South Dakota. To try to correct some of the inequities in our justice system and put my woundedness into service for others, I earned my master's and doctorate degrees in Criminal Justice and Criminology with an emphasis in victimology and statistics at Sam Houston State University in Huntsville, Texas.

I accepted a faculty position in North Dakota to be back up north and closer to family. I missed the trees and the snow. I missed the people and the land I am familiar with. Being Anishinaabe, I relate with the cultural background of Turtle Mountain tribal people more than the other tribes in my state, though I have worked with and developed friendships with members of all the North Dakota tribes. Part of my research interest is to study problems and successes in remote rural areas I can still access with some 'windshield time' from the University of North Dakota (UND). It should be noted that today, UND rests on the ancestral lands of the Pembina and Red Lake Bands of Ojibwe and the Dakota Oyate—presently existing as composite parts of the Red Lake, Turtle Mountain, White Earth Bands, and Dakota Tribes of Minnesota and North Dakota. We acknowledge the people who resided here for generations and recognize that the spirit of the Ojibwe and Oyate people permeates this land. As a university community, we will continue to build upon our relations with the First Nations of the state of North Dakota—the Mandan, Hidatsa, and Arikara Nation; Sisseton-Wahpeton Oyate Nation; Spirit Lake Nation; Standing Rock Sioux Tribe; and Turtle Mountain Band of Chippewa Indians.

Personally, as a member of the Bear Clan, protecting others and trying to improve justice are important to me. In my research, I try to follow the 3Rs: Respect, Responsibility and Reciprocity. I demonstrate Respect as I am committed to the wisdom of the elders and others, and I try to be a good listener. I attempt to show Responsibility as an experienced and passionate researcher who is looking to improve the world of the next seven generations through research. I also believe in Reciprocity, and I think both the researcher and the participants involved in research should benefit from the research enterprise and any resulting improvements should benefit future generations.

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Seeing the Forest

Learning Objectives

- Distinguish between natural science and social science.
- Distinguish between Western scientific research and Indigenous ways of knowing.
- Describe Two-Eyed Seeing.

Boozhoo or hello, and welcome to the exciting journey of learning about criminological research methods. We could think of the specific methods covered in the following chapters as distinct types of trees, each with a main trunk but many varied ways to branch out; still, we should probably step back and look at the forest as a whole first. We should think about what science is, what we are trying to achieve when we conduct research, and if there might be more than one right path to travel as we go through the forest. In fact, different paths may emerge as we continue on our journey.

In this introductory chapter, we will begin by distinguishing between the natural and social sciences. We will also distinguish between Indigenous ways of knowing and Western ways of knowing. The concept of Two-Eyed Seeing will also be introduced in this discussion. Lastly, an overview of what to expect in the coming chapters will be provided.

Social Science

Criminology as a field or discipline is considered a social science. Typically, the word “science” refers to knowledge or understanding, and this understanding is typically gained by following a systematic process. For instance, science is usually grouped into two broad but distinct categories: natural science and social science.

Natural science is the science of things that naturally occur, such as light, a tree branch, a rock, the sun in the sky, or even our own bodies. Natural sciences can be further classified into physical sciences, earth sciences, life sciences, and others. Physical sciences consist of disciplines such as physics (the science of physical objects), chemistry (the science of matter), and astronomy (the science of celestial objects). Earth sciences consist of disciplines such as geology (the science of the earth). Life sciences include disciplines such as biology (the science of living organisms) and botany (the science of plants).

Social science, on the other hand, is the science of people or collections of people, such as groups, societies, and economies, and their individual or collective behaviours. Social sciences can be classified into disciplines such as psychology (the science of human behaviour), sociology (the science of social groups), and criminology (the science of crime and criminals). While these are distinct disciplines, they often overlap and create interdisciplinary fields such as the field of criminal justice studies.

Ways of Knowing

While dividing science or knowledge into these two broad categories of natural and social may initially make understanding the fields easier, perhaps they should not necessarily be separated. From an **Indigenous** standpoint or spiritual worldview, we as humans are all interconnected, not just with each other but with all things around us (the animals, birds, and trees), above us (the sky, clouds, and stars), and beneath us (the ground, rocks, and water). According to this **Indigenous way of knowing** or worldview, if we separate ourselves from these other entities, we will actually understand them and ourselves less. It is only through honouring the important role these entities play in shaping our existence and the role we play in shaping their existence that we can reach an understanding.

You might be thinking, “Wait, what just happened here? Are we learning about science and questioning it at the same time?” In short, the answer would be “Yes.” While it might be easier to teach and to learn the typical concepts of science and research, this text will attempt to present more than the usual Western ethnocentric and often exploitive descriptions of research. We will go beyond the typical majority-biased way of explaining how research should be conducted and instead make visible what is often hidden (Smith, 2021). We will reveal issues that might seem “disruptive” because addressing these issues in a classroom environment can enhance learning. Rather than continuing the erasure and disregard of ethnic and minority contributions to knowledge and understanding (Lambert, 2014), we will strive to blend Western and Indigenous content. By combining both Indigenous ways of knowing and Western science or **Western ways of knowing**, we can develop a deeper and broader sense of

understanding. The ability to see the two ways of looking at knowledge and research and weaving them together is often referred to as **Two-Eyed Seeing** (Bartlett et al., 2012). Seeing the world from both vantage points allows us to discuss the issues before us and perhaps weave between the worldviews to learn the most from each and to use the strengths from each, depending on the circumstances.

You may be wondering why this is important. Well, research has often been a source of distress for Indigenous people. Researchers have benefited in many ways from findings about Indigenous Peoples, but they often do not work with Indigenous communities in developing the research project and do not share the grants or other sources of funding obtained for the research. Early unethical research has led to a significant distrust of researchers, and treating Indigenous Peoples as a problem to be solved by outside experts only furthers this distrust (Cochran et al., 2008). To improve how we acquire our knowledge, it is important to understand the underlying assumptions of Western research and the ways in which this may maintain oppression. It is also important to involve Indigenous communities in the research design and include Indigenous knowledge in the formulation of research protocols, the methods used, and the conclusions drawn. In this way, we can bring together the different ways of knowing so we can grow our understanding, and together we can help make the world a better place for the next seven generations.

Textbook Overview

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Ethics forms the foundation of all research projects and must factor into decisions made at each step of the research process. This open education resource begins by introducing the main ethical principles that must be considered when conducting social science research, with particular attention paid to conducting research on or with Indigenous Peoples in Canada. In [chapter 1](#), core ethical principles are reviewed as well as the role and responsibilities of research ethics boards. The differences as well as overlaps between Western and Indigenous approaches to ethical research are also examined.

In [chapter 2](#), we begin by discussing some abstract philosophical concepts, such as ontology and epistemology, and learn about how we operate under a paradigm that guides our thinking about the world around us and ultimately our approach to research. Our paradigmatic stance also guides the types of topics we are interested in learning more about. The critical Indigenous paradigm is discussed in this chapter, with particular attention paid to the calls made by scholars to decolonize our approach to research. The connections between paradigm, theory and policy are highlighted in this chapter.

In [chapter 3](#), the various purposes of, approaches to and methods of engaging in social science research are reviewed. Deductive and inductive approaches are compared, as are quantitative and qualitative methods. While these approaches have been traditionally described as competing with one another, it is our goal to demonstrate in this chapter that they can actually be complementary to one another. The question you seek to answer at the end of your research study and the data available to answer that question are ultimately what ought to guide your selection of approach and method.

In [chapter 4](#) and [chapter 5](#), you will learn how to formulate your specific research question and how to conduct a review of the existing literature on your topic of interest. These are crucial steps in not only the planning stages of your research but also throughout many stages in the research process. After all, one of the main obligations we have as researchers is to help those who come after us to continue to contribute to knowledge in the area and to share it with others. We look to what others have studied to see what has worked, what has not worked, what theories have been referred to in those studies and the hypotheses they may have set out to test. Now you can ask yourself what questions remain to be answered.

Using Two-Eyed Seeing, you will also want to understand what the communities to be researched already know and have. This culturally relevant information can improve understanding between the researcher and the subjects, and it can provide a good context for research in these early planning stages that can help the community. Collaboration with Indigenous knowledge holders and communities in the planning stage to co-design the study and co-frame the research questions is an important improvement

over many previous studies.

In [chapter 6a](#), [chapter 6b](#), and [chapter 6c](#), more technical terminology relevant to research design is introduced. As you envision and start to become clear on the key question(s) for your own research project, you are engaging in conceptualisation and creating a mental picture of what the concepts of interest are. You should be very specific about what these concepts mean in your project. For example, if you want to study the fear of crime, what exactly do you mean by “fear” and what kind of crime are you referring to? Are you interested in whether people are afraid to walk alone at night or are you interested in whether they are afraid that their identity will be stolen? You should continue to review existing literature that can help shape your image of your research project and identify what gaps exist in the literature, which you may choose to address in your own project. You may also consider what theories or other ways of knowing, such as Indigenous ways of knowing, suggest about potential relationships between variables. In these chapters, you will also learn how to ensure our research is reliable and valid and how we can determine whether something caused something else.

Whatever way you choose to conceptualize the research project moving forward, you will want to avoid using only a rigid Western view of the scientific method and be certain to learn from the Indigenous or other communities helping you with the research and to include relevant cultural components. You also want to be careful not to marginalize the Indigenous or other subjects you are studying. Most research in the past reflected the dominant Western cultural framework in an almost invisible way. Rather than representing a neutral view of reality, the research shapes reality first by how the research questions are conceived and second by how the data are collected and interpreted. Typically, the research efforts lean towards a documentation of not only differences between Western and minority cultures and communities but also conclusions about deficits and dysfunction in the minority cultures. Input from those cultures in how you design your project will help minimize this bias.

In [chapter 7a](#) and [chapter 7b](#), the core principles of sampling as well as the various specific sampling techniques available to social science researchers are introduced. Sampling decisions are important and essentially deal with how we go about choosing who or what will take part in our research study. It is crucial to be aware of power dynamics and the principles of inclusion here. We must be sure to ask members of the community who the knowledge keepers are and how we can reduce barriers and facilitate participation.

After this groundwork has been established, the textbook shifts to a discussion of specific methods of collecting data. For instance, determining a smaller group of people’s opinions or asking a small number of individuals about their lived experiences might best be accomplished by using face-to-face qualitative interviews or focus groups ([chapter 8](#)), whereas learning about actual behaviours may best be documented through observations in field research ([chapter 9](#)). Analyzing content found in newspapers or other media formats is best done through content analysis ([chapter 10](#)), and asking questions in a more quantitative fashion to a much larger number of individuals would be best done using a survey ([chapter 11](#)). If you want to determine cause-and-effect relationships, though, experimentation is best ([chapter 12](#)). It is not the method you like most or are most comfortable with that you should rely on; rather, the method you select must be based on the research question you want to answer and the data available to answer it. Looking at what methods were used in other studies on the same topic or a similar topic may be helpful here.

Typically, the techniques and methods taught and discussed in other texts are based on and advocate for only the use of Western research. While it might seem that the approach does not really matter because research is scientific and objective, hopefully you now understand that power relations are present in the research process. Once an understanding of the importance of the overall research framework has been achieved, we can explore the basic research methods typically used and choose whatever seems most appropriate. This choice should be guided by a consultation with knowledge holders, including other experienced researchers, practitioners in the field, and knowledgeable members of the community who have contributed to and may benefit from our research. Each of these methods of collecting data stems from our worldview and the topic at hand, the question we want to answer and the data available to answer that question. They all have strengths and weaknesses and should not necessarily be seen as independent from one another; in fact, in many projects, different methods are combined to gain a more holistic understanding of the issues at hand.

In the final chapters, we examine how to go about analyzing the data we collected using our chosen method(s). Analysis can be grounded and/or thematic in a qualitative project ([chapter 13](#)) or statistical in a quantitative project ([chapter 14](#)). These analytic techniques can also be combined in the same project. Either way, the goal of analysis is to make sense of the data and to synthesize and summarize the findings in a way that can be communicated to a larger audience. Graphs, tables, and charts are typically used to visually present data that have been analyzed. While all the different statistical or other analytical methods are beyond the scope of this introductory methods text, it is important to understand that a poor research design will lead to poor data. If you run an analysis on poor data, the program will deliver a calculation, but any conclusions drawn on that calculation will be faulty. If you have set up your research project correctly, you can have faith in the conclusions drawn from the analysis.

It is important to be aware of the translation-like process through which any knowledge shared with us is converted into conclusions by those of us in the academy. There may be important differences between “community or elder” and “academic” knowledge that need to be identified so Indigenous viewpoints and knowledge can be acknowledged rather than silenced, even if they wrote something or answered questions in ways other than what we expected. In the analysis stage, we often refer to the literature again to connect what we have found in our own research to the existing body of knowledge.

Woven throughout the entire text are case studies, examples and discussion questions that encourage the reader to critically engage with the material and to consider how research ought to consider the positionality of the research participants. While the task of decolonizing all research methods for criminology is beyond the scope here, this text will aid the reader in assessing the various methods, including Indigenous ways of knowing. Moreover, it will highlight the importance of considering the ethics of applying the chosen technique in the field, particularly when working with Indigenous and other minority participants. In the end, it is hoped that this text will provide unbiased quality learning opportunities that lead to valid results produced by future cohorts of informed researchers.

Key Terms

Boozhoo: hello (in Anishinaabe/Ojibwe).

Indigenous: a term that refers to the original people or species who lived in a place, such as the Americas before colonization.

Indigenous ways of knowing: refers to diverse knowledge systems across different Indigenous communities based on their spiritual and cultural practices, ecological understanding of the land and intergenerational wisdom.

Natural science: a branch of science that deals with the physical world.

Social science: a branch of science that studies human societies and social relationships.

Two-eyed Seeing: a way of viewing the world that considers both Indigenous and Western knowledges and worldviews.

Western ways of knowing: a system of acquiring knowledge primarily based on logic, objectivity, and empirical observation.

Chapter Review

Discussion Questions

1. Choose a contemporary social issue of interest to you. Outline the type of research study you think would accurately and respectfully investigate this issue.
2. Find two research studies reported on in your local media. Describe the studies briefly. Decide if the design has an important influence on the findings. If a different design had been used for either study, would the findings have potentially been different?
3. Locate a research finding, either in one of your texts or online, that concludes there is a deficit or weakness among Indigenous people (such as high rates of poverty, low educational attainment, low interaction with technology, etc.). How could this finding be reframed to present Indigenous people in a stronger or more resilient way?

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AI Declaration Statement

Artificial Intelligence Tool: ChatGPT 4.0 (OpenAI); *Conceptualization:* ChatGPT was used to revise some proposed discussion questions.

definition

Hello (in Anishinaabe/Ojibwe).

×Close definition

A branch of science that deals with the physical world.

×Close definition

A branch of science that studies human societies and social relationships.

×Close definition

A term that refers to the original people or species who lived in a place, such as the Americas before colonization.

×Close definition

Refers to diverse knowledge systems across different Indigenous communities based on their spiritual and cultural practices, ecological understanding of the land and intergenerational wisdom.

×Close definition

A system of acquiring knowledge primarily based on logic, objectivity, and empirical observation.

×Close definition

A way of viewing the world that considers both Indigenous and Western knowledges and worldviews.

×Close definition

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1: Research Ethics in Criminology

Learning Objectives

- Explain why it is important to abide by ethical principles when conducting research with human beings.
- Describe the three core principles and the 5 Rs of research and how they might apply to various research studies.
- Discuss the role and responsibilities of Research Ethics Boards.
- Describe the differences as well as the overlaps between Western (colonial) research ethics and Indigenous approaches to ethical research.
- Reflect on your own values and biases as a researcher, and how these might affect your research.

Why do We Need Research Ethics?

We might all think that we know how to conduct ethical research. After all, it's just about being an honest person and doing research in "the" right way, isn't it? Well, though honesty is important, there are specific additional elements that researchers need to consider in their work. And while we might think that there is a "right way" and a "wrong way" to conduct ethical research, it isn't always that simple; what is deemed "right" can depend on the study design and methodology, the participants, and the decisions that we make as researchers.

In Canada, ethical research is guided by the three core ethical principles of Respect for Persons, Concern for Welfare, and Justice. Research ethics are not merely an afterthought once research is completed, but something considered at the outset of our research, and which shapes *all* our research decisions. Unfortunately, prioritizing ethics was not always part of the research process, and there are many examples of research which violate aspects of these core ethical principles.

This chapter begins with a review of both classic examples – namely the Stanford Prison Experiment and the Tearoom Trade – and contemporary examples of unethical research involving Indigenous participants in Canada, illustrating the continuing need to prioritize ethical decisions in research. Following these examples, the chapter outlines the role of Research Ethics Boards (REBs) in protecting participants in studies like these, and in preventing such ethical breaches from occurring in the future. Then, the core principles outlined in the Tri-Council Policy Statement 2 (TCPS2) are reviewed together with the 5 Rs of Indigenous research ethics to show how the two approaches can work in harmony and where they may differ. The chapter concludes with a review of the additional responsibilities of an ethical researcher. It is important to bear in mind while reading this chapter that the principles and guidelines presented in this chapter may not represent the principles and guidelines of *all* Indigenous communities and nations in Canada and that there are variations, not all of which could be captured here. Having said that, every effort is made to provide a fulsome overview of the shared principles and lessons, with variations noted where relevant.

Unlike other introductory research methods texts in the field of criminology, it was the decision of the editors of this open education resource to place this chapter at the very beginning as ethical decisions do truly impact every single decision in the research process, from the paradigm to which we orient ourselves all the way through to how we decide to share our research findings, and every step in between. The hope is that students gain a true appreciation for the paramount importance of ethics in all that we do as criminologists.

Classic and Contemporary Examples of Unethical Research

The Stanford Prison Experiment

Phillip Zimbardo set out to research power and authority, specifically in a prison setting (Haney, Craig, & Zimbardo, 1973). He set up a simulated prison in the basement of a campus building at Stanford University, complete with cells which had steel bars and a space for solitary confinement. Zimbardo recruited 24 undergraduate men who were then assessed for physical and psychological health and randomly assigned to be prisoners or guards. The goal was to see how otherwise normal young men would embody or adopt the roles they were assigned – a prisoner with little power, or a guard with near absolute authority.

Guards With Blindfolded Prisoner.

To keep the experiment as authentic as possible, participants were not informed in advance about which role they had been assigned. The “prisoners” found out about their role when they were publicly arrested at their homes, then taken to the “prison” for processing. They were given a uniform and a prisoner number. The “guards” were also given a uniform which included mirrored sunglasses and billy clubs. The guards were told to maintain order in the prison, though they were not provided with any specific rules. Instead, the guards created their own rules and punishments for breaking those rules, such as forcing them to engage in physical tasks like push-ups, withholding food and sleep, removing the beds from cells, stripping prisoners naked, and placing prisoners in solitary confinement. While the experiment was to last for two weeks (running 24 hours a day), adverse events occurred early in the study, including a prisoner “rebellion” against their treatment, plans for a prison break, prisoners engaging in self-harm as well as experiencing psychological distress. The experiment was terminated after six days (Zimbardo, Maslach, & Haney, 1999). Although participants technically volunteered for the study were compensated for their time (\$15 a day), and they all provided general consent, the degree of harm experienced was beyond what was disclosed or even anticipated by Zimbardo. The extent to which their participation was truly voluntary is also questionable; after all, they were university students with significant tuition, textbook and living expenses, and \$15 a day in 1971 is equivalent to \$117 a day in 2025. Over the full two weeks of the experiment, that would amount to \$1638 today, a pay day that would likely be enough to convince many students these days to participate even if they would not otherwise do so.

Researchers have an ethical responsibility to ensure participant welfare and to avoid **harm**, and that was missing in this case. With the cruelty evidenced by the guards, and the resulting harm to the prisoners (and the guards), the study should have been stopped immediately; however, Zimbardo was so engrossed in his role as “prison warden” that he started seeing the participants as research objects rather than as participants who were being harmed. It was only after a doctoral student questioned the ethics of what Zimbardo was allowing to happen that he ended the study (Zimbardo, Maslach, & Haney, 1999). Since the study, Zimbardo has discussed things that could have been done differently, including not assuming the role of warden.

The Stanford Prison Experiment is a good example of a few ethical issues, one being the responsibility to minimize or mitigate harm to participants, and another being the need to ensure **voluntariness** of participation. Another ethical issue centres on the researcher themselves and their own role in the research. Researchers are not objective bystanders in their research; they are active in their own work and have an obligation to ensure ethical and honest research. Indeed, there is evidence (e.g., Le Textier, 2019) that Zimbardo was not completely forthcoming when communicating with research participants or the public when describing the study due to his own personal goals and biases. Some of the criticisms include providing the guards with more guidance on how to interact with prisoners than reported, pre-writing the conclusions of this study for presentation to the media before it had concluded, and overdramatizing the severity of the simulation for personal gain.

Stop and Take a Break!

For more on the controversial Stanford Prison Experiment, watch this trailer:

This interactive element is not available in this format. Visit the link or scan the QR code to access it online.

[View this YouTube Video online](#)



Visit [Stanford Prison Experiment](#) for a more in-depth play-by-play of the whole experiment.

The Tearoom Trade

Laud Humphreys was a doctoral student in the late 1960s at Washington University; his dissertation research explored the practice of men engaging in anonymous sexual encounters with other men in public restrooms (known as the tearoom trade). Humphreys wished to understand who these men were and why they participated in the trade. To conduct his research, Humphreys offered to serve as a “watch queen,” the person who keeps an eye out for police and other strangers who were not a part of the tearoom activities. At the time, homosexual behaviour was illegal, so watch queens served an important role in protecting the tearoom participants by alerting them to the presence of others. What Humphreys did not do was identify himself as a researcher to his research participants. Instead, he watched his participants for several months, getting to know several of them, learning more about the tearoom trade practice and, without the knowledge of his research participants, jotting down their license plate

numbers as they pulled into or out of the parking lot near the restroom. After participating as a watch queen, with the help of several insiders who had access to motor vehicle registration information, Humphreys used those license plate numbers to obtain the names and home addresses of his research participants. Then, disguised as a public health researcher, Humphreys visited his participants in their homes and interviewed them about their lives and their health (Humphreys, 2008).

Humphreys' research dispelled a good number of myths and stereotypes about the tearoom trade and its participants. He learned, for example, that over half of his participants were married to women and many of them did not identify as gay or bisexual: ground-breaking research at the time. However, once Humphreys' work became public, it created quite a controversy among sociologists and the public at large, largely over ethical issues of **privacy**, **consent**, and **deception**. Controversy about the study is still ongoing, even years after Humphreys' death.

Humphreys (2008) maintained that his observations were ethical as the interactions observed occurred in public places where people have a diminished expectation of privacy. Others have critiqued this, arguing instead that there is a reasonable expectation of privacy even in a public washroom, and that by recording license plate numbers and tracking down participants in their "normal lives," Humphreys crossed an ethical line (Babbie, 2004; Lenza, 2004). While the critics do have a solid argument, Humphreys went to great lengths to protect the identities of the participants, including destroying the list of participants, and never disclosing any identifying information about the tearooms or the men who frequented them (Lenza, 2004). Critics of Humphreys' work also focused on lack of consent and deception as participants were not informed of Humphreys' role as a researcher or their role as a research subject (Lenza, 2004).

While full, free, and informed consent is the ideal now, there are some circumstances in which deception may be necessary or consent impractical. It is entirely likely that the men in the tearoom would have acted differently, or even stopped coming, had Humphreys been forthcoming with his true purpose. In a subsequent edition of *Tearoom Trade*, Humphreys (2008) offered that he would conduct the second part of his research differently. Rather than trace license plate numbers and interview unwitting tearoom participants in their homes under the guise of public health research, Humphreys instead would spend more time in the field and work to cultivate a pool of informants. Those informants would know that he was a researcher and would be able to fully consent to being interviewed. Covert research is fraught with ethical dilemmas, and the welfare of the participants must be prioritized in such situations. Humphreys' research illustrates the time and effort that strong, ethical research may require.

Experiments on Indigenous Peoples in Canada

While these classic American social science examples provide us with rich learning opportunities about what *not* to do when conducting research, Canada has its own problematic history when it comes to conducting unethical experiments on Indigenous people that warrant our attention. While we present the following examples of research that has been conducted in the past, we also must recognize that harmful and colonial research is an on-going concern for Indigenous people.

For readers who have had similar experiences to those about to be discussed (human experimentation and boarding schools), or those who are impacted by the unethical research, past or present, please feel free to skip ahead to the section on Research Ethics Boards. For other readers, it is important to discuss a topic typically not addressed in research methods texts: the problematic research on Indigenous people. In many of these experiments, harmful or untested interventions were administered, without following ethical guidelines such as those discussed later in this chapter, and at times without proper consent given by participants or without proper respect for their dignity. For instance, George (2019) describes medical experiments that were conducted on Igloolik Inuit men to examine the effectiveness of skin grafts that were painful and that left participants with significant scars. As one of the former subjects, Mr. Paul Quassa declared in an interview in 2019, "We are not animals, we are another human being that deserves respect" (Oudshoorn, 2019).

Children in class at the Catholic residential school of Fort George, QC. Note: The photo shared here is to illustrate the control over child subjects. It should also be noted that even in this photo the children are being treated as unnamed objects who could not give consent to the taking or use of the photo and whose families and Nations were not consulted in the design of the curriculum or medical studies.

Other notable examples of unethical research conducted on Indigenous people are those of the nutritional and biomedical experiments conducted on residents of Indigenous communities and Indigenous children attending residential schools in the 1940s and 1950s. Mosby (2013) describes a series of studies intended to examine "the state of nutrition of the Indian by newly developed medical procedures... [which] included physical examinations, blood tests, and x-rays on nearly 400 Aboriginal residents" (p. 146) in northern Manitoba. Upon arriving at the communities, the researchers noted that many of the residents were severely malnourished. Without fully taking political and power dynamics of colonization into consideration, the researchers concluded that the malnourishment had likely resulted from a combination of factors, including reductions over time in income and food sources due to overhunting and the decline in the fur trade, and reductions of relief payments distributed to Indigenous

peoples by the Canadian federal government. It was initially determined that an intensive study would be undertaken over the course of 1-2 years to examine interventions for malnutrition in these communities. However, the study ballooned into a series of studies conducted over a decade, largely without the knowledge or consent of the participants. Those assigned to the control groups for these studies were exposed to continued malnutrition for long periods of time. For example, in an initial study of 300 participants, just over one-third of participants were administered nutritional supplements like riboflavin, thiamine, and/or ascorbic acid, while the remaining participants did not receive any supplements.

Additionally, many of the nutritional supplements used or intended to be used in the research studies were either known to be nutritionally sub-par or had not yet been tested for their effectiveness. The most well-known study within these experiments is that of the James Bay Survey, whereby vitamins and fortified foods were introduced into the diets of residents via “decidedly experimental strategies” (Mosby, 2013, p. 155) for nutrition supplementation. Two of the nutrition sources intended to be distributed to the northern communities for the study, via both relief allocations or in the food distributed to residential schools, included a variation of a blood sausage containing largely organ meat and filler products and what was referred to as a “Meat Spread.” These were ultimately rejected by the Department of Agriculture and not used in the study because the foods were in contravention of the *Food and Drugs Act* which controls the proportion of substances that can be added to food products in Canada that lower its quality. Unfortunately, potential harm to participants due to the experimental interventions was not a top priority for researchers.

Such unethical research was not limited to adults; research was also conducted on children in residential schools. In the 1940s in Brandon, Manitoba, a study was conducted aimed at identifying a measurement of extrasensory perception and to “find evidence of supernatural abilities of [those who the researchers referred to as] ‘primitive’ people” (Phillip, 2015, para 4). This serves as an example of cultural information taken out of context resulting in published conclusions that were factually incorrect and failed to respect cultural beliefs. Though the study authors describe the children as having willingly participated, as was typical at the time of the study, consent was neither given nor received from the children nor the parents. Further, given the issues mentioned earlier of hunger and malnourishment, offering candy to children as compensation for their participation, likely impeded in part their free will in deciding to participate in the study (Phillip, 2015). This touches on the key concept of voluntariness.



Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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Table 1.1 Summary of Classic and Contemporary Examples of Unethical Research

	Stanford Prison	Tearoom Trade	Experiments on Indigenous Peoples
Research Goal	to see how otherwise normal young men would embody or adopt the prisoner/guard roles they were assigned	to understand who the men were who engaged in anonymous sexual encounters in public restrooms and why they participated in “the trade”	to examine the effectiveness of harmful or untested interventions; to examine the state of nutrition of Indigenous people as well as interventions for malnutrition
Some of the Key Ethical Issues	harm, fully informed consent, dual role of lead researcher, true voluntariness	privacy, consent, deception, harm, voluntariness	consent, harm, lack of respect for human dignity, voluntariness

These examples illustrate that there was a time in which Indigenous people were largely viewed through a lens of racism and dehumanization, considered more as a convenient population of individuals who were inhumanely labelled as “laboratory rats” (George, 2019, para 5) or “experimental materials” (Mosby, 2013, pg. 148) than as human beings deserving of respect. Together with the classic examples discussed earlier in the chapter, the history of research on Indigenous Peoples in Canada highlights the dire need for clear protections when conducting research with or on vulnerable populations. Let us now turn our attention to the role of research ethics boards in addressing this need.

Research Ethics Boards

The Tri-Council Policy Statement 2 (TCPS2) (Government of Canada, 2022) requires any institution which receives funds from the Tri-Council agencies (Social Sciences and Humanities Research Council (SSHRC), the Canadian Institutes of Health Research (CIHR), and the Natural Science and Engineering Research Council (NSERC)) to have a Research Ethics Board to review and approve all research conducted by staff, faculty, or students on human participants. This research may employ a variety of methodologies, including but not limited to interviews, surveys, observations, and collection of human tissue.

The purpose of a Research Ethics Board (REB) is to ensure that research complies with the TCPS2 (2022) principles and prioritizes the well-being of participants. REBs are composed of faculty members who have expertise in research ethics and methodologies across a variety of academic disciplines. For example, a REB may be composed of faculty members from Criminology, History, Communications, Philosophy, Psychology, Sociology, Anthropology, Kinesiology, Chemistry, and Marketing. Ideally, this affords a diversity of perspectives on the proposed research project before it has begun.

No research is risk-free, and part of the REB's job is to assess risk to participants. Research proposals are generally classified as "minimal risk" or "above minimal risk." Minimal risk is where the risks of participation in research are no greater than what participants would encounter in their everyday lives. In contrast, above minimal risk is where the risks of participation in research exceed those in everyday life. For example, an anonymous survey of students about their views on probation as a sentence would be minimal risk, as this may be something that they consider as part of their studies. On the other hand, in-depth interviews with offenders about their own histories of trauma and victimization would likely be considered above minimal risk, as the participants may experience re-traumatization through the re-telling of their stories, something they are unlikely to do on a regular basis. The level of risk is initially assessed or suggested by the researcher in their Research Ethics Board application based on the level of sensitivity of the subject being studied, the risks of the method, and the relative vulnerability of the participants. Often, the REB will also consider researcher expertise in their assessment of risk.

Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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Each REB will have a standard Research Ethics Board application process that needs to be completed prior to conducting the research, which is typically a series of forms submitted through an online portal. Simply submitting a REB application does not mean that the research can start right away, however. No contact with participants can occur until the REB approves the research. Like any peer review process, obtaining REB approval can take time. The REB review process typically proceeds in the manner shown in Figure 1.1 below.

Figure 1.1 Research Ethics Board Flowchart [\[Image description for Figure 1.1\]](#)

It is important to note that the research ethics documents that you submit to the REB must accurately reflect the research that you actually conduct! Any modifications to the research protocol, such as a change to recruitment methods, additional participant groups, or a change in survey questions or observation site should be approved by the REB. Any adverse events must also be reported to the REB. The good news is that modifications usually take a much shorter time to get approval, but it is always important to budget enough time in your research plan for ethical approval and revision. If data collection is ongoing at the time that a revision is submitted to the REB, it is also important to stop collecting data until that revision has been approved.

Core Principles in Canadian Research Ethics

The studies discussed thus far are simply a few examples of research where the desires and interests of the researchers have been prioritized over the rights of participants. Notably, the studies detailed above took place before the establishment of REBs. In Canada, researchers are required to abide by the Tri-Council Policy Statement 2 (TCPS2), a set of guidelines for conducting ethical research collaboratively developed by the three major funding agencies: the Social Sciences and Humanities Research

Council (SSHRC), the Canadian Institutes of Health Research (CIHR), and the Natural Science and Engineering Research Council (NSERC). As research is not static, the TCPS is updated and revised in response to changes in research and in society. There have been several revisions since the first TCPS in 1998, with the TCPS2, published in 2022, being the most recent version (see [TCPS: Ethical Conduct for Research Involving Humans](#)). The policy identifies three interconnected core principles that every researcher must consider when developing and conducting research with human participants: Respect for Persons, Concern for Welfare, and Justice.

Western research has been critiqued as colonial and there are widespread calls to decolonize research, and research ethics specifically (Smith, 2012; Wilson, 2008). Recent collaborative efforts with Indigenous researchers and academics in the revisions to the TCPS2 have resulted in the creation of a specific chapter on ethical considerations in research with Indigenous Peoples. Even still, colonial ideologies have been, and in some cases still are, prioritized over the rights of Indigenous Peoples. In response, Indigenous communities in Canada – Inuit, Métis, and First Nations – have started to develop their own research ethics guidelines and principles to represent formally how the community wants and expects research to be conducted. The [Secwépemc Nation Research Ethics Guidelines](#) and the [Esk'etemc Traditional Knowledge and Research Ethics Policy](#) are two examples of these guidelines.

In such guidelines, there are some foundational ethical elements common to Indigenous research methodologies that are referred to as the 5 Rs: Respect, Responsibility, Reciprocity, Relationships, and Relevance (Davey, 2023). There are variations to these foundational ethical elements across nations and researchers, however. For example, Tsosie et al. (2022) add Representation to the Rs to guide Indigenous research, while others like Roy (2022) focus on the first four Rs, dropping Relevance. In this chapter, we have chosen to present 5 Rs of Indigenous research, as these tend to be consistent in the research literature and among nations. That said, consultation with the community is key in any Indigenous research, and through this you will learn which Rs they hold to be their own ethical core values (more discussion on consultation later in this chapter).

Below we discuss the three core principles and the 5 Rs together to show how the two approaches can work in harmony and where Indigenous research ethics ideals challenge researchers to decolonize their work regardless of the focus of the research.

Core Principle #1: Respect for Persons

Respect for Persons is the first core principle to consider when conducting research with humans. The TCPS2 of 2022 states “Respect for Persons recognizes the intrinsic value of human beings and the respect and consideration that they are due” (p. 6). This principle includes respecting the **autonomy** of individuals, respecting their choice to be involved in research (or not), and respecting their contributions to research.

Part of respecting autonomy and choice in research is ensuring that potential participants have the information that they need to make a fully informed and voluntary decision about whether to engage in the research. To ensure that potential participants are informed, researchers communicate all the information a participant needs to know about the study *before* they consent to participate, including:

- the title of the research project and who the researchers are, including the affiliated institution and contact information for the researchers;
- the main goal of the research project, such as the research question(s) or the topic area that the research is exploring;
- what the participants are being asked to do, such as participate in an interview or respond to a survey, and for how long;
- the potential risks of participation, such as emotional distress, temporary discomfort, or physical harms;
- the benefits of participating, such as using the data to improve services or recommend policy changes;
- any assurances of confidentiality and/or anonymity, including any limitations to confidentiality;
- how the participant data will be stored and protected;
- how the findings will be communicated, such as academic articles, conference presentations, policy papers, or community forums;
- how to withdraw their consent if desired and any limitations to withdrawal, such as within a time window or before a certain date;
- an additional contact person/office if participants have questions about their rights as a research participant (usually contact information for the Research Ethics Board of the institution); and
- a space for the participant (and guardian or representative, if applicable) and the researcher to sign indicating agreement to participate in the study.

This information is usually presented in a document which is signed by both the participant and the researcher. It may also be signed by a guardian if the participant is a minor, or a legal representative for someone whose ability to give voluntary and

informed consent is potentially compromised, such as a person who has been diagnosed with dementia.

Signing a formal document is not the only way that a participant can consent to being included in a study. Informed consent is not always written; a participant can consent verbally or in other ways. Take a research project that involves interviews as an example. The informed consent document can be given to a potential participant in advance, allowing them additional time to consider their participation. The project details in the document can be verbally discussed at the beginning of an interview before the participant agrees to participate, and their agreement would likely be audio-recorded to capture their decision. In other contexts, a handshake or the exchange of gifts indicates consent. Researchers should take into consideration the respectful way that consent may be communicated within the cultural context of the research.

Another part of respecting autonomy and choice is the participant's ability to withdraw their consent. This revocation could happen during data collection, such as exiting in the middle of a survey, or after their participation is complete, such as an interview participant stating that they no longer want their data included in the study once it is completed. Researchers may place reasonable limits on the ability to withdraw for practical reasons. For example, participants may be given a specific date after which withdrawal is *not* possible, such as the date at which the final report is expected to be complete, or after a time frame during which withdrawal *is* possible, such as during a 30-day period between when the interview occurs and when measures have been taken to anonymize the data to protect the identity of the participant. These limits on withdrawal should offer the participants enough time to reflect on their contributions and change their mind if they want to; after the research has been published or the data have been anonymized, an individual's data could be impossible to remove.

Moreover, withdrawal may not be possible at all in some studies depending on the method of data collection. For example, if a survey is completely anonymous, meaning that the identity of the person cannot be linked to their responses at all, it would no longer be possible to locate the survey to remove the data in question. In the case of focus groups, removing one person's contribution to the conversation after the fact is next to impossible; participants may be able to leave the group during the conversations, but any comments made to that point may not be able to be separated from the other data collected throughout the course of the focus group. Part of Respect for Persons is ensuring that any limits to withdrawal are clearly communicated to potential participants so that they have all the information they need before they consent.

You may have noticed that we use the terms participants, individuals, and persons to refer to people who engage in research. Language matters, and such terms are more reflective of respect in the research process. Rather than refer to participants as "research subjects," which implies that research is being done *on* humans or *to* humans, the term "participants" is a respectful representation and acknowledgement of the way people *engage with* research and contribute to knowledge and understanding of the world around us.

Indigenous Research Ethics and the 5 Rs: Respect, Relevance, and Relationships

When thinking about respect in the context of the 5 Rs, we can extend the idea of respect discussed above in the context of the TCPS to not only respect for the persons involved in the research, but also *respect* for the community, ways of life, knowledges with various ways of communicating and holding them, culture, land and environment, and sovereignty of the Nation to decide what is in their best interests. That is, rather than a researcher coming to the community with a fully formed research proposal, wanting to do research *on* or *in* the community, the community should be involved at the earliest planning stage so that the research is *relevant* to what the community wants and needs. Ensuring the relevance of research for the community could take many forms, such as formal conversations with community members about what they see as the most pressing needs, connecting the research with identified strategic priorities of a particular Nation, or building research around a few of the Calls to Action from the [Truth and Reconciliation Commission](#) (2015). Any research in Indigenous communities should be done *with* and *for* the community first and foremost.

The collaborative process in developing not only the research focus, but the entire methodology, ensures that the Indigenous community maintains "agency over the entire research process" (Davey, 2023, p. 53). Wilson (2008, p. 77) offers several questions that researchers working within an Indigenous research paradigm should reflect upon, including:

- *How do my methods help to build respectful relationships between myself and the other research participants?*
- *How can I relate respectfully to the other participants involved in this research so that together we can form a stronger relationship with the idea that we will share?"*

Given the lack of respect that Indigenous Peoples have experienced in research in the past, thoughtful and intentional research practice with Indigenous people must centre respect in ethical research moving forward with thoughtful and intentional research practice.

Respect also refers to respect for Indigenous knowledges and ways. Western (colonial) systems of research place emphasis on the objectivity of the researcher as separate from the research, collecting and analyzing data without emotion or personal involvement. Indigenous research, on the other hand, places *relationships* and the interconnection of people, animals, land, and environment at the centre of the systems of knowledge and the sharing of knowledge with others. Wilson (2008) points out that a Western conceptualization of a “story” is a make-believe tale, yet Indigenous Peoples hold storytelling as a core practice in the communication of knowledge and histories. Respecting not only the relationships but the manner of communication is core to ethical research; rather than dismissing the knowledge as just a story, researchers have a responsibility to honour both the knowledge and the relationship within which the knowledge is shared.

Core Principle #2: Concern for Welfare

Concern for Welfare is the second core principle that every researcher must incorporate into research with human participants. This principle states that attention must be paid to the well-being of research participants before, during, and after the research. Researchers must mitigate risks of research participation, avoid exposing participants to unnecessary risks, and deliberately consider the “physical, mental, and spiritual health of participants, as well as their physical, economic, and social circumstances” (Government of Canada, 2022, p. 7). As is considered by the Research Ethics Boards, researchers must approach welfare from the perspective of a potential participant in the research.

At the core of Concern for Welfare, and in fact all research, is that research should not result in harm. Harm within research ethics is conceptualized quite broadly, and includes physical, psychological, social, and legal harms (Dixon & Quirke, 2017). Such harms can occur at all stages of the research process, from literature review creation to data collection to dissemination of results. At all points, when risk for harm exceeds the potential benefits of the research, it should not be undertaken.

Researchers must make reasonable efforts to anticipate any physical harms associated with the study and to assess whether the benefits of the research exceed the potential harms that could result from it. The examples of the skin graft research on Igloolik Inuit men and the physical cruelty of guards in the Stanford prison experiment demonstrate the bodily harm that can result from research; notably, harm was not outweighed by the knowledge benefits of the research. Another example involving physical harm is illustrated in a laboratory research study examining the effects of a newly developed antipsychotic drug intended to decrease violent behaviours in dangerous offenders. Participants who are randomly assigned to receive the drug could suffer serious side effects of such medication (e.g., Stroup & Gray, 2018), including a worsening rather than an improvement of their violent behaviour (e.g., Eikelenboom-Schieveld & Fogleman, 2023). Though Concern for Welfare is predominantly concerned with potential harm to participants, we must also consider and attempt to prevent harm to researchers themselves. For example, research assistants could be at increased risk of harm as they are working with individuals who have known histories of significant aggression. Here, a researcher may require that interviewers work in pairs as part of a safety plan to mitigate physical harm.

Like in laboratory research, dangers of physical harm are also present in field research. For example, Mathna & Koen (2022) required students to engage in a police ride-along as a component of the course and evaluated the impact of the ride-along experience on perceptions of law enforcement. Students were exposed to the same potential physical harms that law enforcement officials encounter each day as part of their professions, including vehicular accidents or harm during a police response to suspected criminal incidents. Participants may also be at risk of harm by others simply by consenting to be part of a research study. A significant concern in research on vulnerable populations, such as survivors of intimate partner violence, is how to keep participants safe when participating in research and when contacting them for follow-up sessions (e.g., Logan, Walker, Shannon, & Cole, 2008) as there is the potential that they may be victimized by those who do not want them to share their experiences. In all cases, it is important to develop detailed safety plans for all persons involved to reduce risk of harm.

Though actions taken in research could result in harm, so can inaction on the part of the researcher. Researchers who conduct experiments may administer an independent variable to an experimental group and withhold this variable from a control group. Researchers must consider how depriving the control group of the independent variable could be harmful (Maxfield & Babbie, 2017). For example, Indigenous participants in control groups of nutritional studies described by Mosby were deprived of minerals and nutrients that could have allayed the negative long-term effects of malnutrition, including increased risk for disease and death (e.g., Mosby & Galloway, 2017). In another example, depriving dangerous offenders from a drug proven to be successful at decreasing aggression could result in victimization of others. As such, in cases where the administration of an experimental treatment is found to be beneficial or effective for participants in the experimental group, plans should be made to offer that treatment to those in the control group to remedy any relative harm due to deprivation.

Consider research studies that you learned about in your very first criminology course – who was examined? It is likely that the participants in at least one of the studies that you learned about were people who have committed crime, been victimized by crime, and/or enforced criminal law. Individuals in these groups may be more susceptible to psychological harm due to their

personal and professional experiences. Criminal offenders report significantly higher levels of past trauma than non-offenders (e.g., Matheson, 2012). Post-traumatic stress disorder (PTSD) rates in both victims and law enforcement officials, like police officers, typically exceed the rates in the general population (Cotter, 2019; Public Safety Canada, 2023). Asking individuals to reflect on or discuss experiences may lead to re-traumatization, which can contribute to trauma symptoms resurfacing. Researchers or their assistants may experience secondary psychological trauma when hearing about participants' past histories of abuse or when reading archival data describing violent crimes in detail as well. As with physical safety, psychological safety of participants and researchers should be considered as part of research designs and procedures. A common approach is to develop distress protocols to respond to potential and actual emotional harm of participants. Such protocols may include using scripted language to reduce the stress of participants, stopping the research study, and recommending contact with crisis hotlines or counselling services (Whitney & Evered, 2022). Similar protocols could be established for the research team as well to combat psychological harms that can result from conducting research.

Social harm manifests from actions that “damage relationships, diminish social standing or reputation, or threaten employment status” (Dixon & Quirke, 2017, pg. 17). Social harms can be felt by individuals, groups, communities, and organizations. For example, the participants in Humphreys' tearoom trade study were men whose identity as gay was secret or not widely known in their social networks (Humphreys, 2008). Disclosure of their identities could have had serious social consequences, including reputational damage and loss of personal and professional relationships at a time when homophobic attitudes were widespread. Though Humphreys did take steps to conceal the identities of the men in the study, obtaining their names and addresses from their licence plates increased the likelihood that they may have experienced social harms.

Groups can experience social harms as the result of publication of criminology research as well. For example, law enforcement agencies do not systematically publish or release data that break down crime rates by the race or ethnicity of the persons who committed the crimes (Adler, Mueller, Laufer, & Grekul, 2022). It is speculated that this may be due in part to concerns that publication of such data could portray those groups negatively and be used as evidence to bolster prejudiced and/or racist beliefs held by some members of the public (Adler et al., 2022).

Organizations, and the individuals who are members of organizations, can also suffer social harms when research describing past harms committed by those organizations is made public. In 2010, the Toronto Star obtained, analyzed, and published police data which exposed racial bias in the practice of “carding,” or random stops of citizens and the collection of their personal data (e.g., Rankin, 2010). The data revealed that Black persons were stopped disproportionately more often than other groups, which portrayed the Toronto Police in a negative light and resulted in significant public backlash against the organization. However, it is arguable that the benefits of these reports outweighed the resulting harm to the reputation of the Toronto Police. Indeed, a review of police policies and practices was conducted in response to the public backlash and the practice of random carding was prohibited in 2017 (Draaisma, 2017). So while the publication of information may harm the reputation of individuals and organizations who are studied, it would be problematic to ban all criminology research from publishing anything that could cast individuals or groups in a negative light; after all, much research identifies critical problems with individuals or groups that operate within the criminal justice system that are causing harm to others, such as carding. Note that the Toronto Star articles did not single out specific police officers who engaged in the practice of carding, but rather the organization in general. It is important to note that the identities of participants in research studies should be protected whenever possible to mitigate such harms.

Researchers must also take steps to mitigate any potential legal harm for those involved in or affected by research. Research participants may reveal details of crimes that they have not been prosecuted for or may specifically reveal details that would implicate them in the crimes that they describe. Upon hearing this information, researchers may feel compelled to report this information to law enforcement. To prevent this from occurring, researchers may caution participants from divulging any information that could be used to implicate them in past crimes that have gone undetected by law enforcement. However, the purpose of some research studies may run contrary to these cautions – that is, it may be *precisely* the goal of the research to gather details of crimes that have gone undetected. The courts have generally upheld the confidentiality of research relationships on a case-by-case privilege basis for some types of criminal offences (e.g., *R v. Parent*, 2014). Of course, there are some instances in which researchers are legally required to disclose criminal acts to authorities, such as in situations where a participant discloses harm to a child. Mandatory reporting of child abuse is discussed more fully alongside confidentiality later in this section of the chapter.

To prevent legal harms, the TCPS2 (2022) directs researchers to be informed about and comply with all legal and regulatory requirements regarding protection of the identities of participants, intellectual property, and decision-making capabilities of participants. Researchers are also directed to avoid discrimination of participants as per human rights legislation and the *Charter of Rights and Freedoms*. And don't forget about the *Criminal Code of Canada*! While this may be obvious to the average criminology student, it is important to emphasize that researchers should not actively break the law during the course of their research. For example, a researcher may decide that they will secretly pose as a member of an organized crime group to gain an

insider perspective of the organization. To keep their identity secret, the researcher may have to engage in illegal acts to prove their loyalty to the group (e.g., assaulting rival gang members). Though very rich, real-world data about gang life could be obtained, the researcher could be compelled to commit harmful acts in contravention of the law. To avoid this, the researcher may choose a more indirect way of studying the organized crime group, such as interviewing former gang members. All in all, researchers are encouraged to comply with the law in the application of ethical principles to their research (Government of Canada, 2022).

In the context of Concern for Welfare, protecting the identity of participants through confidentiality or anonymity is also required by the TCPS2 of 2022. In fact, the policy requires researchers to “safeguard information entrusted to them and not misuse or wrongfully disclose it” (Government of Canada, 2022, p. 81). Confidentiality and anonymity are not the same. **Anonymity** means that you *can't identify* research participants; **confidentiality** means you can identify research participants, but you *won't identify* them publicly. Researchers should consider if they are able to promise confidentiality or anonymity to participants and embed processes to ensure identity protections into the research design.

Anonymity can be achieved by designing the research study in such a way that no identifying information about the individual – such as name, birthdate, or address – is shared with the researcher. For example, participants responding to an online self-report survey may be anonymous, whereas anonymity is not possible if your research includes face-to-face interviews as a person could be identified by personal features such as their face or voice. Anonymity is often promised in studies where the participants may be hesitant to be identified because they are fearful that they will face negative consequences for providing data for research. For example, as part of a multi-methodological study funded by the BC Ministry of the Attorney General examining the characteristics of men who purchase sexual services in the Greater Vancouver Regional District, Lowman and Atchison (2006) employed an anonymous self-report survey methodology. Participants completed surveys independently that they obtained from a shelf rented by the researchers in an all-night bookstore. Pre-paid envelopes were left with the surveys, which participants used to mail their completed surveys to Simon Fraser University without including identifying information like a return address. Lowman and Atchison (2006) had no way to identify specific participants, thus participants were completely anonymous.

In contrast, confidentiality should be promised by a researcher when the identities of the participants *can* be linked back to their individual data. In another study within Lowman & Atchison's (2006) project, participants completed a semi-structured interview via telephone with researchers about their experiences as consumers of sex work. Here, participants could potentially be identified by their phone number or their voice. However, researchers promised not to reveal their identities, or any **identifying information**, to anyone. These details can be directly identifying information, such as participant names, driver's license numbers, or social insurance numbers, or indirectly identifying information, such as phone numbers, the community where someone lives, or other unique characteristics that may distinguish them from others (Government of Canada, 2022). This information also needs to be considered in the context of the research. For example, a person named Amar who is a criminal lawyer would likely not be identifiable among the millions of residents in Toronto. However, if Amar is a criminal lawyer in a small town with 500 residents, together the details of name, profession, and town may allow Amar to be specifically identified. Researchers can deidentify (or anonymize) data, meaning removing or hiding identifying information, either in the research process or in the publication process. Deidentifying can include using **pseudonyms** for participants, and changing their place of residence, such as referring to a large Canadian city or rural small town rather than naming the city or town. Deidentifying can also be accomplished by assigning participants a unique participant ID number and then protecting the document that links the participant with their ID number. Password protection or file encryption are two common ways to protect these data.

Though it is important to protect the identities of participants, there are limits to confidentiality protections. As mentioned earlier, sometimes these are limits that are set in law. In all provinces and territories in Canada, researchers have a legal obligation to report suspected or known child abuse (Tonmyr et al., 2018). Failure to report can be met with fines or other punishments. This information could be divulged by suspected child victims or suspected perpetrators of abuse who are participating in research studies. Researchers are expected to design their research plans to mitigate any confidentiality issues that may arise (TCPS2, 2022). For example, when researchers collect data from populations who are more likely to divulge involvement in child abuse, participants are often directed as part of informed consent that the researchers have a mandatory duty to report child abuse. Researchers may even request that participants not divulge this information to them to avoid situations where reporting of child abuse must occur.

Though the legal obligation to report intended or undetected child abuse is consistent among many professionals in Canada, reporting of intended or actual crimes against adults is not a legal obligation of researchers in Canada, though it may be an ethical one. Other professionals in criminology and the criminal justice system do have such legal obligations; for example, police have both a common law and statutory duty to warn if they are informed of a credible threat of grievous or lethal violence against an individual or group. There are cases in which the right to uphold confidentiality of participants have been adjudicated for some (but not all) criminal offences in criminal court such as in *R v. Parent* (2014). In a notable case in British Columbia, a researcher was successful in concealing the identities of participants who committed offences when challenged in coroner's court. Russell Ogden was subpoenaed in 1994 to Vancouver's Coroner's Court when he was a graduate student at Simon Fraser University

(Lowman & Palys, 1998). Ogden's research centred on assisted suicide in patients with HIV/AIDS at a time when medically-assisted deaths by physicians were legally prohibited in Canada. He was called to testify because it was suspected that he had acquired knowledge about the death of a "Jane Doe" during his research. Ogden refused to divulge protected information from his research because he had promised participants absolute confidentiality. He successfully argued that he had passed the legal test of privilege in his relationship with his participants as a researcher. It is important to note, however, that issues of duty to warn or researcher-participant privilege when it comes to reporting all criminal offences in Canada remain largely untested in criminal courts to date.

The absence of a legal duty to warn about all intended or actual crimes against adults when they are discovered by researchers does not preclude the presence of ethical duties to warn authorities that participants are a danger to themselves or others. Often, ethical guidelines will include provisions where reporting intended or actual serious harms are exceptions to rules about the protection of participant identities. For example, failure to report harms being committed or experienced by participants conflicts with the core principle of Concern for Welfare. As per the TCPS2 of 2022,

the ethical duty of confidentiality must, at times, be balanced against competing ethical considerations or legal or professional requirements that call for disclosure of information obtained or created in a research context. For example, in exceptional and compelling circumstances, researchers may be subject to obligations to report information to authorities to protect the health, life or safety of a participant or a third party, a community, or the general population. (Government of Canada, 2022, p. 81)

Further, many research studies into sensitive subjects often include a limitation to confidentiality in the informed consent information in that if a participant shares an intention to harm themselves or others, those details (and only those details) will be shared with authorities. REBs also require that researchers report **adverse events** that occur during their research (e.g., Lyons & Fagbamiye, 2023). In the absence of duty to warn legislation for researchers, they must carefully consider whether the harm of failing to disclose participants' planned or past crimes exceeds the harm that may result from breaching confidentiality. If the risk of failing to report exceeds the benefits of doing so, disclosures of harm to self or others should be reported to authorities.

Indigenous Research Ethics and the 5 Rs: Responsibility, Relationships, and Respect

The 5 Rs of Indigenous Research Ethics also connect to the core principle of Concern for Welfare, challenging researchers to expand notions of harm and welfare beyond the risks and harms noted above. The 5 Rs invite researchers to consider their own ongoing *responsibility* in the research process for ensuring the welfare of not only the participants themselves, but also the community and *relationships* within it. As with the core principle of Respect for Persons, the R of *respect* in Indigenous Research Ethics underpins considerations of welfare and harm.

In his list of questions for researchers, Wilson (2008, p. 77) raises notions of responsibility and relationships:

- *"What is my role as researcher in this relationship, and what are my responsibilities?"*
- *Am I being responsible in fulfilling my role and obligations to the other participants, to the topic, and to all of my relations?"*

We add two questions to those Wilson (2008) invites researchers to consider, which challenge researchers to consider their own identity and how that may influence the research and relationships:

- *Who am I as a researcher, community member, and person?*
- *What is my social location, such as positions of privilege and identity?*

Recognizing the importance that relationships hold in Indigenous research methodologies and ethics and taking active responsibility for building and maintaining relationships is part of avoiding harm within the research process and is central to the concern for welfare the TCPS highlights as a core principle. Also, recognizing that harm is not limited to the immediate community members, but also includes the ancestors and relations of the community as a whole is an important idea to hold close as the welfare of the entire community is prioritized.

Reputational harm is a form of harm experienced by Indigenous Peoples in the past within a Western/colonial research framework. Because of this harm, and the extractive practices of Western/colonial research, Smith (2012, p. 1) has identified that research is "probably one of the dirtiest words in the indigenous world's vocabulary." Historically, research has been conducted which has reified harmful stereotypes, portraying a community or group in a harmful or derogatory way (Tuck, 2022). Such research tended to frame Indigenous communities from a **deficit perspective**, meaning that there was something wrong with the community or individuals that needed to be identified, explained, and solved, thus causing harm to the community. Instead,

researchers could consider a **strengths-based perspective** to mitigate community harm as part of their responsibility to prioritize the welfare of participants. A strengths-based approach does not mean ignoring any problems or challenges; indeed, recognizing and naming problems are crucial steps in developing solutions. Rather, a strengths-based perspective highlights the resources and strengths within the community itself. Such strengths can include the relationships among and between community members, connections to cultural practices, and the lands as resources to respond to the challenges in the community.

An example can help to illustrate the difference between deficit and strengths-based perspectives. Data from the Canadian Uniform Crime Reporting Survey shows that in 2018, the “rate of police reported crime [was] six times higher in Indigenous communities than in non-Indigenous communities” (Statistics Canada, 2020, p. 7). A deficit perspective would frame this statistic as indicating something wrong in the communities that needs to be fixed by others because the communities are not capable of doing so themselves. This way of framing the problem would cause reputational harm, portraying the communities as helpless and rife with criminals. Instead, a strengths-based approach, as seen in Statistics Canada (2020), highlights all the actions taken by the communities to respond to crime in their communities, such as justice circles and restorative justice practices like community justice committees which seek to repair relationships between victims and offenders and mitigate the harm of stigma for the individuals as well as the community at large. Such responses draw on the strengths of the communities, including the deep family connections and relationships with community and land to reduce recidivism and increase accountability.

In light of the discussion above about confidentiality and anonymity, it bears a note here in connection to Indigenous Research Ethics. Confidentiality and anonymity may be a part of protecting the welfare of the community but given that so many Indigenous voices have been silenced by Western/colonial research in the past, some Indigenous communities or community members may *want* their contributions recognized using their own names. It is the responsibility of the researcher to respect the participant’s choice and not force confidentiality as a condition of participation.

Core Principle #3: Justice

The TCPS2 of 2022 offers the following definition of Justice:

Justice refers to the obligation to treat people fairly and equitably. Fairness entails treating all people with equal respect and concern. Equity requires distributing the benefits and burdens of research participation in such a way that no segment of the population is unduly burdened by the harms of research or denied the benefits of the knowledge generated from it. (p. 9)

You can see in the definition the overlap with the core principles of Respect for Persons and Concern for Welfare. However, Justice focuses more on equity and fairness within the research process and participation in research. Basically, no person or group should be exploited for research, and no person or group should be systemically included in or excluded from the benefits of research. Take the examples offered earlier in the chapter of the research *conducted on* Indigenous people. While there were certainly issues of lack of respect and harm, there was also a lack of Justice. The Indigenous participants were treated as research subjects, exploited for research because of their relative powerlessness, and disproportionately bore the burden of the risks and harms of the research.

The power imbalance between researcher and researched, and the vulnerability of the persons or group involved in the research as participants are two aspects of Justice that need to be considered. **Vulnerability** can refer to “limited decision-making capacity, or limited access to social goods, such as rights, opportunities, and power” (Government of Canada, 2022, p. 9). For example, in a study interviewing older adults about their perceptions of crime, an older adult with mild dementia could be considered a vulnerable person in the context of research due to the possibility of compromised decision-making about participating in the research. Under the core principle of Justice, this person should not automatically be excluded from research. Instead, how could this person be included in the research respecting their choice and with attention to their welfare? One possibility is to ask a caregiver to assist during the consent process and be present in the interview, and to be a familiar person to support the older adult if they have a brief memory lapse or get momentarily confused (both symptoms of mild dementia). This way, the welfare of the older adult is being protected and their choice to be included in the research is respected.

What about the ethics of paid participation? Valuing the time and energy that participants give to the research is encouraged, such as offering gestures of appreciation like a mug or t-shirt, or a gift card or cash representing an average hourly wage. A reward can be considered one of the benefits of research participation. However, the amount should not be so high as to induce or coerce the participant into the research and thus undermine the voluntariness of participation, as seen in the Stanford Prison Experiment. The reasonableness of the payment or gift (or coercive nature of the amount) can vary depending on the group that is participating. Pretend that two students, for example Jill and Pahar, are each conducting their own research. Jill is researching how people who are unhoused perceive their interactions with law enforcement, and Pahar is interviewing successful criminal

defence lawyers about setting boundaries with their clients. Each student is offering their participants a \$75 gift card to a local coffee shop as thanks for their time in a one-hour interview. For Pahar's participants, the gift card amount is a small fraction of their billable rate and thus represents a nice perk of participation but is unlikely to induce anyone to agree to take part in the study. For Jill's participants who are unhoused and impoverished, \$75 likely represents a great deal of money to them. For Jill's participants, the gift card amount could coerce participants into taking part in the study even if they don't want to, negating the voluntariness of participation that is key to the core principle of Respect for Persons.

Indigenous Research Ethics and the 5 Rs: Relevance and Reciprocity

Recall the definition of Justice above, that no one should be disproportionately burdened by research nor unequally denied the benefits of research. This is where we look to the Rs of Relevance again as well as Reciprocity as components of ethical research.

When research is relevant and beneficial for a community, the burden of participating in research (i.e., time, energy, effort) is offset by the benefits gleaned from the research. Engaging in *relationship* building and conversations about the needs of the community as the foundation of the research, at the *very first stage* of the research idea, is a way to ensure both relevance of the research for the community as well as respect for the protocols of the Nation. Some communities may have strategic priorities with which research should be aligned, while others may have a specific program to evaluate or a challenge within the community that requires research to support solutions. Building relationships within the community takes time and effort but are crucial for ethical and relevant research with and for Indigenous communities.

Reflections on research conducted with (on) Indigenous Peoples in Canada in the past have revealed that much of this research adopted an extractive or "helicopter" approach (University of Waterloo, n.d.), whereby agencies and researchers entered communities, extracted data, and left without returning to present findings or with the aim of using the information to benefit the communities in which it was collected. Among the questions Wilson (2008, p. 77) invites researchers to consider are the following two:

- "What am I contributing or giving back to the relationship?"
- Is the sharing, learning, and growth that is taking place reciprocal?"

Reciprocity means giving something back and is the opposite of the extractive research of the past. Reciprocity is grounded in relationships based on trust and openness. Within Indigenous Research Ethics, part of reciprocity is the return of information to the community. Acknowledging the past harms that have been done via extractive research, many First Nations have developed research protocols and research agreements to clearly establish relevance, reciprocity, and respect within the research process. Many of these agreements and protocols directly address data sovereignty. For an example of a resource for example knowledge sharing along with links to research protocols, see this resource from the Government of Northwest Territories: [TK Data Sharing Agreement \[PDF\]](#).

The First Nations Information Governance Centre (FNIGC) offers the OCAP® principles as a way to ensure one aspect of reciprocity when it comes to data and information. OCAP® stands for Ownership, Control, Access, and Possession of information and data about the community and individuals within it; in short, addressing **Indigenous data sovereignty**. The OCAP® principles offer a framework to ensure that "First Nations alone have control over data collection processes in their communities, and that they own and control how this information can be stored, interpreted, used, or shared" (FNIGC, 2024, para. 3).

STOP AND WATCH THIS VIDEO!

Watch this video introducing the OCAP® principles:

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Another way to ensure reciprocity is by sharing the results of the research in an open community gathering. The community gathering may happen at various points throughout the research process to have conversations over meals about how the

research is progressing and results so far, or a celebration and sharing at the conclusion of the research project. Again, *respect* of the particular ceremonies of the Nation with whom you are doing research and honouring the relationships that are being built through the research process are pivotal to ethical and reciprocal relationships.

In summary, it is important to note that while the core principles of Respect for Persons, Concern for Welfare, and Justice shape and guide researchers' actions and decisions, how these principles are operationalized may differ depending on the group that is participating in the research. In researching with and for Indigenous communities, Davey (2023) offers that the methodology used should resonate with and reflect the values and approaches of the community involved in the research as a component of ethical research.

Table 1.2 Core Principles and Corresponding 5 Rs

Core Principle and Key Ethical Concept	Corresponding Rs
Respect for Persons – autonomy, informed and ongoing consent	Respect, Relevance, Relationships
Concern for Welfare – minimizing harm, protecting identities via anonymity or confidentiality	Responsibility, Relationships, Respect
Justice – power imbalance/vulnerability, truly voluntary participation	Relevance, Reciprocity

TCPS2: Course on Research Ethics (CORE) 2022

Anyone who conducts research at an institution eligible for funding from the Tri-Council Agencies (SSHRC, NSERC, and CIHR) and who collects data from human participants must complete the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans Course on Research Ethics, or [TCPS 2: CORE-2022](#). It is composed of nine modules, including an introduction, discussion of scope of the TCPS2, risks and benefits of research, consent, fairness and equity, privacy and confidentiality, conflicts of interest, research ethics board review, and research involving Indigenous people. Each module concludes with 4-5 multiple choice questions that test the learner's understanding of the content. At the end of the course is a knowledge consolidation exercise containing 25 multiple choice questions about the contents of all nine modules. It is a self-paced online course that takes approximately 4 hours to complete. Participants must achieve a score of 80% or above to receive a Certificate of Completion. This certificate often must be submitted with research ethics applications to university research ethics boards. It is also helpful to complete in parallel with your research methods course to see how ethical principles apply to real world research studies.

Researcher in the Research Process: Additional Responsibilities of an Ethical Researcher

In addition to upholding the core principles of the TCPS2 of 2022 and the 5Rs, researchers have some general ethical responsibilities to the academic and research community: Honesty and Transparency, Respect, and Openness. These responsibilities and ways to honour them are outlined below.

Honesty and Transparency

From the proposal to the presentation of findings stages of research, it is critical that we are truthful in communicating how our research will be or has been conducted. Researchers bear a significant responsibility to the participants and groups that they study, to the individuals who assist them in conducting their research, to those who are impacted by the findings, and to the scientific community and knowledge keepers in general. As such, researchers must be upfront about the risks and benefits of their research, as well as about what they can and cannot conclude from the data they have examined. Such transparency may be achieved by doing the following:

- Preparing research proposals and ethics applications that contain honest and realistic plans for research that are followed faithfully and revised with granting agencies and REBs if necessary;
- Providing accurate information to participants when they give informed consent to participate in research;
- Clearly describing the methods and findings of research studies when disseminating findings in presentations, publications, or community gatherings; and
- Abstaining from falsification of data or exaggerating what can be concluded or inferred from research findings.

When in the planning stages of research, researchers must anticipate whether they may encounter “incompatibility of two or more duties, responsibilities or interests ... of an individual or institution as they relate to the ethical conduct of research, such that one cannot be fulfilled without compromising another” (Government of Canada, 2022, p. 265) during the course of their research. This is referred to as a **conflict of interest**. Conflicts of interest can be real (e.g., the researcher's parent works for the agency funding the research), potential (e.g., the researcher could obtain a job with the participant's legal firm in the future), or perceived (e.g., the researcher has worked for a similar organization previously that is funding the research, but has neither official ties to the organization nor plans to join them).

Not all conflicts of interest substantively impact the outcomes of research studies, but the possibility that they may be present and how they could affect the work for a researcher must at the very least be considered. When a conflict of interest is present, steps must be taken to ensure that role conflict does not compromise the integrity of the work at any stage of the research process. For example, as you may recall from earlier in the chapter, Zimbardo erroneously adopted the role of Superintendent in the Stanford Prison Experiment. It has been suggested that his immersion in the prison simulation played a role in the failure to cease data collection earlier, resulting in harms to participants that should not have occurred. Similarly, he has been accused of prewriting the results of the study to achieve non-academic goals (e.g., Le Textier, 2019). Researchers must take steps to ensure that other roles that they hold do not unduly influence the research they conduct.

Holding dual roles can also affect decisions about if and how data should be published. Take for example an active-duty police detective who also conducts research part-time at a university. The detective decides to conduct research on the effectiveness of an interrogation technique that is used in their department. However, upon analysis of the study data, the detective discovers that the interrogation method poses a significant risk of resulting in a false confession. As a researcher, the detective knows that the discovery of a problematic interrogation technique should be disseminated to the criminal justice community to prevent wrongful convictions. But as a detective, the findings of this study could call into question the validity of hundreds of confessions made to police and have serious legal ramifications for the department. As such, the detective may be tempted to manipulate or falsify data to make the risk for false confessions appear lower, or simply fail to present the findings publicly. But withholding accurate findings would violate principles of integrity that the researcher must uphold.

This example demonstrates how important it is that researchers report and distribute research findings in an honest manner and reflect on how their biases may affect how they collect, examine, and report data. **Positionality statements**, also referred to as reflexivity statements, offer a way for the researcher to be transparent about their perspectives and potential biases in the research process (Lumsden & Winter, 2014). For example, a researcher may begin a conversation, presentation, or publication about the research that describes their background and reasons for conducting the research in question. These statements may allow the researcher and others to consider any potential biases that they may hold in the planning and execution of research (see [Ethics – British Society of Criminology](#) and [Statement of Professional Ethics – Canadian Sociological Association \[PDF\]](#) for more on how to support collegial relationships when conducting research).

Respect

To further uphold Respect for Persons, researchers have a duty to show respect to the field of study in general and to other researchers in particular. With regards to showing respect to the field, according to the American Criminology Society (ASC) Code of Ethics (2016), researchers must take strides to avoid “incompetent, unethical, or unscrupulous use of criminological knowledge” (pg. 1). Incompetence could include failure to use up-to-date measurements or failure to conduct an updated review of literature that is reflective of current knowledge and practices in criminology research. Unethical research could be that which is harmful to the life, safety, and/or reputation of participants or does not respect their decision to or not to participate in research studies. Unscrupulous research could be studies that are conducted with a hidden agenda to harm a group of individuals, such as publishing a study that finds Indigenous people are incarcerated at higher rates than non-Indigenous people, with the intention to implement tougher sentencing laws on offenders who are Indigenous. As experts in the field, researchers must follow sound, high-quality research practices and conduct their research in a responsible manner to uphold high standards for the discipline.

As there are numerous instances when researchers may engage with others and provide critical commentary on their work, such as at public presentations or as part of the peer review process when research studies are published in academic journals, often professional associations also provide guidance on how to engage respectfully with the work of colleagues. For instance, section 11.10 of the *Canadian Sociological Association Statement of Professional Ethics* (2021) states that any evaluations of colleagues, students, and their work must be based on professional criteria only and cautions against reviewing the work of others when the researcher has a conflict of interest or has a pre-existing close relationship (be it positive or negative) with those being reviewed. Section 2.9 of the ASC Code of Ethics requires that criminologists respect the rights, dignity, and worth of all people they study and work alongside in their research. Though researchers often review the work of others and provide critical feedback, this should not be taken as an opportunity to launch unkind criticism at others. Critique should be direct but helpful and focus on

the ideas in the research and not the characteristics or personality of the researcher. And though it can be challenging, it is also respectful to be open to critiques of your own research from others as they may have perspectives that you have not considered. When in doubt, be curious, not critical. We should all be collegial and receptive to the ideas of others, as good research stems from collaborative efforts at generating knowledge, which ultimately benefits the discipline as a whole.

Openness

As we have discussed in the previous section, being open to the ideas of others is important. It is also important to be open to sharing research ideas with others. Financial support and resources to conduct and communicate research are finite and need to be respected as such. Further, ensuring that no one person or group is unduly burdened by research and that all people and groups equally benefit from research is central to the core principle of Justice. One way to achieve the equitable distribution of the work and benefits of research is to subscribe to the principle of **scientific openness**, which is defined as “the commitment to publicly and freely sharing the products and means of scientific investigation, including data, results, theories, models, hypotheses, methods, protocols, materials, and computer code used in processing and analyzing data and images” (Resnik, 2023, p. 2). By extension, openness also includes sharing results of research studies with communities at large. Considering the extractive research approach taken with Indigenous populations in Canada in the past, sharing results with the community first is particularly important when working alongside Indigenous communities to uphold ideals of reciprocity and relationships forged during the research process.



Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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Conclusion

In this chapter, you have been exposed to past studies where ethical violations occurred. You have also learned about the core principles of Concern for Welfare, Respect for Persons, and Justice and the 5 Rs of Indigenous research ethics – Respect, Relevance, Responsibility, Reciprocity, and Relationships – which are intended to prevent ethical violations of the past and improve the benefits of research in the future. You have learned that while some literature suggests that there are 4 Rs while others refer to 6 or more Rs, the important thing to keep in mind is the importance of consulting with the Indigenous community you are researching with to learn which Rs they hold to be their own ethical core values.

You have also learned about the ways in which researchers uphold these principles and goals of ethical research. These ways include but are not limited to prevention of harm, protection of identities of research participants, ensuring research participation is voluntary and informed, and respecting the cultural beliefs and practices of the populations with whom you work. Finally, you learned about the importance of being honest and transparent, respectful, and open as a researcher, as well as the necessity to hold yourself and others accountable to uphold these responsibilities. It is important that you consider these principles and ideas as you consume research moving forward, as well as to practice them if you conduct research in the future.



Summary

- The Stanford Prison Experiment and the Tearoom Trade are classic examples of social science studies where ethical principles were clearly violated, including but not limited to the need to protect our participants from harm, the need to ensure that that participation is voluntary and informed consent is obtained.
- Canada's history of unethical research conducted on Indigenous Peoples further demonstrates the need to ensure, amongst other things, that we do not harm vulnerable participants and that we respect their dignity.
- Research Ethics Boards (REBs) have the task of ensuring that research complies with the TCPS2 of 2022 principles and prioritizes the well-being of participants.
- The TCPS2 of 2022 identifies three interconnected core principles that every researcher must take into account when

- developing and conducting research with human participants: Respect for Persons, Concern for Welfare, and Justice.
- These core principles overlap with foundational ethical elements common to Indigenous research methodologies, which are referred to as the 5 Rs: Respect, Relevance, Responsibility, Reciprocity, and Relationships.
 - OCAP® principles are a way to ensure one aspect of reciprocity when it comes to data and information.

Key Terms

adverse events: serious and unfavourable events that can occur in the context of research studies, which are typically unexpected. Examples include but are not limited to harmful incidents during data collection or the unintended disclosure of identities of participants. REBs require that researchers report these events and may require that studies be halted until the issues are investigated and resolved.

anonymity: when the identity of the participant cannot be determined from the information provided. For example, surveys are anonymous when the participants are never known to the researcher and no identifying information is collected.

autonomy: the ability and right to make your own choices, such as whether to participate in research or not.

confidentiality: the protection of research participants' identities by ensuring that identifying information is removed or altered from the final research report.

conflict of interest: when a stake in a role held, either personal or professional, interferes with or overrides decisions made in another role. Decisions made are often for personal gain in one role and may not be the best decision in the role in which the decision is made. Researchers must reflect on and avoid any real or perceived conflicts of interest.

consent: when research participants agree to participate in research, they may provide consent. This decision should come only after being fully informed of all that they are being asked to do, as well as the risks and benefits of participating. Consent must be voluntary and free from pressure or persuasion to engage in the research.

harm: any negative impact connected to participation in a research study. Harm can be temporary, like feeling sad in an interview, or longer term, such as the lasting trauma experienced by some of the participants in the Stanford Prison Experiment. Harm can come in many forms, including physical, psychological (e.g., emotional distress, embarrassment), financial (e.g., job loss), social or reputational harm (e.g., loss of status or respect within the community), and legal harm (e.g., possibility of prosecution should confidentiality be broken). While most of the focus is on harms to participants, these harms can also be experienced by researchers.

identifying information: any detail, alone or in conjunction with other details, which can identify a specific participant or their contributions. Information can be directly identifying, like a name or detailed physical description, or indirectly identifying, such as a phone number or street of residence.

Indigenous data sovereignty: "the fundamental rights of Indigenous Peoples' to control, access, interpret, manage, and collectively own data about their communities, lands, and cultures" (SFU, 2024).

informed consent: this is achieved when participants make a decision about being involved in a particular research study based on being provided with full and complete information about the study and what they are being asked to do. Informed consent can be communicated in writing (e.g., signed document or email), verbally (e.g., stated at the beginning of an interview), or in other ways (e.g., handshake, remaining in a public space).

positionality statements: also known as reflexivity statements, these are either written or verbal declarations of a researcher's identity or background. Such statements can help researchers and others to identify or acknowledge biases or perspectives that the researcher may hold that affect their research. Statements can include information related to the person's gender, ethnicity, class, and any other relevant social characteristics that can help others understand lenses through which the researcher may be interpreting their findings.

privacy: the right to control information about yourself, including how information is collected, held, and disseminated. Expectations of privacy may differ based on the situation, for example, lower expectations of privacy when in a public space and higher expectations of privacy in your own home. Privacy is closely connected to consent and confidentiality.

pseudonyms: fictitious names or aliases that people adopt for themselves for a particular purpose. In the context of research, a researcher may ask a participant to select an alias that is used to organize research materials associated with the participant without identifying the participant.

reciprocity: the act of giving something back to research participants and the research community, rather than simply extracting data from them, as has been the historical tendency. It is a concept grounded in relationships and based on trust and openness, and is integral in research with Indigenous people.

scientific openness: the commitment to publicly and freely share the products, means and results of our research with other researchers as well as with communities at large.

strengths-based perspective: a perspective which focuses on the inherent strengths, capabilities and resources of individuals and communities in responding to challenges that they may be facing. This is typically referred to in the context of research with or on Indigenous Peoples.

voluntariness: when participants exercise free will in choosing to be studied by researchers. In other words, it is their choice to participate in the research study and they are not compelled to do so by other factors.

Chapter Review

Crossword

Fill in the term in the right-hand column and it will display in the crossword puzzle. Be sure to include spaces where appropriate.

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Discussion Questions

1. In the Stanford Prison Experiment, the issue of voluntariness was raised. What are some ways that Zimbardo could have ensured participation was truly voluntary?
2. Harm to participants and researchers can come in many forms. What types of harm could have been inflicted on the participants in the Tearoom Trade had their identities become public?
3. Informed consent is now the standard in ethical social science research. Outline some reasons why a participant may not want to sign an informed consent form. Brainstorm in small groups the reasons and discuss how these may be accommodated in the research design to ensure that the core principles of Respect for Persons and Justice are upheld.

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Media Attributions

- Any negative impact connected to participation in a research study. Harm can be temporary, like feeling sad in an interview, or longer term, such as the lasting trauma experienced by some of the participants in the Stanford Prison Experiment. Harm can come in many forms, including physical, psychological (e.g., emotional distress, embarrassment), financial (e.g., job loss), social or reputational harm (e.g., loss of status or respect within the community), and legal harm (e.g., possibility of prosecution should confidentiality be broken). While most of the focus is on harms to participants, these harms can also be experienced by researchers.

×Close definition

When participants exercise free will in choosing to be studied by researchers. In other words, it is their choice to participate in the research study and they are not compelled to do so by other factors.

×Close definition

The right to control information about yourself, including how information is collected, held, and disseminated. Expectations of privacy may differ based on situation, for example, lower expectations of privacy when in a public space and higher expectations of privacy in your own home. Privacy is closely connected to consent and confidentiality.

×Close definition

When research participants agree to participate in research, they may provide consent. This decision should come only after being fully informed of all that they are being asked to do, as well as the risks and benefits of participating. Consent must be voluntary and free from pressure or persuasion to engage in the research.

×Close definition

When the participant may not know that they are a part of a research project or are not informed in advance about the true purpose of the research project. There are very limited circumstances in which deception is justified or allowable, specifically where the risk is minimal, the absence of free, full and informed consent presents no risks to participant welfare, the research question can be answered no other way, and participants will be debriefed.

×Close definition

The ability and right to make your own choices, such as whether to participate in research or not.

×Close definition

This is achieved when participants make a decision about being involved in a particular research study based on being provided with full and complete information about the study and what they are being asked to do. Informed consent can be communicated in writing (e.g., signed document or email), verbally (e.g., stated at the beginning of an interview), or in other ways (e.g., handshake, remaining in a public space).

×Close definition

When the identity of the participant cannot be determined from the information provided. For example, the case of anonymous surveys where the participants are never known to the researcher and no identifying information is collected.

×Close definition

The protection of research participants' identities by ensuring that identifying information is removed or altered from the final research report.

×Close definition

Any detail, alone or in conjunction with other details, which can identify a specific participant or their contributions. Information can be directly identifying, like a name or detailed physical description, or indirectly identifying, such as a phone number or street of residence.

×Close definition

Fictitious names or aliases that people adopt for themselves for a particular purpose. In the context of research, a researcher may ask a participant to select an alias that is used to organize research materials associated with the participant without identifying the participant.

×Close definition

Serious and unfavourable events that can occur in the context of research studies, which are typically unexpected. Examples include but are not limited to harmful incidents during data collection or unintended disclosure of identities of participants. REBs require that researchers report these events and may require that studies be halted until the issues are investigated and resolved.

×Close definition

An approach that focuses on what is wrong with an individual or community and narrows attention to explanation for the problem and how to solve it. When used within research, this perspective has tended to reify negative and colonial notions of Indigenous communities.

×Close definition

A perspective which focuses on the inherent strengths, capabilities and resources of individuals and communities in responding to challenges that they may be facing. This is typically referred to in the context of research with or on Indigenous peoples.

×Close definition

A compromised ability to make choices in the context of research, either because of medical reasons (e.g., dementia), age (e.g., children), or social reasons (e.g., limited access to rights or power). Vulnerability can also refer to groups who have historically been exploited or excluded from research, such as prisoners, women, and Indigenous Peoples.

×Close definition

The act of giving something back to research participants and the research community, rather than simply extracting data from them, as has been the historical tendency. It is a concept grounded in relationships and based on trust and openness, and is integral in research with Indigenous peoples.

×Close definition

Indigenous data sovereignty refers to "the fundamental rights of Indigenous Peoples' to control, access, interpret, manage, and collectively own data about their communities, lands, and cultures" (SFU, 2024).

×Close definition

When a stake in a role held, either personal or professional, interferes with or overrides decisions made in another role. Decisions made are often for personal gain in one role and may not be the best decision in the role in which the decision is made. Researchers must reflect on and avoid any real or perceived conflicts of interest.

×Close definition

Also known as reflexivity statements, these are either written or verbal declarations of a researcher's identity or background. Such statements can help researchers and others to identify or acknowledge biases or perspectives that the researcher may hold that affect their research. Statements can include information related to the person's gender, ethnicity, class, and any other relevant social characteristics that can help others understand lenses through which the researcher may be interpreting their findings.

×Close definition

The commitment to publicly and freely share the products, means and results of our research with other researchers as well as

with communities at large.

×Close definition

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2: Paradigms and Theories

Learning Objectives

- Define ontology, epistemology, and paradigm.
- Identify the five key paradigms in the social sciences.
- Distinguish between the traditional paradigms and the Indigenous paradigm.
- List a criminological theory that falls under each paradigm.
- Distinguish between paradigms and theories.
- Explain the connection between theory and policy.

Social scientists and laypersons ask questions and seek answers to these questions in an attempt to understand the world around them. We all want to learn about the social and physical environment we are a part of, the people we spend time with, and perhaps even the meaning of life. There are clear differences in how people approach questions and facts, however. The regular layperson will often make assumptions about how the world works, as observations in our regular life are often made quite haphazardly. For example, before I bought my last vehicle, I had not noticed many of this particular model on the road. But lo and behold, the moment I started driving around, I noticed how many people in my own neighbourhood had the same car as I did and even the exact same colour! This is an example of a common error made in general, casual human inquiry: **selective observation**. Other common errors made in general, casual human inquiry include **overgeneralization**, **illogical reasoning**, **inaccurate observation**, and strict adherence to **ideological or political stances** (Maxfield & Babbie, 2018).

Let us elaborate on the error of inaccurate observation as it is arguably the most relevant for us as criminologists. Did you know that eyewitness testimony is the number one reason for wrongful convictions (Findley, 2016)? These eyewitnesses, with all good intentions, very often place an innocent person at a crime scene, even if that person was not even in the same part of town at the time the event occurred. The eyewitness may inaccurately observe, and then report, the accused's hair colour or clothing, thus resulting in an error of fact. This alone demonstrates the dangers of casual human inquiry.

Stop and Take a Break!

For more on the malleability of human memory and the impacts this has on wrongful convictions, watch this clip from the Innocence Project:

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[View this YouTube Video online](#)



For social scientists, though, observations are made in a much more systematic manner and with much more rigour. The research questions social scientists come up with can be motivated by all types of knowledge, and they are not created out of thin air. Social scientists' perceptions of how the world works shape the kinds of questions they ask and the kinds of strategies they use to answer those questions. During the research process, social scientists constantly move back and forth from a **theoretical level** (abstract, generalizable ideas) to an **empirical level** (actual observations and data analysis). Social scientists learn to visualize the abstract from actual observations in a strategic and deliberate way to identify hidden concepts and patterns and then synthesize those patterns into generalizable ideas that apply to contexts outside the initial observations (e.g., findings from a study examining victims of one type of crime telling us something about victims of other similar types of crime).

While these skills take many years to develop, learning about some basic elements of the theoretical level is a useful first step toward understanding how to think like a researcher. This chapter begins with a brief overview of two key concepts: ontology and epistemology. It then discusses how social science paradigms and theories inform the scientific research process. Examples of criminological theories that fall within each of the paradigms are provided, along with the policy implications of these paradigms

and theories.

Ontology and Epistemology

Thinking about what you know and how you know what you know involves questions of ontology and epistemology. Perhaps you have learned about these concepts before in a philosophy class? These concepts are relevant to the work of criminologists as well. While criminology is multidisciplinary and combines knowledge from sociology as well as a wide variety of non-legal fields, our research tends to focus on aspects of crime and criminal behaviour. In doing so, we are usually not starting with zero knowledge. In fact, we usually start with some understanding of three concepts: 1) what is, 2) what can be known about what is, and 3) what the best mechanism happens to be for learning about what is (Saylor Academy, 2012).

Ontology is a Greek word that means the study, theory, or science of being. Ontology is concerned with the first question – “what is”- or the nature of reality (Saunders, Lewis, & Thornhill, 2009). It can involve some very large and difficult-to-answer questions, such as:

- What is the purpose of life?
- What, if anything, exists beyond our universe?
- What categories does it belong to?
- Is there such a thing as objective reality?
- What does the verb “to be” mean?

Ontology is comprised of two aspects: objectivism and subjectivism. **Objectivism** means that social entities exist independently of the social actors concerned with their existence. **Subjectivism** means that social phenomena are created from the perceptions and actions of the social actors concerned with their existence (Saunders et al., 2009).

Epistemology, on the other hand, has to do with knowledge. Rather than dealing with questions about what is, epistemology deals with questions of how we know what is. In criminology, there are many ways to uncover knowledge. We might interview people to understand public opinions about a topic or observe people in their natural environment. We could avoid face-to-face interactions altogether by mailing people surveys to complete on their own or by reading people’s opinions in newspaper editorials. Each method of data collection comes with its own set of ontological and epistemological assumptions about how to go about finding things out (Saylor Academy, 2012). These various methods are discussed in detail in chapters throughout this textbook. But first, let us review the various worldviews—or paradigms—that guide how we go about uncovering knowledge as criminologists.

Figure 2.1: From Ontology to Analysis [\[Image description for Figure 2.1\]](#)

Paradigms of Social Science Research

The word “paradigm” was popularized by Thomas Kuhn (1962) in his book *The Structure of Scientific Revolutions*, in which he identified patterns of activities that shape the progress of science. For our purposes, we will define a **paradigm** as a way of viewing the world or the frame of reference we use to organize our thoughts and observations. It is a shared worldview that represents the beliefs and values guiding how problems are solved within a discipline (Schwandt, 2001). The chosen worldview affects how we think about the problem and influences how we go about investigating the problem. Think of paradigms as mental models we use to understand our human experiences. Different people perceive social issues and institutions in different ways that may frame their thinking and reasoning about an observed phenomenon. For instance, people tend to have vastly different views about the appropriateness of the death penalty as a sentence for serious violent crimes. While some will vehemently argue that this is a moral and just punishment for serious crimes, will suggest that it provides closure for families of the victims, and will say things like “it’s an eye for an eye.” Others will rely on research about the ineffectiveness of the death penalty as a deterrent for crime and will make mention of key wrongful conviction cases where an innocent person was convicted and executed for a crime they did not commit. Underlying these opposite standpoints are religious, political, cultural, and intellectual assumptions about how the world works and perhaps more importantly, how it *ought* to work. The paradigm you are operating under shapes your stance on the issue. Moreover, it shapes our attitudes and our values and, in turn, whether or not we accept or reject data based on how well those data conform to our ideology (Cooper et al., 2010).

Our personal paradigms are like “coloured glasses” that govern how we view the world and how we structure our thoughts about what we see in the world. Paradigms are often hard to recognize because they are implicit, assumed, and taken for granted. By implicit, it is meant that they are not mentioned in a research study, so you really do have to read between the lines; the paradigm, while not stated in plain form, informs the topics researchers choose to study, the methods they employ, the conclusions they

draw and, ultimately, the solutions they recommend to address the problem at hand. In other words, paradigms are connected to policy. After all, as researchers in the discipline of criminology, we are tasked with contributing to knowledge and informing policymakers on how to better deal with the social problems that plague our communities. Recognizing these paradigms is key to making sense of and reconciling differences in people's perceptions of the same social phenomenon. For instance, why might one group of stakeholders be in favour of safe injection sites while another group of stakeholders argues that it only condones drug use? The former will approach the topic from an evidence-based, harm reduction perspective and quote statistics on the lives that are saved when intravenous drug users are not forced to consume these substances in the shadows, spreading disease by sharing dirty needles and overdosing alone in dark alleys. The latter group will make moral or maybe even religious arguments about how it is wrong to condone these illicit acts and that prohibition is the only thing government policies should promote, despite the miserable failure of prohibition policies throughout history (see [History of Drug Policy in Canada](#) for a summary of the history of alcohol and drug prohibition in Canada and how it has been described as intricately linked to colonization).

As these examples illustrate, subconscious paradigms often constrain the concepts researchers attempt to measure, their observations, and their subsequent interpretations of a phenomenon. Given the complex nature of social phenomena, many social scientific paradigms may offer a partial view of a phenomenon, and researchers may need to operate from multiple paradigms to fully understand a problem and potential solutions. Social scientific researchers have typically operated from one of four paradigms: positivism, social constructionism, the critical paradigm, and postmodernism. In more recent years, some scholars have noted that we are undergoing a paradigmatic shift in the social sciences towards the inclusion of an anti-colonialist, Indigenous framework, which has been historically largely missing from texts in the discipline of criminology (Agozino, 2023). In the next section, each of these paradigms, including the Indigenous paradigm, will be reviewed.

Positivism

When you think of science, you most likely consider it through a positivist paradigm. **Positivism** operates according to the principles of objectivity, knowability, and deductive logic (Williams & McShane, 1988). This paradigm calls for value-free social science research in which researchers aim to abandon their biases and values in a quest for objective, empirical, and universal truth. Positivism holds that the creation of scientific knowledge should be restricted to what researchers can observe and measure using their senses; if you cannot see it and measure it, touch it or smell it, it simply does not exist. The works of French philosopher Auguste Comte (1798–1857) spurred the positivist paradigm as an attempt to separate scientific inquiry from religion (where the precepts could not be objectively observed) (Williams & McShane, 1988). He argued that theories created via reasoning are only authentic if they can be verified through observations. As a result, positivism focuses on **empiricism**, meaning knowledge that is produced through experience or observation (Maxfield & Babbie, 2018).

Cesare Lombroso

An example of a theory in criminology that falls under this positivist paradigm is Lombroso's biological theory of criminology. As you may recall from your introductory criminology courses, Lombroso has often been referred to as the "father of criminology." He argued that criminals were evolutionary throwbacks who possessed identifiable and measurable physical characteristics, or atavisms, that distinguished them from non-criminals, such as sloped foreheads and larger noses. According to his theory, criminals are born with these features and cannot be helped. As such, the only logical policy response to this "fact" that criminals are simply born that way was to identify them using so-called scientific methods and to remove them from society. The notion of free will was completely rejected by biological criminologists, as was any consideration of social influences on human behaviour, including criminal behaviour.

While one might think that this is a ludicrous position to take and was held only by criminologists of Lombroso's time, history has shown us that these notions have infiltrated more recent approaches to dealing with crime and criminality, such as genetic theories examining the similarities and differences between twins, and theories examining the impacts of hormones on behaviour (Miller, Schreck, & Tewksbury, 2006). Moreover, this positivist worldview has led to dangerous and racially charged eugenics efforts much closer to home, including the ongoing sterilization of Indigenous women in Canada (see [Indigenous women in Canada are still forcibly sterilised](#)). For a review of these early biological theories and the impact they have had on more recent eugenics efforts, see [Biological Influences on Criminal Behaviour](#).

Social Constructionism

In the late 1960s, two sociologists, Peter Berger and Thomas Luckman, developed the social constructionist paradigm in their book *The social construction of reality: A treatise in the sociology of knowledge*. While positivists seek to discover "the truth," **social constructionism** posits that "truth" is varying, socially constructed, and ever-changing (Berger & Luckman, 1966). In other

words, there is no truth that simply exists out there, waiting for researchers to discover it.

Instead, we create our individual and social realities through our interactions and our interpretations of those interactions, which are influenced by the social context in which they occur (Berger & Luckman, 1966). As Heidt (2023) notes, it is through social processes such as voting, political action, cultural practices, and media debates that society collectively decides which types of behaviour are considered harmful or criminal. Consider the evolution of face masks before and during the COVID-19 pandemic: a simple square of material edged with elastic bands went from an innocuous piece of protective equipment to an emotionally charged political symbol. Researchers who operate in the social constructionist paradigm would investigate how and why the meanings associated with face masks changed over time. They would also look at how the meaning of a Canadian flag mounted to one's vehicle has come to mean something very specific in the post-COVID era.

An example of a theory in criminology that falls within the social constructionist paradigm is Howard Becker's labelling theory, which is covered in most introduction to criminology textbooks (see [Labelling Theory](#)). According to labelling theory, criminals are only criminals because they come to be defined and labelled as such through a series of symbolic exchanges, and which behaviours come to be labelled as deviant and criminal change over time and place (Ashley, 2023). Take, for example, the case of homosexuality, once defined as a clinical psychological disorder, or the case of alcohol, once prohibited in many U.S. states and Canadian provinces. It is society's reaction to initial deviant acts that shapes the subsequent behaviours of these deviants and leads to eventual criminality (Ashley, 2023). The actor, or the offender, takes on a passive role, while society takes on an active role in labelling theory.

Grekul and LaBoucane-Benson (2008) discuss the labelling process in the context of the formation of Indigenous youth gangs in the Prairie provinces of Canada, whereby Indigenous youth deal with the label of "Aboriginal" followed by the label of "gang member." In this research, they state that these labels, within the context of colonialism and a long history of discriminatory laws and practices, only serve to stigmatize and reinforce the deviance. As their study found, "one ex-gang member recalls the police calling his group of friends a gang, so they 'began to act that way' and identify as a gang" (Grekul & LaBoucane-Benson, 2008, pp. 71-72). To address crime, then, labelling theorists urge us to re-examine and eliminate the labels we use to describe deviance. They warn us of the self-fulfilling prophecy, which refers to the impact that labelling someone as deviant has on the likelihood of that individual internalizing that label and in turn becoming deviant in the long term (Einstadter & Henry, 1995). Programs and policies designed to intervene early and divert young offenders away from the formal criminal justice system through, for example, the reliance on extrajudicial measures and the prohibited disclosure of the names of young offenders, as outlined in the *Youth Criminal Justice Act* (2003), embody many of the principles of labelling theory.

Critical Paradigm

At its core, the **critical paradigm** focuses on power and inequality (Gorkoff & Walby, 2023). Unlike the positivist paradigm, the critical paradigm posits that social science can never be truly objective or value-free. Researchers are human beings located within specific social structures in various positions of power. The same inherent biases that inform and are reinforced in everyday interactions influence the types of questions researchers ask, how they ask those questions, and their methods for investigating and answering questions. Researchers who work within this paradigm believe that social scientists must evaluate and be transparent about how their biases impact their work in every phase of the research process. Researchers within this paradigm also operate from a perspective that social scientific investigation should be conducted with the express goal of social change.

We Can Do It! Poster

Feminist criminology falls within the critical paradigm (Stevenson et al., 2023). While there are many branches of feminist theory, each with its own focus, they all share common features, namely, a focus on patriarchy and gender inequality. Feminist criminologists highlight the fact that, historically, criminological theories have been male-centred and have not meaningfully examined the plight of women as offenders or as victims of crime. In examining the disproportionate victimization of women, it becomes clear that Indigenous women are at greater risk compared to their white counterparts and the experiences of these women need to be understood within the context of colonial, capitalist, and gendered structural inequities. In addition to developing theories *on* women *by* women, feminist criminologists urge researchers to examine their unique pathways to offending so that the criminal justice system is better equipped in responding to female crime through a gender lens, with culturally appropriate and trauma-informed programming. Like other critical theories within the critical paradigm (such as green criminology and restorative, transformative justice), the goal of feminist criminology is to dismantle power structures and more specifically to eliminate the social inequities experienced by female victims and offenders. For a more detailed discussion on feminist criminology, its various branches, and statistics on the victimization of women and treatment of women by the Canadian criminal justice system, see [Feminist Criminology](#).

Postmodernism

In its briefest form, **postmodernism** asserts that truth in any form may or may not be knowable and that much of the knowledge we have about criminality has in fact been socially constructed (Miller et al., 2006). Whereas positivists claim there is an objective, knowable truth that can be discovered using proven, scientific methods, postmodernists would say there is not. Social constructionists may argue that truth is in the eye of the beholder (or in the eye of the group that agrees on it), but postmodernists may claim that we can never really know such truth because, in studying and reporting others' truths, researchers stamp their own truth onto the investigation. Finally, while the critical paradigm may argue that power, inequality, and change shape reality and truth, a postmodernist may in turn ask, whose power, whose inequality, whose change, whose reality, and whose truth? For illustrative purposes, Figure 2.2 displays these paradigms on a continuum of objectivity/subjectivity, including the Indigenous paradigm, which will be reviewed next.

Figure 2.2 Continuum of Paradigms *[Image description for Figure 2.2]*

Postmodernist thought is not unique to criminology; rather, it is a movement that has influenced social scientific thought since the 1980s (Miller et al., 2006). An example of a criminological theory within the postmodern paradigm is the constitutive criminology of Henry and Milovanovic (Einstadter & Henry, 1995), which urges us to re-examine beliefs that may be taken for granted and to question everything we may have once considered to be an indisputable fact. This theory posits that we must deconstruct all “facts” we have about crime to be able to reconstruct them. Let us take the example of the law to illustrate this theory. Postmodern criminologists would argue that there is no one “real” interpretation of the law and that our understanding of the law and the intention of those who wrote laws is entirely subjective (Einstadter & Henry, 1995). We must therefore deconstruct law—break it down into its components—analyze it and re-construct it; law is always subject to challenge and change, as are our definitions of crime and deviance. Postmodernism is the opposite of positivism in that it rejects the search for the causes of crime. Postmodernists go further to argue that criminal justice policy and practice is itself a crime against others as it holds the power to define crime and denies those defined as criminal the power to engage in this exercise. As such, the policy proposed by postmodern criminologists is to rely on informal forms of social control and to dismantle the power of formal criminal justice agents. As these examples suggest, the postmodernist paradigm poses quite a challenge for social scientific researchers. How does one study something that may or may not be real or that is only real in your current and unique experience of it? For a discussion of research conducted on crime media and how another theory – cultural criminology – draws from postmodern thought, see [Crime Media and Popular Culture](#).

Indigenous Paradigm

As mentioned earlier in this chapter, a paradigmatic shift in criminology has been documented in the literature, with increasing mention of decolonization and anticolonialism. While there continues to be a lack of clarity as to what decolonization actually means, at its core, it is agreed upon that decolonization in criminology is a critical approach that seeks to regain independence from racist and sexist power structures and systems (Agozino, 2023) with deconstruction as the larger intent (Smith, 2021). Relationality is central to the **Indigenous paradigm** (Wilson, 2008). This concept suggests that knowledge cannot be gained or owned by an individual; rather, knowledge is shared with the research participants as well as with and from all creation, including plants, four-legged as well as winged brothers and sisters, and the earth (Wilson, 2008). While the dominant paradigms would argue that empirical evidence and knowledge are paramount, with written text seen as superior, Indigenous scholars emphasize the significance of cultural knowledge and oral tradition (Wilson, 2008). Social change is also paramount in this worldview; the concerns of Indigenous Peoples and the benefits research can create with and for them, is how work within the critical Indigenous paradigm is assessed (Denzin & Lincoln, 2008). Research is to be seen as transformative. As Wilson (2008, p. 153) so eloquently states, “if research doesn’t change you, then you haven’t done it right.”

While it may seem obvious, it is important to acknowledge that this term “research” has historically had a very negative connotation amongst Indigenous peoples. As Smith (1999, p.1, as cited in Denzin & Lincoln, 2008, p. 5) states, “the word itself is probably one of the dirtiest words in the indigenous world’s vocabulary.” Research was used by “scientists” to “objectively” observe, measure, categorize, and create knowledge about the Indigenous other. The reports produced by Western scientists as a result of this “research” were sent back to the Western colonial powers without the consent of Indigenous subjects, denying them a voice or an identity. These research findings were used to strategically colonize and control or eradicate Indigenous peoples and lands (Denzin & Lincoln, 2008).

It is no wonder why there has been a push by Indigenous scholars and their allies to decolonize Western research methodologies. Many of these scholars have been educated within critical and feminist research paradigms, which give attention to power, inequity, justice, and representation (Smith, 2021). The goal of these scholars is to give Indigenous peoples a voice and seek their input on the design of the research, to hold researchers accountable, and to give Indigenous peoples first access to research

findings as well as control over how this knowledge is disseminated (Denzin & Lincoln, 2008) (see [chapter 1](#) for more on the ethics of doing research with Indigenous peoples). The sharing of knowledge is seen as a long-term commitment in which reciprocity and feedback are paramount (Smith, 2021). Those critical scholars within the Indigenous paradigm argue that “Indigenous persons must conduct, own, and benefit from any research that is done on, for, or with them” (Denzin & Lincoln, 2008, p. 14). They call for new methodologies to engage in critical Indigenous inquiry as well. As the critical feminist scholar Audre Lorde (1984, p. 110) famously stated, “the master’s tools will never dismantle the master’s house.” While her work is in the area of black feminism, Lorde’s idea also applies to efforts to decolonize our research as criminologists. We cannot use the colonial, namely positivist, research methodologies of the West to research with and for Indigenous peoples. We need new tools to collectively decolonize and revitalize Indigenous knowledge (Smith, 2021). Otherwise, the biases and potential harms inherent in the dominant scientific approach will spill over, despite any efforts made to be “objective.”

BC Memorial quilt, framed in full

Indigenous feminism is an example of a critical theory within the Indigenous paradigm that is relevant to criminologists. It considers the intersection of gender, race, and colonial and patriarchal practices (Suzack, 2015) as both victims of violent crime and as offenders. Much of the ideology of critical feminist criminological theory is consistent with the Indigenous worldview as they both challenge the outlook of mainstream society and seek to re-examine the power relationships and hierarchies that form the basis of the male-dominated ethnocentricity that characterizes most social science theory and research, including criminology. The overrepresentation of Indigenous women at each stage of the criminal justice process and the staggering number of missing and murdered Indigenous women and girls highlighted in numerous commissions and inquiries in Canada shed light on the dangers of being an Indigenous female in this country and on the undeniable need to examine these issues from a critical, Indigenous worldview. For more on this topic, see the following case study on Murdered and Missing Indigenous Women and Girls: [Treatment in the Criminal Justice System](#).

Table 2.1 below provides a summary of each of these paradigms and one theory that falls within each of them. You will notice that the core premise of each theory logically connects to what the respective theorists might consider an appropriate policy or research approach in dealing with and/or studying criminals. For example, as shown below, the positivist biological theory of crime sees the root cause of crime as being some kind of biological or physiological defect. As such, it would not make sense for a biological criminologist to suggest that we should improve access to education and employment for those living in high-crime-risk neighbourhoods. Rather, it logically flows from biological theories that the solution is to methodically identify these defects and either find a treatment or, if no treatment option is deemed viable, segregate that criminal from the rest of society. While this approach seems rather archaic and ruthless, one need not look much further than the psychological assessment tools designed to identify psychopaths and ultimately justify their indefinite incapacitation.

Table 2.1: Paradigms, Theories and Implications

Paradigm	Core Premise of the Paradigm	Theory	Core Premise of the Theory	Policy and Research Implications
Positivist Paradigm	objectivity, knowability, and deductive logic	Biological Theory of Crime	crime is rooted in biological/physiological defects	identify and treat/segregate criminals
Social Constructionist Paradigm	social context and interactions shape individual and social realities; no objective truths	Labelling theory	criminals are only criminal because society has labelled them as such	remove stigmatizing labels; diversion from the formal criminal justice system
Critical Paradigm	focus on power dynamics and inequality; scientific research cannot be objective or value-free	Feminist theory	laws and our understanding of female criminality are based in patriarchy and gender inequality	dismantle patriarchal power inequities; develop theories on women by women

Paradigm	Core Premise of the Paradigm	Theory	Core Premise of the Theory	Policy and Research Implications
Postmodernist Paradigm	truth in any form may or may not be knowable; crime is seen as a social construct resulting from complex interactions between individuals	Constitutive criminology	our understanding of law is totally subjective; criminal justice policy and practice is itself criminal	deconstruct then reconstruct taken-for-granted “facts”; move away from formal criminal justice agencies and toward informal social controls
Indigenous Paradigm	the goal to regain independence from racist and sexist power structures and systems; cultural knowledge and oral tradition are valued; relationality is key	Indigenous feminism	power inequities rooted in gender, race, and colonialism are to blame for the experiences of Indigenous women as both offenders and victims of crime	dismantle Eurocentric ways of thinking and research methods; focus on social change that benefits Indigenous peoples; remain accountable to Indigenous peoples and give them control over knowledge production and dissemination

Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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Theories

Much like paradigms, **theories** provide a way of looking at the world and understanding human interaction; however, they are narrower in their focus, aiming to understand one phenomenon (e.g., criminal behaviour or a specific crime) without attempting to tackle a broader level of explanation (e.g., explaining all behaviour).

In the social sciences, theories are sets of systematically interrelated ideas intended to explain a social phenomenon or behaviour (Maxfield & Babbie, 2018). They help us answer the “why” and “how” questions we often have about the patterns we observe in social life. For example, criminological theories can help answer the question of why and how some people stop committing crimes as they become adults while others continue to commit crimes throughout their entire lives. This is the question asked by life-course and developmental criminological theorists, like Laub and Sampson (2020). While paradigms may point us in a particular direction with respect to our “why” questions, theories more specifically map out the explanation, or the “how,” behind the “why.” Traditionally speaking, a good social science theory is well supported using observed facts and should also have practical value, which means that an essential challenge for researchers is to gather and analyze data to build strong and more comprehensive theories to explain social phenomena. Moreover, theory ideally “has to do with what is, not what should be” (Maxfield & Babbie, 2018, p. 30).

Some theories related to crime you may have heard of, a few of which were summarized earlier in this chapter under

their respective paradigm, include labelling theory, feminist criminological theory, social control theory, strain theory and social disorganization theory (for a more comprehensive review of these key theories and others, please see [Introduction to Criminology](#)). From a research methods standpoint, these theories are important because they propose answers to the “why” and “how” questions of crime. The stage during which theory enters the research process depends on the paradigm the researcher is operating in, amongst other things. Researchers either start with theory very early on in the research process, if they are proceeding by way of the deductive approach (typical in the positivist tradition), or theory emerges at the end of the research process after observations are gathered, if they are proceeding with the inductive approach (more typical in each of the other paradigms discussed earlier). These two approaches, deduction and induction, along with other approaches to conducting social science research, will be elaborated upon in the next chapter.

Conclusion

In this chapter, we started by discussing the philosophical concepts of ontology and epistemology and we examined the various paradigms that social scientists orient themselves with, including the Indigenous paradigm. These paradigms can be thought of as existing on a continuum of objectivity/subjectivity, with positivism at the objective end and postmodernism at the subjective end. We then connected each of these paradigms to a criminological theory to demonstrate how paradigms are related to the theories that guide our research as well as the types of policies that are developed to address social problems like crime. In the next chapter, we will continue our journey from ontology to analysis by focusing on the various approaches we can take and the purposes we can choose from, or even combine, to answer our research question(s).

Summary

- Ontology and epistemology are two key concepts relevant to philosophy and criminology and deal with the questions “what is?” and “how do we know what is?”, respectively.
- A paradigm is a mental model we use for understanding our social world.
- Four paradigms traditionally found in the social sciences are the positivist, social constructionist, critical, and postmodernist paradigms. The Indigenous paradigm has emerged in more recent literature within many disciplines, including criminology.
- Paradigms and theories have direct implications for research decisions made throughout the research process as well as the potential policy solutions proposed.
- Theories are explanations of the social world that attempt to answer “how” and “why” questions. Theories are generally narrower in focus than paradigms.

Key Terms

critical paradigm: one of the paradigms in the social sciences. It focuses on power and inequality. According to this paradigm, power dynamics and biases play into all social interactions as well as research decisions and, as such, scientific research cannot be objective or value-free. Feminism is an example of a theory that falls under the critical paradigm.

empirical level: a level of analysis that originates in or is based on observation or experience. It can be referred to as the level of actual observations and the analysis of actual data.

empiricism: the idea that all learning and knowledge come only from experience and observations. If something cannot be seen or measured, it does not exist. Empiricism is a foundational concept within the positivist paradigm.

epistemology: a philosophical term that has to do with knowledge and deals with questions of how we know what we know and the ways we uncover knowledge.

ideological/political stance: one of the errors of casual human inquiry that involves allowing our own political, religious and/or ideological beliefs cloud our ability to examine an issue objectively.

illogical reasoning: one of the errors of casual human inquiry that involves claiming that an exception to a rule or established pattern is proof of that rule or pattern. The gambler’s fallacy is an example of illogical reasoning.

inaccurate observation: one of the errors of casual human inquiry that involves making observations in a non-systematic, non-deliberate way, leading to erroneous conclusions. The validity of eyewitness testimony is called into question because of inaccurate observations.

Indigenous paradigm: one of the paradigms in the social sciences. It is centred on the concept of relationality, and it urges a decolonial and anticolonial approach within the social sciences. Cultural knowledge and oral tradition are paramount within this paradigm, as is social change.

objectivism: one of the aspects of ontology that states that social entities exist independently of the social actors concerned with their existence.

ontology: the study, theory or science of being. It is concerned with the nature of reality.

overgeneralization: one of the errors of casual human inquiry that involves assuming that a few similar events are proof of a much larger pattern.

paradigm: a way of viewing the world or a frame of reference we use to organize our thoughts and observations. They are mental models we use to understand our human experiences. There are five paradigms in the social sciences: positivism, social constructionism, the critical paradigm, postmodernism, and the Indigenous paradigm.

positivism: one of the paradigms in the social sciences. It was introduced by French philosopher Auguste Comte. It holds that the creation of scientific knowledge should be restricted to what researchers can observe and measure, and it operates according to the principles of objectivity, knowability, and deductive logic. Biological theories of crime fall under the positivist paradigm.

postmodernism: one of the paradigms in the social sciences. It asserts that truth in any form may or may not be knowable. Postmodernists see crime as a social construct resulting from complex interactions between individuals and that by studying a phenomenon or behaviour like crime, researchers are essentially creating crime by using human language to describe and investigate it. Cultural criminology is an example of a criminological theory within the postmodernism paradigm.

selective observation: one of the errors of casual human inquiry that involves only paying attention to an established pattern of events while ignoring any information that suggests otherwise.

social constructionism: one of the paradigms in the social sciences. It posits that social context and interactions shape individual and social realities and that there is no objective reality or truth out there waiting to be discovered. It is the opposite of positivism. Labelling theory is an example of a theory that falls under the social constructionist paradigm.

subjectivism: one of the aspects of ontology. It means that social phenomena are created from the perceptions and actions of the social actors who are concerned with their existence.

theoretical level: a level of analysis that is abstract and based on generalizable ideas. This level of analysis involves outlining how ideas and concepts are related to one another to explain some social phenomenon or behaviour.

theory: a set of systematically interrelated ideas intended to explain a social phenomenon or behaviour. Theories are narrower and more focused than a paradigm. Theories help us answer the “why” and “how” questions we often have about the patterns we observe in social life. Social disorganization theory is an example of a theory in criminology.

Chapter Review

Crossword

Fill in the term in the right-hand column and it will display in the crossword puzzle. Be sure to include spaces where appropriate.

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Discussion Questions

1. Choose one of the errors often made in casual human inquiry and provide an example of when you or someone you know may have engaged in this error.
 2. Which of the paradigms do you feel you gravitate toward the most and why?
 3. Provide a real-life, personal example that illustrates your understanding of the principles of labelling theory.
 4. Indigenous feminism can be thought of as falling within the critical tradition. Explain.
-

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definition

One of the errors of casual human inquiry that involves only paying attention to an established pattern of events while ignoring any information that suggests otherwise.

×Close definition

One of the errors of casual human inquiry that involves assuming that a few similar events are proof of a much larger pattern.

×Close definition

One of the errors of casual human inquiry that involves claiming that an exception to a rule or established pattern is proof of that rule or pattern. The gambler's fallacy is an example of illogical reasoning.

×Close definition

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×Close definition

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×Close definition

A level of analysis that is abstract and based on generalizable ideas. This level of analysis involves outlining how ideas and concepts are related to one another to explain some social phenomenon or behaviour.

×Close definition

A level of analysis that originates in or is based on observation or experience. It can be referred to as the level of actual observations and the analysis of actual data.

×Close definition

The study, theory or science of being. It is concerned with the nature of reality.

×Close definition

One of the aspects of ontology that states that social entities exist independently of the social actors concerned with their existence.

×Close definition

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×Close definition

A philosophical term that has to do with knowledge and deals with questions of how we know what we know and the ways we uncover knowledge.

×Close definition

A way of viewing the world or a frame of reference we use to organize our thoughts and observations. They are mental models we use to understand our human experiences. There are five paradigms in the social sciences

×Close definition

One of the paradigms in the social sciences. It was introduced by French philosopher Auguste Comte. It holds that the creation of scientific knowledge should be restricted to what researchers can observe and measure, and it operates according to the principles of objectivity, knowability, and deductive logic. Biological theories of crime fall under the positivist paradigm.

×Close definition

The idea that all learning and knowledge comes only from experience and observations. If something cannot be seen or measured, it does not exist. Empiricism is a foundational concept within the positivist paradigm.

×Close definition

One of the paradigms in the social sciences. It posits that social context and interactions shape individual and social realities and that there is no objective reality or truth out there waiting to be discovered. It is the opposite of positivism. Labelling theory is an example of a theory that falls under the social constructionist paradigm.

×Close definition

One of the paradigms in the social sciences. It focuses on power and inequality. According to this paradigm, power dynamics and biases play into all social interactions as well as research decisions and, as such, scientific research cannot be objective or value-free. Feminism is an example of a theory that falls under the critical paradigm.

×Close definition

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×Close definition

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×Close definition

A set of systematically interrelated ideas intended to explain a social phenomenon or behaviour. Theories are narrower and more focused than a paradigm. Theories help us answer the “why” and “how” questions we often have about the patterns we observe in social life. Social disorganization theory is an example of a theory in criminology.

×Close definition

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3: Research Purposes, Approaches, and the Link to Methods

Learning Objectives

- Identify the four purposes of social science research.
- Distinguish between inductive and deductive approaches to research.
- Distinguish between qualitative and quantitative approaches to research.
- Discuss different methods used in each research approach.
- Explain the connection between paradigm, purpose, approach and method.

In [chapter 2](#), we identified the five key paradigms relevant to criminologists and outlined the connection that exists between these overarching paradigms and the theories that fall within each of them. Just like theory, the research question(s), approach and method(s) flow from the paradigm under which we operate. For instance, while positivists typically set out to explain things in terms of cause and effect, and they approach research *deductively* and *quantitatively*, social constructionists typically try to understand some deeper meaning and the lived experience of participants themselves; consequently, they tend to approach their research *inductively* and *qualitatively*.

In this chapter, the various purposes of social science research and the different approaches and methods for conducting this research are reviewed. Case studies with Indigenous research principles and participants are used to illustrate these fundamental aspects of the social science research process.

Research Purposes

One of the first things researchers think about when designing a research project is what they want to accomplish by conducting the research. What do they hope to be able to say about their topic? Do they hope to gain a deep and personal understanding of whatever phenomenon they're studying from the perspective of the research participants, or would they rather have a broad, objective understanding? Do they want policymakers or others to use their research findings to shape social life, or is the project more about exploring curiosities? The answers to these questions help researchers decide which of the four purposes of social science research best suit their project: exploration, description, explanation, or application.

Figure 3.1: The Four Purposes of Social Science Research [\[Image description for Figure 3.1\]](#)

Note that, as shown in Figure 3.1, these purposes are not mutually exclusive. A study can simultaneously explore a topic while also setting out to describe various facets of the topic. It also often makes good sense to describe the phenomenon of interest before setting out to explain whether and how one variable impacts another. What is important to bear in mind is that the purpose(s) of the research study is linked to the paradigmatic stance of the researcher, and it also has implications for how they approach their research and other aspects of research design (Maxfield & Babbie, 2018).

Exploration

The research purpose **exploration** involves embarking on new areas of inquiry (Maxfield & Babbie, 2018; Hesse-Biber, 2017; Rennison & Hart, 2019). The goals of exploratory research include:

1. scoping out the magnitude or extent of a particular phenomenon, problem, or behaviour,
2. generating some initial ideas or hunches about that phenomenon, or
3. testing the feasibility of undertaking a more extensive study regarding that phenomenon.

Let's examine a concrete example to illustrate this research purpose. In my master's thesis, I set out to learn about the various impacts of a provincial policy that banned the retail sale of rice alcohol in British Columbia, Canada (see Hassan, 2003).

Oriental Mascot Michiu

The consumption of rice alcohol as a beverage — rather than as a cooking ingredient, as was intended — increased in popularity

in the Downtown Eastside of Vancouver in the 1990s. There had been no research done on this topic at all at this point, and, to be honest, I had zero previous knowledge about what rice alcohol even was! As such, the initial purpose of the project was to explore the various facets of the topic of rice alcohol consumption in an effort to understand whether it was even a problem worthy of my continued efforts. The questions I asked at the outset were: What was it? Why were people drinking it? Where was it sold? What was the impact of drinking it? And who was affected by the sale and consumption of rice alcohol? I read news reports and the transcripts from town hall meetings, and I informally spoke to stakeholders from various agencies, including police and non-profit organizations. These research activities helped me understand the problem and generate some initial ideas about what data existed to examine this issue more closely and understand where I might find this data.

Description

In studies where the research purpose is **description**, the researcher aims to describe or define a particular phenomenon through the systematic observation of a phenomenon of interest (Maxfield & Babbie, 2018; Hesse-Biber, 2017; Rennison & Hart, 2019). These observations are typically based on the scientific method so that they are more reliable than casual observations made by untrained people. Counting or documenting observations is the typical scope of descriptive research (Maxfield & Babbie, 2018). It often focuses on “what, where, and when” questions. Findings are presented in a summary without any follow-up about the underlying causes related to these findings.

Let’s take the rice alcohol study again as an example to illustrate this research purpose. After doing some initial groundwork to establish that rice alcohol was indeed a problem plaguing the community in the Downtown Eastside of Vancouver, the focus shifted to describing the problem in more detail. When was this an issue? Where were the exact police beats in the Downtown Eastside most impacted by its consumption? How many deaths were linked to alcohol consumption? Notice that the questions posed here pertain to alcohol more generally; data on rice alcohol specifically were not actually collected and were not available for analysis, so I had to get a little creative.

To answer these questions, data from the Vancouver Police Department (VPD) and the Coroners Service of B.C. were accessed. The purpose was to find out what days and months calls-for-service related to alcohol intoxication were highest and where these calls-for-service were specifically coming from. Data revealing when and where deaths linked to alcohol consumption occurred were also analyzed. I presented the results to the Vancouver Police Board by showing charts and graphs to visually present the descriptive findings related to these “what, where, and when” questions on the topic of rice alcohol consumption.

Explanation

Chemistry glassware in a chemistry laboratory.

While descriptive research examines the what, where, and when of a phenomenon, if the purpose of our research is **explanation**, it seeks to answer “why” and “how” types of questions. In other words, explanatory research tries to identify the causes and effects of the phenomenon being studied (Maxfield & Babbie, 2018; Hesse-Biber, 2017; Rennison & Hart, 2019). This type of research attempts to “connect the dots” in research by identifying causal factors and outcomes of the target phenomenon.

As you have probably guessed, the rice alcohol study set out to explain something, too! Once it was determined that rice alcohol consumption was indeed a problem worthy of inquiry (exploration) and the initial results from the analysis of VPD and Coroners Service data were revealed (description), I was left to try to answer the question of *why* this was happening. *How* did rice alcohol come to be the intoxicant of choice in the first place? Was the policy of banning the sale of rice alcohol itself the *cause* of the observed decrease in deaths and calls to police in the months following its passing or was it something else entirely that led to these post-policy decreases? Were there any other impacts (effects) of this policy (the cause)?

As I mentioned, data pertaining specifically to rice alcohol consumption were not available, so I had to ask people directly working in the community at the time to offer their expert knowledge in an effort to answer these “why” and “how” questions. These stakeholders from a variety of different agencies, all with different mandates, participated in in-depth interviews to reveal pertinent qualitative data. They assisted me in interpreting the initial graphs and charts I created with the descriptive data collected in the first half of the research project. In these interviews, I learned the diverse ways that stakeholders defined the problem of rice alcohol. I also learned what products were consumed by chronic alcoholics in the community before rice alcohol gained popularity and which products replaced it once it was banned. I heard what the various influences were on these shifts in popularity. Perhaps most interestingly, I had the opportunity to hear personal accounts from those who had used and became addicted to rice alcohol themselves. The lived experience of users and stakeholders in the community at the time rice alcohol was the “drug of choice” was crucial to explaining what the policy had *actually* accomplished.

Application

Last, but definitely not least, we have the research purpose of **application** (Maxfield & Babbie, 2018). Applied research seeks to find solutions to real-life issues. This research purpose highlights the fact that we, as criminologists, have an obligation to conduct studies that can assist frontline workers in the field as well as policymakers. Our findings can have an impact on how the system functions and what solutions should be explored to address the types of social problems we study.

Application research involves either problem analysis or evaluation (Maxfield & Babbie, 2018; Rennison & Hart, 2019). Problem analysis refers to the use of social science research methods to determine what the potential outcomes are of policies or programs that have not yet been implemented. It entails a review of other similar policies/programs, perhaps at different points in time or in different jurisdictions. It is very future-oriented, as it attempts to answer “what if” questions to determine the utility of some solution that has not yet been implemented. Evaluation, on the other hand, involves looking at a program or policy that has already been implemented and conducting social science research to reveal what the various outcomes and impacts of that program or policy have been. It comes after that solution has already been implemented (Maxfield & Babbie, 2018; Rennison & Hart, 2019).

You guessed it—the rice alcohol study was also applied research! It set out to evaluate the policy by determining what the impacts of the rice alcohol ban were — both intended and unintended — and it relied on social science methods in the process. As revealed with the use of this study as an example, it becomes apparent that these research purposes are not mutually exclusive and, in fact, sometimes shouldn’t be. While it is not common that a study includes all four research purposes, it is clear in this example that they can complement one another, and they can come in handy for researchers at different stages of a research project.

Table 3.1: Research Purposes – The Rice Alcohol Case Study

	Purpose	Questions
Exploration	new areas of inquiry scope, initial hunches, future research possibilities	Is rice alcohol a problem? Is there enough information to delve deeper?
Description	describe or define a particular phenomenon through the systematic observation of a phenomenon of interest counting and documenting systematically collected observations what, where and when questions	What did the VPD data reveal about the calls for service possibly linked to rice alcohol? What did the coroner data reveal about deaths linked to rice alcohol? Where and when did these calls and deaths occur?
Explanation	determining causes and effects of some phenomenon why and how questions	How did rice alcohol come to be so popular? What else could be causing changes in the number of calls and deaths?

	Purpose	Questions
Application	<p>using social science research methods to contribute to policy</p> <p>problem analysis and evaluation</p> <p>what if and what happened questions</p>	<p>Did the policy banning the retail sale of rice alcohol work?</p> <p>Are there fewer deaths and calls for service now?</p> <p>What other impacts has the policy had?</p>

Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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Research Approaches

At the outset of the chapter, the connection between paradigms and theory and also between paradigms and research purposes was highlighted. In this discussion, I mentioned that, generally speaking, positivists set out to explain phenomena, and they rely on deductive and quantitative research approaches to do this, while social constructionists search for deeper meaning from the perspective of participants themselves and tend to rely on inductive and qualitative research approaches. These two ways of thinking about research approaches—deductive and inductive, qualitative and quantitative—are discussed next.

Inductive and Deductive Approaches

There are different ways of thinking about approaches to conducting social science research. A discussion about the difference between inductive and deductive research approaches is a good starting point. In an **inductive approach** to research, the goal is to infer theoretical concepts and patterns from observed data (Hesse-Biber, 2017; Rennison & Hart, 2019). Figure 3.2 (below) illustrates the process of research using an inductive approach. As illustrated in the figure (note the direction of the arrow), a researcher begins by collecting data relevant to their topic of interest. After collecting a substantial amount of data, the researcher then takes a break from data collection and begins looking for patterns in the data to develop a theory that could explain those patterns. Thus, an inductive approach to research involves starting with a set of systematically collected observations (the data) and then moving from those observations to a more general set of theoretical propositions about the experiences being studied. In other words, this kind of approach moves from data to theory or from the specific to the general (Maxfield & Babbie, 2018; Rennison & Hart, 2019). Because of their focus on developing theory, inductive approaches are also called theory-building approaches to research.

Figure 3.2: The Inductive Approach to Research [\[Image description for Figure 3.2\]](#)

People typically associate the deductive approach to research with scientific investigation. In a **deductive approach**, the goal is to use empirical data to test concepts and patterns inferred in theories. The researcher studies what others have done, reads existing theories of whatever phenomenon he or she is studying, and then tests those theories by collecting and analyzing data. Essentially, researchers move from a general level of focus (theories) to a specific level of focus (testing the theory with specific data) (Maxfield & Babbie, 2018; Rennison & Hart, 2019). Figure 3.3 (below) illustrates a deductive approach to research (again, note the direction of the arrow). As illustrated in the figure, a researcher starts with theory, then the researcher collects data and analyzes the data to test that theory (the technicalities of this process are reviewed later in this text). Thus, deductive approaches can also be called theory-testing approaches to research. Note here that the goal of theory testing is not only to test a theory but possibly to refine, improve, and extend it.

Figure 3.3: The Deductive Approach to Research [\[Image description for Figure 3.3\]](#)

Inductive and deductive approaches to research may seem quite different, but both theory building (inductive research) and theory testing (deductive research) are critical for the advancement of scientific knowledge. In fact, the two approaches can be complementary. For example, researchers may plan for their research to include both inductive and deductive components, or they might begin a study with only an inductive or deductive approach but then discover along the way that they need the other approach to further explain their findings.

Rather than opposing strategies for conducting research, it might help to think about inductive and deductive research as two halves of a research cycle that constantly moves between theory and observations. Elegant theories aren't helpful if they don't match reality. Likewise, mountains of data are useless until they can contribute to the construction of meaningful theories. Rather than viewing these two approaches to research as wholly separate, imagine each iteration between theory and data contributing to stronger theories and explanations of the phenomenon of interest.

Qualitative and Quantitative Approaches

Another way of thinking about approaches to conducting social science research is to make a distinction between qualitative and quantitative methods. Qualitative and quantitative methods refer to the type of data being collected, the strategies for the collection of data and also the strategies for analysis. **Qualitative methods** involve data collection strategies that yield results such as words or pictures (Maxfield & Babbie, 2018; Rennison & Hart, 2019; Hesse-Biber, 2017). The goal is typically to gain some in-depth understanding about a social phenomenon (Kleinknecht et al., 2018). An understanding of perceptions, meanings and emotions is typically sought after in qualitative research (Silverman, 2005). Some of the most common qualitative methods in social science include field research, intensive interviews, and focus groups, all of which are discussed in chapters later on in this text. After data collection, these methods require analysis strategies such as thematic coding or discourse analysis. The inductive approach to research typically employs a qualitative method. Studies following this inductive, qualitative approach often fall into any one of the paradigms discussed in [chapter 2](#), except for positivism.

Quantitative methods, on the other hand, result in data that can be represented by and condensed into numbers (Maxfield & Babbie, 2018; Rennison & Hart, 2019). Survey research and experiments are probably the most common quantitative methods in social science, both of which are discussed later in this text. After data collection, quantitative methods require statistical analysis. The deductive approach to research typically employs a quantitative method, and, more often than not, the paradigmatic stance at the foundation of these research studies is positivism.

Qualitative and quantitative methods are sometimes presented or discussed in a way that suggests they are somehow in opposition to one another. In fact, this was a message I heard throughout my entire undergraduate degree in criminology. Researchers may prefer one method over another, either because their own approaches to research or their research questions are better suited to one particular approach or because they happened to have been trained in one specific method. While qualitative methods aim to gain an in-depth understanding of a relatively small number of cases, quantitative methods offer less depth but more breadth because they typically focus on a much larger number of cases.

Sometimes, though, the joint use of qualitative and quantitative data may help generate unique insights into a complex social phenomenon; hence, a **mixed-method approach** that combines qualitative and quantitative approaches is often highly desirable (Hesse-Biber, 2017). This was in fact the design I adopted in my master's research examining the problem of rice alcohol addiction: VPD and coroner data were quantitative, and the interview data with stakeholders were qualitative.

This textbook operates from the perspective of qualitative and quantitative methods as complementary rather than competing. These methods should be seen as tools in our toolkit that we can draw from depending on the situation at hand (Ritchie & Lewis, 2003). While these methodological approaches certainly differ, they simply have different goals, strengths, and weaknesses. We'll explore the goals, strengths, and weaknesses of specific social science methods that fall under each of these approaches in more depth in later chapters.

Table 3.2: Key Features of Quantitative and Qualitative Methods, adapted from *Qualitative vs. Quantitative Research*

Quantitative Research	Qualitative Research
focuses on testing or confirming theories and hypotheses	focuses on exploring ideas and understanding subjective experiences
focus on statistical analysis	focus on thematic, textual analysis
mainly expressed in numbers, graphs and tables	mainly expressed in words
requires many respondents	requires few respondents

Quantitative Research	Qualitative Research
closed-ended (multiple choice) questions	open-ended questions
methods include experiments, surveys	methods include interviews, field observation, focus groups
key terms: testing, measurement, objectivity, replicability	key terms: understanding, context, complexity, subjectivity



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Choosing a Research Method

As outlined above, some data collection methods are qualitative and others are quantitative. The former are typically employed by researchers approaching their work inductively, while the latter are typically employed by researchers approaching their work deductively, though, as stated, they can be used to complement one another. Regardless of the approach, at some point, researchers need to decide how they will collect their data. They tend to choose the research method they are most comfortable with because of their skills, training, and disciplinary norms. However, ideally, the choice should depend on the nature of the research phenomenon being studied and the research question, approach, and purposes or goals (Ritchie & Lewis, 2003).

In the preliminary phases of research, when the research problem is unclear, the researcher wants to scope out the nature and extent of a certain research problem, and/or no theories appear to explain the phenomenon of interest, a focus group, field research, or interviews may be ideal because of their usefulness for inductive approaches and exploratory and descriptive goals. But if the researcher finds existing, competing theories and wants to test these theories or integrate them into a larger theory, methods such as surveys or experiments would be more appropriate because they fit well with deductive approaches and explanatory goals.

Researchers must consider the specific research question, their approach to the research process, and the purposes or goals of the research before choosing the method that fits best with their project. The illustrations below should help bring these research decisions to life for you. While these examples make mention of specific research methods and sampling decisions as well as analysis techniques, do not worry, these details are discussed more in future chapters. For now, focus on the connection between the research purpose, approach and method in each example. Also, take note of how the researcher in each example approaches their respective study with respect for Indigenous culture and knowledge and with deep concern for the well-being and autonomy of Indigenous elders.

Qualitative, Inductive Research Illustration – The Spiritual Abuse of Indigenous Elders

Matriarchy

Let's say we are interested in conducting research on the topic of the spiritual abuse of Indigenous elders. Although nothing may appear in the typical literature, we know that Indigenous cultures, and by extension Indigenous research, recognize spirituality as an important contribution to ways of knowing. So, we set out to *explore* this concept in informal talks with elders. We learn in these preliminary exploratory meetings—in what Indigenous researchers call *talking circles* (see this video for more on Talking Circles: [Talking Circles](#)) and Western researchers refer to as *focus groups*—that the last group of researchers who studied the tribal people concluded that Indigenous peoples were lazy and not concerned about their health because they did not use the gym that was built for them. What those previous researchers did not realize was that the facility was built on sacred ground and the local people chose not to use it unless it was moved to a non-sacred space.

The information learned in the talking circle allows us as researchers to discover that elders are concerned about losing their sacred cultural items through theft or items being left behind if they are moved from their home. They also discussed not being transported to, or allowed to participate in, community spiritual ceremonies. These concepts are not typically addressed in most existing theories, policies, or programs, so it fits then that this project will use an *inductive* approach, which by definition is open to new and unanticipated concepts and findings emerging, such as fear of the loss of cultural items and spiritual connection.

Based on the informal but very important initial input from elders at the outset, we decide that what we should do is ask broad, open-ended questions in *in-depth interviews* about spirituality. We should ask whether elders are assisted in practising their spirituality or if anything is keeping them from practising their spirituality. These interviews could take hours, scheduling interviews could prove to be challenging, and the analysis of pages and pages of interview notes could take weeks or longer.

To select interviewees, we would be more interested in choosing participants who we know possess the key characteristics of interest. As such, we would not rely on random sampling techniques; rather, we would strategically select a much smaller number of participants who we would interview using open-ended questions. This is what Western researchers call *purposive sampling*. While we will not be able to generalize in quite the same way as in a quantitative study, our data will be rich and detailed and will likely reveal information we did not anticipate (more on sampling methods in [chapter 7b](#)).

Even the open-ended questions in the spiritual abuse example, where participants answered questions in a lengthy face-to-face interview, will need to be processed in some way. Our spiritual abuse data are predominantly qualitative, based on in-depth interviews with open-ended questions about spirituality, spiritual practices, spiritual objects and any issues they have encountered in practising their spirituality. The responses will be typed into a document or a *discourse analysis* program like NVivo so specific words and phrases can be grouped into categories for qualitative analysis and comparison (more on qualitative analysis in [chapter 13](#)).

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Quantitative, Deductive Research Illustration: The Financial Exploitation of Indigenous Elders

Let's say we are interested in learning more about the financial exploitation of Indigenous elders. In reviewing other studies, we see that this topic has been studied before, so we decided to use parts of existing question sets. We find that these were developed from a theory about social control and have been used in other studies to test whether Indigenous elders are being financially exploited. In doing so, we would be using a *deductive* approach for this particular project.

In studying the financial exploitation of elders in a deductive, *quantitative* way, we could employ *random sampling* to select 100 of the names from a list of elders, which would be about one-third of the population. As long as even 78 participated, we would have about 25% of the population included in our sample. What we find or do not find among those randomly selected individuals is likely also to be found or not present among the other elders as well, so our findings can be generalized. When determining your sample size, it is best to have a large sample when possible.

The data collection process can take a considerable amount of time. We will cooperate with the tribal social service providers, who will contact the randomly selected elders, arrange a time to visit with them, help them complete the *closed-ended survey* and collect it from them. They will also be available to offer services such as a referral to counselling services or information on how to report a crime, if needed and wanted by the elders.

The closed-ended survey questions will be converted into numbers, which will be entered into a spreadsheet or other analysis program. We will need to develop a coding sheet where we agree, for instance, that a yes is entered as a 1 and a no is entered as a 0. By following consistent data entry rules, we will have fewer errors (Hagan, 2014). Our financial exploitation data will be completely quantitative, allowing *statistical numerical analysis* to take place.

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Conclusion

In this chapter, we introduced you to the four purposes of social science research and the different ways we can approach our research: inductively or deductively and qualitatively or quantitatively. We also highlighted that these purposes and approaches are not mutually exclusive, and combining them can often be advantageous. The decision about which purpose(s) and approach(es) to adopt depends largely on the research question(s) we want to answer and the data available to answer it.

We concluded the chapter by illustrating the connection between the purpose, approach and method in our research through two examples involving Indigenous participants. The first is a qualitative study where the spiritual abuse of Indigenous elders is examined inductively, while the second is a quantitative study where the financial abuse of Indigenous elders is examined deductively. In both studies, respect for Indigenous culture and knowledge as well as concern for the well-being and autonomy of Indigenous elders are exemplified, highlighting the central role of ethics in all the work we do, particularly when we conduct research within Indigenous communities.

Summary

- The four research purposes relevant to criminology are: exploration, description, explanation and application. Each has different aims. Exploratory research aims to learn more about a relatively new area of inquiry. Descriptive research aims to describe and define a particular phenomenon. Explanatory research aims to answer causal questions about why and how social phenomenon occur. Lastly, applied research includes both problem analysis and evaluation and seeks to understand and potentially solve real-life problems. These research purposes are not mutually exclusive.
- Inductive approaches to research take a theory-building approach of starting with observations and then analyzing up to build broader theories. Deductive approaches take a theory-testing approach of starting with theoretical propositions and then analyzing down to test those propositions using empirical data. These two approaches may seem incompatible, but they can be complementary.
- Qualitative research methods involve data collection strategies that yield results such as words or pictures. Interviews and focus groups are examples of qualitative research methods. Quantitative research methods involve data collection strategies that yield results that are numerical. Surveys and experiments are examples of quantitative research methods. A mixed-mode approach is often desirable, which highlights the fact that these methods can and often should complement one another.
- The research purpose, approach and method are all connected to the overarching paradigm the researcher is operating from.

Key Terms

application: the purpose of social science research when the researcher seeks to find solutions to real-life issues. It involves either problem analysis, which asks “what if” questions as it relies on social science methods to determine the utility of some proposed solution, or evaluation research, which asks “what happened” questions in situations where a solution has already been implemented. This purpose can be combined with any one or more of the other purposes of research.

deductive approach: a research approach that begins with theory, then proceeds to the collection and analysis of the data and eventually results in testing whether or not the data support the theory. It can be described as moving from the general (theory) to the specific (data). The deductive approach to research typically employs quantitative methods. It can be used in combination with an inductive approach.

description: the purpose of social science research when the researcher uses systematic observation of a phenomenon to describe or define it in detail. Counting or documenting observations is the typical scope of descriptive research. What, where and when questions are typically asked. This purpose can be combined with any one or more of the other purposes of research.

explanation: the purpose of social science research when the researcher sets out to determine the cause(s) and effect(s) of some phenomenon of interest. Why and how questions are typically asked in explanatory research. This purpose can be combined with any one or more of the other purposes of research.

exploration: the purpose of social science research when the area of inquiry is new and little is already known on the topic. Assessing the extent of a phenomenon, generating initial ideas and testing the feasibility of a more extensive examination are all potential goals of exploratory research. This purpose can be combined with any one or more of the other purposes of research.

inductive approach: a research approach that begins with the collection of data, then proceeds to the analysis of the data and eventually results in the generation of a general set of theoretical propositions. It can be described as moving from the specific (data) to the general (theory). The inductive approach to research typically employs qualitative methods. It can be used in combination with a deductive approach.

mixed-method approach: a research approach that combines qualitative and quantitative methods. While these methods have often been discussed as competing, they actually can be complementary, and the decision to combine methods should be based on the research question at hand and the data that exist to answer it.

qualitative methods: research methods that involve the collection of non-numerical data, such as words and pictures. Interviews, focus groups, and field research are examples of qualitative methods. Once data are collected, they require analysis strategies such as thematic coding, which involves allowing themes to emerge from the data. Qualitative methods are interpretive and inductive in nature.

quantitative methods: research methods that involve the collection of numerical data. Survey research and experiments are examples of quantitative methods. The data collected as a result of these quantitative methods require statistical analysis and are typically presented in graphs and charts. Quantitative methods are positivist and deductive in nature.

Chapter Review

Crossword

Fill in the term in the right-hand column and it will display in the crossword puzzle. Be sure to include spaces where appropriate.

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Discussion Questions

1. Think of a criminological topic you would like to study. Now, think of what questions you might want answered if the purpose of your research was to explore. Then, go through the same thought process if your research purpose was to describe, explain, and apply. For the sake of this exercise, pretend that these research purposes are mutually exclusive.
2. Think of a research question you would like to study. Briefly outline how you might approach it deductively, then imagine how you might approach it inductively.
3. Which of the two research illustrations with Indigenous participants are you drawn to? Reflect on which aspects of your chosen study speak to you the most and why.

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definition

The purpose of social science research when the area of inquiry is new and little is already known on the topic. Assessing the extent of a phenomenon, generating initial ideas and testing the feasibility of a more extensive examination are all potential goals of exploratory research. This purpose can be combined with any one or more of the other purposes of research.

×Close definition

The purpose of social science research when the researcher uses systematic observation of a phenomenon to describe or define it in detail. Counting or documenting observations is the typical scope of descriptive research. What, where and when questions are typically asked. This purpose can be combined with any one or more of the other purposes of research.

×Close definition

The purpose of social science research when the researcher sets out to determine the cause(s) and effect(s) of some phenomenon of interest. Why and how questions are typically asked in explanatory research. This purpose can be combined with any one or more of the other purposes of research.

×Close definition

The purpose of social science research when the researcher seeks to find solutions to real-life issues. It involves either problem analysis, which asks “what if” questions as it relies on social science methods to determine the utility of some proposed solution, or evaluation research, which asks “what happened” questions in situations where a solution has already been implemented. This purpose can be combined with any one or more of the other purposes of research.

×Close definition

A research approach that begins with the collection of data, then proceeds to the analysis of the data and eventually results in the generation of a general set of theoretical propositions. It can be described as moving from the specific (data) to the general (theory). The inductive approach to research typically employs qualitative methods. It can be used in combination with a deductive approach.

×Close definition

A research approach that begins with theory, then proceeds to the collection and analysis of the data and eventually results in testing whether or not the data support the theory. It can be described as moving from the general (theory) to the specific (data). The deductive approach to research typically employs quantitative methods. It can be used in combination with an inductive approach.

×Close definition

Research methods that involve the collection of non-numerical data, such as words and pictures. Interviews, focus groups, and field research are examples of qualitative methods. Once data are collected, they require analysis strategies such as thematic coding, which involves allowing themes to emerge from the data. Qualitative methods are interpretive and inductive in nature.

×Close definition

Research methods that involve the collection of numerical data. Survey research and experiments are examples of quantitative methods. The data collected as a result of these quantitative methods requires statistical analysis and is typically presented in graphs and charts. Quantitative methods are positivist and deductive in nature.

×Close definition

A research approach that combines qualitative and quantitative methods. While these methods have often been discussed as competing, they actually can be complementary, and the decision to combine methods should be based on the research question at hand and the data that exists to answer it.

×Close definition

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4: Research Questions

Learning Objectives

- Distinguish between topics and research questions.
- Identify sources for transforming topics into questions.
- Identify five features of a good research question.
- Describe some of the feasibility concerns associated with research plans.

As discussed in previous chapters, research projects usually grow out of a question or area of interest. Do you like watching movies? Do you wonder what you and your peers might do with your degrees once you've finished university? Do you wonder how many people on your campus have been arrested, how many have been the victims of crime, or how many know that people of colour are disproportionately represented in the criminal justice system? Have you ever felt that you were treated differently at work because of your gender or that you've been stopped by police because of your race or ethnicity? If you answered yes to any of these questions, then you may have just the sort of intellectual curiosity that social scientists use as the basis for their research projects.

While questions or observations about the world around you are an important starting point for developing social science research projects, topics in themselves need to be turned into questions that can be answered through scientific research. This chapter focuses on how to develop and evaluate empirical research questions based on five features of a good research question. We will also discuss the importance of assessing the feasibility of your research question in terms of turning it into a research study.

Topics

In research, a **topic** is an area of interest or a subject the researcher might be interested in learning more about. Topics often come from some observation or question that arises from researchers' own lives. They are also linked to our worldview or the paradigm we ascribe to. Whether it's thinking about a question you've had for some time, identifying a subject related to a course you've taken, or looking at patterns in your everyday life, you can probably identify a topic you might be interested in studying.

A topic is not yet a research question. Before turning the topic into a researchable question, you should examine your own thoughts and feelings about the topic. While many researchers probably skip this step, examining your own relationship to the topic can help identify biases and other issues that might make it more difficult to study the topic. Of course, just because you feel strongly about a topic does not mean you should not study it. Sometimes, the best topics of research are those you feel strongly about. What better way to stay motivated than to study something you care about? Although you may have strong opinions about your topic, you might be open to having those ideas challenged. In fact, studying a topic that is relevant to your own life can be very rewarding as you learn new perspectives that might never have occurred to you before collecting data on the topic.

Whether or not you feel strongly about your topic, you will also want to consider what you already know about it. Take some time to think about what you know about your topic from all possible sources. Thinking about what you already know helps identify any biases you may have while also helping to frame a question about your topic.

Research Questions

Transforming a topic into a research question takes a lot of patience, especially if it's your first time conducting a research project. While a topic is an area or subject of interest, a **research question** is a question that can be answered using scientific knowledge. Sometimes, you might develop a research question based on what other researchers have already found about a topic, as you learn through your review of the academic literature. Social scientific theories can also guide the process of transforming a topic into a research question. Other times, you might rely on what you already know about a topic to form a research question.

Exploring what other researchers have found about your topic is an important step as a researcher transforms their topic into a research question, refines that question, and begins to form project ideas. Many topics can be very broad, and an understanding of the general state of knowledge about a topic can help you narrow your focus for your own research question. For instance, let's say your topic is restorative justice, which on its own is a very broad topic area with a wealth of academic research. You conduct

an initial **literature review** (a process that is examined in more detail in [chapter 5](#)) by searching for and synthesizing academic journal articles and books that have been published about restorative justice. You find research on restorative justice for youth, Indigenous restorative justice, restorative justice practices around the world, the impact of restorative justice for participants in the process, and the potential of restorative justice for responding to specific offences. Reviewing the literature sparks your interest in how restorative justice practices are utilized with youth engaged in illicit substance use, and you come up with the research question: What are the benefits and challenges of restorative justice programs for youth engaged in illicit substance use?

Researchers conduct literature reviews at many points during the research process, and developing a research question is one of these points. One of the drawbacks (or joys, depending on your perspective) of being a researcher in the 21st century is that we can do much of our work without ever leaving our comfortable spaces by taking advantage of the wide range of online resources available.

Ethical and Empirical Questions

When it comes to research questions, social scientists are best equipped to address **empirical questions** (those that can be answered by real experience in the real world) as opposed to **ethical questions** (those that people have moral opinions about and may not be answerable in reference to the real world). While we as social scientists may have ethical goals, such as social justice, research projects ask empirical questions that help support those ethical goals.

For example, say you want to research the penalties for sexual assault. Your original research question is: “Why are prison sentences for sexual assault so much lower than the penalty for drug possession?” While this is an interesting question that connects to patriarchy and stereotypes about substance use, it is more of an ethical question, not an empirical one. How could you answer that question by gathering data about people in the real world? What would an answer to that question even look like? As you engage with the research literature on the topic of sexual assault in the criminal justice system, you refine your question to have a more empirical focus. Your new question is: “How do sentences for sexual assault, and the court’s rationale for these sentences, differ across Canada?” This new question is still centred on your topic and the possible ethics of differential sentences, but it also allows for the gathering and analysis of real-world empirical information. Our job as social science researchers is to gather facts about social and justice issues, not to judge or determine morality.

As you may have guessed, this research question is also connected to your overarching frame of reference as a researcher. As discussed in [chapter 2](#) and [chapter 3](#), our interests are linked to the paradigm we orient ourselves within, and the theoretical framework we are working from is linked to that paradigm. The research question above about sentencing for sexual assault is no exception: it is critical (paradigmatically) and feminist (theoretically) in its orientation, ultimately highlighting your concern around patriarchal practices in the court system and gender equality. If we approached the same topic from an Indigenous paradigm, we may ask, “Do sentences for sexual assault, and the court’s rationale for these sentences, differ across Canada when the victim is Indigenous versus Caucasian and, if so, are the sentences typically higher or lower?” This question would highlight both patriarchal and colonial practices in the court system. So, as you can see, these research questions do not just appear out of thin air!



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Evaluating Your Research Question

As a researcher, once you’ve drafted a research question, you must evaluate the strength of the research question before moving on with your research project. The failure to do so could result in a lot of wasted time and resources if you later determine

that your research methods do not match your research question or that your research plan won't help you answer your actual research question. So, what makes a good research question? This section discusses the main criteria to consider when making this evaluation:

1. Is it a question?
2. Is it clearly focused?
3. Can it be answered with “yes” or “no”?
4. Does it have more than one plausible answer?
5. What other relationships among concepts are there?

1. Is it a Question?

A research question is generally written in the form of a question. It may seem obvious, but when working with topics, many students forget to develop an actual question or set of questions from their topic. Students may offer a statement, such as “I’m researching youth restorative justice” (which is a topic) or “Restorative justice is beneficial for youth because it keeps them out of prison” (which is a hypothesis). Such statements can be good starting places, but they should be worked into a question that can be addressed. For instance, rather than assuming that restorative justice programs have benefits, the question could be posed as “What do youth engaged in restorative justice programs perceive as the benefits of these programs, if any?” This question invites investigation as opposed to simply identifying a topic, making a value-laden statement, or stating at the outset how you expect your concepts to relate to one another.

You might be wondering about the difference between a research question and a hypothesis, which we introduced to you very briefly in [chapter 3](#). While the two are related, they are not the same; research questions *inform* hypotheses within a study. A research question is simply that—a question that guides and directs the research project. On the other hand, a hypothesis sets out how we expect our concepts to be related to one another, and it is typically presented in an “if, then” format. More specifically, a **hypothesis** is “a testable statement about the relationship between two concepts,” variables, or ideas (Carr, Boyle, Cornwell, Correll, Crosnoe, Freese, & Waters, 2021, p. 53). Let’s return to the hypothesis proposed above: restorative justice is beneficial for youth because it keeps them out of prison. Or, written differently: *if* youth participate in restorative justice, *then* they are less likely to re-offend and be re-sentenced to prison. These statements propose an association between the concept of restorative justice and avoiding prison. The hypothesis also proposes the nature of the relationship between the concepts: that participating in restorative justice will decrease the number of youths being sentenced to incarceration. Importantly, we can never conclusively prove a hypothesis; we can only state that the findings support or do not support the statement. This is because there is always a margin of error we have to account for in our research analysis; our samples are not identical to the population, and so we have to acknowledge the possibility of error in our findings. Generally, we find hypotheses in studies that are deductive and quantitative in nature and less so in qualitative and inductive-oriented research.

2. Is it Clearly Focused?

A good research question is also one that is well-focused and centres on a particular aspect of the topic the researcher is trying to understand. Returning to the example of sexual assault sentences above, let’s say that the initial research question was: “Why are sexual assault sentences the way they are?” This question may be centred on a particular offence and aspect of the criminal justice system, but it is too general and broad to be answerable. Instead, the refined research question “How do sentences for sexual assault, and the court’s rationale for these sentences, differ across Canada?” is clearly focused on a particular offence (sexual assault), the sentences (a specific aspect of the criminal justice system), the court’s rationale (a specific context), and differences across Canada (a defined geographic area). Although this may seem complicated when the research question is broken down like this, the clear focus improves the feasibility of the research by placing defined parameters around it. Adding the timeframe of this inquiry adds even more focus, and this is typically a desirable feature of a research question. In this example, we could add “in the last 5 years” to the end of the question to narrow the focus even more. Another way you can think about becoming more focused in the construction of your research question is by answering the following: *who/what* are you wanting to examine?; *when* do you want to examine it/them?; *where* do you want to examine it/them?

It can be challenging to be focused and specific. Even when you think you have your research question narrowed sufficiently, a bit more clarity may still be needed depending on the terms you use. Table 4.1 offers a few “watch words” that indicate you may need to be a bit more specific about the concepts in your research question.

Table 4.1 Becoming Specific About Our Research Questions; Adapted from DeCarlo

Watch words	How to get more specific
Factors, Causes, Effects, Outcomes	What causes or effects are you interested in? What causes and effects are important, based on the literature in your topic area? Try to choose one or a handful that you consider to be the most important.
Effective, Effectiveness, Useful, Efficient	Effective at doing what? Effectiveness is meaningless on its own. What outcome should the program or intervention have? Reduced symptoms of a mental health issue? Better crime prevention?
Etc., And so forth	Be more specific. You need to know enough about your topic to clearly address the concepts within it. Don't assume that your reader understands what you mean by "and so forth."

3. Can it Be Answered with “Yes” or “No”?

Questions that can be answered with a simple “yes” or “no” do not make for good research questions in part because they limit the insights a research project might provide on a given topic. For example, you could ask, “Do youth support the use of restorative justice?” After you discovered your yes or no answer, you would have nothing more to say on the topic. Instead, asking, “What do youth participating in restorative justice programs perceive as the benefits and challenges of such programs?” creates a much more interesting question that allows more nuanced insights to emerge about students’ opinions on restorative justice than a simple yes or no question.

4. Does it Have More than one Plausible Answer?

A good research question should have more than one plausible answer. For example, the research question above “What do youth participating in restorative justice programs perceive as the benefits and challenges of such programs?” has more than one answer. The youth will likely have varying opinions about the programs and their participation. These perspectives may vary based on age, gender, offence, amount of family support, location, availability of programs, and numerous other variables, allowing for the fifth criterion of a strong research question.

5. What other Possible Relationships among Concepts are There?

There may be other concepts and relationships among concepts that are relevant in our study that we may want to incorporate into our research question. Let’s return to the question about sexual assault sentences and the rationale for these sentences. If, for example, the victim was Indigenous, perhaps we should also examine the race of the offender to see if sentences vary based on the intra- (offender of same race) and inter- (offender of a different race) racial relationship between the victim and offender.

Table 4.2 offers a few sample questions with proposed alternative wording to get you thinking about how to assess and refine your own research question. Notice how the refined alternative questions mention the temporal and geographic boundaries of the inquiry – i.e., they narrow the focus to a time frame and area, adding a much-needed level of specificity that was missing in the previous iteration.

Table 4.2: Refining Our Research Question; Adapted from Blackstone

Sample question	Question's strengths	Question's weaknesses	Proposed alternative
Do children's books teach us about deviance in our society?	Written as a question	Written as a yes/no	What (or how) do children's books published in the last 5 years teach us about deviance in our society?
	Focused		
Why are some people such jerks?	Written as a question	Lacks theoretical grounding	Amongst current Canadian adults aged 18–40 years, who supports sexist attitudes, and why?
	Focused	Biased	

Sample question	Question's strengths	Question's weaknesses	Proposed alternative
Does fear of crime change depending on where you're from?	Written as a question	Unclear phrasing Written as a yes/no	How does fear of crime as measured in the 2020 GSS vary across different geographical regions in Canada?
What is restorative justice?	Written as a question	Too broadly focused Does not consider relationships among concepts	What are the perspectives of current British Columbia residents on restorative justice?
Do social settings and peers and where you live influence a college student's deviant behaviour?	Written as a question Considers relationships among multiple concepts	Lacks clarity Unfocused Written as a yes/no	How do peer attitudes towards deviance influence a person's engagement in deviant behaviour amongst teens currently in high school in the Lower Mainland of Vancouver?



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Next Steps

Transforming topics into questions often leads researchers to have a few potential research questions that they want to begin studying right away. However, even if they've identified a brilliant research question, they still need to plan their study design, which we'll discuss more in the next chapters. For now, we'll focus on assessing the feasibility of the projects for which we have now created a research question.

We learned about ethics and the process of Research Ethics Board review in [chapter 1](#). Beyond ethics, researchers must consider some other practical matters before beginning a research project. In research, **feasibility** refers to the chances that a study can actually be conducted, with particular attention to accessing the target population and securing adequate resources to conduct the study.

First, researchers must consider their ability to access the populations they want to study. For example, let's say you're interested in studying the day-to-day experiences of maximum-security prisoners. This sounds fascinating, but unless you plan to commit a crime that lands you in a maximum-security prison, it may be nearly impossible to gain access to this population. Similar issues of feasibility arise when researchers want to study groups involved in crime, law enforcement organizations, courtroom actors, and corrections officials. While many researchers have studied these groups, it can take months or even years to connect with people in these populations.

Second, research requires resources such as time and money. In terms of time, a researcher's time frame for conducting research may constrain how they conduct their study. The time a researcher has to complete their work may depend on many factors. Professionally, a project may need to be completed by a certain date to be counted toward job performance reviews or promotion. As a student, you may be required to complete your project by the end of the academic term. Employees or interns in political

settings may need to conduct research within even shorter time spans to inform policymakers' decisions on important social issues. All these time constraints shape what sort of research a person can conduct.

Research often requires money. Your ideal research topic might require you to live on a chartered sailboat in the Bahamas for a few years, but unless you have unlimited funding, it will be difficult to make that happen. Similarly, if you want to study differences in lawyers' interactions with clients in Canada and Australia, you will need money to pay for your travel, housing, food, and other research expenses while overseas. Researchers conducting survey research have to consider the costs associated with subscriptions to high-quality online surveying platforms or, in the case of mailing surveys, the postage as well as the time needed to print surveys, address envelopes, and deliver them to the post office. Interviewing people face to face may require that you offer your research participants a cup of coffee or glass of lemonade while you speak with them. And someone has to pay for the drinks.

In addition to the costs mentioned above, research that requires recruiting participants must factor in the time and money for creating and distributing flyers, emails, and other materials designed to encourage people to participate in the project. Due to these kinds of resource needs, researchers often secure funding in the form of grants from their universities and/or provincial or federal governments.

In sum, feasibility is always a factor when deciding what, where, when, and how to conduct research. Issues of accessing target populations and the availability of resources such as time and money play a major part in assessing the likelihood of being able to conduct a study in the way the researcher envisions. If a researcher reflects upon their research question and determines it is unlikely that they would be able to conduct a study to answer this question, they can then return to their initial topic of interest, review the literature once again, and draft a new research question that may lead to a more feasible study.

Conclusion

The paradigm we orient ourselves with and the theories we gravitate to are connected, as are the research questions that flow from this foundation. In this chapter, we discuss how to transform our interests and topics into researchable questions and how to veer away from asking ethical questions and move towards empirical ones. We also identify the key features that comprise a strong research question and offer ideas on how to become more focused and specific about our inquiries. Lastly, we address the issue of feasibility and highlight the reality that research takes time and money and sometimes we have to alter our questions in order to design a project that can actually be conducted. This speaks to the reality that research does not happen in a vacuum and there are many considerations that we as criminological researchers must make in order to engage in the types of exciting projects our discipline invites.

Summary

- Topics are broad areas of interest that lead to more specific questions (i.e., research questions) that can be answered using scientific knowledge.
- Personal knowledge, feelings, and biases can guide the preliminary work of transforming a topic into a research question. Previous studies on the topic can help narrow the focus and refine the research question.
- Literature reviews involve searching for academic publications on your topic of interest. They can help researchers get ideas on how to phrase their research questions and potential methods for answering their questions.
- Good research questions are phrased as a question, are clearly focused, can be answered with more than a simple yes or no, and have multiple plausible answers. They also take into account other relationships among other relevant concepts.
- Research questions must allow for feasible research projects that match the realities of challenges in accessing populations of interest as well as resource limitations such as a lack of time and/or money.

Key Terms

empirical questions: questions that can be answered by observing experiences in the real world.

ethical questions: questions that ask about general moral opinions about a topic and cannot be answered through science.

feasibility: how likely it is that a study will be conducted, considering time and resource needs.

hypothesis: a statement about the relationship between two concepts that can be tested. It is typically written in “if, then” format.

literature review: a comprehensive survey of what has been written about a particular topic, theory, or research question.

research question: a question that can be answered using empirical and social scientific knowledge. Strong research questions should be phrased as a question, clearly focused, have more than one plausible answer (not a yes/no question), and consider multiple concepts or variables.

topic: an area of interest or a subject the researcher might be interested in learning more about.

Chapter Review

Crossword

Fill in the term in the right-hand column and it will display in the crossword puzzle. Be sure to include spaces where appropriate.

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Discussion Questions

1. Consider a topic you're interested in learning more about. What do you already know about that topic? What feelings or biases might impact your ability to study the topic? What questions do you have about the topic?
2. Find three empirical articles or books that may help you narrow your topic into a research question. For each source, note the bibliographic information as well as the research question, method, and main findings. Draft a research question related to your topic.
3. Draft a research question related to a topic you're interested in. Evaluate your question based on the five features of a good research question and then revise your question to include all four elements.
4. Based on a research question that you've developed, what might be some feasibility concerns related to a potential project you'd conduct to answer your research question? Considering access and resource concerns, would you need to revise your research question? Why or why not?
5. How can collaboration with Indigenous knowledge holders help improve both relevance and integrity when creating an Indigenous research question?

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Carr, D., Boyle, E. H., Cornwell, B., Correll, S., Crosnoe, R., Freese, J., & Waters, M. C. (2021). *The art and science of social research* (2nd ed). W. W. Norton & Company.

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definition

An area of interest or a subject the researcher might be interested in learning more about.

×Close definition

A question that can be answered using empirical and social scientific knowledge. Strong research questions should be phrased as a question, clearly focused, have more than one plausible answer (not a yes/no question), and consider multiple concepts or variables.

×Close definition

A comprehensive survey of what has been written about a particular topic, theory, or research question.

×Close definition

Questions that can be answered by observing experiences in the real world.

×Close definition

Questions that ask about general moral opinions about a topic and cannot be answered through science.

×Close definition

A statement about the relationship between two concepts that can be tested. It is typically written in "if, then" format.

×Close definition

How likely it is that a study will be conducted, considering time and resource needs.

×Close definition

5: The Literature Review

Learning Objectives

- Describe a literature review and explain its purpose.
- Describe the steps in undertaking a literature review.
- Review the different ways of organizing a literature review.
- Describe the five 'C's of writing a literature review.
- Distinguish between a literature review, an essay and an annotated bibliography.
- Explain the importance of properly and accurately referencing and list some of the sources for getting assistance with referencing.

Up until this point, this OER has taken us through the parts of the research journey that involve identifying our worldview and the theories that fall within it and how to move from general topics of interest within that framework to specific, feasible research questions that can be answered empirically. We have emphasized the importance of ethics at each of these phases.

The next step is to delve into the work that has already been done by others on or related to our chosen research question. This chapter begins by defining what a literature review is and outlining the steps involved in conducting such a review. Then, more detailed instruction is provided on how to conduct a good review of the literature and how to properly reference the work of others while doing so. The importance of conducting a thorough and focused literature review cannot be emphasized enough. After all, it is sometimes easiest to decide where to go when we've learned where we have already been.

What is a Literature Review?

A **literature review** is a comprehensive survey of what has been written about a particular topic, theory, or research question. Think about "literature" as "sources of information" that can include **peer-reviewed sources** like academic journal articles and books as well as **grey literature** like government reports, policy documents, speeches, or working papers. This literature will inform you about the research that has already been conducted on your chosen subject to support the development of your own study. A literature review can serve as a background for a larger work (e.g., as part of a research proposal or journal article), or it may stand on its own. Much more than a simple list of sources, an effective literature review analyzes and synthesizes information around key themes or issues.

Purpose of a Literature Review

A literature review involves an extensive study of research publications, books and other documents related to your defined problem or research question. The review of existing research advises you, as a researcher, as to whether the problem you have identified has already been addressed by other researchers and the methodologies these researchers used to address their own research questions. This information is important because we do not want to repeat research that has already been done unless there is a good reason for doing so (i.e., examining a new development in this area, testing a theory with a new population, or even just seeing if the research can be reproduced). A literature review also evaluates the status of the problem or issue, any debates or disagreements in the literature, or other related details.

A literature review goes beyond the search for information; it includes the identification and articulation of relationships between existing literature and your field of research. The literature review enables the researcher to discover what material exists about a topic and to understand the relationship between the various contributions. For example, within the literature on gender-based violence, there is a debate over whether men and women are equally violent in intimate relationships (Fanslow, Mellar, Gulliver, McIntosh, 2023; Hamby, 2014; Hardesty & Ogolsky, 2020). One side of the debate argues that there is symmetry in the violence and abuse between partners, while the other side of the debate holds that there is a gender imbalance, with men predominately the aggressors and women the victims of relationship violence. A comprehensive review of the literature reveals these points of difference, which enables the researcher to identify and (if possible) resolve contradictions as well as determine research gaps and/or unanswered questions.

Even though the nature of the literature review may vary with different types of studies, the basic purposes remain constant and

can be summarized as follows:

- Provide a context for your own research and justify the research you are proposing. The literature helps you answer the ‘so what?’ question about why your research is important.
- Show where your proposed research fits into the existing body of knowledge and can add to the understanding and knowledge of the field. A strong literature review will outline potential gaps in knowledge and thus help articulate what your research adds to the overall literature.
- Identify whether your proposed research has been carried out by another researcher (and if it has, the literature review should help specify why replication is necessary).
- Illustrate the methodological approaches used to study the subject. Understanding how others approached the issue can offer ideas on how you could address your own research question as well as help justify your proposed method.
- Highlight challenges in previous research. These challenges could be methodological or theoretical; for example, the perspectives of a specific group impacted by the issue may be missing or an application of a particular theory to a problem may be incomplete.
- Help refine or refocus the topic or even move it in a new direction.

What is Involved in Writing a Literature Review?

Generally, a literature review is conducted in three steps:

- Research – to discover what has been written about the topic;
- Critical evaluation – to evaluate the literature, determine the relationship between the sources, ascertain what has been done already and what still needs to be done; and
- Writing – to explain what you have found.

It is often helpful to think of the literature review as a funnel or an inverted pyramid, moving from very broad general sources to very specific questions. More specifically, you start with a broad examination of the research related to the topic, working down to look at more specific aspects of the topic, which leads to the gap or the specific aspect of the topic your research question will address, as seen in Figure 5.1.

Figure 5.1: Literature Review Funnel, from a Broad Overview to a Specific Question [\[Image description for Figure 5.1\]](#)

How to Undertake a Literature Review

The first step in undertaking a literature review is to conduct a search of peer-reviewed academic research that has been done on your topic. With the variety of databases electronically available through university libraries, there are millions of scholarly sources accessible from your keyboard. Google Scholar is also a good tool for your search as is the practice of consulting a librarian. Regardless of the database or site you use, it is good practice to evaluate whether the source you find is peer-reviewed, grey literature, or another type of source (see Table 5.1). Grey literature – research conducted outside academia – can serve as an important research source for your literature review. Indeed, such research can have important practical and policy implications, as academic research can sometimes tend toward more theoretical applications.

At this stage, you will likely skim the sources to see if they are relevant for your literature review and for your research question. Not every journal article will be applicable or useful, but it is often important to read more than just the title and abstract (though these can be helpful)!

Part of evaluating the sources is not just assessing whether the source is peer-reviewed or grey literature. It is important to understand who completed the research, the type of research or method used, who funded or sponsored the research you review, in addition to the perspective and purpose of the research. For example, much of the research in the social sciences is funded by the Government of Canada through the Social Sciences and Humanities Research Council. However, researchers are increasingly turning to industry and private grants to fund their research, which may shape the lens through which the research is communicated.

Another critical aspect to consider as you are collecting your sources is related to authorship and **citation bias**. Citation bias can occur in a few ways: a geographical bias can exist in which sources from one region are marginalized or cited more (e.g., North American studies are overwhelmingly included while other regions are excluded), or a gender or race bias may exist where research by women and racialized researchers is minimally cited or ignored (Calderón, 2022; Chakravartty, Kuo, Grubbs,

& McIlwain, 2018; Gewin, 2021; Pandey & Burch-Smith, 2024). There can be valid reasons for taking a geographical focus; for example, if you are researching community policing in Canada, it would make sense to focus on Canadian research. Within this focus you would want to include writings on First Nations research and efforts around the topic. Actively recognizing and resisting citation bias is a crucial part of our collective efforts to decolonize research. One way researchers can do this is by remaining alert to the potential for citation bias in their own work and by seeking out and including the research and work of marginalized researchers as part of a comprehensive literature review.

There are a few more things to keep in mind in this first step as you review the literature:

- Who are the various researchers who have studied this topic? Who are the most prolific researchers/writers on this topic? Has a specific researcher or team of researchers been identified as pioneers or leaders in this field of study?
- How have the various researchers defined key terms that are relevant to your topic? Have the definitions of any of the key terms evolved over time?
- What are the different theories that have been examined and applied to this topic? How, if at all, have the various theories applied to this topic evolved over time?
- What methodologies have been used to study this topic? Have these methodologies evolved over time?

As you compile your list of sources, be aware that you will likely not include all the resources you have read in your final literature review. A good general guideline for the 'search' stage is to read 1.5 times as many sources as you are required to include in your assignment. If you are asked to include 20 resources in your literature review, expect to read approximately 30 to find the best 20. Table 5.1 offers some examples of sources you could include in a literature review, encompassing scholarly material, grey literature, and other sources.

Table 5.1: Literature Review Sources

Category of Source	Type of Source	Description
Scholarly Sources (peer-reviewed or academic)	Peer-reviewed Journal Articles	A peer-reviewed journal article is a paper that has been submitted to a scholarly journal, accepted, and published. Peer-reviewed journal papers go through a rigorous, blind review process of peer review. What this means is that two to three experts in the area of research featured in the paper have reviewed and accepted the paper for publication. This blind review process may involve many back-and-forth edits on behalf of the researchers as they work to address the suggestions and concerns of the peers who reviewed their paper. Reviewers may reject a paper for a variety of reasons, such as unclear or questionable methods or a lack of contribution to the field. Because peer-reviewed journal articles have gone through a rigorous review process and have been accepted, they are considered the premier source for research.
	Edited Academic Books	An edited academic book is a collection of scholarly scientific papers written by different authors. The works are original papers and are often not published elsewhere. The papers within the text also go through a process of review; however, the review is typically not a blind review because the authors have been invited to contribute to the book.

Category of Source	Type of Source	Description
Grey Literature	Articles in Professional Journals	Articles from professional journals should be used with caution because articles in trade journals are not usually peer reviewed, even though they may appear to be. A good way to find out is to read the “About Us” section of the professional journal, which should state whether or not the papers are peer reviewed. You can also find out by searching the name of the journal and adding “peer reviewed” to the search.
	Statistical Data from Governmental Websites	Governmental websites can be excellent sources for statistical data. Statistics Canada collects and publishes data related to crime, the economy, society, and the environment.
	Policy Documents and Reports	Government or government-related websites can be a good source of policies and reports relevant to your topic. For example, <i>Reclaiming Power and Place: The Final Report of the National Inquiry into Missing and Murdered Indigenous Women and Girls</i> (2019) would fall into this category.
Other Sources	Newspaper Articles	News articles can be used in a literature review but should be used with caution, and the media outlet should be credible (e.g., CBC, The Toronto Star). News articles can add interesting details and content but should be used sparingly.
	Website Material from Professional Associations	Material from other websites can also serve as a source for statistics that you may need for your literature review, for example, total membership in a professional association or operating procedure documents. Such sources should be used sparingly and with caution.

The second step in the process is the critical evaluation of the sources you have gathered. It is often beneficial to first read or skim the whole article, look away, and ask yourself what you felt was the main idea before jumping into a deeper reading of the source. In addition to thinking about the questions noted above, you should be taking notes during this process. There are a variety of ways to organize your notes, but you should include the following information:

- **Citation:** A full citation of the source to help you ensure proper referencing and a complete reference list.
- **Research question:** The research question or main points of the research. This includes any hypotheses the researchers propose. If the article is a review of previous research, look for the main points.
- **Theory:** The theoretical framework and any major concepts the research uses. For example, if the research uses a specific theory to explain the issue or an **operational definition**, this is handy information to note.
- **Methods:** The methodology used for the research, such as a qualitative or quantitative approach, the method of data collection, details of the sample (e.g., the number of participants, who they are), and analysis process.
- **Results:** The results or main findings of the study. Writing down the results of the study in your own words in a few sentences is a good idea. For example, “people who are between the ages of 18 and 35 are more likely to own a smartphone than those in an age range above or below.”
- **Conclusion:** The conclusion of the research or, in other words, the ‘answer’ to the research question. It is also helpful to

identify the implications and/or recommendations of the authors, which are typically noted in the conclusion, as this can point to gaps in knowledge or policy.

- *Pros/cons*: The strengths and limitations of the research. Most articles will identify limitations, but you should think beyond what the authors state to consider limitations for your own research question and the literature overall. Also, think about the strengths of the source in terms of what it adds to knowledge or methodological strengths such as including an underrepresented group.
- *Other*: Anything else you find interesting, questions you may have about the particular source, or contradictions with other sources.

See this [literature review matrix \[DOC\]](#) for a concrete example of how some of this information can be organized in a meaningful and useful format.

When reading through and evaluating your sources, remember that you are looking for the “big picture,” not a collection of random, separate articles (an annotated bibliography). You are also not trying to prove a point (an essay). You are looking for common themes and patterns in the research as a whole. You are also looking to see how the various pieces of research are linked, if at all, in the overall body of literature. You cannot be expected to be an expert on your topic at this stage in your academic career, but you do need to be able to identify gaps in the research on your topic. A tip for finding gaps is to read the conclusion section of the sources your search has uncovered, as researchers often identify such gaps as well as suggest areas for future research as part of summarizing their research. However, if a researcher suggested a gap 10 years ago, this gap has likely now been addressed. Look at the most recent research your literature review has uncovered (suggested within 2–3 years of the current date) and compare with older articles to see how this gap has been addressed over time.

At this point in your search of the literature, you may realize that your research question needs to change or adapt. This is a common occurrence, since when you first develop a research question, you cannot be sure what the status of the research area is until you undertake your review of the literature related to this topic. You will also likely have to revisit your literature review at later stages of your research, such as when writing up your methods or analyzing your findings, so that you can connect your own research to the larger body of literature. This is very much an iterative process, as shown in Figure 5.2. Think of your literature review as a segment of your research that evolves and shifts in line with how your research unfolds. A strong foundation of a well-researched and comprehensive literature review makes such changes and revisions easier.

Figure 5.2: The Iterative Process of a Literature Review [\[Image description for Figure 5.2\]](#)

How to Write a Literature Review

After undertaking a search of existing research that has been done on your topic (step 1) and critically evaluating the research gathered (step 2), the next step involves taking your notes from your critical evaluation of the sources, organizing the information, and actually writing the literature review. A [literature map](#), as illustrated in Figure 5.3, is one option to aid in organizing information before starting to write. Whatever method you use, mapping out how the literature works together in terms of themes or concepts, and which sources you are including with the themes and/or concepts, helps ensure that you are providing a review of the body of literature rather than a paper similar to an annotated bibliography (a summary of each article independently with no stated connection between them).

Figure 5.3 Literature Map on Intimate Personal Violence [\[Image description for Figure 5.3\]](#)

Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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The Five 'C's of Writing a Literature Review

To help you frame and write your literature review, think about these five Cs (Callahan, 2014):

1. *Cite* the material you have referred to and used to help you define the research problem you will study.
2. *Compare* the various arguments, theories, methods, and findings expressed in the literature. For example, describe where the various researchers agree and where they disagree. Describe the similarities and dissimilarities in approaches to studying related research problems.
3. *Contrast* the various arguments, themes, methods, approaches, and controversies apparent and/or described in the literature. For example, describe what major areas are contested, controversial and/or still being debated.
4. *Critique* the literature. Describe which arguments you find more persuasive and explain why. Explain which approaches, findings, and methods seem most reliable, valid, appropriate, and/or most popular and why. Pay attention to the verbs you use to describe what previous researchers have stated (e.g., asserts, demonstrates, argues, clarifies.).
5. *Connect* the various research studies you reviewed. Describe how your work utilizes, draws upon, departs from, synthesizes, adds to or extends previous research studies.

There are three parts to the literature review: the introduction, the body, and the conclusion.

The introduction must identify the topic by briefly discussing the significance of the topic and offering a broad overview of the scope of the work you are reviewing. If your literature review is part of a larger work, the introduction is a good place to explain the importance of the review to your research question. You will also want to establish the scope of your literature review in the introduction, for example, whether you are looking at the entire history of the field or just a particular period of time.

In the body of the literature review, discuss and assess the research in the field based on your selected organizational technique (see Table 5.2) rather than addressing each source separately. Most, if not all, paragraphs should discuss multiple sources. Here is where you will compare, contrast, and connect the various pieces of research. For instance, if you are researching the effects of post-traumatic stress (PTS) on law enforcement officers and are taking a thematic approach to organizing your literature review, you may have mapped out themes such as the effects of PTS on sick time, effects of PTS on families of officers, and effects of PTS on overall officer wellness. You will want to connect the research within each theme, such as what different researchers have found about the effects of PTS on sick time, and contrast any differences. For another example of a literature review that takes a thematic approach, see this one conducted by one of the editors of this open education resource: [Developmental Disability, Crime, and Criminal Justice: A Literature Review \[PDF\]](#). You will notice in this example that the many themes that emerge in the literature review are outlined in the introduction of the paper, guiding the reader on what to expect, and in what order.

It is best practice to use your own words while summarizing and paraphrasing the works you are reviewing. Use direct quotes sparingly and strategically; instead, illustrate your knowledge and understanding of the field of research (see this short video for the difference between summarizing, paraphrasing and using direct quotes: [Quoting, Paraphrasing, & Summarizing](#)). In your conclusion, suggest where the research in the field will or should go next. If you are proposing your own research study, show how your research question will contribute to the field and fill in any gaps. The conclusion is also a good place to defend the importance of the topic, now that you have demonstrated the current state of thinking in the field.

Table 5.2 offers three common ways to organize your literature review: thematically, methodologically, and chronologically, along with when you might want to use each technique, with examples. Remember that most college and university libraries have research and writing resources to help as well!

Table 5.2: Three common ways to organize your literature review, adapted from Cronin et al., 2008.

Organization Technique	Instances When to Use it	Sample Outline
Thematically	<p>When explaining key themes or issues relevant to the topic; when blending theoretical and empirical sources.</p> <p>This is the most common way to organize literature reviews.</p>	<p>Topic: Community policing approaches across Canada.</p> <p>Organization of the Literature Review:</p> <ul style="list-style-type: none"> • Definition of community policing • Community policing in western Canada (BC, AB, SK) • Community policing in central Canada (MB, ON, QU) • Community policing in Atlantic Canada (NL, NB, NS, PEI) • Community policing in the Territories (YK, NT, NU) • First Nations and community policing
Methodologically (also called a methodology review)	<p>When discussing interdisciplinary approaches to a topic or when discussing a number of studies with different approaches.</p> <p>When using this organization technique, be sure to include comprehensive details about the methods, samples, and conclusions to allow for comparison among methodological approaches.</p>	<p>Topic: Youth engagement in property crime</p> <p>Organization of the Literature Review:</p> <ul style="list-style-type: none"> • Definition of youth crime, background of property crime • Official police-reported statistics on property crime by youth • Studies using self-report surveys with youth to assess property crime engagement • Studies using interviews and focus groups with youth to assess property crime engagement
Chronologically	<p>When historical changes are central to explaining the topic.</p> <p>Note that sources could have been written in the time period or written about the time period.</p>	<p>Topic: Feminist understandings of domestic violence and how this has influenced responses to domestic violence</p> <p>Organization of the Literature Review:</p> <ul style="list-style-type: none"> • First-wave feminism and domestic violence (1850s to 1920s) • Second-wave feminism and domestic violence (1960s to 1980s) • Third-wave feminism and domestic violence (1990s to 2010s) • Fourth-wave feminism (2010s to present)

Literature Review, Essay, Annotated Bibliography: What's the Difference?

Many students struggle with understanding the difference between a literature review and an essay. This often occurs because a student can use the exact same resources to create a literature review or an essay, and the format of the writing (introduction,

body, conclusion) is the same. However, an essay and a literature review have different purposes.

A literature review focuses on everything that has been written about a particular topic, theory, or body of research. It is focused on the research and the researchers who have undertaken research on your topic. In contrast, an essay focuses on proving a point or supporting an argument. An essay has a narrower focus; it does not need to provide extensive coverage of *all* the material on the topic, and while writers may offer evidence (literature) with a contrary perspective, they mainly use those sources that prove the point. Another way to think about the difference is that a literature review raises a question from the literature (e.g., research gaps, your research question), while an essay seeks to answer a question (e.g., support your thesis or your argument) (University of Newcastle, 2020).

An **annotated bibliography** is a third type of academic writing that can sometimes confuse students who are attempting to write a literature review. A literature review may use the same sources, but it does so in an integrated way, using multiple sources in the same paragraph to show the breadth of research on a particular aspect of a theme or method. An annotated bibliography focuses on one source and then moves to another, with no integration between the sources. In essence, an annotated bibliography is a list with extra details about each source, providing all the reference details of a source with a short (approximately 150 words) description, or annotation, of the article, book, report, etc. The sources should be referenced in the proper format for your chosen style (APA and Chicago are two common styles in the social sciences). An annotated bibliography is not to be confused with a bibliography (or reference list), which is a list (without additional description or discussion) of journal articles, books, and other resources that someone has used and referenced in their writing (see [sample annotated bibliography](#)).

Proper Referencing and Citation

Part of good research practice is to reference each source you use in your work. The purpose of referencing your sources is to give credit where credit is due (i.e., someone else's work) and to ensure you avoid being accused of plagiarism (i.e., putting forth someone else's work as your own). Proper referencing includes both a formal reference list of all sources used at the end of your paper as well as citing sources used in-text as well as attributing ideas and research to the authors whose work you are drawing upon. There are many established referencing styles that provide a set of rules for writing and referencing (citing) your sources. The American Psychological Association (APA) referencing style is widely accepted in the social sciences and is the referencing style used in this text. APA has specific formats for the different reference list entries (e.g., a slightly different format for a journal article than a government report). College and university libraries will also have resources to support you in properly referencing your writing regardless of the style you adopt, and there is a wealth of online resources to use. The [Online Writing Lab](#) from Purdue University is an excellent resource. Remember, proper referencing is a key to strong and honest academic writing.



Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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Conclusion

In this chapter, we introduced you to the comprehensive and systemic review of the existing body of knowledge on our topics of interest and research questions: the literature review. We discussed the purpose of a literature review and how to write one, with specific reference to the 5 Cs. Moving beyond just gathering sources, a review of the literature also requires us to critically evaluate and synthesize our sources. Identifying gaps within the literature when devising our own research questions is key; sometimes, we revise the research question as needed as we discover new, relevant sources of information.

Specific steps are provided in this chapter on how to go about writing a good literature review. Different ways to organize a literature review are also offered, whether it is a standalone document or offered as part of an actual research study. Last, but not least, the importance of properly referencing the sources we include in our literature review is highlighted. After all, giving credit where credit is due is part of our responsibility as ethical social science researchers.

✓ Summary

- A literature review is a comprehensive survey of what has been written about a particular topic, theory, or research question, and it can include both peer-reviewed sources and grey literature as well as other sources, such as news articles.
- The literature review helps us determine the current status of the topic in the field and identify any gaps that need to be addressed or questions that remain to be answered on the topic. It helps us answer the 'so what?' question about why our research is important.
- The first step of conducting a literature review involves undertaking a search of peer-reviewed academic research and other research or commentary that has been done on your topic, and then, secondly, critically evaluating the research gathered. The third step involves taking your notes from your critical evaluation of the sources, organizing the information, and actually writing the literature review.
- The 5 Cs of writing a literature review involve citing, comparing, contrasting, critiquing and then connecting the sources.
- There are three ways to organize the literature review: thematically, methodologically or chronologically.
- A literature review is distinct from an essay and an annotated bibliography.
- Part of our responsibility as ethical researchers is to give credit for the work of others by properly referencing the sources we rely on in our literature review and throughout the entire research study.

Key Terms

annotated bibliography: a list of literature sources that includes a proper citation followed by a short descriptive summary or critical evaluation of the main details within the source.

citation bias: a bias which involves "citing or not citing a source for reasons other than its relevance and quality," with gender, race, ethnicity and nationality impacting the likelihood of being cited (Ray et al., 2024, p. 159).

grey literature: literature or sources that have not undergone a peer-review process, but are still from a reputable source, such as the Government of Canada or a respected non-governmental organization.

literature map: a way to organize and present main ideas and identify connections between and among literature on a particular topic; it is typically presented in a graphic or flow chart format to make sense of the overall trends and themes in a body of literature.

literature review: a comprehensive survey of what has been written about a particular topic, theory, or research question.

operational definition: a precise definition of how a variable or concept is to be measured.

peer-reviewed sources: also called scholarly or academic sources, peer-reviewed sources have undergone an evaluation and review process by other experts in the topic area for quality and the significance of the contribution to knowledge prior to publication.

Chapter Review

Crossword

Fill in the term in the right-hand column and it will display in the crossword puzzle. Be sure to include spaces where appropriate.

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Further Reading

- Critical criminological understandings of adult pornography and woman abuse: New progressive directions in research and theory
 - Strategies to support substance use disorder care transitions from acute-care to community-based settings: a scoping review and typology
 - A scoping review of school-based indigenous substance use prevention in preteens (7–13 years)
 - Ravenous wolves revisited: a systematic review of offending concentration
 - Factors contributing to quarter life crisis on early adulthood: A systematic literature review
-

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Adaptation Statement

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definition

A comprehensive survey of what has been written about a particular topic, theory, or research question.

×Close definition

Also called scholarly or academic sources, peer-reviewed sources have undergone an evaluation and review process by other experts in the topic area for quality and the significance of the contribution to knowledge prior to publication.

×Close definition

Literature or sources that have not undergone a peer-review process, but are still from a reputable source, such as the Government of Canada or a respected non-governmental organization.

×Close definition

A bias which involves “citing or not citing a source for reasons other than its relevance and quality,” with gender, race, ethnicity and nationality impacting the likelihood of being cited (Ray et al., 2024, p. 159).

×Close definition

A precise definition of how a variable or concept is to be measured.

×Close definition

A way to organize and present main ideas and identify connections between and among literature on a particular topic; it is typically presented in a graphic or flow chart format to make sense of the overall trends and themes in a body of literature.

×Close definition

A list of literature sources that includes a proper citation followed by a short descriptive summary or critical evaluation of the main details within the source.

×Close definition

6A: Research Design Part 1 – Measurement, Conceptualization and Operationalization

Learning Objectives

- Define conceptualization and explain its role in the measurement process.
- Define operationalization and explain its role in the measurement process.
- Describe the four levels of measurement.

Once a researcher has identified a research question, conducted the literature review, and given some thought to what might be the most appropriate research method(s), they must then determine how they will measure the social phenomenon that is the focus of their research question. **Measurement** is a key part of research design and refers to the process of describing and ascribing meaning to key facts, concepts, or other phenomena under investigation. At its core, measurement is about defining one's terms in as clear and precise a way as possible. Some constructs in social science research, such as a person's age or the number of people in prison, may be easy to measure. Other constructs, such as creativity or prejudice, are considerably harder to measure. For these reasons, measurement in social science isn't quite as simple as using some predetermined or universally agreed-upon tool. But no matter the topic, researchers must always think carefully and deliberately about how to measure the central components of their research questions.

This chapter covers the processes and concepts involved in empirical measurement: conceptualization and operationalization. We introduce you to variables and review the ways variables can be related to one another. This chapter also covers the four levels of measurement a variable can take as well as the link between the level of measurement of our variables and the types of analyses we will be able to conduct with our data in the latter stages of our research journey.

What Do Social Scientists Measure?

The question of what social scientists measure can be answered by asking what social scientists study. Think about the topics you have learned about in your criminology classes or the topics you have considered investigating yourself. Or, think about the many examples of research you have read about in this text so far.

Let's take a look at a study on the fear of crime as an example of what types of concepts criminologists can measure. Kohm et al. (2012) studied how the fear of crime was related to coverage in news media. To conduct the study, they needed to be able to clearly define the fear of crime and identify how to measure it. How do we know whether or not someone is afraid of crime? How do we know that the person is not fearful of something else entirely? Is it a fear of property crime we want to examine or a fear of violent crime? Understanding how measurement works in research methods helps us answer these sorts of questions.

Social scientists will measure just about anything they have an interest in investigating. Let's take a look at some other examples. Let's say you are interested in learning something about the **correlation** between social class and levels of victimization. If these are the concepts in your study, you must develop some way to measure both social class and victimization. Or, if you wish to understand how a person's gender shapes their workplace harassment experiences, then you must measure gender and workplace harassment experiences. You get the idea. Social scientists can and do measure just about anything you can imagine observing or wanting to study. Some things are easier to observe or measure than others, and the things we might wish to measure don't necessarily all fall into the same category of measurables.

In 1964, philosopher Abraham Kaplan (1964) described three different categories of things that behavioural scientists observe: direct observables, indirect observables, and constructs. Direct observables are probably the simplest to measure in the social sciences. **Direct observables** are the sorts of things we can perceive ourselves with our senses. For example, broken windows in a car or graffiti on a building would be direct observables – you can see and touch them.

Indirect observables, on the other hand, are less straightforward to assess. Indirect observables require a degree of inference about the connection between the observation and what the observation represents (Babbie, 2007). If we conducted a study for which we wished to know if a person had ever committed a criminal offence, we would probably have to ask them about their behaviour, perhaps in an interview or a survey. Thus, we have observed criminal offending, even if it has only been observed

indirectly. Birthplace might be another indirect observable. We can ask study participants where they were born, but it is unlikely that we have directly observed any of those people being born in the locations they report.

Sometimes, the measures we are interested in are more complex and more abstract than observational terms or indirect observables. Kaplan (1964) referred to these as **constructs**. Think about some of the constructs you've learned about in other classes—racism, for example. What is racism? One definition is prejudice or discrimination based on someone's race or ethnicity. But how would you measure it? Another construct is patriarchy, which refers to the systemic power and authority that men hold over women. We know patriarchy influences society and social institutions, but measuring such a construct is more difficult than measuring a person's income. In both cases, racism and patriarchy, these theoretical notions represent ideas whose meaning we have generally come to agree on. Though we may not be able to observe these constructs directly, we can observe the confluence of things they are made up of.

How Do Social Scientists Measure?

Measurement occurs at multiple stages of a research project, including planning, data collection, and sometimes even data analysis. A researcher begins the measurement process by describing the key ideas they hope to investigate, which are usually stated in the research question. For instance, let's say our research question is: How do lawyers with different family backgrounds cope with the emotional demands of their job? Answering this question requires some idea about what coping means. We may come up with an idea about what coping means as we begin to think about what to look for (or observe) during data collection. Once we've collected data on coping, we also have to decide how to report on the topic. Perhaps, for example, there are different types or dimensions of coping, some of which lead to more successful emotional outcomes than others. The decisions we make about how to proceed and what to report will involve processes of measurement.

Measurement is a *process* in part because it occurs at multiple stages of conducting research. We could also think of measurement as a process because measurement in itself involves multiple stages such as identifying key terms, defining them, figuring out how to observe them as well as assessing whether our observations are any good. In the next sections of this chapter, we will elaborate on the task of identifying and defining the key terms/concepts and also figuring out how we will observe them. The assessment of whether our observations are any good will be explored in [chapter 6c](#).

Conceptualization

A **concept** is the notion or image we conjure up when we think of some cluster of related observations or ideas. For example, masculinity is a concept. What do you think of when you hear that word? Presumably, you imagine some set of behaviours and perhaps even a particular style of self-presentation. Of course, we can't necessarily assume that everyone conjures up the same set of ideas or images when they hear the word "masculinity." In fact, there are many possible ways to define the term. And while some definitions may be more common or have more support than others, there isn't one true, always-correct-in-all-settings definition. What is considered masculine may shift over time, from culture to culture, and even from individual to individual (Connell, 2005). Without understanding how a researcher has defined key concepts, it would be nearly impossible to understand the meaning of that researcher's findings and conclusions. Thus, the process of measurement starts with **conceptualization**, which is the process of clearly defining our concepts and their components in concrete and precise terms.

Going back to our example of the concept of masculinity, think about what comes to mind when you see that term. How do you know masculinity when you see it? Does it have something to do with men? With social norms? If so, perhaps we could define masculinity as the social norms that men are expected to follow. That seems like a reasonable start, and at this early stage of conceptualization, brainstorming about the images conjured up by concepts and playing around with possible definitions is appropriate. But this is just the first step. It would make sense to consult previous research and theory (often identified in the literature review) to understand if other scholars have already defined the concepts we're interested in. This does not necessarily mean we must use their definitions, but understanding how concepts have been defined in the past will give us an idea about how our conceptualizations compare with the predominant ones out there.

Understanding prior definitions of our key concepts will also help us decide whether we plan to rely on them for our own work, modify them slightly, or challenge them altogether. If we review the literature on masculinity, we will surely come across the work of Raewyn Connell, one of the world's preeminent masculinity scholars. After consulting Connell's prior work (1987; 2005; 2009) as part of our literature review, we might tweak our initial definition of masculinity just a bit. Rather than defining masculinity as "the social norms that men are expected to follow," perhaps instead we'll define it as "the social roles, behaviours, and meanings prescribed for men in any given society at any one time." Our revised definition is both more precise and more complex. Rather than simply addressing one aspect of men's lives (norms), our new definition addresses three aspects: roles, behaviours, and

meanings. It also implies that roles, behaviours, and meanings may vary across societies and over time. Thus, to be clear, we'll also have to specify the particular society and time period we're investigating as we conceptualize masculinity.

As we can see with this example of masculinity, the conceptualization process is all the more important because of the imprecision, vagueness, and ambiguity of many social science concepts. After we have identified a clear definition we are happy with, we should make sure that every term used in our definition will make sense to others. Are there terms used within our definition that also need to be defined? If so, our conceptualization is not yet complete.

The option of challenging pre-existing conceptualizations may be most relevant when working with Indigenous communities. Rather than simply adopting colonial interpretations, it is critical to turn to Indigenous authors and your Indigenous community partners to see if certain conceptualizations should indeed be challenged. For instance, if you were examining the role of Indigenous spirituality in increasing resilience and decreasing involvement in criminal activity, you would not want to define or measure spirituality as "frequent church attendance." Instead, a definition that pertains more to the inner nature of a person and their relationship to all that surrounds them would be a more appropriate reflection of how many Indigenous cultures conceptualize spirituality.

There is yet another aspect of conceptualization to consider: **concept dimensions**. In terms of social scientific measurement, concepts can be said to have dimensions when there are multiple elements that make up a single concept. Not all men are the same in their behaviour or attitudes, and these differences may be reflected in dimensions of the concept of masculinity. These dimensions could be regional (is masculinity defined differently in different regions of the same country?), age-based (is masculinity defined differently for men of different ages?), or perhaps power-based (are some forms of masculinity valued more than others?). In any of these cases, the concept of masculinity would be considered to have multiple dimensions. While it often is not necessary to spell out every possible dimension of the concepts you wish to measure, it may be important to do so depending on the goals of your research. The point here is to be aware that some concepts have dimensions and to think about whether and when dimensions may be relevant to the concepts you intend to investigate.

There is one last thing to consider in the process of conceptualization: **reification**. Although consulting scholarly definitions of our concepts is part of the process, we should also question prior definitions in the literature. How have these definitions changed over time? Are parts of these definitions missing? Are there discriminatory elements in the current definitions we can identify and revise in our own conceptualization? Think about the term "family." Consider the definitions of family that were used in Western cultures 100 years ago, 50 years ago, and 5 years ago. How have our understandings of this concept changed over time? Challenging reification means evaluating and questioning these different definitions. Fifty years ago, family was conceptualized as an opposite sex couple with children; however, today our conceptualization of family is more inclusive of a variety of relationships and forms. But this conceptualization may vary based on social and geographical context, representing different dimensions of the concept.

As part of our work towards decolonizing research, we should pay specific attention to reification with regard to terms used with Indigenous peoples. Some have significantly changed over time, often as a result of colonization, cultural misunderstanding, or more positively via shifts in reclaiming empowerment. For instance, the term "Indian" was mistakenly used by European explorers who thought they had reached India. It is still widely used in the United States as a result of history and stereotyping. Currently, many Indigenous peoples prefer the term Indigenous, or First Nation, or their respective Tribal or First Nation affiliation.

The caution here is that our terms or concepts mean nothing more and nothing less than whatever definition we assign to them. It makes sense to negotiate social agreement about what various concepts mean. Without that agreement, it would be difficult to navigate through everyday living. But at the same time, we should not forget that we have assigned those definitions to that concept and that they are no more real than any other, alternative definition we might choose to assign. Conceptualization simply offers a clear and concrete definition of how we are using the concept within our own current research study.

Operationalization

Once a researcher has defined, or conceptualized, a concept, exactly how do they measure it? **Operationalization** refers to the process of explaining precisely how a concept will be measured. Operationalization flows from the conceptual definition by establishing a nominal definition, or dictionary definition, of the concept, then an operational definition, and finally identifying specific **indicators**, or empirical observations taken to represent the ideas we are interested in studying. Social scientists tend to measure most concepts using multiple indicators. For instance, if an indirectly observable concept such as socioeconomic status (SES) is simply defined as the level of family income, it can be operationalized using an indicator (e.g., an actual survey question) that asks respondents to report their annual family income. However, if a researcher defines SES as a combination of elements (i.e. concept dimensions) including income along with level of education and occupation, as shown in Figure 6a.1, it would be

measured with multiple survey questions that cover each of these elements.

Figure 6a.1 Process of Operationalizing the Concept of SES [\[Image description for Figure 6a.1\]](#)

Researchers using field research and other methodologies must also operationalize their concepts. For example, a researcher observing lawyers' courtroom interactions might develop indicators of SES such as clothing styles, mannerisms, or patterns of speech. No matter what methodology a researcher chooses, they must always operationalize their concepts during the measurement process.

When operationalizing concepts in Indigenous-related research, the researcher needs to be careful not to adopt a colonial point of view as this may result in misdefining or oversimplifying the concept. For instance, if we were examining "well-being," we might typically examine the elements of economic status, physical health, and individual happiness. From an Indigenous perspective, "well-being" might instead include the elements of spiritual balance, connection to the land or water, and cultural traditions as well as community harmony. Culturally grounded operationalizations are necessary to produce respectful and meaningful research outcomes.

The process of coming up with indicators must not be too arbitrary or casual, and reviewing prior theoretical and empirical work in the topic area can help. Theories point toward relevant concepts and possible indicators; published empirical studies give some very specific examples of how others have defined the important concepts in an area and what sorts of indicators they have used. It might make sense to use the same indicators as other researchers have, or it might make sense to develop new indicators that improve upon previous ones.

Another important aspect that influences the choice of indicators is your methodological approach. A quantitative survey implies one way of measuring concepts – specific, direct written questions with limited response options, while qualitative field research implies a quite different way of measuring concepts – observing people interact in certain ways and watching for certain specific behaviours. As you can see, your data collection strategy – i.e. the specific method you select, whether it be interviews or surveys, or field research – will play a significant role in shaping how you operationalize your concepts.

Figure 6a.2 Process of Operationalizing the Concept of Crime [\[Image description for Figure 6a.2\]](#)

Figure 6a.2 is an example of the process of operationalization, and its connection to conceptualization. While the research question is very general – how does crime vary across Canada? – the process of operationalization narrows the focus of the research. This figure does make the measurement process look like a set of linear stages through which a researcher neatly progresses before beginning data collection; however, it doesn't necessarily always work that way, especially in inductive research. It is normal to revise indicators as the study progresses. For example, in the proposed study in Figure 6a.2, it is unlikely that the indicators will change, but the focus may narrow further to only look at property crimes. If the study was instead exploring how people across Canada perceive crime in their communities, the indicators may evolve as part of the research based on observation or listening to what participants themselves share as indicators of crime.

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Variables and Levels of Measurement

Now that we have introduced you to the process of measurement and how we conceptualize and operationalize our concepts of interest, let us move on and talk about the indicators a researcher develops to measure abstract concepts pertinent to their study, which are often called **variables**. A variable is something with a quantity or quality that can vary (e.g., from low to high, negative to positive, or from one colour/feature to another), in contrast to constants, which do not vary (i.e., remain constant and do not change). The options a variable can take are called **attributes**. For instance, if our variable is eye colour, the attributes would

be the options this variable can take (brown, blue, green, grey, etc.). Variables are essentially groupings of relevant attributes (Maxfield & Babbie, 2018).

The fact that there are changes in the variable enables a researcher to measure those changes and use the differences to address their research question. Returning to the example in Figure 6a.2 about how crime varies across Canada, the variable in this study would be the crime rates for specific offences and the provinces. For instance, we would expect that the rates for robbery would not be the same in each province, and we can compare the differences in robbery between the provinces to help address our research question.

Levels of Measurement

Based on their characteristics, variables are generally categorized into one of four possible **levels of measurement**: nominal, ordinal, interval, and ratio.

The **nominal level** is the most basic level of measurement. Variables at the nominal level of measurement are both **exhaustive** and **mutually exclusive**, meaning that all possible categories or attributes are included and no one can belong to more than one category, respectively. Relationship status, gender, and province of birth are examples of nominal-level variables. For example, to measure relationship status, we might ask respondents to tell us if they are currently partnered or single. These two attributes exhaust the possibilities for relationship status (i.e., everyone is always one or the other of these), and it is not possible for a person to simultaneously occupy more than one of these statuses (e.g., if you are single, you cannot also be partnered). Thus, this measure of relationship status meets the criteria for nominal-level attributes to be exhaustive and mutually exclusive. One unique feature of nominal-level measures is that they cannot be mathematically quantified. We cannot say, for example, that being born in Ontario has more or less quantifiable value than being born in Nova Scotia – you are not more provincial if you are born in one province or another. Nominal-level variables simply categorize or name differences.

Like nominal-level measures, variables at the **ordinal level** are also exhaustive and mutually exclusive. The difference is that at the ordinal level, variables can be ordered by rank, meaning we can say that one attribute of the variable is more or less than another. Examples of ordinal-level measures include social class, degree of support for policy initiatives, and satisfaction. For example, using a **Likert-scale** question in a quantitative survey to measure the variable from very supportive to very unsupportive, we can say that one person's support for a new crime prevention policy may be more or less than their neighbour's level of support. However, there is no way to calculate or quantify the distance between the levels of support, meaning we cannot say exactly how much more or less supportive one neighbour is than the other.

At the **interval level**, measures meet all the criteria of nominal and ordinal levels; the distinguishing characteristic is that the distance between attributes is known and equal. Temperature and age are good examples of interval-level variables. The distance between 5 years and 10 years is the same as between 15 years and 20 years; because a year is a consistent length, it allows for the mathematical calculation of precise differences.

Finally, at the **ratio level**, attributes are mutually exclusive and exhaustive, attributes can be rank ordered, the distance between attributes is equal, and attributes have a true zero point. In fact, it is only with ratio-level variables that we can say there is a true zero point; therefore, it is only with these variables that we can say what the ratio of one attribute is in comparison to another. Examples of ratio-level variables include time incarcerated, number of offences, and years of education. For instance, say you were reviewing sentencing decisions in Alberta and measuring total time incarcerated in days as one of the variables. A person cannot be sentenced to both 11 and 21 days of incarceration in total (mutually exclusive), all number of days can be included in the response (exhaustive), days are a consistent unit of measure (the distance between days is equal), and there is the potential that a person will not have been sentenced to incarceration at all (true zero point). Finally, this true zero point allows us to say that one person has a sentence that is "x" times longer than another person's sentence.

It is important to be aware of the level of measurement for your variables, especially for quantitative research analysis. You can always collapse higher levels of measurement, but you cannot increase the detail in basic levels of measurement. For instance, you can break your interval-level variable of age into categories and create an ordinal-level variable (e.g., age 25 and under, age 26 to 50, and age 51 and over). But you cannot turn the nominal-level variable of province of birth into an ordinal- or interval-level variable, as the detail simply is not there to do so. Certain statistical analyses require variables to have specific levels of measurement to be valid, so it can be good to have these potential analyses in mind when determining your variables to ensure that you have the correct levels of measurement. This will be discussed more in the quantitative analysis chapter ([chapter 14](#)). For now, keep in mind these levels of measurement and the differences between them, as shown below in Figure 6a.3.

Figure 6a.3: The Four Levels of Measurement in the Social Sciences [\[Image description for Figure 6a.3\]](#)

Stop and Take a Break!

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Conclusion

In this chapter, we delve into the important process in research design that we call “measurement.” It is a process that starts with conceptualization – the assigning of meaning to the concepts we include in our studies and being as clear and precise as possible when we do so. Conceptualization is followed by operationalization, which involves explaining exactly how a concept will be measured, such as what exact survey question will be asked to measure a concept, such as SES, level of education, or number of crimes committed in the past year.

This chapter also discusses the terms “variable” and “attribute” and outlines how variables are related to one another. Next, we discussed the four levels of measurement that a variable can take: nominal, ordinal, interval, or ratio. The importance of recognizing the precise level of measurement of the variables of our study is highlighted, particularly the fact that there is a direct connection between this level and the types of analyses we will later be able to conduct, and, subsequently, conclusions we will later be able to make in the final phases of our research journey.

Summary

- Measurement is a key part of research design and refers to the process of describing and ascribing meaning to key facts, concepts, or other phenomena under investigation. It can occur at multiple stages of the research process.
- Measurement includes both conceptualization – clearly and precisely defining our concepts – and operationalization – clearly and precisely stating how we will measure those concepts in our specific study.
- The indicators a researcher develops to measure abstract concepts pertinent to their study are often called “variables.” A variable is something with a quantity or quality that can vary, and it is made up of a logical grouping of attributes.
- Based on their characteristics, variables are generally categorized into one of four possible levels of measurement: nominal, ordinal, interval, and ratio. The level of measurement dictates the type of analyses that can be conducted.

Key Terms

attribute: the categories/options of variation a variable can take. Variables are made up of a logical grouping of attributes. For example, the eye colour green is an attribute of the variable “eye colour.”

causality: when one variable causes another to change. For example, impaired driving causes traffic accidents and fatalities.

concept: the abstract notion or image that comes to mind when we think of some cluster of related observations or ideas.

concept dimensions: the specific aspects or elements of a concept that make that concept more measurable, manageable and easier to analyze.

conceptualization: the process of clearly and concretely defining key terms or concepts.

constructs: abstract concepts that cannot be directly or indirectly observed, such as socioeconomic status or masculinity; constructs can be defined, or “constructed,” based on a collection of indirect observables. For example, socioeconomic status can be defined and measured by the variables of income, education, and occupation, which are indirect observables.

correlation: when two variables are associated with one another, meaning when one is present, the other is also present. Correlation is necessary but not sufficient to show causation.

direct observables: things that can be seen and observed with the naked eye, like the colour of a car or a street sign.

exhaustive: this is a quality of our variables, meaning all possible attributes are listed and every observation can fit with one attribute. For example, if eye colour is the variable, every possible attribute of eye colour should be listed (black, brown, grey, blue, and so on). Often, the option of “other” is included at the end of the attributes listed to ensure each response option is accounted for.

indicators: empirical observations taken to represent the ideas we are interested in studying. Specifying indicators is the final step of the operationalization process.

indirect observables: things we cannot see with the naked eye and require more complex assessment or inferences, such as place of birth or income.

interval level of measurement: variables at this level of measurement can be rank ordered and the distance between ranks is known, but there is no true zero point.

level of measurement: the way in which attributes of a variable are related to one another. There are four levels of measurement: nominal, interval, ordinal and ratio.

Likert-scale: a type of quantitative survey question where the respondents are asked to rate their opinion about given statements on a scale that ranges from “strongly agree” to “strongly disagree.”

measurement: the process of describing and ascribing meaning to key facts, concepts, or other phenomena under investigation. This includes both conceptualization and operationalization.

mutually exclusive: a quality of our variable that means that all attributes are distinct and do not overlap. As such, no observation can be classified into more than one attribute.

nominal level of measurement: this is the most basic level of measurement, and the attributes are only named, with no ranking of attributes. The variable “eye colour” is an example of a nominal-level variable.

operationalization: the process of explaining precisely how a concept will be measured. In other words, what exact operations will be performed (e.g., what observation will be made or what survey question will be asked) to measure that concept.

ordinal level of measurement: variables at this level of measurement are like nominal variables in that they are categories, but they can be rank ordered. The distance between ranks is not known.

ratio level of measurement: variables with this level of measurement can be rank ordered, the distance between the ranks is known, and there is also a true zero point. As such, more sophisticated analyses can be conducted with variables at the ratio level.

reification: the assumption that abstract concepts exist in some concrete, tangible way.

variable: the indicators a researcher develops to measure abstract concepts pertinent to their study. It is something with a quantity or quality that can vary.

Chapter Review

Crossword

Fill in the term in the right-hand column and it will display in the crossword puzzle. Be sure to include spaces where appropriate.

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Discussion Questions

1. See if you can come up with one example of each of the following: a direct observable, an indirect observable, and a construct. How might you measure each?
2. Discuss an example of how a researcher measured the construct “racism.” How would you change how racism is measured? Why?
3. Two researchers studying the same concept develop different ways to measure it. How can we compare their results?
4. How can the mis-operationalization of a key concept lead to flawed conclusions and the exclusion of key voices? Use the concept of “community” as an example within your response.

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definition

The process of describing and ascribing meaning to key facts, concepts, or other phenomena under investigation. This includes both conceptualization and operationalization.

×Close definition

When two variables are associated with one another, meaning when one is present, the other is also present. Correlation is necessary but not sufficient to show causation.

×Close definition

Things that can be seen and observed with the naked eye, like the colour of a car or a street sign.

×Close definition

Things we cannot see with the naked eye and require more complex assessment or inferences, such as place of birth or income.

×Close definition

Abstract concepts that cannot be directly or indirectly observed, such as socioeconomic status or masculinity; constructs can be

defined, or “constructed,” based on a collection of indirect observables. For example, socioeconomic status can be defined and measured by the variables of income, education, and occupation, which are indirect observables.

×Close definition

The abstract notion or image that comes to mind when we think of some cluster of related observations or ideas.

×Close definition

The process of clearly and concretely defining key terms or concepts.

×Close definition

The specific aspects or elements of a concept that make that concept more measurable, manageable and easier to analyze.

×Close definition

The assumption that abstract concepts exist in some concrete, tangible way.

×Close definition

The process of explaining precisely how a concept will be measured. In other words, what exact operations will be performed (e.g., what observation will be made or what survey question will be asked) to measure that concept.

×Close definition

Empirical observations taken to represent the ideas we are interested in studying. Specifying indicators is the final step of the operationalization process.

×Close definition

The indicators a researcher develops to measure abstract concepts pertinent to their study. It is something with a quantity or quality that can vary.

×Close definition

The categories/options of variation a variable can take. Variables are made up of a logical grouping of attributes. For example, the eye colour green is an attribute of the variable “eye colour.”

×Close definition

The way in which attributes of a variable are related to one another. There are four levels of measurement: nominal, interval, ordinal and ratio.

×Close definition

This is the most basic level of measurement, and the attributes are only named, with no ranking of attributes. The variable “eye colour” is an example of a nominal-level variable.

×Close definition

This is a quality of our variables, meaning all possible attributes are listed and every observation can fit with one attribute. In the context of survey research, this means that all possible response options are listed. For example, if eye colour is the variable, every possible attribute of eye colour should be listed (black, brown, grey, blue, and so on). Often, the option of “other” is included at the end of the survey response options listed to ensure each response option is accounted for.

×Close definition

A quality of our variable that means that all attributes are distinct and do not overlap. As such, no observation can be classified into more than one attribute. In the context of survey research, this means that the response options do not overlap and only one response option would apply.

×Close definition

Variables at this level of measurement are like nominal variables in that they are categories, but they can be rank ordered. The distance between ranks is not known.

×Close definition

A type of quantitative survey question where the respondents are asked to rate their opinion about given statements on a scale that ranges from “strongly agree” to “strongly disagree.”

×Close definition

Variables at this level of measurement can be rank ordered and the distance between ranks is known, but there is no true zero point.

×Close definition

Variables with this level of measurement can be rank ordered, the distance between the ranks is known, and there is also a true zero point. As such, more sophisticated analyses can be conducted with variables at the ratio level.

×Close definition

7A: Sampling Part 1 – The Principles of Sampling

Learning Objectives

- Describe each of the four types of units of analysis in criminology: individual, group, organization and social artifact.
- Distinguish between a unit of analysis and a unit of observation.
- Distinguish between populations and samples.
- Define key concepts that relate to sampling: representativeness, generalizability, and sampling error.

Social science researchers come up with all sorts of interesting questions to investigate using scientific research methods. Unfortunately, researchers can't study entire populations because of feasibility, time and cost constraints. Instead, we systematically select samples from a larger group of interest to draw conclusions about the people, behaviors, or social phenomena we're interested in. Who or what researchers select for their samples and how they choose their sample impacts the conclusions that can be drawn from scientific research studies. The process of selecting a subset of a population to study is called **sampling** (Maxfield & Babbie, 2018; Rennison & Hart, 2019; Palys & Atchison, 2014).

This chapter focuses on key elements and principles of sampling, beginning first with a review of units of analysis. The difference between a population, sampling frame and sample is explained next. Finally, key concepts relevant to sampling, including representativeness and generalizability, are reviewed. In the next chapter, the specific types of sampling strategies will be reviewed, along with how to use information about samples to evaluate claims made based on research findings.

Units of Analysis

The main goal of sampling is to identify a subset of a larger group from which to collect data. To do so, a researcher must first define the larger group or entity they are interested in studying. This larger group is also called the unit of analysis. **Unit of analysis** refers to the entity that is the target of the investigation (Maxfield & Babbie, 2018). In other words, a unit of analysis is the entity you wish to be able to say something about at the end of your study. In any scientific study, the research question determines the unit of analysis.

There are four different units of analysis in the social sciences: individuals, groups, organizations and social artifacts (Maxfield & Babbie, 2018; Rennison & Hart, 2019; Palys & Atchison, 2014). These are not mutually exclusive. In fact, for different analyses in the same study, you may have different units of analysis.

Figure 7a.1: Units of Analysis [\[Image description for Figure 7a.1\]](#)

The **individual** is probably the most common unit of analysis in criminological research (Maxfield & Babbie, 2018; Rennison & Hart, 2019; Palys & Atchison, 2014). As researchers, we are often interested in describing characteristics of offenders or victims of crime. For example, my dissertation research examined offenders in British Columbia who had been designated as long-term offenders since the inception of this designation in 1997 (see Hassan, 2010). One of the goals of the research was to describe the key characteristics of these offenders, including their age, gender, and race. As such, the unit of analysis, or the person/thing I wanted to know more about, was the individual offenders.

Groups are also a common unit of analysis in criminological research (Maxfield & Babbie, 2018; Rennison & Hart, 2019; Palys & Atchison, 2014). A good example of a unit of analysis at the group level that is relevant to criminologists is gangs. Gangs are *usually* groups. I say "usually" here because it really depends on what it is about gangs that you want to know more about. If you are interested in describing the characteristics of certain gang members, then you will be studying individuals. But, if you want to compare the features of male gangs versus female gangs, or larger versus smaller gangs, then you are interested in the gangs as entities. In other words, you are interested in the dynamic between the members within the gang and not just the characteristics of each individual gang member. Other examples of units of analysis at the group level that might be of interest to criminologists include cities, neighbourhoods and even households.

Organizations are the third type of unit of analysis social scientists, including criminologists, might study (Maxfield & Babbie, 2018; Rennison & Hart, 2019; Palys & Atchison, 2014). An organization is essentially a more formal group, like a police department or a correctional facility. You may, for example, want to compare the gender distribution or education level of officers that work

at an RCMP detachment versus those of officers that work at a city department throughout the province of B.C., or the age range and ethnic diversity of inmates within correctional facilities in B.C. compared to those inmates in Alberta. While you would have to learn more about the characteristics of individual officers or individual inmates in the two examples provided here, this does not mean that the individuals are what you want to learn more about in your study; rather, it's the detachments or correctional facilities – or organizations – as entities in and of themselves that you are seeking to examine and how they might compare, as a whole, to other entities at the organizational level.

Social artifacts are the last type of unit of analysis examined by social scientists. These can be defined as “products of social beings and their behaviour” (Maxfield & Babbie, 2018, p. 95). Examples of social artifacts that are common in criminological research are newspaper articles or police reports. In my dissertation research, one of the data sources examined was the psychological assessments of long-term offenders; these assessments were social artifacts. While these news articles, police reports and psychological assessments contain information about individuals, it is the social artifacts you are describing and/or comparing, not the individuals. For example, it was the diagnoses outlined in the psychological assessments, the comments made by the mental health professional pertaining to the offender's treatability or risk of recidivating that I set out to summarize and describe. It was the discourse within these assessments that was of particular interest.

Table 7a.1 Units of Analysis in Criminology

Unit of Analysis	Definition	Examples
Individual	when the study seeks to learn about individual people, such as offenders or victims of crime	sexual assault victims, Indigenous individuals, white-collar criminals
Group	when the study seeks to learn about a group of individuals and the group is an entity in and of itself	gangs, First Nations, neighbourhoods, cities
Organization	when the study seeks to learn about a formal group of individuals and that organization is an entity in and of itself	police departments, Tribal councils, correctional facilities, universities
Social Artifact	when the study seeks to learn more about some product of human interaction	legal cases, psychological assessments, Tribal council minutes, news articles, diaries

Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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When drawing conclusions from our research findings, it is important that we are crystal clear about the unit of analysis of our study. If a neighbourhood is the unit of analysis and it's the neighbourhood as a whole you are examining, then you cannot logically make conclusions about all individuals within that neighbourhood. For example, if the crime rates in a neighbourhood in the suburbs are lower than the crime rates in a neighbourhood in the downtown core, we cannot say it is the individuals that live downtown who are committing these crimes. What else could be going on to lead to this disparity in crime rates between these two neighbourhoods? Perhaps the criminals are commuting for work from the suburbs and committing their crimes downtown on their lunch break. Perhaps the downtown neighbourhood has more tourists from other provinces, and it's the tourists committing the crimes. Or maybe the police officers in the downtown neighbourhood are more diligent about recording all criminal incidents occurring in their jurisdiction! This example illustrates an error that researchers must be careful not to make called **ecological fallacy**, which involves making individual-level conclusions while relying on group-level information (Maxfield & Babbie, 2018).

Closely related to the unit of analysis is the **unit of observation**, which is the item (or items) you actually observe, measure, or collect in the course of trying to learn something about your unit of analysis (Maxfield & Babbie, 2018; Rennison & Hart, 2019; Palys & Atchison, 2014). As mentioned earlier, your unit of analysis will be determined by your research question. Your unit of observation, on the other hand, is largely determined by the method of data collection you use to answer that research question. In a given study, the unit of observation might be the same as the unit of analysis, but that is not always the case. For example, if

I want to learn more about the reasons why long-term offenders in B.C. engaged in the sex crimes that resulted in them receiving this designation, I could interview the individual offenders themselves. After all, if I want to learn about the individual offenders – who are the unit of analysis – I should talk to the individual offenders and also make them the unit of observation, right? Well, that may not be possible for a variety of reasons. Perhaps the warden prohibits researchers from having direct contact with these violent, sexual offenders, or perhaps the offenders do not consent to be interviewed. You may need to figure out other ways to learn more about these individual offenders and collect data from some other source. This could be family members of the offenders or their former teachers, for example. The goal of the study would still be to learn more about the individual offenders and so they remain the unit of analysis, but the unit of observation may have to be someone or something else.

Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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In sum, social science might examine many potential units of analysis. Identifying the unit of analysis early on in a research study is important because it shapes the type of data a researcher should collect for their study and who or what they should collect it from. Whichever it is, it is crucial to acknowledge that the level of analysis dictates the types of conclusions you can draw at the end of your study.

Populations versus Samples

Once a researcher has defined the unit of analysis, they can then begin to narrow their focus to identifying the population they wish to study. A **population** can be defined as *all* the people, things or events that one seeks to better understand in a research study (Maxfield & Babbie, 2018; Rennison & Hart, 2019; Palys & Atchison, 2014). Populations in research may be rather large, such as “British Columbians,” but they are usually much more specific than that. For example, in a study in which the population of interest really is British Columbians, we will still need to specify which British Columbians, such as adults over the age of 18 or citizens or legal residents. In the study mentioned earlier about why a certain neighbourhood might have a higher crime rate, the unit of analysis would be the neighbourhood, but rather than identify all neighbourhoods as the population, the researcher would probably narrow their focus to neighbourhoods in a particular geographic area at a particular point in time or over a certain timeframe.

If a researcher wanted to have members of a particular First Nation be the target population and they have permission from that Nation to conduct the study, it is important to remember that the Indigenous peoples you are including in the research should be consulted *before* making decisions about sampling. Not only is collaborating with the Indigenous peoples and respecting their decisions a key aspect of the 5 Rs discussed in [chapter 1](#) on Ethics, but they likely know the unique characteristics of their people better than you. This understanding of typical variations can result in the best decisions for sample selection.

At this point, you might wonder why researchers don't just gather data from the entire population. In reality, most researchers would rather gather data from their entire population of interest. In fact, I was fortunate enough to be able to come quite close to that in my dissertation. While there were 91 offenders in total that received this designation in B.C. at the time of writing my dissertation (population $N = 91$), there were 67 long-term offender files that were physically available to include in the analysis (administrative reasons made obtaining all 91 of the files from the Corrections Service of Canada difficult), and this was a feasible sample size. Technically, this list of 67 offenders would make up what we call a **sampling frame**, which is a complete and exhaustive list of all the possible elements or units of analysis that could theoretically be included in our study from the larger population (Maxfield & Babbie, 2018; Rennison & Hart, 2019; Palys & Atchison, 2014). I had the time and resources to actually study all 67 offenders, so my study examined the entire sampling frame.

This type of situation is rare, though. Typically, the entire population that researchers are interested in is far too large to examine, and the time and monetary resources are rarely available for such an endeavour (Maxfield & Babbie, 2018; Rennison & Hart, 2019; Palys & Atchison, 2014). Consider, for example, if I had set out to study *all* offenders that received the long-term offender designation in Canada since the inception of the designation in 1997 through to the time of writing my dissertation (target

population $N = 577$). In this case, I would have had to narrow my focus and come up with a way to select some of these offenders to include in my study. The smaller subset we select from the larger population of long-term offenders from which I would actually gather data would be the **sample**.

Figure 7a.2: Population, Sampling Frame and Sample [\[Image description for Figure 7a.2\]](#)

Table 7a.2 Examples of Populations and Samples

Population	Sample
News articles discussing the prevalence of gang violence in Canada	120 news articles from three major newspapers in British Columbia published in 2023, with 40 articles from each newspaper
Canadian residents who have been charged with DUI	300 Canadian residents who have been charged with DUI in the provinces of British Columbia and Quebec between 2020 and 2022
Undergraduate students currently enrolled at colleges across Canada	750 undergraduate students currently enrolled in one of 13 colleges, with one college from each of the country's 10 provinces and 3 territories across Canada
Parole officers who supervise long-term offenders in the community in Canada	30 parole officers who have supervised long-term offenders in B.C. between 2020 and 2024
Indigenous women of childbearing age	30 Indigenous women who have given birth within the last three years

Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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Representativeness and Generalizability

Now that we have defined what a population and a sample are and have outlined the difference between the two, let us turn our attention to one of the key concepts relevant to our sampling decisions: **representativeness**. A *representative sample* is one that resembles the population from which it was drawn in all the ways that are important for the research being conducted. If, for example, you wish to be able to say something about differences between men and women at the end of your study, you must make sure your sample doesn't contain only women. That is a bit of an oversimplification, but the point with representativeness is that if your population varies in some way that is important to your study, your sample should contain the same sort of variation.

Figure 7a.3: Population, Sampling Frame and Sample [\[Image description for Figure 7a.3\]](#)

A key point to remember when conducting research with Indigenous peoples is the great variation that can occur between the different communities. The communities may be highly diverse, with unique languages, traditions, and socio-political structures. It is essential to understand the variation you wish to examine when determining the population to study and then determining the sample. For instance, if your question is broad such as, "What is the level of trust between Indigenous peoples and the RCMP in Ontario?", the population could be all Indigenous peoples in Ontario. Your sample could be drawn from various First Nation communities in the province of Ontario. However, if your question was focused on something specific such as, "Do Indigenous cultural fishing traditions and spiritual beliefs create tension between Indigenous peoples and governmental fishing regulations?", your population would likely be a specific First Nation, not every First Nation in the province. Selecting one First Nation as the population to be studied would be important since cultural traditions and spiritual practices can vary greatly between the Nations.

Obtaining a representative sample is mostly important in probability sampling (which we will discuss more in the next chapter)

because a key goal of studies that rely on probability samples is **generalizability**, which is the second key concept relevant to our sampling decisions and is perhaps the main feature that distinguishes probability samples from nonprobability samples. Generalizability refers to the idea that a study's results will tell us something about a group larger than the sample from which the findings were generated.

Generalizing results from a representative sample to a specific population does not mean that the results automatically generalize to *all* similar populations, though. For example, opinions on carrying personal weapons on campus from a representative sample of criminology students at one B.C. university may represent well the opinions of all criminology students on that campus; however, their opinions may be much different from those of students at a university in Alberta or of criminal justice students in the U.S. Clearly, you need to be critical when you read findings that go beyond the specific population and sample utilized in a research study. Only through replication with different samples from varying populations can more confidence be attached to such broad claims of generalizability between different populations.

Sampling Error and Sample Size

Inasmuch as the results from a representative sample are meant to be a close approximation of what would actually be found if an entire population were utilized, there is certain to be some degree of difference in the results produced from a sample compared to a population. For example, survey results from a sample of citizens on attitudes toward rehabilitation versus incarceration will likely not be identical to the overall survey results if an entire province's population of citizens was surveyed.

The difference in results or outcomes between a sample and a population is called **sampling error** (Maxfield & Babbie, 2018; Rennison & Hart, 2019; Palys & Atchison, 2014). Researchers expect there to be a difference between the sample results and the results from an entire population, even when the sample is representative of the population. The good news is that this margin of error can be estimated and considered in research.

One of the most important factors related to the degree of sampling error is the size of the sample (Palys & Atchison, 2014). A general rule is that the larger the sample, the lower the sampling error. As the sample gets larger, it more closely approximates the population, and the error or difference between the sample and population decreases. When the sample is equal to the population, the error is zero because the sample is the population! This was the case in my study on long-term offenders – all long-term offenders in B.C. for which a file existed were included in the research. Conversely, since very small samples are less representative of the population, the results are less generalizable to the population as a whole, and the sampling error is greater. Of course, one must consider that even if an entire population was selected to participate in a survey, some eligible participants would not respond, other persons in the population would be unable to be reached or would be unknown (e.g., unhoused individuals), and these issues are relevant to consider in discussions of sample versus population and sampling error. But as a very general rule, the larger the sample, the smaller the sampling error.

Figure 7a.4: Homogenous vs Heterogenous Samples [\[Image description for Figure 7a.4\]](#)

Students often wonder about the appropriate sample size for a particular research study. The previous discussion indicates that the larger the sample, the better, and this is generally true when considering the notion of sampling error. However, the constraints of the research process – high costs, staffing, tight deadlines – might mean that a larger sample is not feasible. Study constraints notwithstanding, there is no clear-cut rule concerning what constitutes the appropriate sample size. The sample size depends on a number of considerations, including the size of the population and how much variability exists in the population. If the population is **homogeneous**, it means all elements within the population are similar with respect to the relevant characteristics of interest (Maxfield & Babbie, 2018; Rennison & Hart, 2019). For example, if all the long-term offenders in my dissertation were White, male, and 40 years of age and they all had the exact same criminal histories, then a smaller sample would suffice because they all share key common features. On the flip side, if you are dealing with a **heterogeneous** population, which means that the population has a lot of variation (say the gender, race, age, and abilities of individuals within that population are quite diverse), you would likely need a larger sample that is strategically selected in order to capture the diversity from the population in your sample.

Ultimately, the sample size and the emphasis you place on the representativeness of the sample and the generalizability of your findings connect back to what your research goals are and what approach you take to answer your research question (see [chapter 3](#) to review research goals and approaches). This also connects to which specific sampling strategy is the most appropriate to gather the data you need to answer your research question. These sampling strategies will be reviewed in the next chapter.

Conclusion

In this chapter, we reviewed the key elements and principles of sampling. First, we introduced you to the concept of a unit of analysis, which is the target of our investigation, and distinguished this from the unit of observation, which is the unit from which data are collected. We also defined what a population is and how it differs from the sample. Lastly, we reviewed key concepts of sampling: representativeness and generalizability. With this foundation, we can now move on to the next chapter where we engage in a detailed discussion of the specific non-probabilistic (qualitative) and probabilistic (quantitative) sampling strategies that we can choose from or combine in our own research study.

✓ Summary

- The unit of analysis is the larger group, individual, or entity that a researcher wants to be able to say something about at the end of their study.
- The unit of observation is the individual, group or entity that data are actually collected from. It is sometimes, but not always, the same as the unit of analysis.
- Individual, group, organization and social artifact are the four units of analysis relevant to criminologists.
- A population is the entire group or set of entities that a researcher wants to study. By contrast, a sample is a subset of the population from which the researcher gathers data.
- Representativeness and generalizability are the two key concepts relevant to sampling.

Key Terms

ecological fallacy: an error pertaining to the unit of analysis that researchers must avoid, which involves making individual-level conclusions while relying on group-level data.

generalizability: one of the key concepts of sampling, it refers to the idea that a study's results will tell us something about a group larger than the sample from which the findings were generated.

group: this unit of analysis is the larger class of individuals the researcher wants to know more about. The group is the unit of analysis when your goal is to learn more about the dynamics of the group members and the features of the group as an entity in and of itself. A gang is an example of a unit of analysis at the group level.

heterogeneous: when all elements within the population are different with respect to the relevant characteristics of interest, it is said to be heterogenous and a larger, more strategically selected sample is needed.

homogeneous: when all elements within the population are similar with respect to the relevant characteristics of interest, it is said to be homogenous and a small sample will suffice.

individual: this unit of analysis is the individual person the researcher wants to know more about. The individual is the most common unit of analysis in criminology studies, which typically seek to describe characteristics of individual offenders or victims. Victims of domestic violence are an example of a unit of analysis at the individual level.

organization: this unit of analysis is a more formal class of individuals the researcher wants to know more about. Like the group, the organization is the unit of analysis when your goal is to learn about the dynamics of the organization and the features of the organization in and of itself. Police detachments are an example of a unit of analysis at the organizational level.

population: the large set of all the people, things or events one wants to learn more about in our research and from which the sample is drawn.

representativeness: one of the key concepts of sampling, it refers to the extent to which our sample resembles the population from which it is drawn. A representative sample is one that captures the variation that exists in the population.

sample: a subset of the larger target population that is directly included in our research and from which we collect observations.

sampling: the process of selecting a subset of the population to include in your study.

sampling error: the difference in results or outcomes between the sample and a population.

sampling frame: an exhaustive and complete list of all the possible units of analysis that could theoretically be included in our study from the larger population. The sampling frame is a necessary part of probability sampling.

social artifact: this unit of analysis is the product of social beings and their behaviour the researcher wants to know more about. These are inanimate objects, such as news articles.

unit of analysis: the unit we hope to learn more about through the course of our research. The research question determines the unit of analysis. The four units of analysis relevant for criminologists are: individual, group, organization, and social artifact.

unit of observation: the person or thing you actually collect data from in your study. It is sometimes, but not always, the same as the unit of analysis.

Chapter Review

Crossword

Fill in the term in the right-hand column and it will display in the crossword puzzle. Be sure to include spaces where appropriate.

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Discussion Questions

1. Think about a research question you might want to answer in a study conducted in your own neighbourhood that focuses on crime and justice in some way. Name the unit of observation and the unit of analysis as well as the target population and the sample.
2. What are some potential characteristics of a sample comprised of Indigenous peoples that would highlight the need to collaborate with the Indigenous community/ies in question when devising a sample.
3. Provide examples of both heterogeneous and homogeneous Indigenous populations and what hypothetical features of these populations that you would need to take into account when making sample size decisions.

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- Figure 7a.2
- Figure 7a.2

definition

The process of selecting a subset of the population to include in your study.

×Close definition

The unit we hope to learn more about through the course of our research. The research question determines the unit of analysis. The four units of analysis relevant for criminologists are individual, group, organization, and social artifact.

×Close definition

This unit of analysis is the individual person the researcher wants to know more about. The individual is the most common unit of analysis in criminology studies, which typically seek to describe characteristics of individual offenders or victims. Victims of domestic violence are an example of a unit of analysis at the individual level.

×Close definition

This unit of analysis is the larger class of individuals the researcher wants to know more about. The group is the unit of analysis when your goal is to learn more about the dynamics of the group members and the features of the group as an entity in and of itself. A gang is an example of a unit of analysis at the group level.

×Close definition

This unit of analysis is a more formal class of individuals the researcher wants to know more about. Like the group, the organization is the unit of analysis when your goal is to learn about the dynamics of the organization and the features of the organization in and of itself. Police detachments are an example of a unit of analysis at the organizational level.

×Close definition

This unit of analysis is the product of social beings and their behaviour the researcher wants to know more about. These are inanimate objects, such as news articles.

×Close definition

An error pertaining to the unit of analysis that researchers must avoid, which involves making individual-level conclusions while relying on group-level data.

×Close definition

The person or thing you actually collect data from in your study. It is sometimes, but not always, the same as the unit of analysis.

×Close definition

The large set of all the people, things or events one wants to learn more about in our research and from which the sample is drawn.

×Close definition

An exhaustive and complete list of all the possible units of analysis that could theoretically be included in our study from the larger population. The sampling frame is a necessary part of probability sampling.

×Close definition

A subset of the larger target population that is directly included in our research and from which we collect observations.

×Close definition

One of the key concepts of sampling, it refers to the extent to which our sample resembles the population from which it is drawn. A representative sample is one that captures the variation that exists in the population.

×Close definition

One of the key concepts of sampling, it refers to the idea that a study's results will tell us something about a group larger than the sample from which the findings were generated.

×Close definition

The difference in results or outcomes between the sample and a population.

×Close definition

When all elements within the population are similar with respect to the relevant characteristics of interest, it is said to be homogeneous and a small sample will suffice.

×Close definition

When all elements within the population are different with respect to the relevant characteristics of interest, it is said to be heterogeneous and a larger, more strategically selected sample is needed.

×Close definition

8: Interviews and Focus Groups

Learning Objectives

- Define interviews.
- Identify when to conduct interviews.
- Describe how to construct an interview guide.
- Outline the guidelines for constructing good qualitative interview questions.
- Describe some considerations for documenting data in interviews.
- Explain the role of the interviewer.
- Define focus groups and research-sharing circles.
- Describe how to determine the best size for focus groups.
- Identify the major considerations in focus group composition.
- Discuss how to moderate focus groups.

In a deleted scene from the hit movie *Pulp Fiction*, the crime boss' wife, Mia Wallace (Uma Thurman), interviews hitman Vincent Vega (John Travolta) using a handheld video recorder. It's a shame that the scene was taken out of the final movie because it teaches some good lessons about interviewing. Mia explains that it is her job as the interviewer to make the interviewee feel comfortable as interviews can be rather awkward in their formality. She then asks Vincent, "When in conversation, do you listen, or do you just wait to talk?" To which he replies, "I wait to talk, but I'm trying to listen." Many of us, if we are honest, are probably like Vincent. We wait to talk. When conducting interviews, however, it is important that we learn to listen.

In this chapter, the qualitative interview method is defined, and its uses are outlined. The techniques for collecting qualitative data and creating interview guides are also reviewed. Included here is a discussion of power, reflexivity, and relational accountability. The focus then shifts to focus groups as well as sharing circles, a qualitative method often relied upon by Indigenous researchers and other researchers in their work with Indigenous communities.

When and How to Conduct Qualitative Interviews

Interviews are a method of qualitative data collection that involves two or more people exchanging information through a series of questions and answers. An interview is like a conversation but one conducted with a purpose. The researcher designs the questions to elicit information from participants on a specific topic or set of topics. Typically, interviews involve an in-person meeting between an interviewer and an interviewee (also called a respondent). They need not be limited to two people, nor must they occur in person.

Interviews are a great way to gather detailed information. They are also useful when the topic is complex, when the questions require lengthy explanation, or when participants may need extra time or to engage in dialogue with others to work out their answers. Additionally, if the topic is one about which people will likely have a lot to say or you want them to reflect on their experience or describe some process, then interviews may be the best method.

In sum, interview research is especially useful when a researcher:

- wishes to gather very detailed information.
- anticipates wanting to ask respondents for more information about their responses.
- plans to ask questions that require a lengthy explanation.
- wants to access personal experience.
- has a complex or confusing topic.
- has a topic that involves studying thought or decision processes.

Interview Techniques

Qualitative interviews are sometimes called intensive or **in-depth interviews**. These are knowledge-producing conversations or acts of meaning-making that take place between the interviewer and interviewee (Hesse-Biber and Leavy, 2011). Qualitative

interviews often employ a **semi-structured** framework, which means that the researcher has a particular topic they want to hear about from the respondent, but the questions are open-ended and may not be asked in exactly the same way or in exactly the same order to each and every respondent. This is made easier by the fact that interview studies typically sample a smaller number of people than surveys, often 30 people or fewer (van den Hoonaard, 2019). In-depth interviews aim to hear from respondents about what they think is important about the topic at hand and to hear it in their own words.

Qualitative interviews involve **open-ended questions**, which are questions a researcher asks that do not provide pre-selected answer options. Open-ended questions are harder to answer because they require respondents to come up with their own words, phrases, or sentences in response. To respondents, qualitative interviews may seem more like conversations than interviews, but in reality, the researcher guides the conversation to ensure the respondent talks about information relevant to the topic and goals of the research project.

Creating Interview Guides

While qualitative interviewers may not ask the same questions in the same way to every respondent, the researcher develops a guide in advance that they then refer to during the interviews. The **interview guide** contains a list of topics or questions the interviewer wants to cover. You can think of an interview guide like your to-do list for the day: both contain the items you hope to check off or accomplish, but it wouldn't be the end of the world if you didn't accomplish everything on the list or in the exact order in which it's written. See an example of an interview guide in [Appendix B](#).

While there is flexibility, Kallio and colleagues (2016) suggest developing a semi-structured interview guide using a systematic and rigorous multi-stage approach, with the following steps:

- First, determine if an interview is appropriate to begin with.
- Then, develop an in-depth understanding of the topic, which may include a literature review and speaking to subject matter experts.
- Next, based on the existing and new understanding of the topic, design a tentative semi-structured interview guide including main questions and follow-up questions. You may begin by simply listing all the topics and questions that come to mind.
- Afterwards, pare down the list by cutting questions and topics that seem redundant and grouping similar questions and topics together.
- Lastly, test, evaluate and revise the interview guide before using it with actual participants (Kallio et al., 2016).

The order of the questions in the guide matters, as people need to warm up and feel comfortable speaking with an interviewer before they can talk about sensitive or controversial issues. It is usually best to avoid census-like questions up front (e.g., what is your age), as these sorts of **closed-ended questions** set a "just the facts" tone for the interview instead of preparing for a rich discussion of a person's experience (Weiss, 1994). Opening with "How are you today?" will help set the right conversational tone and prevent the interview from feeling like a criminal interrogation.

Don't use loaded terms, like "dangerous drugs" or "offensive pornography," but do use **context-appropriate language** that draws on terms that participants understand. For example, if a participant uses a term like "down" (a colloquial term for fentanyl), it may make sense to use this term in your interviews rather than "opiates and opioids" (it may also be more accurate). Acronyms, though commonly used in criminal justice discourse, should generally be spelled out unless they are very common (such as RCMP in Canada).

As you develop an interview guide, try to follow a few important principles. First, avoid questions that can be answered with a simple "yes" or "no". If you choose to include such questions, make sure to include follow-up questions. In your follow-up questions, try to avoid asking a simple "why?" as it can come off as confrontational, even if that is not how you intend it. Besides, people often won't know how to respond to "why" because they often don't know why themselves. Instead, you might say something like, "Could you tell me more about that?" This allows participants to explain themselves further without feeling that they're being doubted or questioned in a hostile way.

Good researchers always avoid asking **leading questions**. For example, rather than asking, "Don't you think that people in your neighbourhood have a strained relationship with the police?" you could ask, "What comes to mind for you when you think about the police in your neighbourhood?" This avoids pushing the respondent to answer in a specific way and to simply agree with your "don't you think" question. You should also avoid asking questions that can be answered without any knowledge about the topic, such as "Do you agree with the federal government's new bail reform legislation?"; many people will provide an answer to a question like this, regardless of their actual knowledge of the topic (Palys & Atchison, 2014).

Qualitative interviews should also ask questions that draw out stories. Sometimes, respondents will give brief cursory answers instead of the in-depth responses that qualitative interviewers desire. In these cases, the interviewer can **probe** the respondent to elicit a more thoughtful, thorough response. A useful probing technique can be simply pausing and waiting without going to the next question. This may indicate that the interviewer is waiting for a more detailed response. Other techniques for eliciting more information include overt encouragement (e.g., an occasional “uh-huh”), asking for elaboration (e.g., “Can you tell me more about that?”), and reflective statements (e.g., “I’m hearing that you found the experience uncomfortable”) followed by a pause to wait for the respondent to elaborate.

Participants often offer **markers** about other topics that you may wish to explore when they are talking about something else (Leavy, 2017). Rather than interrupting the flow, you should jot these markers down and return to them later. By returning to a marker with a question like, “A moment ago you said that... could you elaborate on that point?”, you show both interest in what a person is saying while allowing them to expand on something that is particularly important to their narrative. End your interview with some variant of the question, “Is there anything else that I should have asked or that you would like to tell me?”

Stop and Take a Break!

Watch these videos to learn “what not to do” and also “what to do” in an interview.

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In summary, the things to avoid when conducting qualitative interviews are:

- demographic questions at the outset
- closed-ended questions
- loaded language
- leading questions
- “yes” and “no” questions
- “why” as a follow-up question

Reflexivity

While an interview is similar to a conversation, it is also distinct from the simple back-and-forth flow that marks a casual exchange between friends. In addition to being more one-sided, the relationship between the interviewer and interviewee can contain notable power differentials. As such, it is important to work at reducing the degree of status hierarchy between the researcher and those they are working with (Hesse-Biber and Leavy, 2011).

As the interviewer, you should strive to be more reciprocal in your exchange rather than purely extractive. This can be partly achieved through thoughtful reflection on one’s social position and the relational dynamics of the interview, a practice qualitative researchers call **reflexivity**. Status differences can never be simply erased, so researchers must be honest with themselves and their readers about how social distinctions affect their study. While it may seem less scientific to reflect on one’s social position, Sandra Harding (1993) explains that it is quite the opposite. By practicing reflexivity, we create the conditions for “strong objectivity” where the reality of social differences is acknowledged rather than hidden or ignored.

Documenting Interviews

When a researcher sits down to interview a respondent in a qualitative interview, they must have a way to record the respondent's answers. Most qualitative interviewers make audio recordings of the interviews they conduct while still taking some notes. Recording interviews allows the researcher to focus on interacting with the respondent instead of being distracted by trying to take detailed notes. Of course, not all participants feel comfortable with being recorded, and the subject may be so sensitive that even asking respondents for consent to record the interview may be inappropriate. In these cases, the researcher must balance meticulous notetaking with exceptional questioning and all-star listening skills. Managing all these tasks simultaneously can be difficult and mentally exhausting for any researcher.

For these reasons, researchers (especially those new to interviewing) must practice their interviews in advance. Ideally, you'd find a friend or two willing to participate in a couple of trial runs with you. Even better, you'd find someone similar in at least some ways to the people in your sample, as they can give you the best feedback on your questions and your interview demeanour.

In general, it is better to do interviews in person as you can observe a person's body language and respond to subtle cues that you would otherwise miss. In some cases, however, it may not be possible to meet directly. This was widely the case in 2020 when COVID-19 distancing guidelines made in-person interviews impossible (Ali et al., 2023; Mamdani et al., 2022). In such cases, the interviews are typically recorded with the consent of the participants and transcribed before being analyzed in the same way you would for an in-person interview. Recordings can be done within video conferencing software, such as Teams or Zoom. iOS likewise includes a [call record and transcription function](#), as does [Android](#).

Interviews and Indigenous Ways of Knowing

Disentangling Indigenous interviewing techniques from the Indigenous ways of knowing and being that inform these techniques is an impossible task. There is no one way to conduct an interview in an Indigenous way. Generally, Indigenous ways of conducting interviews reflect personal and cultural positionality. This may include incorporating ceremony (e.g., burning cedar and tobacco) into the interview process, consulting with tribal knowledge holders to develop an interview guide, or hosting a community meal/feast.

For example, in her interview-based research, Métis-Anishinaabe scholar Chantal Fiola (2015) conducted culturally-located research. She used a blend of Anishinaabe values, relational accountability, and Western research protocol with the aim of better understanding the intersection of Métis, Anishinaabe, identity, and spirituality. This represents a Two-Eyed Seeing approach to research (see the [Introduction](#) chapter and [chapter 12](#) for more on Two-Eyed Seeing).

Fiola's primary method of data collection included interviewing and recording participant stories. She used quota sampling (see [chapter 8](#)) and cultural practices to guide participant recruitment. During recruitment, Fiola presented a handmade *asesmaa* (tobacco) tie to "acknowledge and honor [sic] the participants' knowledge, correct imbalances that may result from asking for their stories, and promise to respect these" (Fiola, 2015, p. 87). Before and during each interview, participants had the option of smudging with *mushkodaywushk* (women's sage). Participants were gifted a handmade medicine bundle at the end of the interview.

Some Indigenous researchers have noted that interviewing itself is not an Indigenous methodology and have developed alternative approaches to collecting data, such as storytelling (Thomas, 2015), yarning (Bessarab & Ng'andu, 2010), and conversational methods (Fiddler, 2014; Kovach, 2019). Thinking about story data creates different expectations on the part of the researcher. For example, one should try not to interrupt a story to redirect it back to a preferred question. This allows participants to share stories in a holistic manner, rather than in a fragmented way, and gives more power to the storyteller. As Kovach (2021) notes, those who are culturally familiar with storytelling will naturally self-regulate. She further contends that story as a research method is congruent with an Indigenous approach to knowledge, which is required for any research that seeks to employ Indigenous methodologies.

The concept of [relational accountability](#) is central to Indigenous research methodology. Relational accountability means being accountable to all our relations (Wilson, 2008). This includes being responsible both for participants but also communities at large, the environment, the land, homelands, ancestors, and lived history. Other qualitative approaches, such as feminist methodologies and participatory action research, also value the relational (see [chapter 12](#)), but Indigenous methodologies "are relational at their core" (Kovach, 2021, p. 12). For research to embody relational accountability, it needs to consider all our relations and how we are showing respect and reciprocity to them. As Fiola shares, "In an Indigenous research paradigm, methodology is about relationships. If you want to understand someone or something better, you can increase your understanding of it by developing more relationships with it" (Fiola, 2015, p. 83).

Accountability also extends to the participant as they are held accountable to their knowledge. It is therefore uncommon for research employing relational accountability to use anonymous participants. Participants are commonly known to the researcher or are known to other participants.

Relational accountability guides every stage of research including the initial phases through to publication. Relational accountability positions researchers as intermediaries between the participants or community and the topic. The researcher is not the main authority, nor do they take ownership of the data gathered. The participants and community have the final say and maintain ownership of the research data and outcomes.

Research Spotlight

Negotiating Successful Transitions: “Criminalized” Indigenous Women in Saskatchewan

Danielle Bird’s (2021) research explored the transitional experiences and perspectives of Indigenous women currently or formerly incarcerated in Saskatchewan returning to their communities. Bird describes herself as from the Saddle Lake First Nation with relatives from Mistawasis. Using qualitative interviews, five purposively sampled Indigenous women participated in in-depth interviews. Purposive, non-probability sampling sought “Indigenous women who were formerly federally incarcerated, who have been out of prison for at least four years, and who currently reside within urban spaces in Saskatchewan” (Bird, 2021, p. 15). Recruitment followed *nêhiyaw* (Cree) and university protocols: Bird introduced herself and explained where she was from (i.e., what nation she belongs to), her relations (i.e., who her relatives are), and where she grew up. Each participant was given a project overview and consent forms to sign. Interviews were open-ended, relationally accountable (Wilson, 2008), and conversational (Kovach, 2010). Once the interview began, Bird (2021) asked the same **prompt** questions, but the follow-up conversation varied depending on the individual. These methodological choices were made to “engage with other Indigenous women on a personal level to discuss the inherently dysfunctional nature of settler colonial carceral institutions” (Bird, 2021, p. 18). How Bird (2021) chose to interview participants impacted the interview process, the data, and what was disseminated. Great care was taken to select protocols valuable to the research question, community, place, and space.

Table 8.2: Strengths and Weaknesses of Qualitative Interviews

Strengths	Weaknesses
Yield in-depth, detailed data	Rely on accurate and honest recall of events, thoughts, behaviours, etc.
Useful for studying social processes through “how” questions	Time-consuming
Allow participants to share information in their own words and from their own perspectives	Can be expensive
Socially rewarding	Emotionally taxing

Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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Focus Groups

Focus groups are planned discussions designed to elicit group interaction to gain a deep understanding of people’s experiences and perceptions of complex social issues. Historically, focus groups were more commonly used in market research. They were

adopted in the 1940s by sociologists to study reactions to wartime propaganda (Merton & Kendall, 1946). Today, focus groups are used in fields as diverse as health research, social work, product development, and criminal justice studies (see this video clip for more on the origins and various uses of focus groups: [Hector Lanz: How do focus groups work?](#)).

As with an in-depth interview, a focus group is a meaning-making process but one that occurs within a group rather than a dyad (Kim, 2009). In this method, a researcher gathers a small group of people to participate in a facilitated discussion on a particular topic. The researcher serves as a **moderator**, a person who organizes and guides the discussion by posing questions or topics for discussion. They then let the group members discuss the questions or topic among themselves, with the goal of ensuring that everyone has a chance to respond, and observing interactions among participants.

A researcher conducting focus groups collects data on more than people's direct responses to their questions; the group interaction is also a key focal point. During their conversations, participants may ask each other follow-up questions, agree or disagree with one another, display body language that tells us something about their feelings during the conversation, or even come up with new questions. Further, when people hear others talk, it can trigger responses or ideas they had not yet considered. These are the kinds of interactions and displays the researcher can focus on.

While focus groups can be expensive and time-consuming, group events may save time because they require fewer sessions than one-on-one interviews to collect data from the same number of people. Nevertheless, a focus group should not be approached simply as an expedient means of gathering more individual-level data. The group dynamics will affect who speaks (and how much) and who may remain silent. While there are ways to mitigate these issues (e.g., creating groups of people who occupy similar social positions), the fact that context affects how people communicate becomes part of the data. Focus groups tell us how people communicate when in a group and how meaning is constructed in a particular social context, which from a social constructionist perspective more reliably reflects how people develop their thoughts and opinions (Hollander, 2004).

Group Size and Composition

alt=""

Christ University focus group

When forming focus groups, researchers must take care to form groups whose members will want to interact with one another and to control the timing of the event so that participants are not asked nor expected to stay for a longer time than they have agreed to participate. The researcher must also be prepared to inform focus group participants of their responsibility to maintain the confidentiality of what is said in the group. At the same time, the researcher must also clarify to participants that the unique nature of the group setting prevents them from being able to promise complete confidentiality.

Researchers determine the size of focus groups in part by the topic of interest and their sense of how much participants will have to say about the topic. If the topic is sensitive or likely to invoke passionate responses and a lot of conversation, a group of three to five people may be ideal. Groups larger than that, especially for heated topics, can easily become unmanageable. For other more mundane or unfamiliar topics, a group of about six to ten participants may be the ideal size.

If you're going to form a focus group, you'll want to consider what you know about the topic and participants' potential interest in, passion for, and feelings about the topic. You should also consider your comfort level and experience in conducting focus groups. These factors will help you decide which size is right for your research project. As this discussion indicates, the researcher ultimately decides the size of the focus group, and they may choose to conduct multiple focus groups on the same topic to increase their sample size.

Once you've decided to form a focus group, you'll also need to consider who might be willing to talk to each other. It may seem counterintuitive but focus groups with participants who don't know each other may provide more information than groups in which participants are friends, relatives, or acquaintances (Palys & Atchison, 2014). Hollander (2004) even found that women were no more likely to disclose assaults within all-female focus groups than they were in mixed-gender groups (Hollander, 2004; see also Currie & MacLean, 1997). This is not to say that groups should be so heterogeneous (meaning diverse) that people have a hard time connecting with each other, nor that homogenous same-gender groups cannot produce valuable moments for **consciousness raising**, which may well be an important goal of more action-oriented research projects (Montell, 1999; Wilkinson, 1998); rather, it is to emphasize that part of your role as a researcher is to be attentive to the way the group dynamics shape the data you are collecting.

Focus groups are particularly useful in gaining data from populations who are traditionally seen as difficult-to-reach; people who may feel unsafe, marginalized, or reluctant to speak are often best suited for focus group research (Kitzinger, 1994) because the focus group can serve as a safe space for people to share perspectives and experience (Dodson et al., 2007; Montell, 1999). Focus

groups can create multiple voices and reveal more nuanced perspectives, even though the researcher ultimately remains the privileged speaker. In many ways, the researcher can “witness” the creation of meaning within the group as well as the dissenting voices of those who may not share the consensus viewpoint.

In sum, focus groups are especially useful when a researcher:

- is engaging with community and other stakeholders.
- seeks to find out more about a little-known topic.
- wishes to gather a diverse range of opinions quickly and efficiently.
- has a sensitive topic that participants may feel safer discussing in a group.
- wants to study group dynamics and how meaning is co-constructed.
- is using Indigenous methodology such as research-sharing circles.

Given their propensity to generate personal revelations, researchers must consider the appropriate level of **self-disclosure** amongst participants and set limits on how far the discussion should go. This is especially the case when participants already know each other. A useful way of setting such boundaries is to ask participants to think about how they might feel the following morning about what they shared in the group (Morgan, 1998). While noting that it is impossible to ensure confidentiality given the group setting, the moderator should always ask participants to honour the privacy of the group members (van den Hoonaard, 2019).

Whatever composition a researcher designs for their focus groups, they must keep in mind the extent to which social contexts impact group dynamics. Participants’ silence as well as their speech may be shaped by gender, race, class, sexuality, age, and other background characteristics or social dynamics, all of which might be suppressed or exacerbated depending on the composition of the group (Hollander, 2004). As Asgar and Macdonald (1995) ask, “Who are those silent voices in the group? Why aren’t they talking? What do they have to say?” (p. 83). Their silence may be as significant as the words being spoken around them.

Moderating Focus Groups

As facilitated discussions, focus groups must be guided by a skilled moderator. Morgan (1995) suggests that for sensitive topics, it is important to choose moderators “whose background will put the participants at ease,” which is generally achieved by sharing some similar social characteristics with the group (p. 521). Often, the researcher moderates the discussion, but sometimes they bring in a trained outside person to serve in this role. Whoever moderates the focus group must be sure to provide enough space for interaction and discussion while also ensuring that the group achieves the research goals.

If you are the one conducting the focus group, be sure to prepare well. Before participants arrive, check your questions, arrange the room, put out nameplates, check recording equipment, and arrange handouts and refreshments. Greet everyone as they arrive. Begin by reminding participants that they’ve been invited because you want to hear from all of them; therefore, the group should let just one person speak at a time and try to avoid having just a couple of participants dominate the conversation. This often relates to status, as those with more power tend to introduce topics that are more likely to be taken up by the group (Hollander, 2004). One way to ensure more voices are heard is to begin by asking participants to briefly introduce themselves or to provide a brief response to an opening question. This will help set the tone of having all group members participate.

As the focus group gets rolling, the moderator plays a less active role than in a one-on-one interview. Sometimes, the conversation may stall, or you, as the moderator, may want to guide the conversation in another direction. In these instances, the moderator must demonstrate that they’ve been paying attention to the conversation before trying to change the course of the conversation. For example, the moderator should be prepared to interject statements or questions such as, “I’d really like to hear more about what Simran and Emma think about what Xinxin has been saying” or “Several of you have mentioned . . . What do others think about this?”. These kinds of statements and questions can help in a variety of ways, including keeping the conversation going, redirecting the conversation, shifting the focus to participants who have been less active in the group, and serving as a cue to those who may be dominating the conversation to allow others to speak.

Sharing Circles

Sharing circles and talking circles have a similar purpose to focus groups but are designed by Indigenous peoples to reflect Indigenous ways of knowing (Lavalley, 2009). The exact protocols of each type of focus group will depend on the community, researcher, and research project. One example of this is the facilitator introducing their name (gifted or English), Nation relationship(s), family, and where they currently reside before any discussion occurs (Tachine et al., 2016). Often, the introduction

of all members of a sharing circle is lengthy and the process takes a significant amount of time. Lennox might say, for example: “Taanshi hello. My name is Christina, and I am Red River Métis, French, English and Irish. My maternal family moved from Treaty 5 to Coast Salish territory 50 years ago where I have lived and played for all of my life.” In a circle, everyone gets a chance to speak and participants are expected to listen and not interrupt. In some cases, an object may be passed around to mark who is speaking, commonly a talking stick.

Sharing circles were not designed as a method of research but can be an effective method when respectfully used by Indigenous peoples in their work with Indigenous communities (Martin, 2001; Wilson, 2008). **Research-sharing circles** encourage equality between speakers and provide participants with ample time to reflect on what is being said. The skills required for a facilitator to run a sharing circle are similar to those required for a focus group, though the methods used are not the same. Facilitators of sharing circles must have an awareness of Indigenous worldviews and have received permission from a teacher, or Elder, to conduct the circle (Martin, 2001). For more on research-sharing circles, see [Talking Circle – Sharing Circle](#).

Table 8.3 Strengths and Weaknesses of Focus Groups

Strengths	Weaknesses
Yield detailed, in-depth data	Expensive (if hiring moderators)
Less time-consuming than one-on-one interviews	May be more time-consuming than survey research
Useful for studying social processes	A small number of participants may dominate the entire group
Allow researchers to observe body language in addition to self-reports	
Allow researchers to observe interactions between multiple participants	



Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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Conclusion

As illustrated throughout this chapter, interviews are an effective way to gather detailed information. Participants can elaborate in a way that is not possible with other methods, and they can also share information in their own words rather than being asked to fit those perspectives into limited response options. Because qualitative interviews are designed to elicit detailed information, they are especially useful when a researcher’s aim is to study social processes.

As with some other methods, in-depth interviews rely on respondents’ ability to accurately and honestly recall details about their lives, circumstances, thoughts, opinions, or behaviours. Especially for new researchers, conducting qualitative interviews may also be emotionally taxing for the researchers involved in interviewing, transcribing, analyzing, and writing (Lalor et al., 2006; Velardo & Elliott, 2018).

Focus groups resemble one-on-one qualitative interviews in many ways, but they give researchers the opportunity to observe group dynamics that cannot be observed in one-on-one interviews. Historically, focus group research was more commonly used by applied researchers than by academics, though in recent decades, social scientists from all domains have discovered the usefulness of focus groups for gaining understanding of social processes and have begun using this method of data collection in their studies.

Indigenous interviewing techniques are inseparable from Indigenous ways of knowing and vary based on cultural context. Some Indigenous researchers prefer storytelling or conversational methods to traditional interviewing techniques, as they allow a more holistic expression. Relational accountability is key to Indigenous research, with its emphasis on respect, reciprocity, and responsibility to all relations, including land and ancestors. In Indigenous research, participants often retain ownership of their stories, and so anonymity is uncommon. Sharing circles, though not originally research methods, are used to promote equality and deep listening in Indigenous research.

Interviews can be emotionally taxing for both interviewers and interviewees. Interviewing people about their experiences may invoke stories of trauma and other shocking, infuriating, or sad events that may be difficult for respondents to speak about and for the researcher to hear. This may take a toll on those who are being interviewed, which is why it is important in many criminological studies to use a **trauma-informed approach** that centres empathy and compassion while gathering data (Quinless, 2022).

✓ Summary

- Interviews involve structured conversations where researchers ask questions to gather information about a person's experience.
- These in-depth interviews use open-ended questions to encourage respondents to share their perspectives in their own words.
- Interviewers must be mindful of power imbalances and practice reflexivity by acknowledging their social position and its influence on the research process.
- Indigenous methodologies prioritize respect, reciprocity, and responsibility to all relations, including land and ancestors, with participants often maintaining ownership of their knowledge.
- A focus group is a moderated group discussion that helps generate insights through participant interaction, allowing researchers to observe social dynamics and collective meaning-making.
- Indigenous alternatives to focus groups, such as research sharing circles, are designed to foster equality and deep listening, requiring cultural knowledge and permission from an Elder or knowledge holder to properly facilitate.

Key Terms

closed-ended questions: quantitative interview questions that include a list of pre-determined response options from which the respondent must choose.

consciousness raising: making people aware of a social issue and their own relationship to that issue.

context-appropriate language: using words that fit the understanding of your participants.

focus group: a qualitative research method that involves a guided group discussion with approximately 6–8 participants (the size depends on a number of factors) and a moderator. It is the interaction between group members that is key to generating data.

interview: a qualitative research method that involves directly interacting with respondents and collecting qualitative data by asking questions to one or more people and recording responses.

interview guide: the document containing questions or topics that the interviewer plans to cover during the course of a qualitative interview. It is referred to as a guide as it is not rigid, serving only as a reference of what they intend to cover.

in-depth interview: a qualitative research method that is often referred to as a conversation with purpose. The interviewer asks the respondent(s) questions, usually face-to-face, with the goal of capturing the interviewee's own words. This method is particularly suited for complex or sensitive topics whereby the researcher is seeking in-depth data.

leading questions: questions that elicit a researcher-desired response.

markers: something a speaker says about something else while speaking that you want to mark and come back to later.

moderator: the researcher, or other individual, who is responsible for posing questions or topics and guiding the group discussion in a focus group while ensuring all participants have an opportunity to participate. The responses of focus group participants as well as interactions amongst group members are recorded and observed by the moderator.

open-ended questions: qualitative interview questions that do not include possible response options but rather require the interviewee to provide responses in their own words.

probe: a request for additional information.

prompt: used to encourage a speaker to speak about a topic.

reflexivity: examining one's own reactions, thoughts, feelings, and social position in regard to your research.

relational accountability: being responsible both for participants but also communities at large, the environment, the land, homelands, ancestors, and lived history.

research-sharing circles: research conducted using sharing or talking circles.

self-disclosure: the amount of information a person reveals about themselves.

semi-structured: a type of qualitative interview format whereby the interviewer asks a series of open-ended questions but is not bound by the wording or ordering of questions from one interview to the next.

trauma-informed approach: the need to recognize a participant's life experience so they are not re-traumatized by the research.

Chapter Review

Crossword

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Discussion Questions

1. Think about a topic about which you might wish to collect data by conducting interviews. What makes this topic suitable for interview research?
2. Based on a research question you have identified through earlier exercises in this text, write a few open-ended questions you could ask during in-depth interviews on the topic. Now, critique your questions. Are any of them yes/no questions? Might any of them come across to respondents as hostile? Are any of them leading?
3. Take the questions you developed in response to the previous question and turn them into closed-ended questions. How might the information you'd gather from the open-ended version of the questions differ from what you'd gather from the closed-ended questions?
4. What part of being an interviewer do you think you'd find most challenging? Most rewarding? Why?
5. How are focus groups different from sharing circles?
6. If you were to design a study using a focus group to understand how people talk about the death penalty, what do you think would be the best size for your group? Do you think you would need more than one focus group? Why/Why not?
7. If you were to conduct a talking circle on a sensitive topic, keeping in mind that only one person at a time talks and all members participate, what do you think would be the best size for this group and how long would a session take? Discuss.

Further Reading

- “They’re very lonely’: Understanding the fraud victimisation of seniors”
 - Lived challenges to ethical social work practice in criminal justice settings
 - Narrated experiences of sexual and gender minority refugees: Resilience in the context of hardship from pre-to post-migration
 - “We keep each other safe”: San Francisco Bay Area community-based organizations respond to enduring crises in the COVID-19 era
 - Sexual consent education among youth experiencing homelessness in Toronto, Canada: Findings from an arts-based and qualitative study
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Media Attributions

- A qualitative research method that involves directly interacting with respondents and collecting qualitative data by asking questions to one or more people and recording responses.

×Close definition

A qualitative research method that is often referred to as a conversation with purpose. The interviewer asks the respondent(s) questions, usually face-to-face, with the goal of capturing the interviewee's own words. This method is particularly suited for complex or sensitive topics whereby the researcher is seeking in-depth data.

×Close definition

A type of qualitative interview format whereby the interviewer asks a series of open-ended questions but is not bound by the wording or ordering of questions from one interview to the next.

×Close definition

Qualitative interview questions that do not include possible response options but rather require the interviewee to provide responses in their own words.

×Close definition

The document containing questions or topics that the interviewer plans to cover during the course of a qualitative interview. It is referred to as a guide as it is not rigid, serving only as a reference of what they intend to cover.

×Close definition

Quantitative interview questions that include a list of pre-determined response options from which the respondent must choose.

×Close definition

Using words that fit the understanding of your participants.

×Close definition

Questions that elicit a researcher-desired response.

×Close definition

A request for additional information.

×Close definition

Something a speaker says about something else while speaking that you want to mark and come back to later.

×Close definition

Examining one's own reactions, thoughts, feelings, and social position in regard to your research.

×Close definition

Being responsible both for participants but also communities at large, the environment, the land, homelands, ancestors, and lived history.

×Close definition

Used to encourage a speaker to speak about a topic.

×Close definition

A qualitative research method that involves a guided group discussion with approximately 6–8 participants (the size depends on a number of factors) and a moderator. It is the interaction between group members that is key to generating data.

×Close definition

The researcher, or other individual, who is responsible for posing questions or topics and guiding the group discussion in a focus group while ensuring all participants have an opportunity to participate. The responses of focus group participants as well as interactions amongst group members are recorded and observed by the moderator.

×Close definition

Making people aware of a social issue and their own relationship to that issue.

×Close definition

The amount of information a person reveals about themselves.

×Close definition

Research conducted using sharing or talking circles.

×Close definition

The need to recognize a participant's life experience so they are not re-traumatized by the research.

×Close definition

9: Field Research

Learning Objectives

- Define field research.
- Distinguish between participant observation and ethnography.
- Describe the role of gatekeepers in field research.
- Distinguish between the various roles a field researcher can take on the participation/observation continuum.
- Describe the work of writing fieldnotes.
- Understand the risks and costs associated with field research.
- Understand that participatory action research (PAR) is one way researchers can engage in decolonial research when working with Indigenous communities.

The methods reviewed so far in this text offer various ways to learn about social behaviour. Whether quantitative or qualitative in nature, the method we choose is meant to assist us in collecting data that can answer our research questions and achieve our chosen research purpose(s). With observation as the agreed-upon cornerstone of scientific inquiry, and often a key element of Indigenous ways of knowing, it is no wonder that going out and seeing what is happening in the real world is an ideal method for learning about true behaviours. It is particularly useful when studying topics that are hidden away from the public eye, as many criminological topics tend to be, and where access depends on earning people's trust and maintaining proper relations with the people we work with.

This chapter examines the qualitative method that has observation at its core: field research. The importance of gatekeepers and consultation, the various roles a field researcher can adopt, the art of taking fieldnotes, and the risks and costs associated with field research are discussed. The chapter also covers how to undertake community-based research through a method known as participatory action research, an approach that Indigenous scholars have identified as particularly amenable to working with Indigenous communities (Smith, 1999).

What is Field Research?

Field research is a qualitative method of data collection aimed at understanding, observing, and interacting with people in their natural settings. Field researchers immerse themselves in the settings they wish to study. While the extent to which researchers immerse themselves in a particular setting varies, all field researchers have in common their participation in **"the field."**

When social scientists talk about being "in the field," they are talking about being in contact with the everyday lives of the people they are studying. Field researchers gain firsthand experience and knowledge about the people, events, and processes they study, and no other method offers quite the same kind of close-up lens on everyday life. This means that field researchers can obtain very detailed data about people and processes, perhaps more so than any other research method. You might think of field research as an umbrella term that includes all the activities that field researchers engage in when they collect data: they participate, they observe, they usually interview some of the people, and they also analyze documents, audio files, and other artifacts created by the people they observe.

Margaret Mead in Samoa

In this chapter, we will use different terms to refer to field research including **participant observation** and **ethnography**. Participant observation is a particular fieldwork tradition that developed within the discipline of sociology; we will discuss the different ways and degrees to which researchers can participate and observe below. Ethnography, on the other hand, originally developed within the field of anthropology and involves a long period of immersion within a field setting to understand the social context in all its nuanced complexity. While originating in anthropology, as seen in the work of scholars such as Margaret Mead shown in the image above, ethnography has been adopted by criminologists since the 1970s to describe in-depth field research (Anderson, 2003) and today is used in a wide range of disciplines, including education (Fitzpatrick & May, 2022), nursing (De Chesnay, 2014), and criminal justice studies (Van Cleve, 2016).

Field Research in Criminology

For those who study criminology, the tradition of going out into “the field” to learn about the lives of people on the margins of urban society can be traced back to the University of Chicago. It was there, during the first half of the 20th century, that professors such as Ernest Burgess and Robert E. Park encouraged their students to get out of the library and do firsthand research around the city. Many students took up this challenge, producing seminal studies on youth gangs (Thrasher, 2013), race and class relations (Frazier, 1939/1997), and the cultural life of homeless men (Anderson, 1923).

What made these studies different from those that came before was that researchers went out to collect **primary data** based on their own observations. This often took place via a long ongoing conversation with research participants, one that lasted weeks, months, or even years. This approach was similar to the one being taken up by anthropologists at the time, where figures such as Bronislaw Malinowski (1979) spent years studying the culture of people living in remote places (remote, that is, from where the researchers themselves lived). Anthropologists found that this extended immersion in a cultural setting was the best way to get a nuanced, complex understanding of social behaviour. This approach is known as ethnography, which literally means “writing culture.”

Ethnographers immerse themselves in a setting so they can observe the lived experience of their research subjects. While the tradition of ethnography began with studies of non-Western societies (Malinowski himself lived for years in the Trobriand Islands of the South Pacific), contemporary ethnographers are just as likely to conduct their work in urban North American settings. Examples of contemporary ethnographies include Philippe Bourgois’ (2003) study of crack cocaine dealers in New York City and Alice Goffman’s (2014) study of Black community life under intense state surveillance in Philadelphia.

W.E.B. Du Bois (1903/2007), a founding figure in sociology, also conducted fieldwork in the Black community, but his focus was on the American South during the early years of the 20th century. Being Black himself helped him gain access to a population that had good reason not to trust white people with sensitive information. Elijah Anderson (1978/2003) likewise found entry into the field facilitated by his racial identity. Anderson was interested in studying urban Black life in Chicago and chose as his research site a neighbourhood liquor store where men and women hung out. He found that being Black himself was helpful in terms of gaining access, but he also reminds us that we carry many different identities with us into the field; while his racial identity may have helped him gain access, Anderson notes that his education and class background marked him off as different from the rest of the folks hanging out at the store, leading him to adopt a fictive kin role as a family member of the store owner in order to be accepted.

As shown in these examples, fieldwork in criminology and other disciplines depends a great deal on relationships. It is perhaps the relational nature of fieldwork that led to so many early practitioners of ethnography being *other than* the usual cast of white, male academics.

Take the work of Annie Marion MacLean, for example. She was a Canadian woman associated with the Chicago School and has been called the “mother of contemporary ethnography” (Hallett & Jeffers, 2008). MacLean conducted fieldwork within department stores (1899), sweatshops (1903), and coal fields (1908), showing just how widely ethnography can be applied.



Stop and Take a Break!

Watch this video on sociologist Laurie Taylor’s ethnographic work on professional criminals for another example of the work of ethnographers.

This interactive element is not available in this format. Visit the link or scan the QR code to access it online.

[View this YouTube Video online](#)



Gaining Access

The examples above highlight the important role of gatekeepers in field research. **Gatekeepers** are people who can grant or deny

access to a particular location, social setting, or organization. This role can be performed formally, as is the case when someone performs this function as part of their official duties, or informally, such as when a person is well positioned to grant access to a community even if they are not formally recognized as fulfilling this role on a daily basis.

In Anderson's (1923) fieldwork at a corner liquor store in Chicago, the proprietor (Jelly) served as a gatekeeper to the community he was interested in working with. Jelly's role was informal but significant as he was able to provide the researcher with access to the store and its patrons. Other gatekeepers are more formal in the gatekeeping role they occupy in that their official position gives them the authority to admit or deny researchers. Prison wardens would be an example of a formal gatekeeper (Jefferson, 2015), as would the principal of a school where a researcher might hope to conduct fieldwork with high school students (Pascoe, 2007).

When working with Indigenous communities, it is important to consult early on and build trust with community members in a meaningful way prior to conducting any research. For Indigenous groups with formal governance structures (such as band councils), researchers should secure agreement from the leadership but should not neglect other Indigenous knowledge holders who should also be consulted. For Indigenous communities without formal governance structures, researchers should seek approval from and involvement with alternative organizations, such as a local Métis association or urban Indigenous and women's organizations (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council of Canada, 2018).

Participating and Observing

Now that we have defined field research, addressed how to gain access, and discussed the importance of gatekeepers and consultation, let us now turn our attention to the various roles that field researchers can take.

Taking on new roles while in the field is not uncommon as researchers often look for ways to both observe and participate in the social life of their research subjects. Goffman (2014), for example, tutored children in the community where she ended up conducting fieldwork on Black community life under intense state surveillance. This is known as **participant observation**. In participant observation, a researcher observes interactions and participates in events in the field. While this might sound straightforward, researchers conducting participant observation vary in the extent to which they participate and observe.

You can think about degrees of participation and observation as existing on a continuum, with **complete observation** at one end and **complete participation** at the other (Lune & Berg, 2017). When engaging as a complete observer, a researcher watches people while attempting to remain separate from what and whom they are observing. A researcher studying people through the use of CCTV cameras would constitute a complete observer. A complete participant, on the other hand, is a researcher who fully immerses themselves in the social group they are studying. Laud Humphreys (1970) could be considered to have conducted this kind of observation in his ethically questionable research on male sexual encounters in public bathrooms, wherein he acted as a lookout or "watchqueen" for the men engaging in sex who did not know he was conducting research. Rather than simply observing, complete participants take part in the social life of the field and, like Humphreys, sometimes do not reveal that they are conducting research, though today this is widely seen as unethical.



Stop and Take a Break!

Watch this videoclip for more on the Tearoom Trade Study.

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To understand the strengths and weaknesses of both poles of the observer-participant continuum, imagine you want to understand how children learn to obey rules during unstructured play. You might choose to conduct participant observation at a local playground over a few different days and times. As a complete observer, you might choose to sit on a bench at the edges of the playground or on a blanket on the grass outside the playground area. You would then watch and take notes on how the children played with their peers and interacted with their parents. From this outside perspective, you may be able to see a wide

variety of interactions across different children and families. But you would miss what happened before or after and would likely not be able to discern the precise relationships at play (who are best friends, siblings, parents, babysitters, etc.).

Complete participation, on the other hand, would allow for a deeper understanding of life in the group. In your study of how children learn to obey rules, you might decide to become a childcare worker yourself. You could then take children to the playground, play with them, watch how they pick up on rules, and learn more about how and when they decide which rules to follow and which to break. While complete participation offers the advantage of a more in-depth understanding of context, it also may complicate the researcher's role and position in the field. Completely participating in a setting makes it difficult to take comprehensive notes in the field as you have other responsibilities (in this example, keeping the children safe). In practice, complete participation is not a common position for researchers to adopt (Lune & Berg, 2017).

Most researchers take a position that lies somewhere near the middle of the observer-participant continuum. We can think of these middle positions as **observer-as-participant** and **participant-as-observer**. An observer-as-participant position means that one's presence is felt in some way, and therefore the researcher has an impact on the setting, but one is not immersed in the events. This often involves short stints of observation, such as one-time trips and brief interviews (Lune & Berg, 2017). Wright et al.'s (1992) field research with active burglars fits this role. While the burglars knew they were being studied, the contacts were typically brief and the researchers were not immersed in the research sites (i.e., they never went into people's homes with the burglars).

A participant-as-observer, on the other hand, spends a lot of time in the field getting to know the social actors and generally participating in some activities while maintaining some distance from the action. The participant-as-observer role is the one typical of ethnography. For example, while studying the culture of crack-cocaine dealing in New York, Bourgois (2003) spent many months hanging out with men who sold drugs at their place of business, as well as drinking beers and chatting with them late into the night, but he was not involved in selling drugs himself. He participated in the daily life and observed behaviour, and while his presence influenced those in the field, he was careful not to get involved in the business and status struggles that defined the groups' social organization. He was a participant-as-observer.

Figure 9.1: The Continuum of Field Research Roles [\[Image description for Figure 9.1\]](#)

In summary, field researchers typically participate at least somewhat in their field sites while also spending some time just observing. The above distinction between complete observer, observer-as-participant, participant-as-observer, and complete participant is meant to help in thinking through the relative advantages and disadvantages of your own position in the field (Lune & Berg, 2017). Sometimes, we have more control over the roles we play than at other times, and our research question will often dictate what sort of position we should take. It is important to note that while complete observation (where a researcher hides their identity) is sometimes permissible, research that involves deception is generally not allowed by today's research ethics boards, which value informed consent as a prime directive for all research (see [chapter 1](#) for more on ethics).

Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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Taking Notes

Fieldwork is sometimes described as “hanging out,” and indeed being present is an important part of gaining insight into people's lives. This is not the same as passively observing, like the kind of people watching you would engage in while sitting in the park on a sunny day. Ethnography “involves looking in a planned and strategic way with a purpose” (Palys & Atchison, 2014, p. 189). Unlike casual observation, ethnography requires a researcher to write **fieldnotes**. These are notes on what you are seeing, hearing, feeling, and even smelling and tasting. This can sometimes be done while you are in the field, though most researchers must wait until they are back at their desk to write up their notes.

Field researchers often carry pocket-sized notebooks in which they can jot down brief reminders of important observations and events to write more about later. When conducting fieldwork outdoors in wet climates, researchers can use a write-in-the-rain booklet for observations. Today, a smart phone with a notebook function can work just as well and has the advantage of being less noticeable, as one is less likely to draw attention to oneself when typing on a phone rather than writing in a notebook in this day of constant phone usage.

Regardless of how and when a researcher writes their fieldnotes, they must take great care to jot down as much as they possibly can while in the field and all they can remember after leaving the field. You never know what might become important later, and things that seem entirely insignificant at the time may later reveal themselves to have a great deal of relevance when you begin to conduct your analysis (see [chapter 13](#) on qualitative data analysis).

When thinking about how to produce fieldnotes, it is useful to distinguish between the quick notes you take in the field and the detailed fieldnotes you produce when you are back at your desk. The former can be thought of as **jottings**; they are short, on-the-fly notes you produce in the moment (Hesse-Biber & Leavy, 2011). These jottings are what go into your small notebook, phone app, or a spare piece of paper that might be lying around, like a grocery store receipt or napkin (not that researchers are ever caught without their tools).

Your fieldnotes, on the other hand, are what you produce when you have the time to sit down and write out the details in all their richness. This should be done as soon as possible, ideally before you've had the chance to talk with colleagues or family members about your experience. Write up your fieldnotes when you are fresh, the very same day or first thing the next morning. Waiting a couple days will result in subpar fieldnotes as your memory fades and your mind starts framing things differently. These fieldnotes represent your data, so you want to make sure your data are of good quality.

When writing your fieldnotes, pay particular attention to the words people use as these can often be important for developing concepts later. When looking at a scene, describe the action happening, not just the static frame, and pay attention to other sensory data, like smells and noises. Keep inferences to a minimum and avoid generalizations as they are likely to produce weak descriptions with possibly erroneous conclusions. Consider the following example descriptions of the same scene (adapted from Fontes & Piercy, 2000):

Description #1: A student got on the bus. She looked like she was late for class.

Description #2: A young (mid-20s?), white woman with dark brown hair, wearing blue framed glasses, a white shirt, blue jeans, and white sneakers got onto the bus. She sat down at the front and placed her brown leather backpack onto her lap and repeatedly looked at her phone, apparently checking the time. At University Bus Station, she rang the bell to request a stop and, pushing her way past the crowd of people waiting to board, hurried towards the campus.

Note how description #1 relies heavily on inferences. How do we know this is a student? Maybe she is late for a job interview as a department assistant? Instead, your fieldnotes should paint vivid descriptions based on what you observe and contain details you can draw upon later when you analyze your data and start writing up your final report, paper, or book. Photos and drawings can also be helpful, as can video, though one is often limited regarding how much one can record for practical and ethical reasons. If you are someone who sketches or doodles, you might enjoy Causey's (2017) book *Drawn to See*, which is about how drawing can be used effectively in ethnographic research.

Much like the qualitative method of interviewing examined in [chapter 8](#), ethnography is an iterative process, so don't wait until you are finished gathering data to start thinking about your analysis. Write down any analytical/theoretical insights and interpretation as you go (Hesse-Biber & Leavy, 2011). It can be useful to separate these analytical/theoretical notes from your descriptive fieldnotes using different section headings in the fieldnotes. It is also important to keep track of your own reactions and emotions while engaged in the project. This might take the form of a separate journal for personal reflections, or these personal observations can be folded into your general fieldnotes (Hesse-Biber & Leavy, 2011). The value of keeping a separate journal, or creating separate sections in your fieldnotes, is that when it comes time to code your fieldnotes, you won't have a lot of dead-end analytical notes and tangential personal matters to sift through, though these can be coded as such when conducting your analysis and can provide valuable insights into the process itself. For Indigenous researchers, intuitions and dreams may form an important part of the methodology and ought to be recorded and preserved as one progresses (Kovach, 2021).

Risks and Costs of Field Research

Doing fieldwork does present some risks to the researcher, especially in a field like criminology. If you are an undergraduate student, you should be aware that any research that might put you or anyone else in harm's way will not be approved by

your teachers or your institution. Some risk, however, simply comes with being in the field. Risk that comes from working in a dangerous setting, like being mistaken for a rival gang member while researching gang culture (as was the case with Venkatesh (2008)), is known as **situational risk** and should be minimized or avoided altogether in your research planning. **Ambient risk**, on the other hand, is risk that may affect everyone in the setting equally, like falling ill while in the field. This type of risk is one you should consider but is unlikely to raise the same ethical problems as situational risk (Lune & Berg, 2017).

A related concern is the **emotional labour** involved in successfully conducting a field research project. Field researchers often develop close relationships with the people they study. These relationships can be very rewarding and yield rich, detailed data. However, the emotional closeness that comes from participating in day-to-day life with one's research subjects can result in some ethically problematic situations, such as when Goffman (2014) served as the driver for a group of armed young men searching for the killer of their friend. It can also be emotionally difficult, as the people you work with may suffer tragic misfortune and even death.

While the time spent in the field and the ability of field researchers to collect detailed data are strengths of field research, these benefits come at a cost. Field researchers sometimes spend years in the field, and they must take care to write detailed notes to document their observations. For example, Williams (1989) spent four years observing teenage cocaine dealers before he wrote his ethnographic study. Vysotsky (2015) spent seven years studying militant-antifascist organizations, albeit over the course of two periods of time. Most field researchers don't spend that long conducting research, but it is not uncommon for graduate students to devote over a year or two to working in the same setting, especially if they are conducting ethnographic research. This allows researchers to gather in-depth information on elements and interactions in the field, but the focus is by necessity narrower compared to survey research. In short, field researchers generally sacrifice breadth of knowledge in exchange for depth of understanding.

Participatory Action Research

As mentioned earlier in this chapter, all fieldwork involves relationships. Many of these relations are asymmetrical and primarily reflect a professional association. This is reflected in the language itself, where the researcher "studies" a given group who become "research subjects." Many researchers, particularly those working with Indigenous and other marginalized populations, are concerned with the colonial, top-down way in which research is conducted (Smith, 1999). In such research, a researcher chooses the topic, conducts a literature review, formulates a research question, carries out the research, and writes up the results without much input from the people "being studied" other than as a source of data. This can be the case even when a researcher wishes to challenge social inequalities. As a purely extractive way of carrying out research, the research process itself is likely to reproduce the dynamics of exclusion and disempowerment (Quinless, 2022).

How, then, does one include community members in the research project in a more authentic way? One answer is **participatory action research** (PAR). PAR is a **community-based research** method that has grown out of several traditions, including psychological action research (Lewin, 1948), feminism (Reinharz, 1992), and educational studies (Freire, 1982). In recent years, PAR has been used to evaluate college educational programming inside a women's prison (Fine & Torre, 2006) and as a means for running focus groups with women in Japan who experienced intimate partner violence (Yoshihama, 2002), a project that resulted in the first community-based support group for domestic abuse survivors in Japan.

PAR can help ensure that community members maintain control over how the knowledge will be produced and how it will be used. This form of research is not **value-neutral**, nor does it generate knowledge simply for the sake of testing academic theories (Torre & Ayala, 2009). It is explicitly oriented towards producing social change and empowering the people themselves who are participating in the project. As Dupont (2008) explains, "researchers engaged in participatory research are encouraged to take a stand and to be invested in outcomes and policy implementation. They are allied with marginalized individuals and communities with the purpose of improving their well-being and social conditions to the degree possible" (p. 202).

Participatory action research is a collaborative approach that empowers people to take action to resolve specific problems. Unlike traditional research, it is the participants themselves who define the problem at hand and do so with the aim of improving their own condition. Since the action may take any form, PAR can facilitate a move away from reliance on the criminal justice system for addressing crime, as the community takes the lead on developing solutions and remedies (Dupont, 2008; Pepinsky & Quinney, 1991).

Indigenous scholars advocate for PAR as a way for researchers to engage in decolonial research when working with Indigenous communities and to counter **deficit theorizing** (Smith, 1999). A great deal of research conducted in Indigenous communities focuses on the preconceptions of outsiders, and while often well-intentioned, this research frequently ends up reproducing negative stereotypes by portraying Indigenous communities as deficient in various ways. This form of deficit theorizing blames

community problems on individual choices rather than structural conditions and ignores the impact the state has had on creating the conditions that exist in Indigenous communities today (Irlbacher-Fox, 2009; Kovach, 2021).

PAR, by contrast, is well suited to a strengths-based approach because it allows the community to focus on what is working well rather than simply identifying problems (Quinless, 2022). Mohatt et al. (2004), for example, used a participatory action approach to research sobriety in an Indigenous community in Alaska. At first, the researchers thought they would focus on alcoholism, but through working with the community to develop their research problem, “Very quickly everyone agreed that our research should focus on sobriety, rather than on alcohol abuse, and strengths not deficits” (Mohatt et al., 2004, p. 265). This culturally anchored approach, created in collaboration with members of the community, allowed the researchers to use the concept of *ellam-iinga*, or “eye of awareness” (Mohatt et al., 2004, p. 267). By using this concept, the research was redirected away from a pathology framework toward one based on resiliency, and from a focus on Western conceptualizations of illness to an Indigenous understanding of wellness.



Stop and Take a Break!

Watch this video for more on PAR.

<https://www.youtube.com/watch?v=6D492AP9JP4>

Conclusion

In this chapter, we considered how to conduct fieldwork in an authentic and ethically grounded way. Because much of the history of ethnographic fieldwork is one of extracting data from the community, without giving much back in return, we also considered PAR as a way researchers can centre community needs and voices and ensure that communities maintain control over the research. PAR is not in-itself an Indigenous methodology, but it is well suited to working with Indigenous communities as it depends on relational accountability throughout the entire research process.

Fieldwork yields rich and nuanced data, which makes it an excellent choice for studying social processes and for understanding the role of social context in shaping people's lives and experiences. Because methods like ethnography typically occur over an extended period, it permits greater opportunities for understanding the intricacies of daily life. The combination of observations, interviews, and the analysis of content in field research creates opportunities for understanding the social and historical context for people's words and actions. You often know you have really found something when you can tell the people you are working with something about themselves they did not already know. PAR might add something they can use to improve their lives and challenge the unjust power structures that keep them in a marginalized position.



Summary

- Field research involves examining social behaviour in its natural setting and collecting primary data from our own observations.
- Fieldwork is relational and relies heavily on gatekeepers and early consultation with members of the community, particularly when studying Indigenous peoples.
- A field researcher can take on various roles, and these roles can be thought of as existing on a continuum, from complete observer to complete participant.
- The art of taking good fieldnotes involves thick, rich description of all observations as well as interpreting as you go.
- Participatory action research is one way researchers can engage in decolonial research when working with Indigenous communities.



Key Terms

ambient risk: risk that is present in any environment, such as cold viruses.

community-based research: where the research is driven by community concerns and needs and where the community is involved throughout the research process.

complete observation: a role taken by a field researcher that involves solely observing the phenomenon of interest from a distance, with no participation.

complete participation: a role taken by a field researcher that involves being completely immersed into the phenomenon of interest and interacting with the members of that population in their natural setting, with or without their knowledge of your research intentions.

deficit theorizing: when researchers interpret community problems that are the product of structural factors as being caused by individual choices.

emotional labour: the management of one's emotions in the context of doing work.

ethnography: a qualitative method of field research that involves a long period of immersion within a field setting to understand the social context in all its nuanced complexity and then writing about that culture.

(the) field: the natural setting in which a phenomenon of interest exists and a field researcher is immersed during the course of their research.

field research: a qualitative research method that involves observing and interacting with the phenomenon of interest in the natural setting in which it occurs. The level of participation in the phenomenon of interest ranges on a continuum, from full observation to full participation.

fieldnotes: the notes taken by a field researcher on all observations as well as all researcher reflections and thoughts about what is observed throughout the course of the data collection phase of the research. These notes should be taken as soon as possible after the observations, or even during the observations if possible, and should be highly inclusive and detailed.

gatekeepers: people who are in a position to grant or deny access to a social setting.

jottings: short notes one makes on the fly while in the field.

observer-as-participant: the researcher observes a group but is not a member and only interacts indirectly with the group.

participant observation: a role taken on by a field researcher that involves both participating in interactions and observing the phenomenon of interest in its natural setting.

participant-as-observer: the researcher observes a group by becoming a member, to the extent possible, establishing relationships and directly interacting with the group.

participatory action research: an approach where researchers and participants work together to understand a problem within the community and attempt to change it.

primary data: data sources used in research that are accessed and used by the researcher in their original and raw form.

situational risk: risk that comes from working in a dangerous situation, such as getting shot as a soldier.

thick description: a type of description that adds context and depth to observation.

value-neutral: maintaining impartiality and objectivity.

Chapter Review

Crossword

Fill in the term in the right-hand column and it will display in the crossword puzzle. Be sure to include spaces where appropriate.

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Discussion Questions

1. Pretend you're a field researcher. Find a public place to take fieldnotes for about 15 minutes. Be sure to use all your senses as you take notes: your eyes, your ears, your nose, your mouth, and your sense of touch. After your 15 minutes are up, consider what strategies you used to take notes. What decisions did you have to make about what details to write and what details to overlook? How many pages of notes did you write? Did you notice any patterns to your observations? What challenges did you face in your brief field research experience? How might you approach field notetaking differently if you had to do it again?
2. Where do you think is the best place to be on the observer-participant continuum? Why?
3. In your opinion, what is the most important strength of field research? What do you view as its greatest weakness? Why?

Further Reading

- [The role of public interior spaces in the socialization of active elderly individuals](#)
- [“We keep each other safe”: San Francisco Bay Area community-based organizations respond to enduring crises in the COVID-19 era](#)
- [Keepin’ It Real: Authenticity, Commercialization, and the Media in Korean Hip Hop](#)
- [‘Do not go through the system passively’: Integrating environmental studies and ethnic studies through a social justice outdoor education program for high school learners](#)
- [Routines and daily dynamics of young people with borderline intelligence: An ethnomethodological study](#)
- [Inappropriate driving behavior exhibited by drivers with the tendency of developmental disabilities](#)

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definition

A qualitative research method that involves observing and interacting with the phenomenon of interest in the natural setting in which it occurs. The level of participation in the phenomenon of interest ranges on a continuum, from full observation to full participation.

×Close definition

The natural setting in which a phenomenon of interest exists and a field researcher is immersed during the course of their research.

×Close definition

A role taken on by a field researcher that involves both participating in interactions and observing the phenomenon of interest in its natural setting.

×Close definition

A qualitative method of field research that involves a long period of immersion within a field setting to understand the social context in all its nuanced complexity and then writing about that culture.

×Close definition

Data sources used in research that are accessed and used by the researcher in their original and raw form.

×Close definition

People who are in a position to grant or deny access to a social setting.

×Close definition

A role taken by a field researcher that involves solely observing the phenomenon of interest from a distance, with no participation.

×Close definition

A role taken by a field researcher that involves being completely immersed into the phenomenon of interest and interacting with the members of that population in their natural setting, with or without their knowledge of your research intentions.

×Close definition

The researcher observes a group but is not a member and only interacts indirectly with the group.

×Close definition

The researcher observes a group by becoming a member, to the extent possible, establishing relationships and directly interacting with the group.

×Close definition

The notes taken by a field researcher on all observations as well as all researcher reflections and thoughts about what is observed throughout the course of the data collection phase of the research. These notes should be taken as soon as possible after the observations, or even during the observations if possible, and should be highly inclusive and detailed.

×Close definition

Short notes one makes on the fly while in the field.

×Close definition

Risk that comes from working in a dangerous situation, such as getting shot as a soldier.

×Close definition

Risk that is present in any environment, such as cold viruses.

×Close definition

The management of one's emotions in the context of doing work.

×Close definition

An approach where researchers and participants work together to understand a problem within the community and attempt to change it.

×Close definition

Where the research is driven by community concerns and needs and where the community is involved throughout the research process.

×Close definition

Maintaining impartiality and objectivity.

×Close definition

When researchers interpret community problems that are the product of structural factors as being caused by individual choices.

×Close definition

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10: Content Analysis

Learning Objectives

- Define and describe content analysis.
- Describe the ethical considerations that are relevant when conducting content analysis.
- Outline the data sources and research questions that are suitable for content analysis.
- Distinguish between quantitative and qualitative content analysis.
- Discuss the strengths and weaknesses of content analysis.

Content analysis is a research method used to study communications, such as texts or images, and examine their meaning in a particular social context. It gained popularity at the beginning of the 20th century with the mass production of newsprint and was initially a largely quantitative endeavour, then referred to as quantitative newspaper analysis (Krippendorff, 2004). Now, though, content analysis can certainly adopt a more inductive, qualitative approach when the goal is to thematically analyze hidden meanings. It is also possible to use a mixed-method, triangulated approach by combining quantitative and qualitative approaches when analyzing content.

This chapter begins by defining and describing the nature of content analysis and providing examples of studies that have employed this method, both quantitatively and qualitatively. The ethics of content analysis, and issues of bias and representation, are included in this discussion. Next, the chapter reviews the types of data sources and research questions that can be examined with this method. Specific attention is paid to the sampling decisions that are central to the work of content analysts. The chapter then delves into the distinction between quantitative and qualitative content analysis and the coding of both forms of data. The chapter concludes with a discussion of the strengths and weaknesses of this research method.

You may be wondering why this chapter is sandwiched between the qualitative chapters (i.e., interviews/focus groups & field research) and the quantitative chapters (i.e., surveys and experiments). This placement was purposeful; it speaks to the fact that content analysis really can and often *should* employ both approaches depending, as always, on the research purpose/goal, the research question, and the data available to answer it.

Defining Content Analysis

As mentioned at the outset of this chapter, content analysis involves the study of communications and their meaning. The “texts” that contemporary content analysts investigate include such things as actual written content (e.g., news or magazine articles, legislation, e-mails, letters, blog posts), content we might hear (e.g., speeches, podcasts, lectures), and even visual representations of human communication (e.g., photographs, online videos, television advertisements, movies). Content analysis methods can be applied to almost any form of communication so long as the study of messages is systematic (Maxfield & Babbie, 2011).

Below is a table of the types of communications that could be used for content analysis, mainly focusing on a criminological context. Note that the same source, e.g., online news articles, could have a slightly different focus for the content analysis – on the written text or the images, or both. The same is true for the audio or video sources; the focus could be on what is said, as in the words and narrative, or how it is said, such as energetic and loud or quiet and calm, or both. As you can see, content analysis is very versatile!

Table 10.1 Types of Communications Suitable for Content Analysis

Textual (written)	Visual (images and video; what is presented and/ or the accompanying narrative)	Audio (what is said and/or how is it said)
<ul style="list-style-type: none"> news articles personal letters parliamentary debates published legal decisions academic journal articles textbooks social media posts (e.g., Facebook, X, Bluesky) comments on social media posts victim impact statements interview transcripts policy documents magazine articles personal diaries government agency reports (e.g., correctional case files, assessments) song lyrics court case transcripts 	<ul style="list-style-type: none"> images in online news and/or magazine articles parliamentary debates television commercials television shows films or documentaries print advertisements images on social media (e.g., Instagram) videos on social media (e.g., TikTok, YouTube) online recorded interviews security video footage police body camera footage dash camera footage music videos 	<ul style="list-style-type: none"> podcasts political speeches parliamentary debates radio advertisements locker room pep talks opening or closing arguments in criminal trials delivery of victim impact statements call-in radio shows (e.g., CBC) public lectures 911 call recordings security footage (audio) police body camera audio dash camera audio recordings book readings

Unlike many of the other methods reviewed in this textbook that involve human participants (e.g., focus groups, interviews, field research, surveys and experiments), content analysis is classified as an **unobtrusive method** (also referred to as a nonreactive method) of research, meaning that the researchers generally do not intrude into the lives of those they are studying in order to collect their data. Researchers focus on data that already exist, that are often publicly available, and that were often not produced for the purpose of being researched. For example, the National Archives in Ottawa contain all the death penalty case files from the Department of Justice from 1867 up until the death penalty was officially abolished in Canada in 1976. These case files include police reports, court transcripts, internal justice officials' correspondence, media clippings, medical reports, petitions, and letters of appeal to the Minister of Justice and Governor General for a commutation of the death penalty to life imprisonment, among others. None of these documents were produced or intended as part of a research study on the death penalty in Canada; however, they are texts that exist and can be used as data for a content analysis study.

The Ethics of Analyzing Content

As with all research, there are ethical considerations with content analysis, even though it is unobtrusive and there are no human participants. Researchers should consider whether the use of the texts and images they wish to study will breach the privacy of the person who produced the text, whom the text is about, or who is depicted in the image and consider what measures could be employed to protect the privacy of those concerned. Researchers must investigate whether it is possible to gain consent from those whose privacy may be breached directly or indirectly in the course of the research.

Considering issues of representation and bias is also an ethical obligation of content analysts. After all, it is important to remember that texts and images do not exist in a vacuum. Palys and Atchison (2014) and Webb et al. (1981) invite us to think about the processes that lead to certain texts and images being left behind. Are certain groups in society more likely to have their texts and images preserved for posterity? How can we know what is missing from the historical traces that have been left behind? Do the documents that exist provide us with a full, or at least representative, picture of what happened?

A study by Collins (2016) illustrates the importance of considering these issues of representation and bias. In this study, Collins conducted a content analysis of Canadian newspaper articles about female offenders and victims of crime, sampling articles from four major newspapers over a period of 30 years. Collins (2016) employed both a quantitative and qualitative content analysis

(to be distinguished and described in more detail later in this chapter), with the analysis showing significant differences in how offenders and victims were portrayed based on gender as well as over time. In the article in which they share their findings, Collins (2016) included a table of descriptive statistics of both offenders and victims, which in itself is illustrative of whose voices and experiences are included, and whose experiences are marginalized. Out of the total sample of 1190 articles, the race of the victim was mentioned in only 338 articles. Digging into this subset of articles revealed that white victims were noted in 209 (62%) articles, while Indigenous victims were identified in 42 (12%) articles. However, according to official crime statistics in Canada, Indigenous peoples are six times more likely to be victims of homicide than other groups (Perreault, 2022), and Indigenous women are more likely to experience physical or sexual assault than non-Indigenous women (Heidinger, 2022). So, despite the difference in prevalence of violence against Indigenous and non-Indigenous women, mainstream news media reports continue to underreport the victimization of Indigenous women, marginalizing their experience. Without critically considering whose experiences are being left out or minimized, the descriptive statistics Collins (2016) presents could be interpreted to suggest that White women are more likely to be victims of crime, thereby overlooking the disproportionate victimization of Indigenous peoples as a whole and Indigenous women in particular. As illustrated here, if we simply take for granted that what is being presented in the text is the whole story (i.e., newspaper article, prisoner record, television commercial), then there is a real risk of reifying existing biases that may be present. Instead, content analysts can and should more deeply investigate the reasons why the discrepancy in reporting exists and question whose voices are included, whose are left out, and why.

Let us turn to another study to illustrate the importance of considering bias and voice. In a content analysis exploring how animal abuse was presented in two mainstream newspapers over the period of two years, Stevenson (2008) identified who was quoted in each of the 48 news articles and who was relied upon for information about the criminal event. Interestingly, Stevenson found regional differences between the papers, with the Toronto Star relying more heavily on police and court sources for details in 65% of articles, while the Vancouver Sun utilized animal welfare groups, namely the BC SPCA, as their main source of information in 69% of articles included in the sample. This finding may have reflected the relatively close relationship between the police and reporters in Toronto and a close relationship between the BC SPCA and reporters in Vancouver. The fact that law enforcement and animal welfare were the most frequent voices means that their perspective was the most commonly shared. Notably missing voices were the animal owners or accused in the cases as well as veterinarians who may have cared for the animals, both of whom could offer a different point of view.

Choosing what Texts to Analyze and What Research Questions to Ask

Now that we have defined what content analysis is and described it as an unobtrusive method that still has ethical implications, let us now turn our attention to the importance of sampling when employing this method and the types of primary and secondary sources and research questions content analysts typically deal with.

As discussed in the sampling chapters in this open education resource (see [chapter 7a](#) and [chapter 7b](#)), generally, researchers are not able to study all elements of a population (i.e., every news article or podcast cannot be analyzed). This is particularly true in the case of content analysis as the target population is often enormous. For example, in quantitative content analysis, the samples might be composed of hundreds or thousands of items to be coded, while a sample for a qualitative content analysis is often more restricted. Researchers should be deliberate in determining what to include in their sample due to the large amount of work required for each element included in the sample.

Multiple methods can be used for composing a sample for content analysis. For illustrative purposes, let's return to the study by Collins (2016), wherein they used a date-based strategy to gather a sample for their study. Sampling every Canadian news article about female offenders and victims over a 30-year time span would yield a dataset much too large for a content analysis, so Collins (2016) selected four newspapers from large cities across the country: the Vancouver Sun, the Saskatoon Star Phoenix, the Winnipeg Free Press, and the Toronto Star. Even within these four newspapers, the data from 30 years would be overwhelming. To narrow the sample further, Collins (2016) randomly selected two years from each decade and then randomly selected twenty dates from each year. Each article about crime with a female offender and/or victim from these 120 days (6 years x 20 days) was collected, resulting in a total sample of 1190 articles for analysis.

In another study by Gray et al. (2019), a categorical strategy was used to compose a sample for their exploration of how the connection between intimate partner violence and animal abuse, along with any services for survivors, was communicated to the public via public websites. Rather than taking a smaller sample of the websites for their content analysis, Gray et al. (2019) instead narrowed their sample by including only first-stage emergency domestic violence shelters, which tend to serve survivors in immediate crisis or danger, rather than second-stage shelters, which offer longer-term stays, or domestic violence agencies who did not offer shelter services. They then looked at every website within the category of first-stage shelters, resulting in a sample of 337 websites.

Parameters of the sample are based on the research question. Defining the parameters of a sample may include considering a particular time span, location, and type of source that will be most relevant to the topic to be studied. Collins (2016) wanted to explore change over time, so a time span made sense for their study, whereas Gray et al. (2019) wanted to look at a particular type of source (websites) to address their research questions. Like the examples offered above, defining the parameters of a sample also includes specifying what is and is not part of the sample. For instance, when studying online news, the data available may include text, images, audio, video, and engagement commentary. All of these data may be useful but examining them all can be overwhelming. It is important to set out what will and will not be studied and why.

Sampling decisions may also involve considering if the researcher can reasonably expect to have access to the data source they wish to study. A student in one of the author's crime and media courses in the Fall semester of 2023 wrote a research proposal at the beginning of the semester about studying video shorts on the war in Ukraine, wanting to examine whether war crimes committed by the Russian army were being portrayed in the same way as the same actions committed by the Ukrainian army. By the time he went to collect his data sample, Hamas had attacked Israel and that war ensued, and the video shorts he had intended to use were no longer featured on the sites he was using. They had been replaced by videos of the Hamas-Israel conflict. With research increasingly being conducted online, researchers must give thought to access in terms of the stability of the data access and how to save data for future analysis.

When researchers examine original sources, their texts represent **primary sources**. For example, if you wanted to study letters sent between people in prison and their family members and you obtained copies of these kinds of letters, then you are working with primary sources. It is important to note here that even though you have copies of the original sources, they are still considered primary sources because you are analyzing the original documents. In contrast, **secondary sources** are those that have already been compiled and analyzed by someone else. In your study of letters between inmates and their families, you may not be able to obtain copies of the original letters. However, you might be able to find books or other publications that have summarized and/or analyzed such letters. Other examples of secondary sources include documentaries about people in prison and research reports about communications from people in prison. One way to distinguish between primary and secondary sources is to consider that secondary sources often quote or include information from primary sources.

Content analysis is a versatile method for social research and blends well with a wide range of research questions and methodologies. Say you wanted to investigate how attitudes towards crime change over 10 years. Conducting a longitudinal study with participants via interviews or surveys over 10 years can be challenging and expensive, with the potential for participant attrition and needing to fund the study for a decade or more. However, content analysis offers a way to address the research question without a lengthy process through the use of various texts, such as parliamentary debates about the passage of new crime legislation or online comments about news stories about crime. Alternatively, you could take more of a historical approach, exploring how crime has been portrayed in film over the past century as an indication of popular attitudes.

The table below offers a range of research questions that could be approached with content analysis, along with potential primary and secondary sources. As you can see, there is a wealth of potential texts, and a researcher must make many decisions about the texts they can use!

Table 10.2 Research Questions, Primary and Secondary Data Sources

Research Question	Potential Primary Sources	Potential Secondary Sources
How have victim impact statements changed over time?	<ul style="list-style-type: none"> • victim impact statements • court transcripts • autobiographies of victims of crime 	<ul style="list-style-type: none"> • news stories about cases with victim impact statements • reasons for judgement (words of the justice)
How does the Canadian criminal court system conceptualize the offence of mischief?	<ul style="list-style-type: none"> • court transcripts • media interviews with Crown and defence attorneys • reasons for judgement • court appeals 	<ul style="list-style-type: none"> • legal commentary and articles

Research Question	Potential Primary Sources	Potential Secondary Sources
What are the similarities and differences among community-based crime prevention measures?	<ul style="list-style-type: none"> community crime prevention websites city council meeting transcripts 	<ul style="list-style-type: none"> news reports about crime prevention police reports and documents
What is the perception of offenders of probation as a sentence?	<ul style="list-style-type: none"> offender letters to family and friends social media posts from self-identified offenders 	<ul style="list-style-type: none"> official reports from probation officers academic literature about probation
How has the use of administrative segregation (solitary confinement) changed over the past 25 years?	<ul style="list-style-type: none"> correctional institution records correctional institution policies and standard operating procedures correctional institution reports inmate letters to family and friends case law (appeals, constitutional challenges) 	<ul style="list-style-type: none"> media reports of high-profile cases academic articles with interviews with correctional officers/staff government reports and statistics on administrative segregation biographies of inmates or correctional staff
How do crime documentaries frame offenders and victims?	<ul style="list-style-type: none"> documentaries about crime film trailers crime documentary series television advertisements for crime documentary series *could focus on images, dialogue/narrative, screentime, etc. 	<ul style="list-style-type: none"> media interviews with directors, producers, writers about the documentaries

Qualitative, Quantitative, or Both?

As mentioned earlier in this chapter, content analysis can be qualitative or quantitative, and researchers will often use both strategies to strengthen their research. In **qualitative content analysis**, the researcher aims to identify themes and examine the underlying meaning of those themes. **Quantitative content analysis**, on the other hand, involves assigning numerical values to information in the texts under study so they can be analyzed using various statistical procedures. For example, imagine a researcher wanted to conduct a content analysis looking at representations of women police officers in film. A quantitative content analysis might examine how many of all the officers portrayed are women, how many of the main characters are women, how many of the women are ranked officers, etc. The research would code or count the images in the films portraying women officers in order to attempt to establish statistically significant differences between the portrayals of female and male officers based on the **manifest content** in the films or compared to their representation in policing in real life.

A qualitative content analysis might delve into how those female officers are portrayed, extending beyond their numbers to also include **latent content** and how it might generate meaning. For example, the researcher could look at stereotypes of women officers in real life (e.g., lacking in physical strength or mental toughness, more focused on their relationships) to see if or how those stereotypes are represented in film. Or, the researcher could investigate issues policewomen experience in real life (e.g., sexual harassment, glass ceiling, tokenism, work-life balance) to see if or how those experiences are portrayed in film. This distinction is explored further below.

Quantitative Content Analysis

As noted above, quantitative content analysis revolves around identifying the manifest content and quantifying data for the purpose of conducting statistical analyses that can range from simple **descriptive statistics** to more complex **inferential statistics** (described in more detail in [chapter 14](#)). Researchers examine the data for the presence or absence of certain variables they have defined. They may want to know how often particular incidents are reported on in the news or how much time is spent in podcast series discussing specific aspects of a case. They record information that can be used in establishing correlations with those variables, such as the political orientation of the news outlet or the number of people who listen to a particular podcast.

Because of the statistical analyses they will want to perform with their data, researchers taking a quantitative approach to content analysis aim to have a representative sample to ensure their statistics are meaningful. Once the researcher has established the research question and collected a sample, they will want to devise a systematic way to record information about that sample. Researchers will typically establish a set of codes, or rules, that they will use to collect data as they go through each text in the sample (the process of coding will be described in more detail in the analysis chapters of this text: [chapter 13](#) & [chapter 14](#)). Codes may be grounded in what are identified in the research literature as significant themes or variables in relation to the research topic. The codes may also be generated from a preliminary qualitative examination of the data, which allows themes to emerge from the data. Researchers will define their codes in a coding manual that clearly lays out what they include and exclude from each code (see an example of a coding manual in [Appendix C](#)). They will count every time each code is present in the sample.

Let us return to the example of the representation of women police officers in film to illustrate these concepts. One code might be 'position of authority.' The researcher may count the number of times the women officers take the lead in a situation affirming a position of authority (e.g., questioning a suspect or witness) or have their authority undermined in having to correct another character about their position (e.g., the character says something like "it's actually Detective, not Officer"). In the coding manual, the researcher would clearly state what would be included as part of the theme, or what would be counted. The idea is that another researcher could take that manual, watch the same films, and arrive at the same conclusion as to the presence or absence or extent of the theme of "positions of authority." Researchers will sometimes use a coding sheet, a sort of checklist to be used while coding to ensure they capture all their codes (see an example of a coding sheet in [Appendix D](#)). Both the coding manual and coding sheet will likely be revised as the research project unfolds and more texts are examined. It is a good idea to pilot them with a small sample of texts to see what works well, what does not, and what is not captured. The coding tools can then be revised before being deployed on the larger sample. Establishing a clear coding manual and pilot testing the manual helps to ensure the reliability and validity of the research (recall our discussion of reliability and validity in [chapter 6c](#)).

After all the data have been coded, the researcher will then proceed to analyze the information they have collected. In quantitative content analysis, this step will involve calculating statistics to provide a representation of the overall sample as well as relationships between different variables. For example, if a researcher were examining the representation of characters from different ethnic groups in television crime series, their coding might have included items such as whether the characters had leading roles or supporting roles in the series, how many minutes they appeared on the screen, and their roles relative to the police drama (police, lawyer, offender, victim, other). In the analysis, the researcher could calculate how many times or the average number of minutes characters from different ethnic groups appear on screen. They might also use statistical analysis to determine whether there is a statistically significant correlation between the frequency of characters appearing on screen and their ethnicity, their roles, or other relevant variables.

Because quantitative content analysis often involves large data sets, it is not typical for this type of analysis to be done by hand. A number of software packages have been designed for conducting quantitative analysis. Notably, many researchers use SPSS (IBM Statistical Package for Social Sciences) to enter and analyze their data quickly and efficiently (see [chapter 14](#) for more on SPSS). Excel may be sufficient for smaller research projects or those employing more basic statistics.

Let us take a look at a study conducted by Faucher et al. (2015) to illustrate further the features of quantitative content analysis. Their study examined the topic of policies relevant to the handling of cyberbullying at Canadian universities. This study was developed at a time when relatively little attention had been paid to cyberbullying other than what was occurring in the elementary and secondary school (K-12) sectors. Therefore, the researchers were not guided by the existing literature on the specific topic of cyberbullying in universities. They developed a coding manual based on some of their prior research in the K-12 sector as well as their knowledge of the types of university policies that might be relevant to the handling of cyberbullying matters. In all, the study scanned a total of 465 cyberbullying policies at 74 Canadian universities. First, the types of policies were noted (student conduct, respectful workplace, discrimination and harassment, etc.). Then, the policies were coded yes/no for the following: whether the policy actually defined cyberbullying, whether it listed examples of cyberbullying behaviours that would fall under the policy, whether cyberbullying was referenced in relation to hazing, whether cyberbullying was mentioned in relation to discrimination,

whether sanctions were mentioned, whether complaint procedures were mentioned, whether the policy addressed prevention, and whether the policy was “cyber”-bullying specific. The descriptive statistics in the analysis paint a picture of the types of policies that existed in Canadian universities at that time to manage potential instances of cyberbullying on campus. It was found that cyberbullying was, for the most part, subsumed within existing general policies on student conduct, electronic communication, or harassment and discrimination. Only about a third of the policies specifically addressed *online* misconduct, suggesting that the policies were not keeping pace with the evolving technological changes involved in interactions between campus constituents.

Qualitative Content Analysis

As mentioned earlier in this chapter, qualitative content analysis tends to focus on the latent content, looking for the presence of broad themes in the data and ways of discussing or framing a particular issue. A component of this process is identifying themes in a data set, exploring the meaning of those themes, and determining how the information might be interpreted by different groups in society. Researchers might examine comments on social media posts to find the different ways in which people talk about the issue and what stands out to them, but they should also be attuned to what is left out or unsaid. They might delve into television crime shows to examine ways in which particular actions are portrayed. This is a much deeper and more detailed analysis than what is accomplished through quantitative content analysis and is typically based on much smaller samples of data.

As with quantitative content analysis, in qualitative content analysis, researchers will need to establish a method for coding the data. The intent with qualitative content analysis is often to generate new knowledge. Themes found in the research literature may provide initial ideas about codes, but researchers should remain open to seeing new and unanticipated themes in the data. Qualitative coding (discussed in [chapter 13](#)) often employs an iterative and inductive process called inductive coding (Strauss, 1987). This means that the researcher will not begin the analytical process with a preset group of themes. They will let the themes emerge from their interactions with the data. They will think about themes as they are collecting the data and keep notes as they go through data collection and the initial reading or examination of the data set. They may start to flesh out a coding scheme or frame as they interact with their data. They may then pilot their preliminary coding scheme and revise it as necessary. A few attempts may be needed to come up with a suitable coding scheme (see a sample coding scheme in [Appendix E](#)). In applying their coding scheme, they may begin to see relationships between different themes within their data.

Although qualitative content analysis may have a smaller number of items in the sample, the volume of text may still be large. The analysis of these data is not always done by hand. There are a range of software packages that can assist with qualitative content analysis such as NVivo, HyperRESEARCH, QSR, QDA Miner, Free QDA, ATLAS.ti (see screenshot below), The Ethnograph, dedoose, and many more. Researchers can use these tools to aid in their analysis, as they help keep the data, codes, and themes organized, but the researchers must still establish the parameters of the coding and conduct the sampling, coding, and analysis themselves.

Screenshot showing ATLAS.ti interface

ATLAS.ti

Table 10.3 Key Features of Quantitative and Qualitative Content Analysis

Quantitative Content Analysis	Qualitative Content Analysis
<ul style="list-style-type: none"> • manifest content • deductive coding • statistical analysis • SPSS 	<ul style="list-style-type: none"> • latent content • inductive coding • thematic analysis • generation of new knowledge • Nvivo, etc.

Let us now turn our attention to a few excellent examples of studies employing a method of content analysis – either quantitative, qualitative, or both – to further illustrate the features of this versatile method. We will begin with a study conducted by Goossens et al. (2021), who examined the use of hashtags in Twitter posts regarding a murder case wherein the accused’s defence team argued that the defendant was Not Criminally Responsible on account of Mental Disorder (NCRMD). In this case, de Grood, the accused, murdered five people at a house party in Calgary, Alberta in April of 2014. The high-profile case received a large amount of attention on social media, sparking a few widely used hashtags related to the case. Looking to explore how the general public understood the NCRMD defence in general, and how NCRMD was perceived in the de Grood case specifically, Goossens et al. (2021) collected 4,991 tweets with the three most popular hashtags. After sifting through the tweets to remove duplicate postings, irrelevant content or spam, and journalists or media, they were left with 365 unique tweets for their qualitative content analysis.

To start their analysis process and ensure trustworthiness (review [chapter 6c](#) for more on this concept of trustworthiness as it relates to qualitative research), two of the researchers independently examined a subset of the tweets to establish preliminary codes, then assessed and reconciled any differences to arrive at a final codebook used to collaboratively and iteratively code the complete sample. Goossens et al. (2016) then identified three main themes: mistrust in the justice system, NCRMD as a loophole to avoid consequences, and a need for change and desire for justice. Overall, Goossens et al.'s (2016) qualitative content analysis revealed a significant lack of public understanding of NCRMD as a criminal defence and the perception that it is a legal loophole able to be exploited to circumvent justice.

There are also noteworthy examples of research conducted by Indigenous scholars employing both a quantitative and qualitative approach. For example, Cripps (2011) conducted a study that includes the qualitative and quantitative analysis of news reports regarding the 2011 murders of two Indigenous women in two different countries: Cindy Gladue in Canada and Lynette Daley in Australia. At the time of the murders, the news media paid little attention, but media attention substantially increased around the trials of the accused several years later. Using 261 news reports about the two cases between 2011 and 2018 and guided by Indigenous research methodologies, Cripps (2021) investigated how Indigenous women were portrayed in the media and the relative newsworthiness of the deaths of Cindy and Lynette.

The quantitative analysis included several metrics. For example, Cripps (2021) observed that only two articles were published about Cindy and only six were published about Lynette in the months following their deaths. These articles were also quite short, with the average word counts in these first articles being 221 and 229, respectively, implying that these murders were not worthy of media attention. In contrast, when the trials for the accused began, there were over 130 articles published about Lynette's case and over 95 about Cindy's case. The average word count of these articles was much greater than the few early articles, and female reporters had higher average word counts (640 and 763 for Lynette and Cindy respectively) than male reporters (374 and 592 for Lynette and Cindy respectively). This finding points to a gendered element in the reporting of sexualized violence and also in the representation of the victims, as female reporters tended to describe both Lynette and Cindy in more positive terms.

Findings from Cripps' (2021) qualitative analysis of the articles revealed a pervasive portrayal of both Cindy and Lynette as being responsible for the violence perpetrated against them, with references to alcohol and drug use, previous sexual histories, their children being in the care of others, and sex work. Cripps (2021) notes that the early articles contained no photographs and were "devoid of information that would invoke sympathy or connection to the victim," inhibiting the reader's ability to "make a meaningful connection with her as a person" (p. 307). Combining the qualitative and quantitative analysis, Cripps (2021) clearly illustrates the picture the media paints of Indigenous women who are victims of crime – that they are deserving of the violence perpetrated against them. Cripps (2021) observes that allowing the blame to be shifted from the aggressor onto the victim compromises the process of seeking justice. Further, Cripps (2021) asserts that such media framing of Indigenous victims "perpetuate[s] a colonial discourse that has denied Indigenous women their stories" (p. 316) and calls for a critical and intentional change in how victims of sexualized violence, especially Indigenous women, are portrayed in the media to avoid continued reification of a harmful discourse around gendered violence.

These examples illustrate well the versatility and flexibility of content analysis as a method and the utility of this method to bring to light the messages we consume daily in our lives and to force us to ask ourselves how these messages might impact our perceptions of marginalized groups. See Figure 10.1 below for a visual review of the process of content analysis.

Figure 10.1 The Process of Content Analysis Poster

Strengths and Weaknesses of Content Analysis

As with any method for social research, content analysis has advantages and disadvantages, some of which have been mentioned already in this chapter. Among the advantages of content analysis is its versatility, with both the types of research questions that can be investigated and the data sources that can be analyzed. It can be used with any kind of communication, from written to audio to visual data, affording a wide range of choices for data sources, as shown in Table 10.1. It is also unobtrusive, mainly utilizing data that already exist. The use of existing, often freely available texts means that content analysis as a method tends to be inexpensive when compared with other methods. Sometimes, there are online databases that freely and publicly provide access to the types of data criminologists may be interested in studying, such as Canlii, which maintains public court decisions and reasons for judgment in any variety of matters heard by Canadian courts.

An additional benefit of using texts that have already been produced is that there is less [reactivity](#) because there is no direct contact between the researcher and the person who produced the text or image being studied. Other types of methodologies raise concerns about the potential for the researcher to influence the research participant (for example, in a survey, the way the questions are phrased might encourage participants to respond in a particular manner). With unobtrusive methods, including

content analysis, because the text or image was produced before the researcher began conducting research, there is no way for them to influence the content of the data. However, it is also important to consider the social and political context in which a text or image was produced.

Another advantage of content analysis is the possibility of longitudinal analysis without having to spend years or decades collecting data. The use of existing texts allows the analysis of change over time, a comparison of specific time periods, or a focus on a time in the distant past, again showing the flexibility of content analysis.

Depending on your research question, though, access to data could be a potential disadvantage as some content is not publicly available or free. For example, original court transcripts are often expensive to purchase and are often limited to persons involved in the case. Further, some sources may have been lost over time, are difficult to find, or may not have existed at all. While the sheer diversity of potential texts available for study is an advantage, the quality of the texts must also be considered. Texts must be assessed for credibility, authenticity, and representativeness. Researchers should challenge themselves to identify whose voices are present and absent in any and all content analysis studies.

The development of clear coding schemes and stable and producible data allow for a transparency of process in content analysis that is not found in other methods. Replicability, meaning that other researchers can use the same (or a similar) sample with the coding scheme and get the same or similar results, can lend depth of reliability and validity to content analysis studies. That said, all research requires interpretation, and no research can be completely objective. Content analysis is no exception, and it often necessitates a degree of contextual cultural and social awareness to avoid erroneous inferences or interpretations.

Strengths	Weaknesses
<ul style="list-style-type: none">• unobtrusive• no reactivity• versatile – any kind of communication• many easily accessible data sources• inexpensive (often free)• can examine change over time• high validity and reliability	<ul style="list-style-type: none">• access can be an issue• data are not created with research in mind• not all questions can be answered with this method• issues of privacy, bias, representation, and data sovereignty• not all content is preserved for analysis• cannot be completely objective



Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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Conclusion

In this chapter, we introduced you to an unobtrusive and versatile method called content analysis. We reviewed the many types of data sources and research questions that can be examined using this method. While historically, content analysis was initially purely quantitative, this chapter provides many examples of studies that employ a qualitative approach or that combine both quantitative and qualitative techniques in the same study.

We also explored the important sampling decisions that are central to the work of content analysts who are uniquely tasked with the responsibility of narrowing down an often enormous and unmanageable number of potential units – sometimes in the thousands – into a feasible sample that can be systematically examined. The ethical responsibilities of content analysts are also discussed, including considering privacy, representation and bias. The strengths and weaknesses of this powerful method were outlined, with particular attention to issues of access.

Ultimately, the beauty of this method is that it provides a way to critically examine the messages we are bombarded with on a daily basis, which may profoundly impact our perceptions about the world around us. In an era where fake news and misinformation are rampant, content analysis serves as a powerful tool in the examination of such messages, the critical consumption of which is perhaps more important now than ever before.

✓ Summary

- Content analysis is an unobtrusive method used to study various forms of communication.
- Ethical considerations relevant for content analysts include issues around privacy, bias and representation, particularly when the content conveys messages about marginalized groups.
- Various research questions can be examined using content analysis.
- There are many decisions that content analysts must make relating to sampling due to the sheer volume of units that can be included in the analysis.
- Data sources included in a content analysis can be primary or secondary.
- Content analysis can involve a quantitative or qualitative approach or a combination of both.
- There are many strengths and weaknesses of content analysis, many of which revolve around access.

Key Terms

content analysis: A research method used to study communications such as texts or images and examine their meaning in a particular social context.

descriptive statistics: statistics that focus on our sample data alone, such as frequency distributions, measures of central tendency and measure of dispersion for one or more variables in our study.

inferential statistics: statistics where we use our sample data to make inferences to a larger population from which our sample is drawn. This is based in probability theory.

latent content: The deeper, underlying meaning of a text or image that is not immediately apparent to those who examine it.

manifest content: The surface-level reading of a text or image or what is easily observable to those who examine it.

primary sources: Research data in the form of text or images in their original state, without having been modified, compiled, or analyzed by someone else.

qualitative content analysis: A research method that relies on identifying themes and examining the underlying meaning of those themes in textual data so they can be contextualized.

quantitative content analysis: A research method that relies on assigning numerical values to information in the texts under study so they can be analyzed using various statistical procedures.

reactivity: The effect derived from contact/communication between the researcher and research participant. Research that involves close or prolonged interaction between the researcher and participant is expected to increase reactivity, whereas research that does not involve such contact is expected to minimize reactivity.

secondary sources: Research data in the form of text or images that have already been compiled, summarized, or analyzed by someone else.

unobtrusive method: Also referred to as nonreactive method – a research approach characterized by the lack of contact between the researcher and research participant such that the researcher does not intrude into the lives of those they are studying, and the participant does not react in a particular way due to the presence or influence of the researcher.

Chapter Review

Crossword

Fill in the term in the right-hand column and it will display in the crossword puzzle. Be sure to include spaces where appropriate.

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[View this Interactive Content online](#)



Discussion Questions

1. Review a recent news article. Identify the voices who are included and the voices of those who are not included. Discuss why the particular voices may be included/excluded.
2. Write a research question that can be answered using the method of content analysis. Explain why this method is the most appropriate for answering this question and what data source(s) you would try to access.
3. Can content analysis tell us what the consumers of these messages think about them? Why or why not?
4. What is one potential benefit and one limitation of using content analysis to study legal documents, policy statements, or court transcripts related to Indigenous justice issues?
5. In what ways can a researcher ensure that content analysis of Indigenous-related materials respects the cultural context and avoids reinforcing stereotypes?

Further Reading

- [Administrative burden and the reproduction of settler colonialism: A case study of the Indian Child Welfare Act](#)
- [The racialization of Latino immigrants in new destinations: Criminality, ascription, and countermobilization](#)
- [Statutory inequality: The logics of monetary sanctions in state law](#)
- [A content analysis of persuasion techniques used on white supremacist websites](#)

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definition

A research method used to study communications such as texts or images and examine their meaning in a particular social context.

×Close definition

Also referred to as nonreactive method – a research approach characterized by the lack of contact between the researcher and research participant such that the researcher does not intrude into the lives of those they are studying, and the participant does not react in a particular way due to the presence or influence of the researcher.

×Close definition

Research data in the form of text or images in their original state, without having been modified, compiled, or analyzed by someone else.

×Close definition

Research data in the form of text or images that have already been compiled, summarized, or analyzed by someone else.

×Close definition

A research method that relies on identifying themes and examining the underlying meaning of those themes in textual data so they can be contextualized.

×Close definition

A research method that relies on assigning numerical values to information in the texts under study so they can be analyzed using various statistical procedures.

×Close definition

The surface-level reading of a text or image or what is easily observable to those who examine it.

×Close definition

The deeper, underlying meaning of a text or image that is not immediately apparent to those who examine it.

×Close definition

Statistics that focus on our sample data alone, such as frequency distributions, measures of central tendency and measures of dispersion for one or more variables in a study.

×Close definition

Statistics where we use our sample data to make inferences to a larger population from which our sample is drawn. This is based in probability theory.

×Close definition

The effect derived from contact/communication between the researcher and research participant. Research that involves close or prolonged interaction between the researcher and participant is expected to increase reactivity, whereas research that does not involve such contact is expected to minimize reactivity.

×Close definition

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11: Surveys

Learning Objectives

- Define survey research.
- Identify when to use survey research.
- Describe different types of surveys.
- Recognize the elements of effective survey questions and questionnaires.
- Explain six types of bias in survey research.
- Assess the strengths and weaknesses of survey research.
- Value data sovereignty when conducting survey research with Indigenous communities.

Surveys have become very much a part of our everyday lives, and we've probably all taken one, heard about their results in the news, or even administered one ourselves. Despite being ubiquitous, constructing a good survey takes a great deal of thoughtful planning and many rounds of revisions, especially when you want valid results that can be used to shape social policy. In this chapter, we will define survey research and discuss when to use it. Additionally, we will describe different types of surveys and outline points of consideration when designing the questions, including biases that can influence survey construction. We will also outline the strengths and weaknesses of the methodology, as well as its relationship to Indigenous methodologies.

What is Survey Research?

Survey research is a method where researchers use standardized questionnaires to systematically collect data about people and their preferences, thoughts, and behaviours. While often used interchangeably in informal speech, the word “survey” refers to the method of gathering data, while a “questionnaire” is the list of questions used to elicit information from participants (Neuman & Robson, 2017). Survey research – particularly that which is conducted in-person – shares some elements with interviews ([chapter 8](#)), but it is a distinct method with its own set of guidelines, strengths, and weaknesses. Unlike interviews, surveys are often administered impersonally; that is, typically the person collecting the data will only interact with respondents to get their consent to participate in the research or to answer clarifying questions about survey items, leaving respondents to complete the questionnaire largely on their own.

Survey research is especially useful when a researcher aims to describe or explain trends or common features of a very large group or groups. In many ways, population surveys (like censuses, health surveys, and crime statistics) are the ways that states “see” the people who constitute the national body. In fact, the word “survey” derives from earlier Latin terms that mean “to look over,” while the word “statistics” (a common feature of survey research) originally meant the study of the condition of a state (Andersen et al., 2025).

The ability to see populations in this way is itself a form of power (Foucault, 2004/2009). As Hacking (1999) explains, statistical knowledge was originally developed to satisfy the interests of certain powerful groups. **Eugenics** (the practice of improving the quality of given populations, typically racial ones) was an important part of the work of early statistical pioneers, including that of Francis Galton and Karl Pearson (Hacking, 1999). These data on racial groups were not neutral but rather reflected and supported the racial hierarchies of the societies that created them (Kukutai & Walter, 2017). These uses reflect the positivist orientation of many survey projects (see more on the features of the positivist paradigm in [chapter 2](#)). The problems arise when these methods are used to uphold the status quo by reinforcing stereotypes through pathologizing narratives and misrepresenting the lived experience of dominated populations.

Despite this injurious history, survey research and quantitative data are powerful ways of knowing the world and can be used in the service of social justice goals. That is to say, surveys can also be conducted using a critical paradigm (Perez et al., 2023). Studying populations quantitatively is not a Western invention (Andersen et al., 2025). People the world over have long used quantitative approaches to understand their environment. As surveys and statistics have the power to shape public policy, it is vital that communities have a say in how they are conducted and how the data they produce are controlled.

The power dynamics inherent in survey research need to be kept in mind when working with any population but particularly for researchers working with Indigenous peoples. Statistics derived from surveys form the primary evidence used when creating Indigenous policy in Canada, but as Andersen et al. (2025) argue, “such data have never delivered benefits to Indigenous

lives” (p. 60). Specifically, the data typically collected about Indigenous peoples represent knowledge that the state deems important, rather than reflecting the actual lives of the Indigenous peoples they purport to portray (Andersen et al., 2025). As such, survey researchers in Canada tend to focus on what Palawa scholar Maggie Walter calls the “Five Ds” (5D) of Indigenous data: “difference, disparity, disadvantage, dysfunction and deprivation” (Walter, 2016, as cited in Andersen et al., 2025, pp. 16-17). Taken together, 5D constructs an image of Indigenous lives as fundamentally deficient, reflecting mainstream prejudices about Indigenous culture as being marked by poverty, crime, and health problems, all of which are seen to emerge out of the “bad choices” Indigenous individuals make (Andersen et al., 2025).

It is therefore vitally important for criminologists and criminal justice researchers to avoid stigmatizing entire communities when presenting survey data. Instead, researchers should engage with the effects of colonization during every stage of their research, from data collection and analysis to the preservation of findings and the storage of data (Andersen et al., 2025). **Strength-based research** (i.e., research that focuses on community capacities rather than deficits) can help Indigenous communities address issues related to criminal justice in a way that does not reproduce stereotypes about community shortcomings (see [chapter 1](#)) (Andersen et al., 2025).

It is also vital that survey research, like other methods, incorporate the 5Rs (Respect, Relevance, Responsibility, Reciprocity, and Relationship) discussed in [chapter 1](#) into every stage of the project. Concerning surveys, this approach may involve determining if the community is interested in collecting data with a survey compared to other methods. Other considerations include the types of questions included, how survey data are analyzed, and how the results will be shared (see box below for an example). In some instances, it may be requested that communities not be compared or averaged, or there might be particular interest in the results of a specific question. What is most important is that, if the research is not led by an Indigenous community, careful conversation and consultation occur between the research team and the Indigenous community of interest.

Indigenous-Led Research

In a publication from the Our Health Counts (OHC) data, Muir et al. (2024) examined associations “between the rate of ever being incarcerated and family disruption, experiences of racism, and victimization for Indigenous adults in the cities of London, Thunder Bay, and Toronto, Ontario, Canada” (p. 241). This publication only cites a small subsection of the overall OHC project, which is an Indigenous-led multi-phase database project focused on documenting and improving urban Indigenous health and wellbeing in six Ontario regions (Ottawa, Hamilton, Toronto, London, Kenora, and Thunder Bay).

Every stage of this project involved participation and collaboration from Indigenous community partners and leadership. This included the study design (how the entire study would be conducted), data collection (how participants are recruited and what tools are used to capture data), data analysis (how surveys are analyzed), and data interpretation (what insights and conclusions are drawn from the data). In accordance with the project’s data governance protocol and agreements, each community partner retained full ownership and control of data collected as part of the project. Also, each of the communities requested that their data be analyzed alone and not compared or summarized together. This is different from other studies based in a different intellectual tradition where the research institution (e.g., university) and researcher often retain ownership and control of all data and analysis.

The primary data collection tool for this study was a health survey developed through community-based partnerships in each of the three sites in Ontario (London, Thunder Bay, and Toronto). The project employed a respondent-driven sampling method, which invites initial respondents to recommend a limited number of additional participants to complete the survey instrument. Respondents were provided with monetary compensation for completing the survey and an additional amount for recruiting others who completed the survey (Rotondi et al., 2017). The surveys were unique to each community and took approximately 90 minutes to complete.

To measure justice system involvement in two communities (London, Toronto), the survey asked “‘Have you ever done time in jail?’ (‘yes’ or ‘no’); and ‘If yes, was this for a federal or provincial offense/crime?’” (p. 242). In Thunder Bay, they asked if the respondent had ever been incarcerated for 96 hours or more. Other survey questions asked about family disruption, experiences of racism, and victimization.

The study found (1) that Indigenous peoples in all three cities had disproportionately high rates of ever being incarcerated (43.0% in London, 54.0% in Toronto, 72.0% in Thunder Bay); (2) child protection involvement and experiencing racism were associated with an increase in previous incarceration; and (3) in Toronto and London, experiencing victimization was linked to a higher likelihood of incarceration. Overall, Muir and colleagues (2024) point to systemic inequities that continue to have a significant impact on ever being incarcerated among Indigenous peoples in these regions. They called for reforms in funding, programming, public health interventions, practices, and policy that are grounded in a deep understanding of the ongoing impacts of colonialism

Types of Surveys

Surveys come in many forms. Different types of surveys arise from differences in time (when or with what frequency a survey is administered) and administration (how a survey is delivered to respondents). This section examines what types of surveys exist when it comes to both time and administration.

Time

As you recall, the time element in research design was discussed in [chapter 6b](#), where we introduced you to the idea that researchers can collect data at one point in time (cross-sectional) or at multiple points of time (longitudinal). One method of collecting data in these two ways is through survey research.

Cross-sectional surveys are administered at a single point in time, offering researchers a snapshot of respondents' lives, opinions, and behaviours when the survey was administered. One issue with cross-sectional surveys is that the events, opinions, behaviours, and other phenomena that such surveys are designed to assess don't generally remain static. Thus, generalizing from a cross-sectional survey can be tricky as things change. For example, the Canadian Social Survey (CSS) is a rapid survey conducted by Statistics Canada every three months, each time on a different topic. In fall 2022, the CSS asked about trust in Canadian institutions, including the police and court system. It found that 62% of Canadians had confidence in the police, though less than half (42%) had faith in the justice system and courts (Statistics Canada, 2023). Trust in police and courts is likely to change depending on high-profile events, such as the Movement for Black Lives, so this survey represents a snapshot of how Canadians feel at one moment in time.

Longitudinal surveys try to overcome this problematic aspect of cross-sectional surveys. Longitudinal surveys are administered at multiple points in time. There are three types of longitudinal surveys: trend, panel, and cohort. Researchers conducting **trend surveys** explore how surveyed phenomena change over time in large, general groups. Though surveys are collected multiple times, those who are surveyed can be different at each data collection point. An example of a trend survey is the General Social Survey: Canadians' Safety (formerly the GSS on Victimization), which is conducted every five years with the aim of capturing information on Canadians' experiences of victimization. The last cycle for the survey began 2019 and ended in March 2020, just as the COVID-19 pandemic was beginning to upend life for people in Canada (Cotter, 2021). One can imagine that the data may well have been different if the survey had been conducted during the lockdown.

Another type of longitudinal survey is called a **panel survey**. Unlike in a trend survey, in a panel survey the same people participate in the survey each time it is administered. For this reason, panel studies can be difficult and costly. Imagine trying to administer a survey to the same 100 people every year for, say, five years in a row. Keeping track of where people live, when they move, and when they die requires resources that researchers often don't have. Statistics Canada attempted such a survey with the National Longitudinal Survey of Children and Youth (NLSCY), which began in 1994 with the aim of studying the development and well-being of a group of Canadians from birth to early adulthood. Of interest to criminologists, the NLSCY data demonstrate a correlation between punitive parenting and aggressive behaviour in children (Thompson, 2004). Had the survey continued, it would have been interesting to see whether this aggression would continue into early adulthood, but like so many panel surveys it ended early due to funding problems in 2009.

The third type of longitudinal survey offers a middle ground between trend and panel surveys. In a **cohort survey**, a researcher identifies a specific rather than general category of people of interest and then regularly surveys people who fall into that category. For example, researchers may identify people of specific generations or graduating classes, people who began work in a given industry at the same time, or perhaps people who have some specific life experience in common. Similar to a trend survey, the same people don't necessarily participate from year to year, but all participants must meet the categorical criteria for inclusion in the study.

All three types of longitudinal surveys share the strength of allowing a researcher to make observations over time. If the behaviour or other phenomenon of interest changes over time across data collection points, either because of some world event or because people age, the researcher will be able to capture those changes in their study.

In sum, when or with what frequency a survey is administered will determine whether a survey is cross-sectional or longitudinal. Longitudinal surveys may be preferable in terms of their ability to track changes over time, but the time and cost required to administer a longitudinal survey can be prohibitive.

Administration

Surveys vary not just in terms of *when* they are administered but also in terms of *how* they are administered. Researchers commonly use **self-administered questionnaires** to gather survey data. In a self-administered questionnaire, respondents receive a written set of questions to which they respond on their own and typically without assistance. As such, these types of questionnaires usually include items that are easy to read and respond to and which are completed by those who are able to answer the questionnaire without significant support from others. Self-administered questionnaires can be delivered in hard copy (i.e., paper and pencil) format or online. We'll consider both modes of delivery here.

Hard copy self-administered questionnaires may be delivered to participants in person or via regular, paper-based mail. Researchers may ask people to fill them out right away or return them to the researchers at a later date via mail or by having the researcher return to retrieve the completed survey.

Distributing surveys door-to-door can be extremely time-consuming, so many researchers decide to send their surveys through the mail. Often, survey researchers who deliver their surveys via mail provide some advance notice to respondents about the survey to get people thinking about and preparing to complete it, such as a letter sent out a week or two prior to sending the survey in the mail. They may also follow up with their sample a few weeks after their survey has been sent out. This reminder can be done not only to prompt those who have not yet completed the survey to please do so, but also to thank those who have already returned the survey. This sort of follow-up can greatly increase response rates (Creswell & Creswell, 2022).

Online surveying has become increasingly common because of the ease of use, cost-effectiveness, and speed of data collection. It's much simpler to create a survey online, send out the link to potential respondents, and then wait for the responses to roll in. With online surveys, researchers may employ some of the same strategies as mail surveys to increase response rates, including sending advance notice by email and following up with reminders to complete the survey. To deliver a survey online, a researcher may subscribe to a service that offers online survey construction and administration. Popular tools that are often supported by university and colleges include [REDCap Surveys](#), [Qualtrics](#), and lastly [SurveyMonkey](#), which you have likely seen before and is shown in Figure 11.1.^[1]

Screenshot showing SurveyMonkey interface

Figure 11.1 SurveyMonkey example

An example of an online survey that is relevant to criminology is the 2023 Canadian Survey of Cyber Security and Cybercrime. Examining responses from Canadian businesses, the purpose of the survey is to examine how these businesses have been affected by cybercrime. Administered electronically, survey items inquire about steps taken by businesses to engage in cyber security, how cybercrime has affected businesses, and the costs associated with proactive and reactive responses to cybercrime. You can learn more about this questionnaire by going to this website: [Surveys and statistical programs – Canadian Survey of Cyber Security and Cybercrime](#).

When conducting an online survey, it is generally best to minimize the number of questions presented on the screen simultaneously to reduce survey fatigue and confusion. You can also include a progress bar at the top or bottom of the screen so that participants know how close they are to finishing. A progress bar also encourages participants to keep going as it makes a bit of a game out of keeping the bar moving towards completion.

Online surveys also allow for some innovative approaches that are simply not possible with paper-based surveys. For example, researchers can include video or sound clips into the survey itself. It is also much easier to construct adaptive questions that personalize a survey based on the answers provided. In a paper-based survey, you might include a **contingency question** that asks the respondent to “skip to question X if you answer no,” which can be a bit awkward for participants and should be minimized to reduce confusion when completing the questionnaire. This issue tends not to occur during online surveys, as the questionnaire can simply adapt and advance to the next relevant survey item without the respondent even knowing there was another pathway they could follow (Palys & Atchison, 2014).

There are pros and cons to each of the delivery options we've discussed. For example, while online surveys may be faster and cheaper than mailed surveys, a researcher cannot be certain that every person in their sample will have the necessary computer hardware, software, and Internet access to complete an online survey. On the other hand, mailed surveys may be more likely to reach the entire sample, but they are also more likely to be thrown away, lost, or not returned. The choice of delivery mechanism depends on factors such as the researcher's resources, respondents' resources, and the time available to distribute surveys and wait for responses.

Table 11.1 Survey Types: Strengths and Limitations

Survey Type	Description	Strengths	Limitations
Cross-Sectional Survey	Administered at a single point in time to capture a snapshot of opinions, behaviours, or experiences.	Quick and cost-effective; good for assessing a point-in-time snapshot.	Limited ability to track change; may be outdated quickly.
Trend Survey (Longitudinal)	Administered to different people at multiple time points to identify trends in a general population.	Tracks broad trends in the population over time.	Does not track the same individuals; cannot show individual-level change.
Panel Survey (Longitudinal)	Administered to the same group of individuals at multiple time points to observe change over time.	Allows for individual-level analysis of changes over time.	Costly and complex to maintain contact with participants over time.
Cohort Survey (Longitudinal)	Administered to people who share a defining characteristic (e.g., birth year) over time.	Tracks category-specific changes over time. Can help reduce panel attrition issues.	Must consistently recruit new participants who fit the category.
Mail Survey (Self-Administered)	Delivered in hard copy via mail or in person; completed and returned physically.	Accessible without internet; the tangible format may feel more formal or legitimate.	Can be lost, discarded, or ignored; slower to administer and analyze.

Survey Construction

Now that we have outlined some types of surveys we can employ in our research, let us now turn our attention to the actual construction of the survey questions. In this section, we will discuss what needs to be considered when making decisions about the content of survey questions, the wording and sequencing of questions as well as survey response formats.

Question Content

Question content refers to the topics of the questions you want to ask in a survey. In other words, the researcher must identify what exactly they want to know. As silly as this sounds, it can be easy to forget to include important questions in a survey because it requires considerable skill to translate abstract ideas into concrete and complete measurements.

Let's say you want to understand how people make the transition out of prison. Perhaps you wish to identify which people were comparatively more or less successful in this transition and which factors contributed to success or the lack thereof. To understand these factors, you'll need to include questions in your survey about all the possible factors that might contribute to successful transitions into the community. Consulting the literature on the topic will help as will brainstorming on your own and talking with others about what they think may be important in the transition out of prison. Time or space limitations won't allow you to include every single item you've come up with, so you'll also need to think about ranking your questions so that you can be sure to include those that seem most important.

Although including questions on all important topics makes sense, researchers also don't want to include every possible question they can think of because this places an unnecessary burden on the survey respondents. Survey researchers have asked respondents to give their time and attention to the survey and to take care in responding to the questions, so asking them to complete an extremely long questionnaire just because the questions sound interesting to the researcher can be disrespectful to the respondents and increase the likelihood that they will not finish the entire set of questions.

Question-Wording

Question-wording refers to decisions that survey researchers must make about how to phrase each question. Responses obtained in survey research are very sensitive to the types of questions asked, and poorly framed or ambiguous questions may result in meaningless responses with very little value. For these reasons, survey researchers often use some common rules to evaluate their questions.

Rule 1. Is the Question Clear and Understandable?

Survey questions should be as clear and to the point as possible. This is not the time to show off your creative writing skills; a survey is a technical instrument and should be written in a way that is as direct and succinct as possible. Questions should be stated in simple language, preferably in the active voice, and without complicated words or jargon that the typical respondent may not understand. Write out all abbreviations, as what may be obvious to you may be confusing to the respondent (Neuman & Robson, 2017). While criminal justice researchers may immediately think of Correctional Services Canada when they see the acronym CSC, for example, a movie lover might see Canadian Society of Cinematographers and become quite confused by the question.

Rule 2. Is the Question Worded Negatively?

Negatively worded questions – those containing words such as “no,” “not,” or “never” – tend to confuse respondents and can lead to inaccurate responses. For example, a question such as “Should police officers *not* wear body cameras?” can be confusing and may frustrate respondents as they must do the mental gymnastics required to accurately answer the question. Respondents are also more likely to agree with negatively phrased questions than questions with neutral or even positive phrasing. Survey researchers must avoid these types of questions as well as questions that include double negatives. What if a question asked, “Did you not drink during high school?” A response of “no” would mean that the respondent did drink because they did not not drink. Imagine if you had to answer these kinds of questions on a survey; your brain would quickly tire, and you would likely end up responding in a way that you did not intend to, thus calling into question the validity of your responses. Or, you may simply not finish the survey. Avoiding negative terms in the question wording helps increase respondents’ understanding.

Rule 3. Is the Question Ambiguous?

Survey questions should not include words or expressions that may be interpreted differently by different respondents. For instance, asking someone “Do you go downtown often?” can be interpreted in a wide variety of ways, with respondents thinking that “often” may refer to daily, weekly, or monthly (Neuman & Robson, 2017). Different interpretations like this will lead to incomparable responses that cannot be accurately analyzed.

Sometimes, regionally or culturally specific phrases can also be ambiguous, especially to respondents outside of the region or culture that uses the phrase. For example, a summer retreat home in Eastern Canada is typically referred to as a “cottage,” while in Western Canada the term “cabin” or “camp” is more common. While you might think these terms are similar and that people could understand the intended meaning, it is likely to cause confusion because people typically think the terms used in their region are the natural, normal terms for whatever it is they are talking about.

Rule 4. Is the Question Double-Barreled?

Double-barreled questions are those that ask multiple questions as though they are a single question. This can be confusing and frustrating for survey respondents. Consider how a respondent might answer the following question: “How well do you think the police are doing at protecting and serving the people in your neighbourhood?” What if they thought the police were doing a good job protecting people in the neighbourhood but not serving them? Or what if they thought the police were doing a good job serving people in the neighbourhood but not protecting them? This is a double-barreled question because it’s really asking two separate questions:

Question 1. How well do you think the police are doing at protecting your neighbourhood?

Question 2. How well do you think the police are doing at serving your neighbourhood?

Because the original question combines protecting and serving, it’s a double-barreled question; therefore, it is recommended that this one question be divided into two separate questions.

Rule 5. Is the Question too General or too Specific?

There is a fine line between being too general and too specific in question wording. Questions that are too general may not accurately convey respondents' perceptions. If a researcher asked someone how they liked a particular program and provided a set of responses ranging from "not at all" to "extremely well," it would be unclear what the responses mean. Instead, more specific behavioural questions, such as "Would you recommend this program to others," or "Do you plan to enroll in other programs offered by the same group" can better assess people's perceptions of the program. Likewise, instead of asking how big a respondent's neighbourhood is, a researcher could ask how many people live on the respondent's block or street.

Questions that are too specific may be unnecessarily detailed and serve no specific research purpose. For example, if a researcher is interested in annual household income, asking a respondent to report the adjusted gross income on their last tax return may be too specific unless it serves a particular purpose for the research goals. Generally, asking respondents to estimate their annual household income or choose from a range of possible income options would be sufficient for the purposes of gathering basic demographic information. At the same time, if a researcher thinks the detailed data might be important for the study, then they should err on the side of requesting too much detail rather than not enough.

Response Formats

Response options are the answers you provide to the people taking your survey. Providing respondents with unambiguous response options is an important part of designing effective survey questions. Generally, survey questions ask respondents to choose a single (or best) response to each question, though in some cases, respondents are asked to choose multiple response options.

When writing an effective **closed-ended question**, researchers must follow a few guidelines, some of which we have introduced to you more generally in [chapter 6a](#) when reviewing the levels of measurement. First, the response options must be **mutually exclusive**, meaning they must not overlap. For example, if a question asks a respondent to report how many times they've interacted with the police in the past year and provides the options of 1–3 times, 3–5 times, and 5–7 times, what category would a person choose if they'd interacted with the police 3 or 5 times? To ensure that the options are mutually exclusive, the researcher could rewrite the response options to be 1–3 times, 4–6 times, and 7–9 times. To be sure that respondents can answer accurately, the categories provided must not overlap.

You might have noticed another problem with the response options presented above. What if a person had interacted with the police 0 times or 10 times? These options aren't provided, so what option would they choose? This points to another guideline you have been introduced to as well: response options must be **exhaustive**. In other words, the set of responses provided must cover every possible response. In the example above, the researcher could add categories for 0 times and more than 9 times to make the list exhaustive.

Another consideration for response options involves the number and type of options, also called levels of measurement. Researchers can choose between four levels of measurement: nominal, ordinal, interval or ratio. In the context of survey research, **nominal response options** signify that the survey question presents two or more options that have no inherent order. **Dichotomous response options** (a type of nominal level of measurement) are those in which a respondent must choose one of two possible choices such as yes/no or agree/disagree. For example, the question, "Do you think the death penalty is justified under some circumstances: yes / no" is dichotomous because there are only two answer choices given. Nominal-level response options can also involve more than two answer choices. For example, the question, "What is your industry of employment: manufacturing / consumer services / retail / education / healthcare / tourism & hospitality / other" presents nominal response options because there are more than two categories, and they have no inherent order. The categories are simply names or labels, and no one category is inherently more or less than the other.

By contrast, **ordinal response options** present more than two options that *can* be ordered. For example, the question "What is your highest level of education (choose one): some high school / high school diploma / some college, no degree / associate's degree / bachelor's degree / some graduate school / graduate degree" has more than two options, and those options can be ordered (from least to most education).

One common type of survey question with ordinal response options is the **Likert scale**, which is shown in Figure 11.2. Likert scales measure people's attitudes, behaviours, or perceptions on a scale. For example, they may ask do you "strongly agree," "somewhat agree," "neutral," "somewhat disagree," or "strongly disagree" with the following statement: "The police in my neighbourhood treat all people fairly." Note that it is important to include a neutral option as some people may have no opinion on the statement at all.

Interval or ratio response options involve options for which respondents enter a number as their answer. For example, asking for a respondent's age and providing a blank space for them to write in their answer would be an interval/ratio response option. Ratio response options include the possible response of zero, making it possible to conduct certain statistical analyses. Age would be a ratio response as it is impossible to be less than 0 years old. Interval responses, on the other hand, can be less than 0, such as the way we measure temperature in Celsius.

Thus far, we've discussed response formats for closed-ended questions, which are more typical in quantitative survey research. Though surveys are predominantly quantitative, researchers sometimes also include **open-ended questions** in their questionnaires to gather additional information from respondents. An open-ended question does not include response options; instead, respondents are asked to reply to the question in their own way, using their own words. Survey researchers use these questions to find out more about a survey participant's experiences or feelings about whatever they are being asked to report in the survey. Allowing participants to share some of their responses in their own words can add substantive depth and detail to their responses and may reveal new motivations or explanations that had not occurred to the researcher. However, the inclusion of these types of questions poses a considerable data analysis and generalizability barrier. Like interview transcripts, these types of responses often take a lot of time to analyze.

Question Sequencing

In addition to constructing quality questions and posing clear response options, researchers must also think about how to present their written questions and response options to respondents. One of the first steps after writing survey questions is to group the questions thematically. In the example of the transition from prison, perhaps we'd have a few questions asking about daily routines, others focused on support systems, and still others on exercise and eating habits. There's no one way to organize the questions, but researchers must deliberately choose an order that makes sense given the goals of the research.

Once a researcher has grouped similar questions together, the next consideration is the order in which to present the question groups. Questions should flow logically from one to the next, with the least sensitive questions leading into the most sensitive, the factual and behavioural leading into the attitudinal, and from the more general to the more specific. Some researchers disagree on where to put demographic questions such as those about a person's age, gender, and race. Placing them at the beginning of the questionnaire may lead respondents to think the survey is boring, unimportant, and not something they want to bother completing. However, if the survey deals with some very sensitive or difficult topic, such as child sexual abuse or other criminal activity, you don't want to scare away respondents or shock them by beginning with the most intrusive questions. Some other general rules for question sequencing include starting with a closed-ended question, asking questions in chronological order if they relate to a sequence of events, and asking about one topic at a time rather than switching between topics with every question.

In the end, the order in which a researcher presents survey questions depends on the unique characteristics of the research. Only the researcher, preferably in consultation with people willing to provide feedback, can determine how best to order the questions. To do so, the researcher might consider the unique characteristics of the topic, the questions and, most importantly, the sample. Keeping in mind the characteristics and needs of the people being asked to complete the survey can help guide decisions about the most appropriate order in which to present the survey questions.

When researchers think they have a good questionnaire ready for respondents, they pretest the survey before sending it out. **Pre-testing** refers to the process of having a few people take the survey as if they were real respondents to identify any issues with the question content, wording, response options, or sequencing. By pretesting a questionnaire, researchers can find out how understandable the questions are, get feedback on the question wording and order, and learn whether any of the questions are unintentionally boring or offensive. The researcher can also ask pre-testers to keep track of how long it takes them to complete the survey, which provides valuable information on whether the researcher needs to cut some questions and what they should tell respondents about how long they should expect to spend completing the survey. In general, surveys should take no longer than 10–15 minutes to complete. Any longer and respondents may be more likely to refuse to participate, or they may not complete the entire questionnaire.

In sum, designing effective questions and questionnaires requires thoughtful planning that accounts for the goals of the research and respects respondents' time, attention, trust, and confidentiality. Keeping the survey as short as possible, limiting the questions to only those necessary for the research project, and providing information about the confidentiality of responses, how data will be used (e.g., for academic research), and how the results will be reported (usually, in the aggregate) will all increase the

chances that the researcher will gather quality data while respecting their respondents.

Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

This interactive element is not available in this format. Visit the link or scan the QR code to access it online.

[View this Interactive Content online](#)



Bias in Survey Research

Survey research also has some unique considerations related to the goals of generalizing findings from the sample to the broader population. These potential biases include non-response bias, volunteer bias, sampling bias, social desirability bias, recall bias, and identity bias. While some of these biases apply to multiple research methods, they may be particularly relevant in survey research that aims for generalizability from a sample to a population, which is why we'll discuss them in this chapter.

Non-Response and Volunteer Bias

Survey research can yield notoriously low **response rates**. For example, a response rate of 10–20% is typical in a mail survey, even after sending two or three reminders to potential respondents (Palys & Atchison, 2014). While there is no universal “good” rate and context matters a great deal, 50% or more would generally be considered good for any survey.

Low response rates can introduce bias into your survey, as there may be something different between those who answer and those who do not, a problem known as volunteer bias. **Volunteer bias** occurs because the type of people who volunteer to fill out surveys may be different from the general population. They tend to be more highly educated, female, nonconforming and more seeking of arousal and approval than the general population (Rosenthal & Rosnow, 1975).

Some strategies that help to improve response rates include making the survey as short as possible with clear questions that are easy to respond to, sending multiple follow-up requests for participation in the survey, providing incentives (e.g., cash or gift cards, giveaways, entry into a draw) to compensate people for the time and inconvenience of participating, and assuring potential respondents of the confidentiality and privacy of their data. Indicating that the survey is affiliated with a public institution (like a college or university) can also help ensure the survey is legitimate (Dantzker et al., 2018). Finally, volunteer bias can be improved by ensuring the topic is of interest to subjects and that they see the value of the research, which can be done by involving members of the researched community in all stages of the research process.

Sampling Bias

As discussed in [chapter 7b](#), **sampling bias** occurs when the people selected for inclusion in a study don't represent the larger population that the researcher is interested in studying. A particular concern in survey research relates to how the researcher administers the survey. For example, online surveys tend to include a disproportionate number of students and younger people and systematically exclude people with limited or no access to computers or the Internet. Further, any surveys that respondents must read and answer on their own will exclude people who are unable to read or do not understand the language used in the survey.

Social Desirability Bias

Many people try to avoid expressing negative opinions or making embarrassing comments about themselves, their employers, or their family or friends. On a survey, researchers may not get truthful responses to questions that require expressing these kinds of negative views. Instead, respondents might spin the truth to portray themselves or people they know in a positive, or socially desirable, light. This is what we refer to as **social desirability bias**. For example, respondents might try to protect their family, friends, and neighbours by saying that they disagree with statements such as, “My family tends to get on my nerves,” “There are

a lot of political conflicts in my neighbourhood,” or “My friends often engage in activities that are against the law,” even though they may agree to some degree with the statements. While researchers can never know for sure how social desirability bias might impact responses to survey questions, they can try to lessen it by assuring confidentiality (and anonymity, if possible), allowing respondents to complete their surveys in private and return them in sealed envelopes, and telling respondents that they can skip any question they do not want to answer.

Recall Bias

In this type of bias, respondents may not fully or accurately remember past events or their own motivations or behaviours in relation to those events. You might experience **recall bias** when someone asks about your weekend. Even if it's Monday, when someone says, “What did you do this weekend?” you might not be able to answer the question. After some thought, you can probably bring back the memory, but you might not remember every detail, emotion, or motivation behind your actions over the weekend. What if someone asks you about some event last month, last year, or even years ago? How likely is it that you'd remember the event in detail?

The same issue with remembering events happens in survey research. If a survey asks respondents to note how often they used alcohol and drugs during high school or even just a few weeks ago, they might not remember exactly how often they engaged in those behaviours in the past. Researchers can somewhat mitigate recall bias by anchoring respondents' memories in specific events as they happened. For example, a survey might ask respondents to think about an occasion when they drank alcohol while in high school and report on specific aspects of that event. Then, the survey could ask respondents to estimate how often those kinds of specifics occurred throughout their high school years. While not a perfect solution, this kind of anchoring can help mitigate some of the concerns associated with recall bias.

Identity Bias

Lastly, because surveys rely on respondents' self-identification, it can be difficult to know what criteria a person is using when responding to identity-based questions. This bias, called **identity bias**, can be particularly problematic when conducting research on Indigenous issues, as there is a growing recognition that many people claim Indigenous identity without being recognized as such by any Indigenous nation. For Métis, there are two competing definitions; it is often difficult to know whether a person is indicating a connection to the Métis nation or whether they are indicating that they have both an Indigenous and a non-Indigenous background (Andersen et al., 2025). This not-knowing can make policy construction difficult and highlights the need to have Indigenous communities involved in the survey construction to ensure questions about identity are properly framed.

Table 11.2 Types of Bias

Type of Bias	Definition	Cause	Mitigation Strategies
Non-response Bias	Bias that occurs when selected individuals do not respond to the survey.	Respondents differ in important ways from non-respondents.	Increase follow-ups, offer incentives, ensure confidentiality, shorten the survey.
Volunteer Bias	Bias that arises when the people who choose to participate differ systematically from those who do not.	Volunteers are more likely to be educated, female, approval-seeking, and interested in the topic.	Ensure the broad appeal of the topic, involve community members in the research design.
Sampling Bias	Bias that occurs when the sample does not accurately represent the population of interest.	Survey administration excludes certain groups (e.g., those without internet, literacy barriers).	Use multiple survey modes; ensure accessibility in language, format, and delivery.
Social Desirability Bias	Respondents give answers they believe are socially acceptable rather than truthful.	Fear of judgment, desire to present oneself positively.	Ensure anonymity/confidentiality, allow private completion, avoid leading questions.
Recall Bias	Inaccurate or incomplete memory of past events or behaviours.	Respondents forget details or misremember timing and frequency.	Use memory anchors, ask about specific events, shorten recall period.

Type of Bias	Definition	Cause	Mitigation Strategies
Identity Bias	Uncertainty or inconsistency in how individuals interpret and report identity-based questions.	Self-identification may not align with community or legal definitions (e.g., Métis identity).	Involve communities in question design, clarify definitions, and consider community recognition criteria.

Strengths and Limitations of Survey Research

Survey research has several benefits compared to other research methods. First, surveys are an effective way to measure a wide variety of unobservable data such as people's preferences (e.g., political ideologies), traits (e.g., self-esteem), attitudes (e.g., toward people with criminal records), beliefs (e.g., about a new law), behaviours (e.g., smoking or drinking behaviour), or demographic information (e.g., income).

Second, survey research allows for the remote collection of data from many people relatively quickly and with minimal expense (Palys & Atchison, 2014). With surveys, an entire province can be covered using representative sampling techniques. Mailing a written questionnaire to 500 people entails significantly fewer costs and less time than visiting and interviewing each person individually. Plus, some respondents may prefer the convenient, unobtrusive nature of surveys to more time-intensive data collection methods such as interviews.

Related to the benefit of cost-effectiveness is a survey's potential for generalizability. Because surveys allow researchers to collect data from very large samples for a relatively low cost, survey methods lend themselves to probability sampling techniques, which we discussed in [chapter 7b](#). Of all the data collection methods described in this text, survey research may be the best method to use when one hopes to gain a representative picture of the attitudes and characteristics of a large group.

As with all methods of data collection, survey research also comes with some drawbacks. First, surveys may be flexible in the sense that researchers can ask many questions on many topics, but once the researcher has written and distributed the questionnaire, they are usually stuck with a single instrument for collecting data (the questionnaire) regardless of any issues that may arise later. For example, imagine you mail out a survey to 1,000 people and then, as responses start coming in, you discover that respondents find the phrasing of a particular question confusing. At this stage, it would be too late to start over or to change the question for the respondents who haven't yet returned their surveys.

Validity can also be a problem with surveys. Because survey questions are standardized, it can be difficult to ask anything other than very general questions that a broad range of people will understand. As a result, survey findings may not be as valid as results obtained using methods of data collection that allow a researcher to comprehensively examine the topic being studied. Let's say, for example, that you want to learn something about voters' willingness to elect a politician who supports drug decriminalization. On a questionnaire, you might ask, "If your political representative supported decriminalizing drugs, would you vote for them if they were qualified for the job?" and provide the options of answering either "yes" or "no." What if someone's answer was more complex than could be answered with a simple yes or no? In an interview, the respondent and interviewer could have a conversation about the intricacies of a respondent's answer to this type of question; however, standardized questionnaires often cannot allow for the same range and depth of responses as might be found in other research methodologies.

Another consideration is that surveys can be designed to allow the participant to respond without supervision. Although the remoteness of mail and digital surveys is a strength, it also means that the researcher will lose the ability to validate who *actually* took the survey (Palys & Atchison, 2014). For example, consider if we were working with an Indigenous Nation in Canada. Their leaders and Elders circle have asked to learn more about a new community safety patrol program they started last year. Eventually, we decide to conduct a survey with a small prize that will be distributed via a community email newsletter and through social media. The survey is sent out as expected, and we receive many responses almost instantly. However, we notice that when asked to describe their experiences, half of the responses are the same. After some investigation, we suspect a software program was deployed to repeatedly fill out the survey to win the prize. In this imaginary study, although we had hundreds of completed surveys, we could not validate which responses were human or computer-generated.

Table 11.3 Strengths and Limitations of Survey Research

Strengths	Limitations
Can measure a wide variety of unobservable data.	Cannot change questions after the questionnaire has been distributed.

Strengths	Limitations
Allows data to be collected from many people quickly and with minimal expense.	May be less valid due to a lack of variation, depth in responses, and (potentially) people other than those intended might fill it in, even a computer program.
Strong potential for generalizing to larger populations.	
Use of standardized questionnaires allows for consistency	



Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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Survey Data and Indigenous Peoples

Given the power surveys have to shape policy, Indigenous organizations have been formed to ensure that survey data are properly governed by Indigenous Nations, communities, and other stakeholders. Data sovereignty means “managing information in a way that is consistent with the laws, practices and customs of the nation-state in which it is located” (Kukutai & Taylor, 2016, as cited in First Nations Information Governance Centre [FNIGC], 2019, p. 60). [Chapter 1](#) discussed the creation of OCAP®, which stands for ownership, control, access, and possession. Ownership refers to the fact that a community owns their information collectively; control ensures that communities and their representatives have the right to seek control over the way research is conducted at all stages of a project; access refers to the principle that Indigenous communities make decisions around who has access to the data; and possession refers to the concrete reality of having physical control over the data (FNIGC, 2019).

OCAP® grew out of the First Nations Regional Longitudinal Health Survey and has become the de facto standard for conducting research in First Nations communities (FNIGC, 2019). Although it originated in the context of First Nations research, the principles are also relevant to Inuit, Métis and other Indigenous Peoples (Schnarch, 2004). Métis researchers have also been developing their own principles regarding data sovereignty. For example, the Saskatchewan Métis Health Research and Data Governance Principles© were created in 2023 by Drs. Caroline Tait and Robert Henry in partnership with the Métis Nation Saskatchewan to govern health-related research (Anderson et al., 2025). The principles can also be applied to other areas for research, including education, housing, and justice-related topics.

Conclusion

Survey research is a common quantitative method that allows researchers to sample a large number of people and to learn about their attitudes, beliefs and opinions on a wide range of topics. This chapter outlines the key features of survey design, including the way in which the element of time applies to survey research design, the ways surveys can be administered as well as the various ways questions and questionnaires can be constructed to increase validity and response rates. Biases to consider as well as the various strengths and limitations of this method are also reviewed.

Throughout the chapter, special attention is paid to the importance of considering the power dynamics involved when employing this method with Indigenous participants and in Indigenous communities. The ways in which we can ensure those we are researching are respected and consulted at each stage of the survey research process are also highlighted. After all, like other quantitative methods, the potential to misuse or misinterpret survey results is ever present, and the onus remains on us as researchers to protect our participants from such harms.



Summary

- Survey research is a data collection method in which researchers use standardized questionnaires to systematically collect data about people in their sample.

- Two types of surveys are cross-sectional surveys, which are administered at one point in time, and longitudinal surveys, which are administered multiple times. There are three types of longitudinal surveys: trend, panel and cohort.
- Surveys can be self-administered in hard copy format or online, each of which has advantages and disadvantages.
- Designing effective questions and questionnaires requires that careful thought be given to the question content, wording, response options, and sequencing.
- Researchers must try to reduce the chances of various types of biases occurring in survey research. These include non-response, volunteer, sampling, social desirability, recall, and identity bias.
- Some of the benefits of survey research include the ability to measure a wide variety of information, collect data from many people quickly with relatively minimal expense, generalize to larger populations, and ensure consistency across questions and answers.
- Some of the drawbacks of survey research include not being able to change questions once surveys have been sent out and the potentially lower validity of answers compared to more in-depth and personal research methods.
- Indigenous organizations have established frameworks such as OCAP® (Ownership, Control, Access, Possession) to ensure data sovereignty, meaning data are governed in accordance with Indigenous laws, customs, and community decision-making.

Key Terms

closed-ended questions: quantitative interview questions that include a list of pre-determined response options from which the respondent must choose.

cohort survey: a longitudinal survey administered at more than one point in time to the same sub-category of people within the general population with the goal of examining overall changes over time within that same sub-category. An example of a cohort is people who are all born in the same decade.

contingency question: a question that is only asked to certain respondents based on their answers to a previous question.

cross-sectional survey: a survey that is administered once, with no follow-up, providing a snapshot of respondents' opinions, beliefs, or preferences at that one point in time.

data sovereignty: managing information in a way that is consistent with the laws, practices and customs of a particular nation.

dichotomous response options: when a closed-ended survey question has only two response options, which are often exact opposites. For example, yes and no are dichotomous response options.

double-barreled question: a survey question that includes two distinct issues in the same question. This type of wording should be avoided in survey construction.

eugenics: the attempt to improve human populations through selective breeding and sterilization.

exhaustive: closed-ended question response options are deemed exhaustive when all possible responses are captured in the response options included in the survey question. Often, the response option "other" is included to ensure the options are indeed exhaustive.

identity bias: uncertainty or inconsistency in how individuals interpret and report identity-based questions.

interval/ratio response options: when a closed-ended survey question has response options that are numeric and can be rank ordered. Ratio response options include the possible response of zero, making it possible to conduct certain statistical analyses. For example, it is possible that someone has committed zero crimes.

level of measurement: this refers to the type and nature of response options in a survey. For example, a response option may be a word or a numerical value, and this will determine the type of analysis that can be conducted. In the social sciences, there are four levels of measurement: nominal, ordinal, interval and ratio.

Likert scale: a rating scale used in survey research that measures attitudes, opinions, or perceptions where respondents are asked to indicate their level of agreement or disagreement with a given statement.

longitudinal survey: a survey that is administered at more than one point in time, allowing changes in responses to be recorded. There are three types of longitudinal surveys: trend, panel, and cohort.

mutually exclusive: closed-ended question response options are deemed mutually exclusive when they do not overlap and respondents' answers can be categorized into only one response option.

negatively worded question: a survey question that includes the words "no", "not", or "never". This question wording should be avoided in survey construction.

nominal response options: when a closed-ended survey question has two or more response options that are words that cannot be rank ordered. Gender is an example of a nominal variable, with the nominal response options of male, female, transgender, etc.

open-ended question: qualitative interview questions that do not include possible response options but rather require the interviewee to provide responses in their own words.

ordinal response options: when a closed-ended survey question has two or more response options that can be rank ordered. For example, socioeconomic status can be ranked as low, middle and high. Note that no specific numeric value is assigned to each of the ranks at the ordinal level of measurement.

panel survey: a longitudinal survey administered at more than one point in time to the exact same people, thus allowing individual changes to be recorded.

pretesting: this involves having a small number of people complete the research instrument in question (e.g., the survey) before it is distributed to the study sample in order to address any issues and rectify any ambiguities at this preliminary stage.

recall bias: inaccurate or incomplete memory of past events or behaviours.

response options: the answer options that respondents can select from when responding to quantitative, closed-ended survey questions.

response rate: the percentage of responses you receive relative to the number of surveys you distribute.

sampling bias: bias that occurs when the sample does not accurately represent the population of interest.

self-administered questionnaire: a survey that is completed by the respondent on their own time, either in hard copy or online.

social desirability bias: occurs when people attempt to present a better image of themselves than might really be the case.

strength-based research: research that focuses on community capacities rather than deficits.

survey research: a method of collecting data by asking people questions, typically through questionnaires, to gather information about their attitudes, behaviours, or personal characteristics.

trend survey: a longitudinal survey administered at more than one point in time to the same target population with the goal of examining overall changes in that population. The respondents are not necessarily the same at each point in time.

volunteer bias: a data distortion that happens when the people that volunteer are somehow different than the rest of the general population.

Chapter Review

Crossword

Fill in the term in the right-hand column and it will display in the crossword puzzle. Be sure to include spaces where appropriate.

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Discussion Questions

1. Based on a research question you have identified through earlier exercises in this text, write a few closed-ended questions you could ask in a questionnaire on the topic. Now, use the information in this chapter to critique your questions based on the content, wording, and response options.
2. What are some of the reasons why a researcher might choose a cross-sectional survey over a longitudinal survey?
3. How can survey researchers ensure they are conducting ethical research when working with Indigenous communities?
4. If you were to conduct survey research, would you choose to deliver the questionnaire in hard copy or online? Why?
5. If you were to develop a questionnaire based on a research question you have identified through earlier exercises in this text, which topics would you cover in the beginning, middle, and end of your survey? Why would you choose that particular sequence of topics?

Further Reading

- [Technical university students' feedback on studying English online under COVID-19](#)
- [Perceptions of safety among taxi and rideshare service patrons: Gender, safekeeping and responsabilisation](#)
- [Social security and fighting poverty in Tunisia](#)
- [The relationship between intimate partner behaviour control and impulsivity among college students: the chain mediating effect of autonomy needs satisfaction and intimacy quality](#)
- [Perceptions of police legitimacy and citizen decisions to report hate crime incidents in Australia](#)

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AI Declaration Statement

Artificial Intelligence Tool: ChatGPT 4.0 (OpenAI); *Visualization:* The creation of Table 11.1 and 11.2. using content written by the author. The tables were then edited by the authors

1. While the homepages for these services are provided, for data security reasons use the links supplied by your institution. These can be accessed through your institution's website. [1.11: Surveys#return-footnote-849-1](#)

definition

A method of collecting data by asking people questions, typically through questionnaires, to gather information about their attitudes, behaviours, or personal characteristics.

×Close definition

The attempt to improve human populations through selective breeding and sterilization.

×Close definition

Research that focuses on community capacities rather than deficits.

×Close definition

A survey that is administered once, with no follow-up, providing a snapshot of respondents' opinions, beliefs, or preferences at that one point in time.

×Close definition

A survey that is administered at more than one point in time, allowing changes in responses to be recorded. There are three types

of longitudinal surveys: trend, panel, and cohort.

×Close definition

A longitudinal survey administered at more than one point in time to the same target population with the goal of examining overall changes in that population. The respondents are not necessarily the same at each point in time.

×Close definition

A longitudinal survey administered at more than one point in time to the exact same people, thus allowing individual changes to be recorded.

×Close definition

A longitudinal survey administered at more than one point in time to the same sub-category of people within the general population with the goal of examining overall changes over time within that same sub-category. An example of a cohort is people who are all born in the same decade.

×Close definition

A survey that is completed by the respondent on their own time, either in hard copy or online.

×Close definition

A question that is only asked to certain respondents based on their answers to a previous question.

×Close definition

A survey question that includes the words "no", "not", or "never". This question wording should be avoided in survey construction.

×Close definition

A survey question that includes two distinct issues in the same question. This type of wording should be avoided in survey construction.

×Close definition

The answer options that respondents can select from when responding to quantitative, closed-ended survey questions

×Close definition

Quantitative interview questions that include a list of pre-determined response options from which the respondent must choose.

×Close definition

A quality of our variable that means that all attributes are distinct and do not overlap. As such, no observation can be classified into more than one attribute. In the context of survey research, this means that the response options do not overlap and only one response option would apply.

×Close definition

This is a quality of our variables, meaning all possible attributes are listed and every observation can fit with one attribute. In the context of survey research, this means that all possible response options are listed. For example, if eye colour is the variable, every possible attribute of eye colour should be listed (black, brown, grey, blue, and so on). Often, the option of "other" is included at the end of the survey response options listed to ensure each response option is accounted for.

×Close definition

When a closed-ended survey question has two or more response options that are words that cannot be rank ordered. Gender is an example of a nominal variable, with the nominal response options of male, female, transgender, etc.

×Close definition

When a closed-ended survey question has only two response options, which are often exact opposites. For example, yes and no are dichotomous response options.

×Close definition

When a closed-ended survey question has two or more response options that can be rank ordered. For example, socioeconomic status can be ranked as low, middle and high. Note that no specific numeric value is assigned to each of the ranks at the ordinal level of measurement.

×Close definition

A type of quantitative survey question where the respondents are asked to rate their opinion about given statements on a scale that ranges from “strongly agree” to “strongly disagree.”

×Close definition

When a closed-ended survey question has response options that are numeric and can be rank ordered. Ratio response options include the possible response of zero, making it possible to conduct certain statistical analyses. For example, it is possible that someone has committed zero crimes.

×Close definition

Qualitative interview questions that do not include possible response options but rather require the interviewee to provide responses in their own words.

×Close definition

A measurement taken before an experimental treatment is administered – it serves as a baseline for assessing changes due to interventions during post-testing.

×Close definition

The percentage of responses you receive relative to the number of surveys you distribute.

×Close definition

A data distortion that happens when the people that volunteer are somehow different than the rest of the general population.

×Close definition

A concern about the potential of a sample not being representative of the population from which it is drawn.

×Close definition

Occurs when people attempt to present a better image of themselves than might really be the case.

×Close definition

Inaccurate or incomplete memory of past events or behaviours.

×Close definition

Uncertainty or inconsistency in how individuals interpret and report identity-based questions.

×Close definition

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12: Experiments

Learning Objectives

- Define experiment.
- Distinguish true experiments from quasi-experiments.
- Explain the difference between an experimental group and a control group.
- Describe types of true experimental designs.
- Describe types of quasi-experimental designs.
- Discuss the implications of experimental research in studies focused on Indigenous communities.
- Explain the strengths and weaknesses of experiments, particularly in relation to ethical practices and cultural sensitivity when working with Indigenous Peoples.

Experiments represent a highly effective methodology for data collection, particularly for researchers seeking to determine the effects of specific actions or stimuli in creating reactions or changes in other stimuli. In other words, experiments are particularly suitable when the research purpose is explanatory (see [chapter 3](#) for a review of the various purposes of social science research). Predominantly classified as a quantitative research method, experiments are employed by scholars in fields such as criminal justice, psychology, and various other social science disciplines to explore a diverse array of research inquiries. Even for individuals who do not intend to engage in experimental research themselves, acquiring an understanding of the nature and execution of experiments is invaluable: it enhances one's ability to critically assess the experimental studies encountered in academic journal articles or mainstream media reports.

It is noteworthy that students enrolled in research methods courses frequently utilize the term “experiment” to encompass a broad spectrum of empirical research endeavours. However, within social scientific inquiry, this term possesses a distinct definition and should not be indiscriminately applied to all methodological approaches. Furthermore, it is essential to acknowledge the contributions and perspectives of Indigenous Peoples in discussions surrounding research methodologies, particularly given their historical experiences with research practices that have often marginalized their voices and knowledge systems.

In this chapter, we will explore experimental methodologies within criminological research, focusing on their frameworks, applications, and implications. We will begin by defining what constitutes an experiment, laying the groundwork for our discussion. Following this, we will distinguish between true experiments and quasi-experiments, highlighting the critical differences that affect the **validity** and **reliability** of research findings. We will also clarify the roles of experimental groups and control groups in research design, as these concepts are foundational to understanding how experiments are structured. Furthermore, we will delve into various types of true experimental designs, such as randomized controlled trials and field experiments, before examining different quasi-experimental designs that researchers may employ when randomization is not feasible. A significant aspect of our discussion will focus on the implications of each type of experimental research design in studies centred on Indigenous communities, where cultural sensitivity and ethical considerations are paramount. Lastly, we will critically assess the strengths and weaknesses of experimental methodologies in criminology. This multifaceted approach aims to equip students with a nuanced understanding of experimental methodologies in criminological research.

What is an Experiment?

An **experiment** can be defined as a systematic method of data collection aimed at evaluating hypotheses within controlled environments. This form of empirical research may be employed in either laboratory or field settings. **Laboratory experiments** occur within artificially constructed environments established by the research team, allowing for precise control over variables. Conversely, **field experiments** are conducted in naturalistic contexts, such as within actual agencies or organizations, thereby facilitating the observation of phenomena in real-world scenarios. Regardless of the setting in which an experiment is performed, certain fundamental terminology is universally applicable across all experimental methodologies.

In the context of experimental research, participants are typically divided into two distinct groups: one exposed to an **experimental stimulus**, sometimes referred to as a treatment, and another that serves as a control group, which does not receive such exposure. Social science researchers employ a diverse array of experimental stimuli, which may include written passages, visual imagery, audiovisual materials, and even olfactory (i.e., smelling) or auditory (i.e., hearing) cues. The group subjected to the

experimental stimulus is referred to as the **experimental group**, while the group that remains unexposed is designated as the **control group**. In this context, researchers use various methodologies, including surveys and interviews, to quantify the impact of the stimulus. These assessments are conducted at two distinct points: prior to the introduction of the stimulus, termed the **pre-test**, and after its introduction, referred to as the **post-test**.

When conducting experimental research, scholars need to carefully consider the implications of both random selection and random assignment in their methodological frameworks. Both of these instances occur at different stages of the research process. **Random selection** refers to the process of selecting participants from a population through a technique of probabilistic random sampling, as elaborated upon in chapter 7b. Following this initial phase of sampling, researchers engaged in experimental designs should strive for random assignment whenever feasible. That is, once a sample has been selected, **random assignment** involves the systematic allocation of participants in the sample into either experimental or control groups through a randomization process. This methodological approach significantly enhances the likelihood that the experimental and control groups are similar prior to the administration of any stimuli or interventions.

Types of Experimental Designs in Criminological Research

Criminology scholars employ various experimental designs to rigorously test their hypotheses. These designs can be categorized into two primary types: “true experiments” and “quasi-experiments.” Each of these categories encompasses a combination of essential components, including independent and dependent variables, pre-testing measures, stimuli presentation, post-testing assessments as well as the establishment of experimental and control groups in true experiments or comparison groups in quasi-experiments. A critical distinction between these two types lies in the methodology employed for group formation: true experiments uniquely incorporate random selection and random assignment to create their experimental and control groups. This is necessary to ensure the **internal validity** of findings (review chapter 6b and chapter 6c for the various forms of validity relevant for social science research). These two designs are described in more detail below.

True Experiments

True experiments are characterized by the systematic manipulation of the **independent variable** and **dependent variable** as well as the implementation of pre-testing and post-testing measures. These studies typically involve the establishment of experimental and control groups, which are selected and assigned through rigorous random selection and assignment methodologies. Within the realm of true experimental designs, there are three prevalent types: the classic experimental design, the Solomon four-group design, and the post-test-only control group design.

Classic experiments serve as a foundational methodology for examining the impact of specific stimuli on behavioural outcomes in criminological research; in other words, these experiments are key to determining cause-and-effect relationships. In such studies, there are two distinct groups: one subjected to the stimulus under investigation (the experimental group) and another that remains unexposed to the stimulus (the control group). This methodological approach allows us to determine how an independent variable influences a dependent variable. Given that the primary focus of the researcher is to ascertain the effects of the independent variable, you must conduct measurements on participants regarding the dependent variable both before and after the administration of the independent variable or stimulus. Consequently, pre-testing and post-testing protocols are critical components within the framework of the classic experimental design.

One notable example of a criminology-related study that employs pre-testing and post-testing protocols, particularly involving Indigenous participants, is the research conducted by Morin et al. (2022). This study evaluated the effectiveness of the Indigenous Healing and Seeking Safety (IHSS) intervention – an integrated, culturally grounded program that combined Indigenous healing practices with a trauma-informed, harm-reduction model – within a residential treatment program in northern Ontario. The researchers used a pre-intervention cohort to assess baseline outcomes such as treatment completion rates and health service utilization and compared these results to a post-intervention cohort following the implementation of IHSS. The findings revealed that program completion rates nearly doubled in the post-intervention group, suggesting that culturally relevant, trauma-informed approaches can significantly enhance engagement and outcomes among Indigenous clients. This study highlights the importance of integrating Indigenous worldviews into treatment and intervention frameworks, especially when aiming to reduce recidivism and promote healing in justice-involved populations (Morin et al., 2022).

Table 12.1 presents an example of a classic experimental design. The designation “R” preceding each group signifies that the researcher randomly assigns participants into groups. Group 1 functions as the experimental group, wherein all participants undergo a pre-test, are exposed to a stimulus, and subsequently complete a post-test. In contrast, Group 2 serves as the control group, with participants receiving *only* the pre-test and post-test assessments. They are not administered the stimulus; in other

words, they are not exposed to the “thing” we want to know the effects of.

Table 12.1 Classic Experimental Design

Group	Pre-test	Stimulus	Post-test
R: Group 1	Yes	Yes	Yes
R: Group 2	Yes	No	Yes

An illustrative example of experimental research is presented in the study conducted by McCoy and Major (2003), which investigates individuals’ perceptions of prejudice. In one segment of this research, all participants underwent a pre-test designed to evaluate their levels of depression. The findings from this pre-test indicated no statistically significant differences in depression levels between the experimental group and the control group. Subsequently, participants assigned to the experimental group were exposed to an article that argued that prejudice against their own racial group is both severe and pervasive. Conversely, those in the control group read an article asserting that prejudice against a different racial group is similarly severe and pervasive. Upon conducting a post-test assessment of depression scores, the researchers found that individuals who had engaged with the material highlighting prejudice against their own racial group reported higher levels of depression compared to those who had engaged with material highlighting prejudice against a different racial group.

This research contained all three features of a true experiment and is in fact a classic experiment. It tests the effects of an independent variable/stimulus (the reading) on a dependent variable/outcome (depression) by using pre-tests and post-tests of one experimental group and one control group.

You may be wondering how the findings of this study might apply to Indigenous Peoples. In examining the unique influences of systemic bias and historical trauma on mental health outcomes among Indigenous populations, it is essential to recognize that these communities often encounter compounded challenges related to identity, cultural dislocation, and societal marginalization. Such factors can intensify feelings of depression, particularly when narratives about prejudice resonate with their lived experiences.

To enhance our understanding of these challenges, it is crucial to integrate Indigenous methodologies and perspectives into the research design. This approach not only acknowledges the specific cultural contexts of Indigenous Peoples but also allows for a more nuanced exploration of how perceptions of prejudice impact mental health. By employing methods that prioritize community engagement, storytelling, and culturally relevant frameworks, researchers can gain deeper insights into the mental health experiences of Indigenous populations. This integration can lead to more effective interventions and support systems tailored to their unique needs.

The **Solomon four-group design**, which is characterized by its inclusion of both control and experimental groups, represents a sophisticated variant of a true experimental methodology. This design is particularly noteworthy due to its incorporation of two additional groups: one that is exposed to the experimental stimulus prior to undergoing a post-test and another that does not receive the stimulus but still participates in the post-test assessment. This design allows for a more nuanced understanding of the effects of the stimulus while controlling for potential **confounding variables**. In other words, it still allows us to say that no outside factors caused the effect we are trying to measure for.

Figure 12.1: Solomon Four-Group Design Diagram [\[Image description for Figure 12.1\]](#)

As illustrated in Table 12.2, random assignment remains a critical component of this design, as it ensures that groups are formed without bias. Specifically, Groups 1 and 2 mirror those found in traditional experimental designs, while Group 3 is subjected to both the stimulus and subsequent post-test evaluation, and Group 4 engages *only* in the post-test without prior exposure to the stimulus.

Table 12.2 Solomon Four-Group Experimental Design

Group	Pre-test	Stimulus	Post-test
R: Group 1	Yes	Yes	Yes
R: Group 2	Yes	No	Yes
R: Group 3	No	Yes	Yes
R: Group 4	No	No	Yes

Lastly, the **post-test-only control group design** is recognized as a valid experimental design despite the absence of pre-test measurements. In this framework, researchers engage in the random assignment of participants to both experimental and control groups. Then, the researcher administers a specific stimulus and subsequently evaluates the participants based on the dependent variable. This approach skips the pre-test phase under the premise that randomization effectively mitigates potential biases, thereby rendering pre-testing unnecessary. An appropriate example of a scenario where the post-test-only control group design is suitable – and potential biases are mitigated through randomization – would be a study examining the effectiveness of a new educational intervention on student performance. In this case, researchers might randomly assign students from various classrooms to either an experimental group that receives the new teaching method or a control group that continues with the standard curriculum. Because the assignment is random, any pre-existing differences in student abilities, motivation levels, or classroom environments are likely to be evenly distributed across both groups. Thus, when measuring the dependent variable, such as test scores after the intervention, the researchers can attribute any significant differences in outcomes directly to the educational intervention rather than confounding variables.

A post-test-only control group design is illustrated in Table 12.3. It is important to observe that neither group is administered the pre-test. The first group, designated as the experimental group, is subjected to the stimulus followed by the administration of the post-test. Conversely, the second group, referred to as the control group, is only administered the post-test.

Table 12.3 Post-Test-Only Control Group Experimental Design

Group	Pre-test	Stimulus	Post-test
R: Group 1	No	Yes	Yes
R: Group 2	No	No	Yes



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Quasi-Experiments

Quasi-experimental designs share significant similarities with true experimental designs, particularly in their structured approach to investigating causal relationships. However, a defining characteristic that distinguishes quasi-experimental designs is the absence of the random assignment of participants to experimental and control groups. This lack of randomization can stem from various constraints faced by researchers, including limited funding, time restrictions, participant availability, field conditions, organizational constraints, and inherent limitations associated with the specific research topic or question at hand.

For example, in a collaborative effort to evaluate the impact of a revised curriculum within a local police training program, researchers encountered organizational constraints (one of which was the fact that the classes had already started and students had already formed study groups) that precluded the possibility of randomly assigning students to either experimental or control groups. Consequently, they opted to implement the new curriculum across entire training cohorts rather than individual participants. Following this implementation, they conducted a comparative analysis of post-test results between these cohorts and those that had undergone the traditional curriculum.

The absence of random assignment in quasi-experimental research significantly heightens the likelihood that the group that receives the stimulus – and the group that does not – will be a **non-equivalent comparison group**. This non-equivalence refers to the presence of critical differences between the groups that may influence the outcomes of the study, and because of this, the term **comparison group** is typically used instead of control group (Maxfield & Babbie, 2018). For instance, in their investigation into the efficacy of a curriculum modification, it is plausible that the cohorts selected for the experimental group possessed a greater degree of prior knowledge related to the subject matter under examination than their counterparts in the comparison group. This could be due to chance or some bias in group selection. The implications of such non-equivalence are manifold, potentially compromising the internal validity of experimental studies (i.e., something other than the stimulus could have caused

the change in the dependent variable in the post-test). Nevertheless, researchers may have to use a quasi-experimental design when random assignment is not feasible.

Numerous true experimental designs can be transformed into quasi-experimental designs through the exclusion of random assignment, as seen in the non-equivalent groups design exemplified in Table 12.4. When comparing this to the classic experimental design shown in Table 12.1, there is only one clear difference: the designation “R” preceding the groups has been substituted with an “N.” This modification signifies the absence of random assignment among the groups involved in the study. Notwithstanding this alteration, all other methodological components remain consistent.

Table 12.4 Non-Equivalent Groups Design

Group	Pre-test	Stimulus	Post-test
N: Group 1	Yes	Yes	Yes
N: Group 2	Yes	No	Yes

A distinct variant of quasi-experimental design is the post-test-only control group design, which has been previously discussed. Specifically, in the **post-test-only non-equivalent groups design**, exemplified in Table 12.5, the researcher implemented a stimulus to the experimental group and subsequently conducted only post-tests on both the experimental and comparison groups to assess the impact of the administered stimulus.

A comparative analysis of this table with the post-test-only control group experimental design shown in Table 12.3 reveals that the sole distinction lies in the notation “N” preceding the groups, signifying non-random assignment.

Table 12.5 Post-Test-Only Non-Equivalent Groups Design

Group	Pre-test	Stimulus	Post-test
N: Group 1	No	Yes	Yes
N: Group 2	No	No	Yes

The research conducted on the effects of a curriculum change in police training employed a quasi-experimental design. In this study, several cohorts were exposed to the newly implemented curriculum, and subsequent post-test results were obtained. These results were then compared with those from other cohorts that had not undergone the new curriculum. The absence of random assignment of participants to groups necessitated the classification of this research as quasi-experimental.

Table 12.6: Summarizing and Comparing Principles of Experiments and Quasi-Experiments

Principle	Experimental Design	Quasi-Experimental Design
Random Assignment	Participants are randomly assigned to experimental and control groups.	No random assignment; groups may be pre-existing or selected based on certain criteria.
Control Group	A control group is used to compare the effects of the treatment.	Control groups may not be present, or comparison is made with a non-equivalent group.
Manipulation of Variables	Independent variables are manipulated by the researcher.	Independent variables may be manipulated, but without random assignment, confounding variables can influence the results.
Internal Validity	High internal validity due to controlled conditions and randomization.	Lower internal validity; potential for selection bias and confounding variables affecting outcomes.
Causality	Stronger ability to infer causality between independent and dependent variables due to controlled conditions.	Weaker ability to infer causality; findings may suggest relationships but cannot definitively establish cause-and-effect due to a lack of randomization.

The various forms of experimental and quasi-experimental designs covered so far in this chapter can be adapted by Western scholars when conducting research on Indigenous communities to respect cultural contexts and community leaders and members throughout the research process. For instance, ethical considerations and culturally responsive methodologies can – and should be – integrated into both the selection and assignment processes to ensure respect for Indigenous knowledge systems and community engagement. Indigenous methodologies emphasize community involvement and culturally relevant practices that honor traditional knowledge systems. By incorporating Indigenous frameworks into experimental research, Western scholars can

enhance the relevance and applicability of their findings while fostering respectful partnerships with Indigenous communities. This integration allows for a more holistic understanding of crime and justice issues as experienced by Indigenous communities, thereby enriching the overall discourse within criminology.

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Experimental Research Conducted by (and with) Indigenous Peoples

While Western scholars have been known to conduct experimental research on Indigenous communities, it is also important to note that Indigenous Peoples have a long-standing tradition of conducting their *own* forms of experimentation and investigation within their cultural frameworks, frequently drawing upon traditional knowledge systems and practices that enhance our comprehension of human behaviour and social interactions. This approach often contrasts with conventional Western scientific methods, which can overlook or misinterpret Indigenous knowledge systems, but they are nonetheless valid and significant within their own frameworks. In their approach, Indigenous researchers prioritize community involvement and ethical considerations, ensuring that the research is not only beneficial to the community but also conducted in a manner that respects traditional practices and values. For instance, many Indigenous communities employ **participatory action research (PAR)** as a means of integrating local knowledge with scientific inquiry. As discussed in [chapter 9](#), albeit in the context of field research, this method allows community members to actively participate in the design implementation and analysis of experiments, thereby fostering a sense of ownership over the research process and its outcomes.

As discussed in the introductory chapter, **Two-Eyed Seeing** is an integrative approach in PAR and community collaboration that brings together Indigenous knowledge and Western science, including experimental research. This approach helps different groups understand each other better and learn from one another. Peltier (2018) has explored the concept of Two-Eyed Seeing (see Figure 12.3 below). The figure illustrates how Two-Eyed Seeing can serve as a framework for conducting research within Indigenous communities. The diagram outlines the conventional research processes associated with a Western paradigm, including planning, implementation, knowledge production, and action. These processes can be transformed to align with an Indigenous paradigm that emphasizes community engagement, capacity building, empowerment, and self-determination. By employing Two-Eyed Seeing and fostering genuine collaboration with Indigenous communities, researchers can effectively validate Indigenous perspectives and adapt the four outlined processes beyond traditional frameworks.

Figure 12.2: Participatory Action Research with Indigenous Methodologies as Two-Eyed Seeing [\[Image description for Figure 12.2\]](#)

Moreover, Indigenous experimental research often incorporates **traditional ecological knowledge (TEK)** into scientific frameworks. TEK encompasses the understanding and insights gained from generations of living in harmony with the land and its resources. By blending TEK with experimental designs, Indigenous researchers can address pressing issues, such as climate change, resource management, and health disparities within their communities. For example, studies on sustainable agriculture practices have utilized both quantitative data from controlled experiments and qualitative insights from Indigenous farmers to develop more effective strategies for food security. This integrative approach not only enhances the validity of the findings but also ensures that they are culturally relevant and applicable to the community's needs. This is unique from a laboratory approach, which often seeks to isolate variables rather than examine multiple interconnections between variables.

Finally, there is a growing recognition within academic circles of the importance of decolonizing research methodologies to include Indigenous perspectives. This shift has led to increased funding opportunities for Indigenous-led experimental studies and collaborations between universities and Indigenous communities. Such partnerships aim to create a more equitable research landscape where Indigenous voices are amplified, allowing for innovative experimental designs that respect cultural protocols while addressing critical social issues. As these collaborative efforts continue to evolve, they promise to reshape how experimental research is conducted in ways that honour both scientific rigour and Indigenous wisdom.

Strengths and Limitations of Experimental Research

Strengths

In the realm of criminological research, experiments present a unique set of advantages and challenges that scholars must meticulously evaluate during the design phase. A notable strength of experimental methodologies, particularly laboratory experiments, lies in the significant degree of control they afford researchers over the variables and conditions to which participants are exposed. This level of control enables researchers to isolate specific factors and assess their effects on behaviours or attitudes, thereby enhancing the internal validity of the findings. In simpler terms, it enables researchers to confidently state that the effect they observe is directly caused by the specific factor they are studying and not influenced by anything else. Furthermore, experiments are typically more amenable to replication compared to other research methodologies, such as observational studies or qualitative interviews. This means that the entire study can be re-created by a future researcher to determine if the same results will be found. The capacity for replication is crucial in establishing the reliability and **generalizability** of experimental results across diverse populations and contexts.

However, it is important to acknowledge that traditional experimental designs may not fully capture the complexities inherent in studying human behaviour within various cultural frameworks, particularly those of Indigenous Peoples. Indigenous perspectives often emphasize holistic approaches that consider community context, historical trauma, and cultural values. Therefore, when designing experiments involving Indigenous populations, researchers should strive to incorporate culturally relevant methodologies that respect Indigenous knowledge systems and prioritize community engagement, as seen in PAR. This approach not only enhances the ethical integrity of the research but also enriches the findings by ensuring they resonate with the lived experiences of Indigenous individuals.

Limitations

The utilization of experimental methodologies also presents inherent limitations that merit critical examination. One significant critique pertains to the artificiality of experimental settings. This concern is particularly pronounced in laboratory experiments where the controlled environment may not accurately replicate the complexities and nuances of real-world scenarios. Even field experiments, which are ostensibly conducted in naturalistic settings, often fall short of capturing the multifaceted dynamics that characterize everyday life.

A unique challenge associated with field experiments is the diminished control researchers have over various stimuli and contextual factors that may influence participants' behaviours. This lack of control can lead to variability in responses that complicates the interpretation of results. Furthermore, when the conditions established within an experimental framework diverge from those encountered in broader societal contexts, researchers face significant obstacles regarding the generalizability of their findings. This issue is particularly salient when considering Indigenous populations and perspectives: traditional experimental designs may overlook or misrepresent cultural contexts and values intrinsic to these communities. Consequently, it becomes imperative for researchers to adopt methodologies that are sensitive to Indigenous epistemologies and practices to ensure that their findings are both relevant and applicable within these distinct sociocultural frameworks.

To enhance the rigour and applicability of experimental research in criminology, scholars should engage with Indigenous perspectives and incorporate culturally responsive methodologies that honour the lived experiences and knowledge systems of Indigenous Peoples. By doing so, researchers can better navigate the complexities inherent in human behaviour while fostering a more inclusive understanding of crime and justice.

Case Study: The Use of Experimental Methods in Environmental Justice

Experiments can also be applied to environmental justice issues faced by Indigenous communities. By employing experimental methods, researchers can assess the effectiveness of various strategies aimed at mitigating environmental harm.

The case study in the video below highlights experimental approaches to addressing environmental challenges faced by Indigenous Peoples.

YouTube Video

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Another significant concern arises regarding the extent to which researchers can confidently attribute observed effects to the experimental stimulus, as opposed to extraneous variables or contextual factors that may inadvertently influence outcomes. This issue is particularly salient when considering the diverse backgrounds and experiences of participants, including Indigenous Peoples, whose unique cultural perspectives may interact with experimental conditions in unforeseen ways. Moreover, researchers must remain vigilant about potential confounding variables that could distort findings. These may include unanticipated conditions within the experimental framework or longitudinal changes in participant behaviour and attitudes over time. Such dynamics underscore the necessity for a nuanced understanding of how various factors can converge to produce specific outcomes in experimental settings.

While experimental research designs afford researchers a degree of control over conditions and facilitate replication by other scholars, they are not without limitations. The artificiality inherent in controlled settings may compromise **ecological validity** (i.e., the extent to which research findings can be generalized to real-world settings, meaning that the results of a study are applicable and relevant outside of the controlled experimental environment), raising questions about the generalizability of findings across different populations and contexts. Furthermore, researchers must grapple with the challenge of establishing causal relationships with confidence, particularly when engaging with diverse groups such as Indigenous communities whose lived experiences may diverge significantly from those represented in traditional experimental paradigms.

Table 12.7: Strengths and Weaknesses of Experimental Research Designs

Strengths	Weaknesses
high degree of control over variables	artificiality may compromise ecological validity
facilitates replication	limited generalizability across diverse populations
ability to establish causal relationships	challenges in engaging with specific communities
systemic approach allows for precise measurement	risk of oversimplifying complex social phenomena

Conclusion

In this chapter, we reviewed both true experiments and quasi-experiments. True experiments are characterized by random selection of participants from a larger population and random assignment to either experimental or control groups. This methodological rigour enhances the internal validity of findings by minimizing biases that could affect results. The experimental design typically includes several key components: pre-tests, which assess participants' baseline characteristics or behaviours before any treatment; a stimulus, which is the intervention or condition applied to the experimental group; post-tests, which evaluate the impact of the stimulus after its application; and the establishment of both experimental and control groups. Quasi-experiments, on the other hand, are research designs that aim to evaluate the effect of an intervention or treatment, without random assignment, to experimental (or treatment) and comparison groups, often utilizing existing groups or conditions for comparison.

Integrating Indigenous perspectives into criminological experiments requires thoughtful consideration of cultural contexts throughout all stages – from hypothesis formulation through data collection and analysis – to ensure that research outcomes are meaningful and beneficial for Indigenous populations. This necessitates an understanding of how traditional knowledge systems and community values can influence research design and interpretation. Indigenous methodologies often emphasize relationality, respect for cultural contexts, and community engagement in research processes. Further, the implications of integrating Indigenous perspectives into criminological research are profound. When done thoughtfully, such integration can lead to more accurate representations of crime within Indigenous contexts – and perhaps may inform broader contexts as well – and contribute to more effective interventions tailored to community needs. Moreover, it empowers Indigenous Peoples by validating

their knowledge systems and fostering resilience through community-driven solutions. However, if these perspectives are not integrated appropriately, there remains a risk of perpetuating colonial attitudes within criminology, whereby Indigenous voices are sidelined or misrepresented. Thus, it is essential for researchers to remain vigilant about power dynamics in their work and strive for equitable partnerships with Indigenous communities.

✓ Summary

- Criminological experiments systematically collect quantitative data and test hypotheses in controlled environments. They are best suited for explanatory research.
- True experiments randomly select participants and assign them to groups to reduce bias.
- The experimental group receives a treatment or stimulus to assess its impact on criminological issues, while the control group does not receive the treatment.
- True experimental designs, including classic experiments, Solomon four-group design, and post-test-only control group design, provide structured frameworks for examining causal relationships in criminological research.
- Experimental research methods offer precise variable control and replication for reliability but may create artificial environments that limit generalizability for Indigenous populations.
- Quasi-experiments are similar to experiments but lack random assignment, resulting in non-equivalent comparison groups.
- It is essential to integrate cultural contexts throughout the research process to ensure meaningful outcomes for Indigenous communities.
- The thoughtful integration of Indigenous perspectives in criminological research can enhance the accuracy of crime representations, empower Indigenous communities, and promote resilience, but it also necessitates vigilance against colonial attitudes and misrepresentation.

Key Terms

classic experiment: a type of true experiment characterized by random assignment to treatment and control groups, allowing for the establishment of causal relationships between variables.

comparison group: a group in a quasi-experiment that does not receive the experimental treatment, serving as a benchmark to measure the treatment's effects. This group is crucial for establishing causal relationships and evaluating an intervention's effectiveness by providing a reference point against the experimental group.

confounding variables: extraneous factors that may influence the dependent variable, potentially leading to erroneous conclusions about the relationship between the independent and dependent variables.

control group: a group in an experiment that does not receive the experimental treatment or intervention, serving as a baseline to compare against the experimental group.

dependent variable: the outcome variable that researchers measure in a research study – it is expected to change as a result of manipulations to the independent variable.

ecological validity: the extent to which research findings can be generalized to real-world settings – it assesses how well experimental conditions reflect actual environments.

experiment: a controlled investigation that tests hypotheses by manipulating independent variables and observing their effects on dependent variables, often using random assignment to attribute results to the manipulation rather than outside factors.

experimental group: the group in an experiment that receives the treatment or intervention being tested, allowing researchers to observe its effects compared to the control group.

experimental stimulus: the specific intervention or manipulation introduced by researchers in an experiment intended to elicit a response from participants.

field experiments: experiments conducted in natural settings rather than controlled laboratory environments, providing insights into real-world behaviours and interactions.

generalizability: the degree to which research findings can be applied beyond the specific context of the study, influencing broader theories and practices.

independent variable: the variable manipulated by researchers in a research study – its variation is hypothesized to cause changes in the dependent variable being measured.

internal validity: refers specifically to whether observed effects within a study can confidently be attributed solely to manipulations made by researchers rather than other confounding factors.

laboratory experiments: controlled experiments conducted in a structured environment where variables can be manipulated precisely, often yielding high internal validity but potentially low ecological validity.

non-equivalent comparison group: a group used for comparison that is not randomly assigned, which may introduce bias and affect the validity of conclusions drawn from the study.

participatory action research (PAR): an approach that actively involves participants in the research process, aiming for both knowledge generation and social change through collaboration.

post-test: a measurement taken after an experimental treatment has been administered that is used to assess any changes resulting from the intervention compared to pre-test measurements.

post-test-only control group design: an experimental design where only post-test measurements are taken after administering treatments without pre-tests, simplifying analysis while still allowing for comparisons between groups.

post-test-only non-equivalent groups design: a quasi-experimental design where groups are compared based on post-test results without random assignment; it is often used when randomization is impractical or unethical.

pre-test: a measurement taken before an experimental treatment is administered – it serves as a baseline for assessing changes due to interventions during post-testing.

quasi-experimental designs: research designs that resemble true experiments but lack random assignment – they are useful when ethical or practical considerations prevent randomization.

random assignment: the process of assigning participants randomly to different groups (experimental or control) within an experiment to ensure each participant has an equal chance of being placed in any condition.

random selection: a core principle of probability sampling, random selection refers to a mathematical process whereby chance governs the selection process and every sampling element has an equal probability of being selected.

reliability: the consistency and stability of measurement results over time. Reliable measures yield similar outcomes under consistent conditions across different instances of testing.

Solomon four-group design: an advanced experimental design involving four groups – two receiving pre-tests and two not – allowing researchers to independently assess both pre-test effects and treatment impacts.

traditional ecological knowledge (TEK): knowledge acquired through generations regarding local ecosystems and species interactions; it informs participatory approaches within criminological research contexts related to environmental crime or justice issues.

true experiments: research designs characterized by the random assignment and manipulation of independent variables, enabling strong causal inference regarding relationships among variables studied.

Two-Eyed Seeing: a way of viewing the world that considers both Indigenous and Western knowledges and worldviews.

validity: the degree to which a test measures what it claims to measure; it encompasses various forms such as internal validity (the accuracy within the study) and external validity (generalizability).

Chapter Review

Crossword

Fill in the term in the right-hand column and it will display in the crossword puzzle. Be sure to include spaces where appropriate.

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Drag and Drop

Drag the boxes at the bottom into their correct position in the table.

Interactive Content

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Discussion Questions

1. In what situations might a researcher choose to use a quasi-experimental design instead of a true experimental design when studying crime and criminal behaviour? Discuss the drawbacks of quasi-experimental designs, especially regarding their internal validity (how well they measure what they intend to measure) and generalizability (how well the findings can be applied to other settings). Also, think about how these drawbacks might have a greater impact on research that involves Indigenous populations.
2. Explore the main features of the three different types of true experimental designs mentioned in this chapter. How do these designs compare and contrast in terms of their methodological strength, their relevance to real-life situations, and the ethical issues they raise?
3. In what ways can using Indigenous research methods improve the accuracy and trustworthiness of experimental studies in criminology? Share examples where Indigenous viewpoints have been included in research designs and discuss how this affects our understanding of crime and justice in Indigenous communities.

Further Reading

- [Individual perceptions of climate anomalies and collective action: Evidence from an artefactual field experiment in Malaysian Borneo](#)
- [Art in the city reduces the feeling of anxiety, stress, and negative mood: A field study examining the impact of artistic intervention in urban public space on well-being](#)
- [Is there ethnic discrimination in Roma children's access to sports clubs in Hungary? Evidence from field experiments in basketball, volleyball, and soccer](#)
- [Revisiting broken windows: The role of neighborhood and individual characteristics in reaction to disorder cues](#)
- [Vehicle trajectory at curved sections of two-lane mountain roads: a field study under natural driving conditions](#)

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definition

The degree to which a test measures what it claims to measure; it encompasses various forms such as internal validity (the accuracy within the study) and external validity (generalizability).

×Close definition

The consistency and stability of measurement results over time. Reliable measures yield similar outcomes under consistent conditions across different instances of testing.

×Close definition

A controlled investigation that tests hypotheses by manipulating independent variables and observing their effects on dependent variables, often using random assignment to attribute results to the manipulation rather than outside factors.

×Close definition

Controlled experiments conducted in a structured environment where variables can be manipulated precisely, often yielding high internal validity but potentially low ecological validity.

×Close definition

Experiments conducted in natural settings rather than controlled laboratory environments, providing insights into real-world behaviours and interactions.

×Close definition

The specific intervention or manipulation introduced by researchers in an experiment intended to elicit a response from participants.

×Close definition

The group in an experiment that receives the treatment or intervention being tested, allowing researchers to observe its effects compared to the control group.

×Close definition

A group in an experiment that does not receive the experimental treatment or intervention, serving as a baseline to compare against the experimental group.

×Close definition

A measurement taken before an experimental treatment is administered – it serves as a baseline for assessing changes due to interventions during post-testing.

×Close definition

A measurement taken after an experimental treatment has been administered that is used to assess any changes resulting from the intervention compared to pre-test measurements.

×Close definition

A core principle of probability sampling, random selection refers to a mathematical process whereby chance governs the selection process and every sampling element has an equal probability of being selected.

×Close definition

The process of assigning participants randomly to different groups (experimental or control) within an experiment to ensure each participant has an equal chance of being placed in any condition.

×Close definition

Refers specifically to whether observed effects within a study can confidently be attributed solely to manipulations made by researchers rather than other confounding factors.

×Close definition

Research designs characterized by the random assignment and manipulation of independent variables, enabling strong causal inference regarding relationships among variables studied.

×Close definition

The variable manipulated by researchers in a research study – its variation is hypothesized to cause changes in the dependent variable being measured.

×Close definition

The outcome variable that researchers measure in a research study – it is expected to change as a result of manipulations to the independent variable.

×Close definition

A type of true experiment characterized by random assignment to treatment and control groups, allowing for the establishment of causal relationships between variables.

×Close definition

An advanced experimental design involving four groups – two receiving pre-tests and two not – allowing researchers to independently assess both pre-test effects and treatment impacts.

×Close definition

Extraneous factors that may influence the dependent variable, potentially leading to erroneous conclusions about the relationship

between the independent and dependent variables.

×Close definition

An experimental design where only post-test measurements are taken after administering treatments without pre-tests, simplifying analysis while still allowing for comparisons between groups.

×Close definition

Research designs that resemble true experiments but lack random assignment – they are useful when ethical or practical considerations prevent randomization.

×Close definition

A group used for comparison that is not randomly assigned, which may introduce bias and affect the validity of conclusions drawn from the study.

×Close definition

A group in a quasi-experiment that does not receive the experimental treatment, serving as a benchmark to measure the treatment's effects. This group is crucial for establishing causal relationships and evaluating an intervention's effectiveness by providing a reference point against the experimental group.

×Close definition

A quasi-experimental design where groups are compared based on post-test results without random assignment; it is often used when randomization is impractical or unethical.

×Close definition

An approach where researchers and participants work together to understand a problem within the community and attempt to change it.

×Close definition

A way of viewing the world that considers both Indigenous and Western knowledges and worldviews.

×Close definition

Knowledge acquired through generations regarding local ecosystems and species interactions; it informs participatory approaches within criminological research contexts related to environmental crime or justice issues.

×Close definition

One of the key concepts of sampling, it refers to the idea that a study's results will tell us something about a group larger than the sample from which the findings were generated.

×Close definition

The extent to which research findings can be generalized to real-world settings – it assesses how well experimental conditions reflect actual environments.

×Close definition

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13: Qualitative Data Analysis

Learning Objectives

- Distinguish between grounded theory and thematic analysis.
- Identify the main goal of qualitative data analysis.
- Differentiate between the strategies for preparing various types of qualitative data for analysis.
- Use the coding process for qualitative data.
- Describe the process of identifying themes in qualitative data.
- Explain how credibility is established within qualitative data analysis.
- Evaluate the applicability of qualitative data analysis strategies for Indigenous researchers and researchers working with Indigenous communities.

Qualitative methods can be used for interpretive, theory-building research projects. The qualitative data used in such projects may consist of pictures, artwork, words, audio files, and similar non-numerical information. This chapter begins with an overview of two ways to analyze qualitative data: the grounded theory approach and thematic analysis. The focus then shifts to practical techniques for preparing various kinds of data, such as fieldnotes, interview transcripts, and audio files. Next, the stages of coding qualitative data and identifying themes are outlined. The chapter concludes with a discussion on credibility and trustworthiness.

While this chapter will provide you with clear steps you can use to analyze your qualitative data, it is important to keep in mind that analyzing qualitative data is not like using a recipe book; however, you can think of it as a recipe you can play around with and change as you see fit. As Renata Tesch says, “qualitative analysis can and should be done artfully, even ‘playfully,’ but also requires a great amount of methodological and intellectual competence” (quoted in Hesse-Biber & Leavy, 2011, p. 302). Ideally, qualitative analysis should also be done in close relationship with the community one is working with. This is especially true when working with Indigenous communities, where research has long taken the form of unreciprocated extraction by settler researchers (Kovach, 2021).

A Human and Iterative Process

Qualitative data analysis has an inherent human component: it is always performed by a person, and all people occupy different social positions that shape their perspective of the world (Braun & Clarke, 2006, 2021, 2023). Before beginning data analysis, consider reflecting on your own intersecting privileges and exclusions. How may these identities (gender, class, ethnicity, etc.) impact how you analyze data? **Journaling** can help you keep track of how your social positionality shapes your research throughout your project. Journaling can also help relieve anxiety as it provides a place for you to vent your anxiety and frustrations – feelings we all experience while conducting research.

Reflecting on Social Positionality

In her book *Braiding Sweetgrass*, Robin Kimmerer reflects on how her citizenship in the Potawatomi shapes her perception of the world:

“I try to turn off my science mind and name them with a Nanabozho mind.... I’m trying to imagine what it would be like going through life not knowing the names of the plants and animals around you. Given who I am and what I do, I can’t know what that is like” (Kimmerer, 2013, p. 208).

Note that your analysis will not emerge all at once so be sure to write yourself **memos** as you go. These memos can be jotted down at any time, and sometimes our best insights come to us while walking alone in the woods. As discussed in [chapter 10](#), the theoretical/analytical notes you took during your research can provide a good starting point for thinking about possible codes and serve as early instances of memos. Continue to write yourself memos throughout your project so that you don’t forget any of your good ideas. It’s also helpful to date these memos so you can remember when and why you thought the way you did.

Qualitative data analysis is an iterative process that occurs throughout the research process, which is why memo writing is so valuable. By “iterative,” we mean that the researcher is constantly looping back on previous stages. Data collection does not

simply lead to a period of analysis where we forget about collecting data anymore; data analysis also shapes (and reshapes) the data collection, research design, and research questions. Unlike surveys, which are difficult to change once they are distributed, qualitative researchers revisit early stages again and again in a spiral or looping process.

Figure 13.1: The Iterative Qualitative Data Analysis Process [\[Image description for Figure 13.1\]](#)

Ultimately, the goal of data analysis is to reach some inferences, lessons, or conclusions by condensing large amounts of data into relatively smaller, more manageable bits of understandable information. Each type of qualitative data requires somewhat different analytic techniques, and it is impossible to cover every type of data in this textbook. Instead, we'll focus on the most common types of data: fieldnotes, audio recordings of interviews, talking circles or focus groups, and texts for content analysis (see [chapter 10](#) for a more detailed discussion of content analysis). Following the discussion on preparing the data, we will review the ways to code the data and, lastly, ways to analyze common themes that result from the coding.

Setting the Stage

Qualitative methods such as focus groups, talking circles, field research, and qualitative interviews generate enormous amounts of data. In focus groups, the researcher might end up with audio or video recordings of the group discussions, fieldnotes about participants' interactions, pieces of artwork created during the focus group, and demographic information about participants. In field research, the data might be in the form of fieldnotes, audio recordings of interviews, and texts gathered for content analysis. Regardless of which forms of qualitative data the researcher ends up with, they all need to be prepared for analysis. While many different analytic strategies can be used by qualitative researchers, we will focus on two in particular: the grounded theory approach and thematic analysis.

The **grounded theory** approach (Charmaz, 2006; Glaser & Strauss, 1967) occurs, as you might imagine, from the “ground up,” with the researcher beginning with an open-ended and open-minded desire to understand a social situation or setting. The process of using a grounded theory approach to analyze data involves a systematic process whereby the researcher lets the data guide the inquiry rather than guiding the data using preset hypotheses. Grounded theory is an inductive approach because the researcher is looking to develop theory directly out of the data rather than testing out an already-existing theory (see [chapter 3](#) for more on the inductive approach). The goal of a grounded theory approach is to generate theory that is grounded in the data. Its name implies not only that discoveries are made from the ground up but also that theoretical developments are grounded or rooted in a researcher's empirical observations and a group's tangible experiences.

Grounded theory is the older of the two approaches covered here, and there has been some debate over how much someone can really approach their data without any preconceived theoretical ideas (Corbin & Strauss, 1990). For our purposes, you can think of grounded theory as a more inductive approach that is attempting to develop concepts and theories that are firmly grounded in the data themselves.

As exciting as it might sound to generate theory from the ground up, this experience can also be intimidating and anxiety-producing. Without hypotheses to guide their analysis, as is typically the case in quantitative research, researchers engaged in grounded theory work may experience feelings of frustration or angst. At the same time, the process of developing a coherent theory grounded in empirical observations can be quite rewarding, not only to researchers but also to their peers, who can contribute to the further development of new theories through additional research, as well as to research participants, who may appreciate getting a bird's-eye view of their everyday experiences.

Thematic analysis is similar to grounded theory in terms of the analytical process, but it is not restricted to generating new theory; rather, thematic analysis can be used to refine existing theories and/or draw upon theories to help identify and illuminate themes within your data. Thematic analysis is therefore more flexible than grounded theory in that it can be more deductive (i.e., guided by theory) or inductive (i.e., themes are developed from the data themselves), while grounded theory is more clearly inductive. Thematic analysis is also newer than grounded theory, being a 21st-century approach, and it draws on practices developed in that tradition. While grounded theory developed in sociology, thematic analysis emerged from psychology; both are used by criminologists and criminal justice researchers today.

When doing thematic analysis, a researcher first familiarizes themselves with the data, generates a set of **codes**, and then identifies themes that emerge from the data (Moustakas, 1990). Unlike grounded theory, the codes themselves can be shaped more by the theoretical perspective used by the researcher rather than strictly from the data themselves. When conducting Indigenous research, thematic analysis is particularly valuable as the work can remain rooted in an Indigenous theoretical perspective (Kovach, 2021). It can also be used by other researchers who are interested in developing existing theory, for example, when used by feminist researchers (Yercich, 2021).

Table 13.1 Grounded Theory and Thematic Analysis Compared

Grounded Theory	Thematic Analysis
Used to develop new theories and concepts.	Used to explore themes found with the data.
Strongly inductive, as it develops theory and concepts directly from the data.	Primarily inductive, in that themes may emerge from the data, but can include deductive elements, in that coding can be guided by existing theory.
More structured, with a focus on concept and theory development.	More flexible, in that the researcher can decide how inductive or deductive to make their process.

As mentioned at the outset of this chapter, there are many ways to analyze qualitative data. Each approach/researcher has their own take on the process and how it could be undertaken. A researcher who is doing **discourse analysis**, for example, might proceed with the same steps described here, starting with open coding and moving to more focused coding, all the while focusing on how language and power create and shape social reality (see Ashley, 2014). A researcher interested in **narrative analysis** might likewise use open and focused coding to identify how people construct stories to make sense of their own experience (see Sandberg, Tutenges, & Copes, 2015). Whatever your approach, and there are many others, the steps for coding described below can help you organize and make sense of your data.

Preparing the Data

Writing Fieldnotes

Analyzing field note data is an iterative process that begins the moment a researcher enters the field. Proper fieldnotes (i.e., the ones you write up at your desk) are often developed from jottings taken in the field, though some field settings allow researchers to take more detailed notes on the spot. Fieldnotes are the fully developed, rich, thick descriptions you produce when you exit a given observation period and sit down at your computer to type your observations into a more readable and formal format.

We've already noted that carefully paying attention while in the field is important; so too is noticing what goes on immediately upon exiting the field. Field researchers typically spend several hours typing up fieldnotes after each observation. During this process of creating and preparing the data for analysis, the researcher also begins analyzing their data. Once they are out of the field, researchers take time to reflect on their experiences in the field and what their observations might mean.

Transcribing Audio Recordings

The analysis of audio data typically begins with transcribing the audio into written form. When you **transcribe** an audio file, you create a complete written copy of the recording by playing the recording back, typing in each word spoken on the recording, and noting who spoke which words. In general, researchers aim for a verbatim transcription that reports everything said in the recording exactly as the speakers said it. In addition to the words spoken, a verbatim transcription should also include verbal cues, such as laughing, and filler words (e.g., uh's, um's) as well as notes on the tone of voice and when and how respondents emphasized specific spoken words. It's very important that the punctuation the transcriber uses maintains the meaning of what is said – for example, “I love hunting, my kids, and my dogs” is quite different from “I love hunting my kids and my dogs.”

Transcribing audio files can be very time-consuming. Some researchers pay for transcription services, while others transcribe audio themselves. On average, it takes four to five times longer to transcribe interview data than to listen to it. That means that a one-hour interview could take five hours to transcribe! Despite the time it takes to transcribe audio files, it is worthwhile to do it yourself. When researchers transcribe their own files, they become immersed in the data and their patterns. Listening to conversations you participated in or observed may spark recall of nonverbal cues or other interactions that you may have forgotten to include in your fieldnotes. These can contribute to richer data and aid in more robust analyses.

Interview Transcription Example

A transcription of an interview conducted by Lennox:

Researcher: What do you remember when your parent would call you from jail as a child?

Participant 2: Well...uh... I don't really remember it being from jail... or prison... I was still in elementary school and he would call when I was home from school... wait... I might have been older... high school maybe? I might have been thir-thirteen. I don't remember much of what he said, it was twenty... uh... ish... years ago. I remember it would have this introduction saying, like, "this call is from Peter" in a robotic voice. I can't remember what we would talk about but nothing that made me particularly upset or happy. I think I would remember if I was super upset or super happy. I didn't even realize it was from prison until like five years ago randomly. So... I don't know... I guess I don't remember much?

Preparing Texts

Preparing texts for analysis really depends on the type of texts the researcher has collected (e.g., social media posts, archival records, movie scripts). Texts should be compiled and organized in a way that makes sense for the aims of the research (e.g., by source, theme, year, or type of text). This may include organizing text into tables, collecting screen captures into a series of folders, organizing notes on archival exhibits into physical piles, or uploading interview transcripts into qualitative data analysis software.

Table 13.2 Fieldnotes, Audio Data and Textual Data Compared

Type of Data	Main Points
Fieldnotes	Fieldnotes are prepared from the jottings and descriptive notes a researcher takes in the field. They should be rich in detail and may contain analytical observations as well as personal reflections.
Audio	Audio analysis starts with transcribing recordings into written form. Transcription involves creating a verbatim record, including who spoke, verbal cues (e.g., laughter, filler words), and nonverbal cues (e.g., tone, emphasis). Transcription is time-intensive, taking 4–5 times the length of the recording (e.g., a 1-hour interview takes ~5 hours to transcribe).
Text	Preparation methods depend on the type of text collected (e.g., transcriptions, social media posts, archival records, books, or scripts).



Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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Coding Qualitative Data

Once the researcher has prepared their qualitative data for analysis, they begin looking for patterns across the data by reading through their data files and trying to identify codes. A code is a word or short phrase representing some complex set of issues or ideas (Saldaña, 2016). The process of identifying codes in one's data is often referred to as **coding**. Coding involves looking for patterns across data by reading and rereading (and rereading again) the data until the researcher has a clear idea about what sorts of themes come up across the data points. One might say you are searching and *re-searching* for codes in your data. As Kovach (2021, p. 209) reminds us, we must also be sensitive to **coyote codes** – outliers that don't fit with the rest of our themes. Coyote codes are important and can contribute to the nuance and complexity of our analysis.

As you might imagine, wading through all these data can be a challenging process. Luckily, some computer programs can

help qualitative researchers sort through, code, and analyze their data. Programs such as **NVivo** and **ATLAS.ti** are specifically designed to assist qualitative researchers with organizing, managing, sorting, and analyzing large amounts of qualitative data. The programs work by allowing researchers to import electronic documents and then label passages with codes, cut and paste passages, search for various words or phrases, and organize complex interrelationships among passages and codes, as shown in Figure 13.2. You can also code manually using highlighters or coloured pencils to mark off different sections. Or, you can do the same with Microsoft Word, Pages, or **LibreOffice**, as all have highlighting and comment functions.

Screenshot showing Nvivo interface

Figure 13.2: Nvivo Output

Start your coding process by reading through all the data to get a general sense of what you have collected. After you've read through your data at least once, you can begin to assign initial codes. At a basic level, coding means identifying words or phrases that we can then use to "categorize chunks of the data so that we can work with them" (van den Hoonaard, 2019, p. 174). This involves reading through your data carefully and coding each line or sentence with a descriptor.

This first stage is known as **open coding**. It usually begins with no pre-determined codes and requires the analyst to generate new codes throughout the coding process, which is why it is known as "open" coding. These codes are generally more descriptive and can include words that appear within the text itself. During open coding, researchers try not to let their original research question or expectations about findings influence the categories or themes they see. Open coding usually requires multiple go-rounds so that researchers can be sure they've identified all the possible codes they can think of and find.

If you are doing thematic analysis, the process of open coding may be more deductive than if you are doing grounded theory. If you are using a more deductive approach, one that is guided more by theory, your open coding might be guided more by the theory you are using (feminism, Indigenous, critical, etc.), though at this stage, your coding should still remain as close to your data as possible, with theory shaping your analysis in later stages of the coding process (i.e., focused coding, as described in the next section).

What to Code?

Knowing what to use as a code can be tricky. Kathy Charmaz (2003, p. 94-95) suggests that researchers should ask the following questions during this process to assist them with developing codes:

- What is going on?
- What are people doing?
- What is the person saying?
- What do these actions and statements take for granted?
- How do structure and context serve to support, maintain, impede or change these actions and statements?

You Have Some Codes. Now What?

As researchers pore over their data, they begin to see patterns or commonalities. Once you begin to see some patterns, you can begin more **focused coding**. Focused coding involves collapsing or narrowing codes identified in the open coding process by reading through the notes and memos again. This process can involve identifying codes that seem to be related, and you might start merging some codes that seem too similar to warrant their own unique code. Over time, these mergers may create categories that might contain multiple codes. During the coding process, the researcher might also create a **codebook**, or a document that includes brief definitions or descriptions of each code. The codebook can help the researcher go back through their data to ensure they have accurately marked passages with the relevant codes. See [Codebooks in Qualitative Content Analysis](#) for examples of codebooks:

Table 13.3 Open vs. Focused Coding

Open Coding	Focused Coding
No pre-determined codes. Instead, codes are generated through engagement with data.	Refining your initial codes by grouping them together.
Often used in the beginning stages of coding.	Can include more analytical and interpretive codes.

Let's look at an example from a research project conducted by Ashley (2014) on the British Columbia polygamy reference that took place in 2011. Ashley knew that this case would be significant, but at the outset it was not clear how the arguments would be made or what exactly the court would decide. An open-coding approach was therefore used to code all the court transcripts. With the assistance of qualitative analysis software ([TAMS analyzer](#)), he conducted a line-by-line coding of the transcripts to create a set of codes that described what was being said in court. As you can see from the table below, these codes included "consequences of criminalization," "fear of social service," "psychological stress," and "risks of insularity." Ashley then moved on to more focused coding, which ended up creating nested hierarchies where "consequences of criminalization" became its own larger category, while "health risks" and "fear of social services" became subcategories. The following examples from the court transcript reflect words spoken by the lead lawyer for the BC Attorney General's office:

Table 13.4 Examples of Coding

Court Transcript	Initial open codes	Categories and focused codes
The BCCLA also suggests that	Civil liberties association	
security of the person is engaged through the	Security of person	
consequences of criminalization in the form of	Consequences of criminalization	Consequences of criminalization
psychological stress which might also be linked to	Psychological stress	Consequences of criminalization: psychological stress
the insularity of Bountiful and other polygamous communities, which tend to make the	Insularity	Consequences of criminalization: insularity
residents in those communities reluctant to access health or other services	Reluctance to seek health services	Consequences of criminalization: insularity: health services

You can see from this example how the coding process can help organize thousands of pages of data while providing a potential avenue for analysis.

Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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Identifying Common Themes

As you start to compare and cluster various categories, you will start to see themes emerging from your data. Depending on your purpose, these themes may be more or less inductive. In grounded theory, the themes ideally develop into new theoretical insights that are closely tied to the data themselves (i.e., a more inductive form of analysis). For researchers who are interested in developing and testing out pre-existing theories, themes may be more deductive, reflecting questions and concerns of the theoretical tradition being used.

Regardless of one's approach, the researcher's subjective interpretation is always intertwined with data analysis and the entire research project (Braun & Clarke, 2021). While engaged in [reflexivity](#), the researcher makes meaning of codes by generating initial themes, developing and reviewing themes as well as refining, defining, and naming themes (Braun & Clarke, 2019). Although these are described here in sequence, researchers will likely move through these stages of data analysis in a non-linear fashion: generating initial themes, developing and reviewing themes, and refining themes.

Generating Initial Themes

Once the researcher is ready to move beyond coding, they enter the first stage of theme development. Generating initial themes has some of the same traits of focused coding as it involves analyzing codes and grouping them into clusters of **candidate themes**. Candidate themes aim to tentatively explore meaning in relation to the research question(s) and the entire dataset. To help with this stage and future stages, Braun and Clarke (2021) suggest using **thematic mapping**. Thematic mapping refers to creating visual maps of candidate themes to explore relationships, interconnections, and meanings between candidate themes. Below is a thematic map of the human-animal bond describing the different themes that arose from research interviews. The square boxes represent the main themes, with arrows indicating the sub-themes contained within. For example, under the theme of “Unconditional Love” are the sub-themes of *no judgement* and *always happy to see you*. The thematic map also helps to illustrate the connections between themes, as indicated by dotted lines. In the map, the themes of “Responsibility” and “Burden” are connected, as the same sub-themes of *time*, *finances*, and *energy* appeared in both themes. We can also see that the sub-themes may arise in more than one theme, such as the sub-theme of *they saved me* being contained in both the themes “Rescuing” and “Good for People.” In short, a thematic map helps to visually identify and make sense of connections between themes and sub-themes, allowing you to try out different connections, and helping you to deeply analyze your data.

Figure 13.3 Thematic Map of Human-Animal Bond [\[Image description for Figure 13.3\]](#)

Developing and Reviewing Themes

Once candidate themes have been identified, researchers need to develop them and check their accuracy. At this stage, candidate themes may be kept, changed, renamed, split up, combined, or discarded. When reviewing themes, ask yourself these questions: Is this pattern a viable theme? Can I identify the boundaries of this theme? Am I clear about what it includes and excludes? Is there enough (meaningful) data to support this theme? Does this theme convey something important (Braun & Clarke, 2021, p. 90)?

Refining, Defining and Naming Themes

This stage continues the work of the previous with more finality. Here, themes are named, parameters are identified (where does one theme start and end?), and detailed analyses of the themes are presented (what is the core analysis of the theme?).

When Do I Stop?

It's impossible to give clear guidelines on when to stop refining and working over your themes, but generally you can wrap it up when you aren't finding anything new. That is, you can stop when refinements aren't producing any new interpretations. This is known as **saturation**, the point where no additional issues, themes, or insights are being generated (Hennink, Kaiser, & Marconi, 2017).

Credibility and Trustworthiness

Determining if your interpretation is valid is different in qualitative analysis than in quantitative analysis. In qualitative research, as discussed in [chapter 6c](#), validity speaks to how credible and trustworthy your conclusions are. **Credibility** and **trustworthiness** speak to how rigorous and systematic you were in your methodology and whether readers of your research believe you have established your credibility (Leavy, 2017). When reflecting on the validity of your study, ask yourself the following questions: Are you telling a convincing story? Have you reached your findings with integrity? Have you looked for and addressed contradictory cases or coyote codes? Are your interpretations available for discussion among participants and other knowledge holders? How do your findings impact those who participated in the research, and how do your findings impact the wider social context in which research occurred (Hesse-Biber & Leavy, 2011; Kovach, 2021)?

Guba and Lincoln (1989) explain this as follows:

The basic issue in relation to trustworthiness is simple: how can an inquirer persuade his or her audiences (including self) that the findings of an inquiry are worth paying attention to, worth taking account of? What arguments can be mounted, what criteria invoked, what questions asked, what would be persuasive on this issue? (p. 398)

Validation is therefore a process whereby we as researchers interrogate our own findings and test out our conclusions in dialogue

with others. Considering questions of who owns the stories we are working with and how their interpretations shape a study is particularly important when working with Indigenous communities, though the question of how our research represents any community is important to explore whichever community we are working with.

Conclusion

The overall goal of data analysis is to reach some inferences, lessons, or conclusions by condensing large amounts of data into relatively smaller, more manageable bits of understandable information. The analysis process for qualitative data is not distinct from the preparation and coding stages; rather, analysis begins early and continues throughout the project. For example, while transcribing audio files, the researcher is also beginning to identify themes (coding) and make sense of those themes (analysis). Even creating a codebook is a way of making sense of data and developing a way to talk about the findings. Thus, the analysis of qualitative data occurs throughout the entire qualitative research process. Researchers conducting these types of studies begin analyzing the moment they start a focus group or interview, enter the field, or gather texts to analyze. When the researcher has prepared their data, identified codes, marked passages with those codes, developed definitions of each code, and the data have been condensed into manageable form, it is time to begin the important work of writing up these findings in ways that make sense to a larger audience – whether it be the community that participated in the study, a government agency, the academic community, or the public at large.

Summary

- Qualitative analysis is an iterative process that begins while you are gathering data and continues through to the time you write up your final conclusions.
- Grounded theory uses an inductive process of open coding that is followed by more focused coding. This allows you to draw forth concepts, categories, and patterns from your data. The purpose is for your data to tell you something new.
- Coding for thematic analysis can be more deductive, where your codes reflect the theories you are testing and further developing.
- Regardless of the type of data you are analyzing, it is important to write memos throughout your data analysis process as possible codes and themes can reveal themselves to you at any time.
- Coding involves reading the data several times and identifying patterns across data. Computer programs like NVivo can assist with coding. Themes are eventually identifiable as you begin to compare and cluster various categories of data.
- Validity in qualitative research is about how trustworthy and credible your findings are to you, your peers, and the community you worked with. This can be made possible by remaining close to the community you are working with throughout the analysis, especially if that community is Indigenous.

Key Terms

ATLAS.ti: a computer software program that assists qualitative researchers in sorting, coding and analyzing large amounts of qualitative data.

candidate themes: themes that aim to tentatively explore meaning in relation to the research question(s) and the entire dataset. They are “candidates” for final themes but may not be selected.

codes: a label or tag given to words or phrases in qualitative data in the analysis stage to represent more complex ideas in simple form.

codebook: a document or booklet that lists and describes all codes developed during qualitative data analysis. The document resembles a detailed legend that can be referred back to by the researcher to ensure all data passages have been correctly coded.

coding: the process of systematically organizing and labelling raw qualitative data to find patterns and themes, or conceptual categories.

coyote codes: codes that are outliers.

credibility: whether the claim is of a kind that, given what we know about how the research was carried out, we can judge it to be very likely to be true.

discourse analysis: the study of how language shapes meaning, power, and social relations.

focused coding: a more narrow and refined process of organizing qualitative data that occurs after open coding, whereby the researcher narrows, collapses and/or merges themes or categories. These categories are then labelled, and data passages are re-sorted under each of these newly labelled categories.

grounded theory: when theory emerges through inductive data analysis. The theoretical constructs are rooted, or grounded, in empirical observations from the data collection stage of the research process.

journaling: recording your reactions, emotional state, and personal experiences while conducting fieldwork.

memos: notes that the researcher develops about their data regarding interpretation and relationships within the data.

narrative analysis: a qualitative research method that examines how stories and personal accounts shape meaning, identity, and social reality.

NVivo: a computer software program that assists qualitative researchers in sorting, coding and analyzing large amounts of qualitative data.

open coding: the process of organizing and labelling qualitative data to find patterns and themes without allowing any preconceived notions or ideas to guide the process.

reflexivity: examining one's own reactions, thoughts, feelings, and social position in regard to your research.

saturation: the point at which no new codes or themes are being produced.

thematic analysis: a qualitative method for identifying, analyzing, and interpreting patterns (themes) within data.

thematic mapping: creating visual maps of candidate themes to explore relationships, interconnections, and meanings between candidate themes.

transcribe: the process of converting audio data into written form, verbatim, while also making note of who each speaker was as well as nonverbal cues.

trustworthiness: trustworthiness refers to the degree of confidence in data, interpretation, and methods used to ensure the quality of a study.

Chapter Review

Crossword

Fill in the term in the right-hand column and it will display in the crossword puzzle. Be sure to include spaces where appropriate.

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Discussion Questions

1. Read more about grounded theory at the Grounded Theory Institute here: <https://www.groundedtheory.com/>. Is this way of conducting research interesting to you? Why or why not?
2. Conduct the practice field research explained in [chapter 9](#), discussion question 1. Then, prepare your fieldnotes for analysis by typing up all your notes and add some of your own insights to create some analytic fieldnotes. How long was the process of

taking notes from a 15-minute observation period? What did this experience tell you about preparing fieldnotes for analysis?

3. Choose a podcast episode from *Give Methods a Chance*. Transcribe the first two minutes of the podcast. Be sure to type exactly what the speakers say and indicate who said what, their tone of voice, and any other cues you hear. How long did this process take you for two minutes of audio? What did this experience tell you about preparing audio data for analysis?
 4. Use the audio transcript you typed up for question 3 above to practice your coding skills. Start with open coding and then move to focused coding. Create a codebook with at least two codes and their definitions. How long did this coding process take you? What did you learn about coding from this experience?
-

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definition

Recording your reactions, emotional state, and personal experiences while conducting fieldwork.

×Close definition

Notes that the researcher develops about their data regarding interpretation and relationships within the data.

×Close definition

When theory emerges through inductive data analysis. The theoretical constructs are rooted, or grounded, in empirical observations from the data collection stage of the research process.

×Close definition

A qualitative method for identifying, analyzing, and interpreting patterns (themes) within data.

×Close definition

Labels or tags given to words or phrases in qualitative data in the analysis stage to represent more complex ideas in simple form.

×Close definition

The study of how language shapes meaning, power, and social relations.

×Close definition

A qualitative research method that examines how stories and personal accounts shape meaning, identity, and social reality.

×Close definition

The process of converting audio data into written form, verbatim, while also making note of who each speaker was as well as nonverbal cues.

×Close definition

The process of systematically organizing and labelling raw qualitative data to find patterns and themes, or conceptual categories.

×Close definition

Codes that are outliers.

×Close definition

The process of organizing and labelling qualitative data to find patterns and themes without allowing any preconceived notions or ideas to guide the process.

×Close definition

A more narrow and refined process of organizing qualitative data that occurs after open coding, whereby the researcher narrows, collapses and/or merges themes or categories. These categories are then labelled, and data passages are re-sorted under each of these newly labelled categories.

×Close definition

A document or booklet that lists and describes all codes developed during qualitative data analysis. The document resembles a

detailed legend that can be referred back to by the researcher to ensure all data passages have been correctly coded.

×Close definition

Examining one's own reactions, thoughts, feelings, and social position in regard to your research.

×Close definition

Themes that aim to tentatively explore meaning in relation to the research question(s) and the entire dataset. They are "candidates" for final themes but may not be selected.

×Close definition

Creating visual maps of candidate themes to explore relationships, interconnections, and meanings between candidate themes.

×Close definition

The point at which no new codes or themes are being produced.

×Close definition

Whether the claim is of a kind that, given what we know about how the research was carried out, we can judge it to be very likely to be true.

×Close definition

Trustworthiness refers to the degree of confidence in data, interpretation, and methods used to ensure the quality of a study.

×Close definition

14: Quantitative Data Analysis

Learning Objectives

- Understand the importance of levels of measurement in quantitative data analysis.
- Describe the utility of frequency distributions.
- Distinguish between descriptive and inferential statistics.
- Distinguish between the three measures of central tendency: mode, median and mean.
- Describe the utility of measures of dispersion.
- Describe the different graphical formats used to display univariate distributions.
- Explain the role quantitative data have played historically in justifying racist policies, including those targeting Indigenous peoples.

We are inundated with quantitative data on a daily basis – numbers are everywhere. We see important social issues being debated using numerical data in the public domain on social media and the news media, such as intimate partner violence, pandemic epidemiology (including COVID-19), fear of crime, immigration, correlates of offending, and many other important social topics. Numerical findings on these topics can be interpreted and used in inappropriate ways by laypersons as well as people who represent themselves as “authorities” in these media. The challenge is that when people are not well-versed in how the scientific process operates, they may incorrectly use research and numerical results as evidence for and therefore confirmation of their perspectives or positions based on a misunderstanding of what the statistics actually represent.

This chapter is a simplified overview of the process of quantitative data analysis for information gathered from experiments, surveys, content analysis, and other data represented by numbers. We start by discussing why understanding statistics is critical in everyday life, and we review some of the foundational concepts in statistics. We then discuss the process of data analysis, including data entry, data cleaning, and univariate analyses. This chapter is structured to highlight the process of data analysis, from the point at which we have completed collecting our data on some interesting social phenomenon, to presenting data in a graphical format. We conclude by considering the importance of including Indigenous peoples and their voices and perspectives in the collection, analysis, and interpretation of numerical data, especially when conducting research involving Indigenous peoples and their communities.

Overview of Terminology in Quantitative Data Analysis

Although the process of operationalization is beyond the scope of this chapter, the end process of operationalization, where we define the categories in our variables with numbers for the purpose of quantitative analysis, first requires an understanding of levels of measurement (LOMs) (see the full discussion in [chapter 6a](#)). Recall that LOMs refer to how the attributes of our variables are related to one another; are they rank ordered, do we know the distance between the ranks, is there a true zero point, or are they simply different categories? Determining the level of measurement of our variables involves an appraisal of *how* categories in each variable are coded with numbers and *how* these numbers are used in statistical tests. LOMs are critical because they determine the range of *legitimate* mathematical operations that can be performed on specific variables of interest (see Fox et al., 2013; Gau, 2019; Bachman & Paternoster, 2004). LOMs determine:

1. The legitimate statistics that can be interpreted for your variables.
2. The types of descriptive/univariate statistics that can be reported and the types of inferential tests that can be undertaken.

In other words, determining the LOM of variables is always the starting point prior to running any statistical analysis. Please refer to Table 14.1 for a review of the four LOMs: nominal, ordinal, interval and ratio.

Stop and Take a Break!

Watch this video for a clear explanation of LOMs and their importance in the context of statistical analysis.

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Table 14.1: Levels of Measurement Defined

Level of Measurement	Simplified Definition	Examples
Nominal	Numbers represent categories only. No ranking or meaningful distance between categories.	gender, ethnicity, colour
Ordinal	Numbers are categories with a natural ordering or ranking. No meaningful distance between categories.	education, opinion scales, socioeconomic status
Interval	Numbers are categories with a natural ordering and equal distance between the categories. <i>Absence</i> of a natural zero point.	IQ, Temperature in degrees Celsius
Ratio	Numbers are categories with a natural ordering and equal distance between the categories. <i>Presence</i> of a natural zero point.	number of drinks in the past month, self-reported offences, final exam scores.



Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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Overview of the Process of Quantitative Data Analysis

Once we have collected our quantitative data and we are clear on the level of measurement of each variable, now what? Rather than calculate all the statistics by hand, we can use a statistical analysis program, like Statistical Package for Social Sciences (SPSS), to run all the analyses we may want or need to address our research question. We can import our data directly into SPSS from online survey programs, such as Qualtrics and Survey Monkey, or manually enter the data ourselves into the analysis program, which may be the case if we are using content analysis or experiments. But before we jump into the analysis, we need to define our variables and clean our data.

Say we are conducting a survey of university students asking about substance use. As part of the demographic information we collect, we ask about their gender in an open question, allowing the respondent to type in their gender rather than choose from a selected list. As respondents may type in any gender identity, part of defining our variable for gender is going through the

responses and placing them into categories so that we can run analyses with gender as an independent variable. We would then assign a number to each category so that our computer program can work with the variable (e.g., woman = 1; transwoman = 2; non-binary = 3; and so on), remembering that gender is also a nominal variable and so the numbering of the categories does not represent any ordering or ranking. Part of data cleaning is assessing the data we have collected for errors. For example, what if a respondent offered that their gender was “orange”? This would not be a valid response to the question about gender identity, and so we would need to determine how we would code this response. We could code it as “no response,” as the person realistically did not respond to the question asked, or we could interpret the person’s response as preferring not to answer and code it that way. The point of data cleaning, including defining our variables, is that each respondent should have a value entered for each variable, even if that value is “missing data” for respondents who skipped that question.

After we confirm the accuracy of our data, we generally examine all our variables in summary tables called **frequency distributions**. These distributions provide a visual display of frequency counts (how many times categories of a particular variable appear in the data) so that researchers can easily interpret the data and more easily identify any potential additional data entry errors not identified while entering or double-checking the data.

Let’s look at an example. Table 14.2 shows the frequency distribution of the variable of political affiliation in a study on perceptions of capital punishment in a sample of adults. We can see that there are seven missing values. Missing values can happen for several reasons. A survey respondent may skip a survey question because they didn’t want to answer the question. Or, the question (variable) may not be applicable to the respondent; for example, if a respondent replies that they do not have children, we would expect that they would skip a question about the ages of their children. Missing values may also be due to data entry errors. We can also see from Table 14.2 that there is one response that is not a legitimate value for our categories of political affiliation: the value 5. This is likely due to a data entry error. This frequency distribution enables us to identify and correct such errors before we start the data analysis process. Checking each variable for data accuracy using frequency distributions is a good practice, and programs like SPSS make it easy!

Table 14.2: Political Party Affiliation in a Sample of Adult Participants in a Study on Views on Capital Punishment, a Frequency Distribution with Data Entry Errors

Question: What party do you most identify with?					
Response	Party	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Conservative	127	51.2	52.7	52.7
Liberal	51	20.6	21.2	73.9	
NDP	45	18.1	18.7	92.5	
No Party	17	6.9	7.1	99.6	
5	1	0.4	0.4	100.0	
Total	241	97.2	100.0		
Missing	System	7	2.8		
Total	248	100.0			

Statistically Analyzing and Presenting Quantitative Data

Now that our quantitative data have been cleaned, errors have been addressed, and data have been presented in the form of frequency distributions, we are ready to consider the types of statistical analyses that can be performed on our data. The purpose of quantitative data analysis is to uncover patterns and relationships in large **aggregations of data** so that we can describe the data in meaningful ways.

Two types of statistics can be derived from numerical data. **Descriptive statistics** are statistics that represent in or more variables in our *sample*. We can discuss the percentages in categories of our variables (frequency distributions), typical or average cases (measures of central tendency), and the dispersion, or spread, of our variables (measures of dispersion). In other words, any conclusions based on descriptive analyses apply to the specific participants or elements we have studied only.

Conclusions based on **inferential statistics** go beyond the sample to say something about the *population* from which the sample was drawn (see Fox et al., 2013; Gau, 2019; Schulenberg, 2016). Inferential statistics involve formal hypothesis-testing procedures

in making these inferences. Inferential statistics include **bivariate** (i.e., two variables) and **multivariate** (i.e., more than two variables) analyses. See Table 14.3 for the key features of each. This chapter focuses on univariate statistics. For more information about bivariate or multivariate analyses, any text authored by Neil J. Salkind can be a good place to start.

Table 14.3: Key Features of Descriptive and Inferential Statistics

Descriptive Statistics	Inferential Statistics
focus on describing the sample only	use the sample to make evidence-based statements about the population
often focus on one variable at a time (univariate); can also focus on more than one variable at a time	focus on two variables (bivariate) or more than two variables (multivariate)
common univariate statistics include: <ul style="list-style-type: none"> • frequencies • mean • mode • median • range • standard deviation • variance 	common bivariate statistical analyses include: <ul style="list-style-type: none"> • correlation • t-tests • chi square common multivariate analyses include: <ul style="list-style-type: none"> • analysis of variance (ANOVA) • multiple analysis of variance (MANOVA) • linear regressions

Descriptive Statistics: Univariate Analysis

Univariate analysis focuses on describing the patterns in *one* variable at a time. There are three categories of univariate statistics:

1. Frequency distributions, which display frequencies and percentages;
2. Measures of central tendency, which are the mean, median, and mode;
3. Measures of dispersion, which include the range, standard deviation, and variance. (see Gau, 2019; Maxfield & Babbie, 2018)

Frequency Distributions

The first way we can describe variables in our data is frequency or how often a value of a variable occurs in the data. Frequency distribution tables are a tool used in identifying frequencies. Not only do these tables assist us with data cleaning and identifying errors as discussed earlier, but they also provide information from which we can discuss the categories of our variables in meaningful ways. For example, let's examine the data presented in Table 14.4 below, looking at participants' subjective well-being.

Table 14.4 Frequency Distribution of Subjective Well-Being

Subjective well-being					
	Response	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very dissatisfied	161	0.9	0.9	0.9
	1	71	0.4	0.4	1.4
	2	136	0.8	0.8	2.2
	3	243	1.4	1.4	3.6
	4	321	1.9	1.9	5.5
	5	1326	7.8	7.8	13.3
	6	1237	7.3	7.3	20.6
	7	3011	17.8	17.8	38.4

Subjective well-being					
	Response	Frequency	Percent	Valid Percent	Cumulative Percent
	8	4945	29.2	29.2	67.5
	9	2199	13.0	13.0	80.5
	Very satisfied	3306	19.5	19.5	100.0
	Total	16956	100.0	100.0	

Note: Data drawn from the 2015 General Social Survey on Time Use

In the first column, we can see the categories for our “subjective well-being” variable. This ordinal-level variable ranges from a minimum value of 0, “very dissatisfied,” to a high of 10, “very satisfied.” The “frequency” column presents the number of participants in each category. We can see that 1,326 participants rated their subjective well-being at 5, meaning “neither satisfied nor dissatisfied.” The “percent” column provides the percentage of the respondents who are in each category that includes respondents with missing values. In this sample, 7.8% of the sample rated their subjective well-being at 5. The “valid percent” column provides the percentage of the respondents who are in each column that excludes respondents with missing values (they are the same here because these data do not include missing values). If our data have missing values, it is common to use the “valid percent” column when discussing the categories of a variable. The “cumulative percent” column sums the percentages in each category. It is not often used but can be helpful when identifying the median (defined later in this chapter) and some other features of our data.

These frequency tables allow us to discuss specific features of our data. In the frequency distribution in Table 14.4, we can see that the majority of respondents have rated their subjective well-being as 7 or greater, meaning that people are generally satisfied with their own well-being. In addition, we can see that the most frequently reported satisfaction level is 8 (29.2%), and less than 6% of the sample reported being dissatisfied with their subjective well-being.

After we examine our univariate frequency distributions, we can take a look at descriptive statistics for our sample data: **measures of central tendency**, which include the mean, median and mode, and **measures of dispersion**, which include the standard deviation, range, and variance (see Fox & Levin, 2013; Gau, 2019). The selection of the most appropriate descriptive statistics to use is dependent on the LOMs.

Measures of Central Tendency

Measures of central tendency are the most common, typical or “average” response in our data (Palys, 1997). The **mode** is the most frequently occurring category in a variable and is best used to represent or describe nominal-level data (Schulenberg, 2016). For example, Table 14.5 shows the variable of whether respondents feel like they are constantly under stress. Of the two categories (yes and no), the most frequently occurring category, or the mode, is “no” (11,794 respondents). We can then say that the majority of respondents do not feel like they are constantly under stress.

Table 14.5: Perceptions of Feeling Constantly Under Stress, a Frequency Distribution

	Response	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5221	30.7	30.7	30.7
	No	11794	69.3	69.3	100.0
	Total	17015	100.0	100.0	

Note: Data drawn from the 2015 General Social Survey on Time Use

The measure of central tendency frequently used for ordinal data is called the **median**. The median is the category that falls on the 50th percentile or the case that divides the frequency distribution in half (see Schulenberg, 2016), as depicted in Figure 14.1. While we can also use the median to describe interval and ratio-level data, the median is the most appropriate for ordinal data because the data are ordered from the lowest to the highest values.

Figure 14.1: Conceptual Representation of the Median [\[Image description for Figure 14.1\]](#)

When identifying the median, we first locate its position. The position of the median is equal to the case in the middle of the distribution. Once we find the position of the median, we need to identify the “case” associated with that position (see Schulenberg, 2016). Consider the data in Table 14.4, which present the level of subjective well-being. Looking at the cumulative percent column, we can see that the median (or the 50% point) is located among the respondents who rated their subjective well-being as 8. So, we can state that the median level of subjective well-being among the sample studied is at the higher end of the satisfaction rankings.

The **mean** is the measure of central tendency best used to describe interval- or ratio-level variables (Schulenberg, 2016) and the one we are most familiar with. When you ask your professor for the class average for your exam, you are requesting the mean. The formula for calculating the mean is presented in the formula shown in Figure 14.2.

$$\begin{aligned} &\overline{x} \\ &= \\ &\frac{\sum x}{N} \end{aligned}$$

Figure 14.2: Formula for Calculating the Mean

To calculate the mean, we sum exam scores (each X) for all students in class and divide by the number of students in the class. When we have a lot of extremely low or high scores, sometimes referred to as **outliers**, the mean becomes a less accurate representation of interval and ratio-level data. For example, if most students scored between 70% and 90% on their exam but several students scored 0%, this would bring the mean down significantly. In cases where we have extreme scores that skew the mean, it is helpful to also provide the median to better describe our sample.

Figure 14.3 shows a graphical way to understand how the mean, median, and mode describe data. It is an example of perfectly symmetrical data with no outliers, and this does not often happen in the real world. These data are symmetrical because each half of the distribution are mirror images of each other; in other words, the mean, median, and mode are the same.

Rendered by QuickLaTeX.com

Figure 14.3: Symmetrical Distribution with the Same Measures of Central Tendency

Measures of dispersion

Measures of dispersion are complimentary to measures of central tendency (Palys, 1997). Despite knowing the centre of the data, we also often want to know how much data varies from the centre, such as knowing what the lowest and highest scores are. Consider Figure 14.4, where the blue distribution represents Class A's exam scores (A) and the red distribution represents Class B's exam scores (B). Although both distributions have the same mode, median and mean, the blue distribution of exam scores has much more dispersion – or spread – around its mean than the red distribution. This means that students in Class A had more high and low scores as compared to the students in Class B, whose scores clustered closer to the class average. Measures of dispersion allow us to describe how much our sample varies around its measure of central tendency. All measures of dispersion discussed here require at least ordinal-level variables.

Rendered by QuickLaTeX.com

Figure 14.4: Distributions with the Same Measures of Central Tendency and Different Dispersions

The most basic measure of dispersion is referred to as the **range**. The range represents the difference between the highest score and lowest score in our data. For example, if the lowest age in our sample of criminology students is 18 and the highest age is 24, our range is 6 years.

When we have data that are measured at the interval or ratio level, we can assess dispersion – or the “spread” – around our mean by using the **variance** and the **standard deviation**. While the details and formulas of these measures are beyond the scope of this text and will be explored further in your statistical analysis courses later on, it is important here to reiterate that the way we measure the dispersion around the mathematical average, or mean, will depend on the level of measurement of the data in question. The question ultimately becomes how different each “score” or participant is from the average score or participant. You will see variance-related concepts are used in inferential tests in future courses.

Figure 14.5 shows positively skewed data and negatively skewed data. When we have a positively skewed variable, the mean will be higher than the median, and the median will be higher than the mode. This occurs because the mean is pulled higher by outliers on the positive side of the distribution (higher scores). When we have a negatively skewed variable, the mean will be lower than the median, and the median will be lower than the mode. This occurs because the mean is pulled lower by outliers on the negative side of the distribution (lower scores) (see Fox et al., 2013).

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Rendered by QuickLaTeX.com

Figure 14.5: Asymmetrical Distributions: A Positively (a) and Negatively (B) Skewed Distribution

Presenting Quantitative Data

It is often useful to audiences to present our univariate distributions in a graphical format instead of in tables. Univariate charts and graphs are a powerful way to visualize and communicate data. Some of these basic options for univariate distributions include pie charts, bar charts, and line graphs (see Palys, 1997; Schulenberg, 2016).

Pie charts are generally used to represent variables that have a small number of categories, usually measured at the nominal or ordinal level. Figure 14.6 illustrates solved homicides in Canada in 2024, broken down by the relationship between the accused and the victim. As we can see from the pie chart, the most common relationship category is acquaintance (39%), followed by intimate relationship (19%). A pie chart allows us to quickly see how the categories are distributed.

Figure 14.6: [Solved Homicides in Canada, 2024, by type of accused-victim relationship](#). Statistics Canada. (2025, July 22). Number of victims of solved homicides, by type of accused-victim relationship [Data set] (Table 35-10-0073-01). <https://doi.org/10.25318/3510007301-eng> [\[Image description for Figure 14.6\]](#)

Bar charts are generally used to represent nominal, ordinal, and grouped interval data with several categories. The example in Figure 14.7 is a bar graph of the number of homicide victims in Canada over a 5-year period, from 2019 to 2023. We can quickly see that there was an annual increase in homicide victims, peaking in 2022 with 882 victims. Like pie charts, bar charts are useful to visually compare differences across categories.

Figure 14.7: Homicide victimization in Canada, 2019-2023 [\[Image description for Figure 14.7\]](#)

Line graphs are used to represent variables measured at the interval or ratio level. The example in Figure 14.8 is a line graph that shows the homicide victimization rates in Canada by gender and Indigenous identity over a period of 13 years. Looking at the graph, we can quickly see that Indigenous women and girls are victims of homicide at a much higher rate than non-Indigenous women and that men and boys have the second-highest rate of homicide among the three groups.

Figure 14.8: Homicide victimization, by gender and Indigenous identity, Canada, 2009 to 2021 (rate per 100,000 population). Data Source: Statistics Canada. (2023). Canadian Centre for Justice and Community Safety Statistics, Homicide Survey. [\[Image description for Figure 14.8\]](#)

The sharing of stark findings, such as those presented in Figure 14.8, without culturally sensitive interpretation can perpetuate harmful stereotypes, erode trust in research, and allow misinterpretation to justify discriminatory policies. So, in addition to pointing out the disproportionately high percentage of Indigenous women and girls as victims of homicide, the findings should be couched in a discussion of systemic challenges faced by Indigenous peoples that may influence these percentages. These challenges may include historical trauma, the forced removal of children to residential schools, and the reserve system. Additionally, systemic factors such as the discretionary decisions of law enforcement and prosecutors to respond to victimization against Indigenous peoples should be mentioned, such as the National Inquiry Into Missing and Murdered Indigenous Women and Girls (2019). The way in which we interpret quantitative data such as these as they pertain to Indigenous peoples is also addressed in the next section.

Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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Including Indigenous Voices with the Use of Western Models of Science and Statistics

Western methods of science have been criticized as being a tool of colonialism that have aided in the perpetuation of Western systems of dominance of Indigenous groups in Canada. The focus of Western science on aggregated data, an outsider perspective and expertise being the domain of the academic researcher has silenced other sources of knowing as unworthy of consideration in traditional science (Deckert, 2016). Historically, the scientific method has been used within imperial systems to justify the subordinate position of Indigenous peoples. Policies influenced by quantitative data have discriminated against and harmed these groups through overtly racist institutions, such as residential schools and the reserve system (Deckert, 2016) and thus have led to intergenerational trauma for Indigenous communities (McQuaid et al., 2017). Moreover, in current times, research on these communities has been used to justify other forms of governmental intervention, such as the removal of children from Indigenous parents and the disproportionate incarceration of Indigenous peoples (Deckert, 2016; Wilk et al., 2017). These actions have resulted in resentment from Indigenous communities because they are over-researched and yet silenced within academic research (Morisano et al., 2018). Statistical data, which are a cornerstone of Western science, are often viewed as objective by both academics and the general population. Think about discussions you have had in class, with other students and with friends and family about crime rates, alcohol and drug use, high-school graduation rates, and other social problems with regard to Indigenous peoples. Now think about how many of those conversations have incorporated Indigenous voices on these issues.

Bearing all this in mind, it is important that quantitative researchers exercise caution when undertaking research with Indigenous communities. It should be apparent from the information provided in previous quantitative and qualitative methods chapters that quantitative research is particularly susceptible to silencing voices of Indigenous groups. This has led to a re-evaluation of the research process, particularly criminological research, involving Indigenous peoples (Morisano et al., 2018). More recent work on Indigenous knowledge has demonstrated the necessity and usefulness of including Indigenous voices in the applied sciences, including resource development and ecological management (see Ulluwishewa et al., 2008). The importance of Indigenous knowledge and perspectives has been acknowledged in ethical frameworks for research in Indigenous communities, data collection and analysis and ownership and the dissemination of data from research on Indigenous persons and their communities (Morisano et al., 2018, 2024). As discussed at greater length in [chapter 9](#) and [chapter 12](#), participatory action research is an emerging framework for research undertaken in collaboration with vulnerable groups that includes Indigenous perspectives in all stages of the research. Moreover, participatory action research seeks to empower communities by involving Indigenous community members in all steps of the research process (e.g., conceptualization to data collection and analysis) and the dissemination of results (see Aldridge, 2015). It is also worth mentioning that it is critical to include Indigenous voices in quantitative research in criminology because we are analyzing social phenomena. At a fundamental level, including Indigenous perspectives increases the validity of quantitative measures and the validity of the interpretations of the quantitative data gathered from, on and with Indigenous peoples.

Conclusion

The overall goal of data analysis, regardless of the nature of those data, is to be able to condense large amounts of information and present it in a way that can be understood and communicated to an audience. In this chapter, we examine this process when the data are numerical. These numerical data are typically collected in studies employing a deductive approach using methods such as experiments or surveys, where there is often a large number of participants. While the focus of this chapter was on descriptive statistics – frequency distributions, measures of central tendency, and measures of dispersion – we also mention the role of inferential statistics in social science research. The ways we can effectively present these data in a graphical format are also reviewed; these visual representations of large amounts of data can be effective but also potentially misleading. The chapter concludes with emphasis on the importance of understanding how to collect, analyze and interpret numerical data accurately as these data, in their aggregate form, have a unique potential to be misused and to misinform audiences, a concern that is

paramount when researching and reporting on the lived experiences of Indigenous peoples.

✓ Summary

- Quantitative data are a part of our everyday lives and are particularly susceptible to being misinterpreted or used in inappropriate ways. As such, a basic understanding of statistics is critical.
- Before we can begin to think about what quantitative analysis technique is most suitable for the data we have, we must first understand the level of measurement (LOM) of each of our variables. The LOM determines the legitimate univariate statistics we can calculate, and they influence the types of inferential statistics we can use later in the analysis process.
- Prior to analyzing our data, it is necessary to enter, clean and examine our data for errors.
- Descriptive statistics summarize our sample data.
- Univariate statistics include frequency distributions, measures of central tendency and measures of dispersion. The choice of the proper measure is determined by the level of measurement of the single variable.

Key Terms

aggregate data (or aggregations of data): data from multiple sources that are summarized and compiled to examine trends or statistical analysis. They are the sum of their component parts or smaller units of data.

bar chart: a chart used to represent univariate distributions in a graphical format instead of a table. Bar charts are generally best to represent nominal, ordinal and grouped interval data with several categories.

bivariate statistics: statistical tests that assess the extent of the relationship between two variables.

descriptive statistics: statistics that focus on our sample data alone, such as frequency distributions, measures of central tendency and measures of dispersion for one or more variables in a study.

frequency distributions: a table that visually displays the distribution of one variable through aggregated counts and percentages of participants in each category of the variable. These distributions allow researchers to easily interpret the data and identify any potential data entry errors.

inferential statistics: statistics where we use our sample data to make inferences to a larger population from which our sample is drawn. This is based in probability theory.

line graph: a chart used to represent univariate distributions in a graphical format instead of a table. Line graphs are generally best for representing interval- or ratio-level data.

mean: a measure of central tendency that represents the arithmetic average of an interval or ratio variable.

measures of central tendency: statistics that provide a measure of where participants cluster, the typical response or the average response in a variable. The three measures of central tendency are mode, median and mean.

measures of dispersion: statistics that provide information on how responses on a variable differ from or are dispersed around a measure of central tendency. They compliment the measure of central tendency. The three measures of dispersion are range, variance and standard deviation.

median: a measure of central tendency that represents the midpoint in a distribution of an ordinal variable.

mode: a measure of central tendency that represents the most frequently occurring category of a nominal variable.

multivariate statistics: statistical tests that assess the extent of the relationship between three or more variables. Typically, we examine the impact of multiple independent variables on a single dependent variable.

outlier: extremely high or low scores in a distribution that make the mean an inaccurate measure of central tendency when dealing with interval- or ratio-level data. These outliers positively or negatively skew data.

pie chart: a chart used to represent univariate distributions in a graphical format instead of a table. Pie charts are generally best to represent a small number of categories at the nominal or ordinal level.

range: a measure of dispersion that represents the difference between the highest and lowest observed value in a variable.

standard deviation: a measure of dispersion that represents the square-root of the average of the squared deviations from the mean. This value is transformed back in the original units of the variable so it can be interpreted.

univariate analysis: statistics on one variable in our sample, such as the mean and standard deviation.

variance: a measure of dispersion that represents the average of the squared deviations from the mean. This value is in squared units so it is difficult to interpret as a measure of dispersion.

Chapter Review

Crossword

Fill in the term in the right-hand column and it will display in the crossword puzzle. Be sure to include spaces where appropriate.

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Discussion Questions

1. In your own words, describe how a distribution can have all the same measures of central tendency but different measures of dispersion.
2. Discuss why quantitative research is particularly susceptible to silencing voices of Indigenous groups. Provide an example of a quantitative statistic you have read in the news or in another class that you feel misrepresented the lived experiences of Indigenous peoples in Canada and what you might do to rectify this if you were reporting on the same social topic.
3. What is one benefit and one limitation of using univariate graphs when trying to understand the distribution and central tendency of a single variable?
4. Provide a hypothetical example of when an outlier should not be ignored as it provides meaningful information for your analysis.

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definition

A table that visually displays the distribution of one variable through aggregated counts and percentages of participants in each category of the variable. These distributions allow researchers to easily interpret the data and identify any potential data entry errors.

×Close definition

Data from multiple sources that are summarized and compiled to examine trends or statistical analysis. They are the sum of their component parts or smaller units of data.

×Close definition

Statistics that focus on our sample data alone, such as frequency distributions, measures of central tendency and measures of dispersion for one or more variables in a study.

×Close definition

Statistics where we use our sample data to make inferences to a larger population from which our sample is drawn. This is based in probability theory.

×Close definition

Statistical tests that assess the extent of the relationship between two variables.

×Close definition

Statistical tests that assess the extent of the relationship between three or more variables. Typically, we examine the impact of multiple independent variables on a single dependent variable.

×Close definition

Statistics on one variable in our sample, such as the mean and standard deviation.

×Close definition

Statistics that provide a measure of where participants cluster, the typical response or the average response in a variable. The three measures of central tendency are mode, median and mean.

×Close definition

Statistics that provide information on how responses on a variable differ from or are dispersed around a measure of central tendency. They compliment the measure of central tendency. The three measures of dispersion are range, variance and standard deviation.

×Close definition

A measure of central tendency that represents the most frequently occurring category of a nominal variable.

×Close definition

A measure of central tendency that represents the midpoint in a distribution of an ordinal variable.

×Close definition

A measure of central tendency that represents the arithmetic average of an interval or ratio variable.

×Close definition

Extremely high or low scores in a distribution that make the mean an inaccurate measure of central tendency when dealing with interval- or ratio-level data. These outliers positively or negatively skew data.

×Close definition

A measure of dispersion that represents the difference between the highest and lowest observed value in a variable.

×Close definition

A measure of dispersion that represents the average of the squared deviations from the mean. This value is in squared units so it is difficult to interpret as a measure of dispersion.

×Close definition

A measure of dispersion that represents the square-root of the average of the squared deviations from the mean. This value is transformed back in the original units of the variable so it can be interpreted.

×Close definition

A chart used to represent univariate distributions in a graphical format instead of a table. Pie charts are generally best to represent a small number of categories at the nominal or ordinal level.

×Close definition

A chart used to represent univariate distributions in a graphical format instead of a table. Bar charts are generally best to represent nominal, ordinal and grouped interval data with several categories.

×Close definition

A chart used to represent univariate distributions in a graphical format instead of a table. Line graphs are generally best for representing interval- or ratio-level data.

×Close definition

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7B: 7b. Sampling Part 2 – Probability and Non-Probability Sampling Strategies

Learning Objectives

- Describe appropriate sampling strategies for non-probabilistic, inductive research.
- Describe appropriate sampling strategies for probabilistic, deductive research.
- Use information about samples to evaluate research claims.

As discussed in [chapter 2](#) and [chapter 3](#), the paradigm under which a researcher operates informs the approach they take when conducting research. Generally speaking, the paradigms of social constructionism, critical inquiry, post-modernism as well as the Indigenous paradigm all typically produce theorists who approach their research inductively, employing qualitative methods to find answers to their research questions (Hesse-Biber, 2017). They are more concerned with better understanding a particular process or the meaning their research participants attribute to a certain social situation or personal lived experience (Hesse-Biber, 2017). As such, they are more concerned with strategically selecting a smaller sample than they are with the generalizability and representativeness a very large sample might provide. It logically follows, then, that these qualitative, inductive researchers typically employ **non-probability sampling** strategies.

On the other hand, positivism produces theorists who approach their research deductively, employing more quantitative methods. As discussed in [chapter 2](#), positivists believe that truths do exist, and we just need to use systematic, scientific strategies to uncover them. They are more concerned with determining causes and explaining phenomena. It logically follows then that these quantitative, deductive researchers typically employ **probability sampling** strategies.

As we'll discuss in this chapter, probability and non-probability sampling techniques are quite different and serve different purposes. Keep in mind as you review these different sampling strategies that they are not mutually exclusive. Many research studies use more than one sampling strategy, depending on what the research question is, what the population of interest is, and what data are available to answer that question. Sometimes when working within Indigenous or other communities, the sampling technique may need to be modified based on input from the community and/or problems with the practicality of implementing an ideal strategy within a typically small, closed population. When working with Indigenous communities, they may have suggestions that pertain to sampling such as which elders you need to speak to before getting started. Those elders may then have suggestions not only about the project design, but also about how to select your sample and the best wording to use for the recruitment of participants. For instance, if you want to discover if traditional cultural involvement helps youth stay away from deviant activities, they may suggest you sample the youth participating in the upcoming powwow rather than youth in school. Often, the support of key elders for your project will convince Indigenous community members to voluntarily participate. Further, a mixed-method, and therefore a mixed-sampling strategy, is often not only necessary but advantageous to provide the most complete and holistic answers to the complex research questions we ask as criminologists.

Non-Probability Sampling Strategies

Non-probability sampling refers to sampling techniques for which the chance of any person or entity being included in the sample is unknown (Maxfield & Babbie, 2018; Ritchie & Lewis, 2003; Palys & Atchison, 2014). The reason it is unknown is because we don't have a sampling frame. Let's say, for example, you want to interview Indigenous residential school survivors. The records of who attended these schools are not always publicly available and in many cases have been destroyed; therefore, you likely cannot obtain an exhaustive list to select a sample from, and, consequently, we cannot statistically calculate the likelihood of selection or know whether a sample represents a larger population. This might sound like a problem, but representing the population is not the goal with non-probability samples. The goal, rather, is to include in our sample people or things that possess the detailed and rich information we are looking for (Ritchie & Lewis, 2003), even if that means only interviewing 25 residential school survivors. Researchers still use sound scientific processes to select their samples. The next sections explain some of these non-probability sampling strategies, but let's first consider why a researcher might decide to use a non-probability sample.

A researcher might choose a non-probability sampling method when designing a research project. For example, before conducting survey research, a researcher might administer the survey to a few people who seem to resemble the people they're interested in studying to help work out any issues with the survey such as unclear question wording, a missing response option,

or confusing ordering of questions. Researchers might also use a non-probability sample to conduct a pilot study or exploratory research before designing a more comprehensive study. This can be a quick way to gather some initial data and help get some idea of the lay of the land before conducting a more extensive study. These examples show how non-probability samples can be useful when setting up, framing, or beginning a research project.

Researchers also use non-probability samples in larger-scale research projects. These projects are usually qualitative in nature, where the researcher's goal is gaining an in-depth understanding of a topic or issue. For example, evaluation researchers who aim to describe some very specific small group might use non-probability sampling techniques. Researchers conducting inductive research in which the goal is to contribute to the theoretical understanding of some phenomenon might also collect data from non-probability samples. These researchers may seek out extreme or anomalous cases to help improve existing social theories by expanding, modifying, or poking holes in those theories.

In short, non-probability samples can serve important purposes in social science research. They are particularly useful for developing strong research projects and for improving theories through the use of extreme, anomalous, or other purposefully selected cases.

Types of Non-Probability Samples

Researchers use several types of non-probability sampling techniques, including convenience sampling, purposive sampling, quota sampling and snowball sampling. While convenience and quota sampling may be used by quantitative researchers from time to time, they are more typically employed in qualitative research, and they are both non-probability sampling techniques.

Convenience Sampling

Convenience sampling (also sometimes called opportunity, accidental or haphazard sampling) is perhaps the most basic and simple form of sampling (Ritchie & Lewis, 2003). It involves drawing a sample from the part of the population that is close at hand, readily available, and/or otherwise convenient to access (Maxfield & Babbie, 2018). This method is most useful in exploratory research. Journalists also use this technique when they need quick and easy access to people from their population of interest. If you've ever seen brief interviews of people on the street, you've probably seen a convenience sample in action. It is very much a first-come, first-serve sampling strategy. This is not to say that the samples are selected "randomly," however. The term "random selection" has a very specific meaning in social science research, and it is not synonymous with convenience sampling, despite the tendency of social science students to refer to it as such.

Let us look at a more concrete example to better illustrate convenience sampling. Suppose a local news crew was on your campus today and stopped 100 students between classes to ask their opinions on installing metal detectors on campus, and the results of the survey reveal that 90 of them are in favour of this crime prevention strategy. Later, you find out that these 90 students who happen to have just exited a class right where the news crew was set up had just watched a very graphic film on school shootings. The result from this survey would surely represent the feelings of the (rather emotional) convenience sample, but the results might be *completely* different from students on the campus as a whole if they were instead selected using a strategy that yielded a representative sample of *all* students.

While convenience samples offer one major benefit—convenience—as this example demonstrates, we should be cautious about generalizing from research that relies on convenience samples. These types of samples exclude a large portion of the population, such as the people who didn't happen to walk down the exact street on which the researcher was looking for participants or the students who were not present when the local news crew attended the campus. As such, data collected from the sample may reflect the unique characteristics of the area or group in which you've chosen to recruit participants rather than representing the larger, more diverse set of people or other entities you are trying to study.

7b.1 Convenience Sampling [\[Image description for Figure 7b.1\]](#)

Quota Sampling

Quota sampling involves the researcher segmenting the population of interest into mutually exclusive groups and then choosing a non-random set of observations from each group to meet a predefined quota. In this type of sampling, a researcher finds potential participants by:

1. identifying categories that are important to the study and for which there is likely to be some variation,

2. creating subgroups based on each category,
3. deciding how many people (or documents or whatever element happens to be the focus of the research) to include from each subgroup, and
4. collecting data from that number of entities for each subgroup.

Figure 7b.2: Quota Sampling [\[Image description for Figure 7b.2\]](#)

The number of entities to include in each group can be determined in a few different ways. In **proportional quota sampling**, the researcher tries to match the proportion of respondents in each subgroup to the proportion of that group in the population. For instance, imagine you wanted to use a sample of 100 students at your university about their career goals and to compare these goals by gender. First, you would need to know how many students identified as male and how many identified as female; you could get that information from the registrar's office. Let's say 63 percent of students identified as female, 32 percent identified as male, and 5 percent identified as non-binary or transgender. You would then want to ensure that 63 of the students in your sample identified as female, 32 as male, and 5 as non-binary or transgender. Quota sampling resembles convenience sampling in a way because the first 63 people who walked by you who identified as female would suffice. Once you have reached the number 63, you would no longer survey female students.

Non-proportional quota sampling is less restrictive because a researcher tries to meet a minimum number of people in each subgroup rather than meeting a proportional representation of the population. In this case, a researcher may decide to have 25 respondents from each gender rather than a number that matches the proportion of this gender in the population and then stop when they reach the quota for each subgroup. A non-proportional technique can be useful in research with small and/or marginalized groups because it can oversample these groups to provide more data on people whose voices may otherwise be silenced by the voices of people in proportionately larger groups. In our example of career goals by gender, those voices that would be silenced if using proportional quota sampling would be the non-binary or transgender students. We would learn more from them if we included 25 instead of 5 of them in our sample.

In sum, quota sampling techniques offer the strength of helping researchers account for potentially relevant variation across study elements, but they are not representative and do not guarantee to yield findings that can be generalized to an entire population. This strategy closely resembles convenience sampling as it's the first people or unit of observation we have access to who are included in the sample, with the only added element of a predetermined quota or cap for each subgroup of interest.

Purposive Sampling

Purposive sampling (also called judgmental sampling) is aptly named because the researcher is specifically interested in the attributes of the particular sample that was *purposely* chosen for its characteristics (Maxfield & Babbie, 2018; Hesse-Biber, 2017). It is also called judgmental sampling because the researcher is using his or her judgment in selecting a sample that is specific to the goal of the research.

Let's refer to the long-term offender study again, as the qualitative interview portion of the study utilized this sampling strategy. In addition to reviewing the case files and psychological assessments of these dangerous sexual offenders in the quantitative portion of the study, I also wanted to interview parole officers who were specifically tasked with the responsibility of supervising these offenders in the community for a period of up to 10 years once they were released from prison. Since the designation was less than 10 years old at the time of writing my dissertation and many of these offenders were just coming up to the end of their community supervision periods, it was very timely to examine how well that supervision was actually going and whether those in charge of their supervision felt it was safe to release these offenders back into the community with zero correctional oversight. The only people who could realistically answer this question with any degree of accuracy were not the policy makers who came up with this rule but rather the frontline parole officers themselves. And not any parole officer would suffice; I had to specifically talk to those senior parole officers in B.C. who actually had long-term offenders in their caseloads. They are the only ones who possessed unique knowledge and expertise on this topic. As such, purposive sampling was the primary strategy used to select these interviewees.

As this example illustrates, no matter how purposive sampling is utilized, the goal of the individual selecting the sample is to be very strategic in hand-selecting the particular sample needed. There is little interest in selecting a representative sample from a larger population; rather, the interest lies in selecting a specific sample that fulfills the goal of the research.

Figure 7b.3: Purposive Sampling [\[Image description for Figure 7b.3\]](#)

Snowball Sampling

The last non-probability sampling strategy is **snowball sampling**. With this technique, a researcher starts by identifying a few respondents that match the criteria for inclusion in the study and then asks them to recommend others they know who also meet the selection criteria (Maxfield & Babbie, 2018; Hesse-Biber, 2017). In this case, a researcher might know of one or two people they'd like to include in their study, and they rely on those initial participants to help identify additional study participants.

Let's look again at the long-term offender study. I had interviewed a handful of parole officers who were responsible for specifically supervising these offenders in the community. I had a hard time getting more names of parole officers from their supervisors, however. So, I asked the parole officers themselves, at the end of each interview, if they knew others who may have been reluctant to tell their supervisor they wanted to participate but in fact wanted my contact information. Thankfully, my sample quadrupled after asking this simple question at the end of my interviews. In fact, I was also referred by one parole officer to a long-term offender who also wanted to be interviewed! By the end, I had numerous interviews, and the sample grew with each subsequent interview, much like how a snowball builds and becomes larger as it rolls through the snow. This study shows how more than one sampling strategy may not only be necessary but very beneficial.

Snowball sampling is an especially useful strategy when a researcher wishes to study a stigmatized group or behaviour. For example, a researcher who wanted to study how transgender police officers cope with police culture would be unlikely to find many participants by posting a call for interviewees in the police station or announcing the study during a departmental briefing. Instead, the researcher might know of a transgender police officer, interview that person, and then be referred by the first interviewee to another potential participant. Having previous participants vouch for the trustworthiness of the researcher may help new potential participants feel more comfortable about being included in the study. For the same reason, researchers may also use snowball samples when they're interested in studying hard-to-reach populations such as people who share an unpopular opinion on an issue or people who belong to a group with very few members.

The main challenge or limitation with snowball samples is the fact that the initial interviewee shapes the rest of the sample; they are likely to refer the researcher to other potential participants who are very similar to themselves, thus limiting the diversity of your sample (Maxfield & Babbie, 2018; Hesse-Biber, 2017). For example, let's say you are interested in learning more about sex workers in the Downtown Eastside of Vancouver and you are introduced to one sex worker who identifies as female, white and is a youth. If you ask her to connect you with other sex workers, then they are likely to refer you to others who share the same characteristics and who probably work in the same part of the neighbourhood and not sex workers who have significantly different characteristics or experiences (e.g., homosexual male sex workers). Whether or not this poses a problem really depends on your research question and goals and ultimately the availability of research participants.

Figure 7b.4: Snowball Sampling [\[Image description for Figure 7b.4\]](#)

Table 7b.1 provides a summary of the types of non-probability samples. As explained earlier, rather than trying to represent a larger population, the overall goal of these samples is to provide a deeper understanding of the issues, gain insights for designing and conducting larger research projects, or build or improve theories about social phenomena.

Table 7b.1: Summary of Non-probability Sampling Strategies

Sampling Strategy	Description
Convenience Sampling	gathers data from whatever cases happen to be accessible; it is a first-come, first-serve sampling strategy
Quota Sampling	selects a predetermined number of cases from within different subgroups of interest
Purposive Sampling	seeks out elements that meet specific criteria
Snowball Sampling	relies on participant referrals to recruit new participants

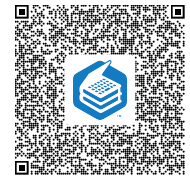


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Probability Sampling Strategies

A core principle of **probability sampling** is that all elements in the researcher's target population have an equal chance of being selected for inclusion in the study. This implies that the researchers must first have an exhaustive list – or sampling frame – of all these elements. In research, this is the principle of **random selection** (Maxfield & Babbie, 2018; Palys & Atchison, 2014; Rennison & Hart, 2019). Random selection is a mathematical process that must meet two criteria. The first criterion is that chance governs the selection process. The second is that every sampling element has an equal probability of being selected (Palys & Atchison, 2014). We won't go in-depth into the mathematical process of random selection except to say that researchers who use random selection techniques to draw their samples will be able to use statistical techniques to estimate how closely the sample represents the larger population from which it was drawn and consequently, how generalizable the findings are.

Types of Probability Samples

As mentioned, researchers conducting deductive, quantitative studies are the most likely to use probability sampling techniques. This category of sampling techniques includes simple random sampling, systematic random sampling, stratified random sampling, and multi-stage cluster sampling (Maxfield & Babbie, 2018; Palys & Atchison, 2014). The first criterion that needs to be satisfied to be able to use any of these techniques is the existence of a sampling frame. Without this exhaustive list of all possible units in the population that could be selected, probability sampling methods are not an option.

Simple Random Sampling

Simple random sampling is the most basic type of probability sampling. In this technique, all possible units of the population of interest have an equal and known probability of being selected (Maxfield & Babbie, 2018; Rennison & Hart, 2019; Palys & Atchison, 2014). To draw a simple random sample, a researcher starts with the sampling frame. For instance, if you wanted to survey 25 police departments in your state, you'd first develop a list of every police department in your state.

Once a researcher has created their list, they then number each element sequentially and use a random number table (or a set of randomly assigned numbers) to select the elements from which to collect data. One way to do this would be to enter each element into a spreadsheet and then use a random number function within the spreadsheet program to generate random numbers for each element on the list. In the example of a survey of police departments, you could list each department as a separate row in a spreadsheet and then generate a random number to be associated with each row. Then, you would sort the list based on the assigned random number and choose the first 25 departments to survey. It is very much like drawing numbers from a hat: as long as you know how many numbers are in the hat, you can calculate the likelihood of each number being selected and you can start picking numbers until you reach the 25th unit.

Instead of random number functions within spreadsheet programs, researchers could also use a random number table from a variety of other sources such as textbooks or free online random number generators. For example, the website **Stat Trek** contains a random number generator that you can use to create a random number table of whatever size you might need. **Randomizer** also offers a useful random number generator.

Figure 7b.5: Simple random sampling *[Image description for Figure 7b.5]*

Systematic Random Sampling

As you might have guessed, drawing a simple random sample can be quite tedious. **Systematic random sampling** is less tedious but offers the benefits of a random sample. As with simple random samples, you must be able to produce a list of every one of your population elements. Once you have done that, to draw a systematic sample, you would simply select every kth element

on your list (Maxfield & Babbie, 2018; Rennison & Hart, 2019; Palys & Atchison, 2014). But what is “k”, and where on the list of population elements does one begin the selection process? The symbol “k” is your selection interval or the distance between the elements you select for inclusion in your study. To begin the selection process, you would need to first figure out how many elements you wish to include in your sample.

Let us say you want to survey 100 students from the criminology program at your university. You gather data from the registrar’s office and discover there are 300 students currently registered in the program. In this case, your selection interval, or k, is 3. To arrive at 3, simply divide the total number of population elements by your desired sample size. To determine where on your list of population elements to begin selecting the names of the 100 students you will survey, select a random number between 1 and k and begin there. If we randomly select 1 as our starting point, we would begin by selecting the first student on the list and then select every 3rd student from there.

Population (N) = all students registered in criminology (300)

Sample (n) = student respondents (100)

$$k = N/n = 300/100$$

$$k = 3$$

Figure 7b.6: Systematic Random Sampling [\[Image description for Figure 7b.6\]](#)

There is one clear instance in which systematic sampling would not be appropriate. If your sampling frame has any pattern to it, you could inadvertently introduce bias into your sample by using a systematic sampling strategy. This is sometimes referred to as the problem of periodicity. **Periodicity** refers to the tendency for a pattern to occur at regular intervals (Maxfield & Babbie, 2018; Rennison & Hart, 2019; Palys & Atchison, 2014). For example, suppose you want to observe how students at your university campus use the outdoor courtyard space and you need to complete your observations within 28 days. During this time, you wish to conduct four observations on randomly chosen days. To determine which days you will conduct your observations, you will need to determine a selection interval. As you will recall from the preceding paragraphs, to do so you must divide your population size – in this case, 28 days – by your desired sample size – in this case, 4 days. This formula leads you to a selection interval of 7 ($N/n = 28/4 = 7$). If you randomly select 2 as your starting point and select every seventh day after that, you will end up with a total of 4 days on which to conduct your observations (days 2, 9, 16, and 23). But what happens is that you are now observing on the second day of the week, Tuesdays. As you have probably figured out, that is not such a good plan if you really wish to understand how these spaces on your campus are used. Weekend use probably significantly differs from weekday use, and that use may even vary during the week. Therefore, if your sampling frame has a pattern to it like the days of a week do, this probability sampling strategy would yield a sample that is not at all representative and therefore not generalizable.

Stratified Random Sampling

In **stratified random sampling**, a researcher divides the study population into strata of these subgroups (Maxfield & Babbie, 2018; Rennison & Hart, 2019; Palys & Atchison, 2014). This technique can be useful when a subgroup of interest makes up a relatively small proportion of the overall sample and the researcher wants to be sure to include representatives from all subgroups, no matter the size of the group. For example, imagine a researcher wants to examine how people with a range of gender identities perceive their interactions with the police. Transgender people make up a smaller percentage of the population than cisgender men and women, so there’s a chance that neither simple random nor systematic sampling techniques would yield any transgender people in the sample. The same logic applies to other non-dominant gender identities such as non-binary, agender, and gender-fluid. Instead, using stratified sampling techniques can help ensure that the sample contains adequate numbers of people in the gender subgroups in the population. This may sound a lot like the non-probability sampling technique discussed earlier called quota sampling, and it is, except for one clear difference: with stratified sampling, there is a sampling frame, and random selection is used to select units from that sampling frame to include in the sample. With quota sampling, since there is no sampling frame, random selection cannot be employed.

In the previous example of selecting 25 police departments from a list of 100 departments, a researcher could start by categorizing the departments based on the population in the area they serve. The categories might include areas with large (more than 50,000 people), medium (between 10,000 and 50,000 people), and small (less than 10,000 people) populations. The researcher would then use simple random sampling to select eight departments from two subgroups and, depending on which group the researcher is most interested in ensuring representation, 9 from the third subgroup to make up the sample of 25 departments. This sampling strategy would ensure that departments serving small, medium, and large populations would be

equally represented in the sample even though they're likely not equal in the larger population.

Figure 7b.7: Stratified Random Sampling [\[Image description for Figure 7b.7\]](#)

Cluster Sampling

Each of the probability sampling techniques we've discussed so far assumes that researchers can access a list of population elements to create a sampling frame. This is not always the case. Let's say, for example, that you wish to conduct a study of the experiences that people with different gender identities have had with the police in your state. In the previous sampling techniques, you'd need to create a list of every person in your state along with their gender identities. Even if you could find a way to generate such a list (which is highly unlikely), attempting to do so might not be the most practical use of time or resources. When this is the case, researchers turn to cluster sampling. With **cluster sampling**, researchers divide the population into **clusters** (or small groups) for which a list is readily available. Then randomly sample a few clusters, and then randomly select participants within those chosen clusters (Maxfield & Babbie, 2018; Rennison & Hart, 2019; Palys & Atchison, 2014). It should be noted that a sampling frame does still exist as is required of all probability sampling strategies, but in this instance, it is a sampling frame of the clusters and not of the units within those clusters.

Let's say you are concerned about the financial exploitation of First Nation elderly in Manitoba but there is no list of all affected Indigenous elderly, particularly since it is an underreported type of crime, but also because you would need permissions from every tribe in the province to conduct this research. Instead, you could create a list of all tribal nations in the province, randomly select two of them, and then after you have obtained permissions and support from the two tribes, you include in your final sample the elderly who are randomly selected from within each randomly chosen tribe (cluster).

Figure 7b.8: Cluster Sampling [\[Image description for Figure 7b.8\]](#)

Table 7b.2 below provides a summary of the types of probability samples. As explained earlier, the overall goal of these samples is to represent a larger population so that research findings can be more generalizable to that population.

Table 7b.2: Summary of Probability Sampling Strategies

Sampling Strategy	Description
Simple Random Sampling	Randomly selects elements from the sampling frame
Systematic Random Sampling	Selects every kth element from the sampling frame
Stratified Random Sampling	Creates subgroups and randomly selects elements from each subgroup
Cluster Sampling	Randomly selects clusters and selects randomly chosen elements from those clusters

Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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Questions to Ask About Samples

When reading the findings of research studies, it's easy to focus only on findings rather than procedures. But, as the preceding discussions indicate, evaluating how a researcher selects study participants and who they select is very important for understanding research findings. Now that you have some familiarity with the variety of sampling techniques, you are equipped to ask some very important questions about the findings you read and to be a more responsible consumer of research.

Who were sampled, how were they sampled, and for what purpose?

Social science researchers on college campuses have a luxury that other researchers may not: access to a whole bunch of (presumably) willing and able human guinea pigs – students! But that luxury comes at the cost of sample representativeness. One study of top academic journals in psychology found that over two-thirds (68%) of participants in studies published by those journals were based on samples drawn in the United States, and two-thirds of the work derived from US samples published in the *Journal of Personality and Social Psychology* was based on samples made up entirely of American undergraduates taking psychology courses (Arnett, 2008).

These findings beg the question of what we learn – and whom we learn about – from social scientific studies. Joseph Henrich and colleagues (2010) pointed out that behavioural scientists very commonly make sweeping claims about human nature based on samples drawn only from WEIRD (Western, educated, industrialized, rich, and democratic) societies. Minorities and other marginalized groups in society, including Indigenous peoples, do not have their experiences represented in many of these social science studies; therefore, the theories that develop as a result of the research cannot apply to them.

Risk assessment tests that develop as a result of this research also cannot apply to these minority and marginalized groups. As I demonstrated in my analysis (see Hassan, 2010) of psychiatric assessments administered on Indigenous versus non-Indigenous long-term offenders (LTOs) in British Columbia in the first 10 years of the use of this designation in Canada, twice as many LTOs categorized in the high psychopathic range were Indigenous compared to their non-Indigenous counterparts (46% vs 23%, respectively). Moreover, while the percentage of LTOs categorized in the intermediate category was approximately the same in these two groups (46% of the Indigenous LTOs vs 43% of LTOs not identified as Indigenous), only one (9%) of the Indigenous LTOs assessed using the PCL-R was categorized in the non-psychopathic range, as compared to 10 (33%) of the LTOs not identified as Indigenous. I also found that amongst those LTOs whose files were included in my analysis, a disproportionately high number of Indigenous LTOs were deemed untreatable compared to their non-Indigenous counterparts. The clear overrepresentation of Indigenous LTOs in the high psychopathic range and in the untreatable category calls into question the objectivity and neutrality of the tests used to assess this population. The reduction of human behaviour to a quantifiable score results in an undeniable loss of personal information and blatantly disregards the impacts of colonization and genocide experienced by Indigenous populations across Canada and beyond (see [Introduction to Criminology](#) for a more fulsome critical review of criminological theories and their applicability to the Indigenous experience).

It is clear, then, that many robust findings about the nature of human behaviour when it comes to fairness, cooperation, visual perception, trust, and other behaviours are based on studies that excluded participants from outside the United States and sometimes excluded anyone outside the college classroom (Begley, 2010). These points demonstrate that we must pay attention to the population on which studies are based and the claims being made about whom the findings apply to.

Figure 7b.9: Making Inferences from the Sample to the Population [\[Image description for Figure 7b.9\]](#)

A related, but slightly different, potential concern is **sampling bias**, which occurs when the elements selected for inclusion in a study do not represent the larger population from which they were drawn. For example, a poll conducted online by a newspaper asking for the public's opinion about some local issue will certainly not represent the public since those without access to computers or the Internet, those who do not read that paper's website, and those who do not have the time or interest will not participate in the poll. In addition, just because a sample may be representative in all respects that a researcher thinks are relevant, other aspects that didn't occur to the researcher may also be relevant.

So how do we know when we can count on results that we read from research studies? There aren't any magic or universally true rules we can apply, but we can keep in mind a couple of guiding points. First, while sampling methods provide guidelines for drawing scientifically valid samples, the quality of a sample should be evaluated only by the sample actually obtained. A researcher may set out to administer a survey to a representative sample by correctly employing a random selection technique, but if only a handful of the people contacted respond to the survey, the researcher will have to be very careful about the claims they make about the survey findings. Second, researchers may be tempted to talk about the implications of their findings as though they apply to some group other than the population actually sampled. This tendency usually doesn't come from a place of malice, but we must be attentive to how researchers talk about their findings in relation to the population they have sampled.

At their core, questions about sample quality should address who has been sampled, how they were sampled, and for what purpose they were sampled. Being able to answer those questions will help you better understand, and more responsibly read, research results.

Conclusion

In this chapter, the various non-probabilistic and probabilistic sampling strategies were reviewed. The key distinction between the

two is the availability of a sampling frame, which is a necessary prerequisite for the probabilistic sampling options as it allows for random selection. While this may make the probabilistic strategies seem superior, a strategy's effectiveness will be determined by the goals of the research and the nature of the sample. Representativeness is not always necessary or desired. As highlighted in the chapter, the combination of different research methods and consequently sampling strategies may be ideal in certain circumstances, again depending on the research question(s) we seek to answer, the data available to answer it, and the unique features of the population we want to know more about.

Now that we have a grasp of the various sampling strategies available to us, the textbook shifts to an examination of the various specific methods we can choose from to answer the types of complex and interesting questions criminologists ask.

✓ Summary

- Inductive, qualitative approaches to research tend to rely on non-probability sampling techniques such as convenience, quota, purposive, and snowball sampling.
- Deductive, quantitative approaches to research tend to rely on probability sampling techniques such as simple random, systematic, stratified, and cluster sampling.
- Evaluating research findings requires examining sampling procedures and the quality of the samples themselves. Answering questions such as who was sampled, how were they sampled, and why were they sampled can help assess the validity of claims made based on the findings of the research.

Key Terms

clusters: small groups for which a sampling frame is available, thus allowing for the use of simple random sampling within the clusters when cluster sampling is used.

cluster sampling: a probability sampling technique that does not begin with a sampling frame as a list of all units in the target population is not available, though a list of all clusters or groups within the population is. A random selection of clusters is chosen, and then a list of all units – or a sampling frame – within each cluster is created, making it possible to then conduct simple random sampling.

convenience sampling: a non-probability sampling technique that relies purely on ease of access. The observations of the chosen population of interest are readily available, such as people walking by on a street corner. This sampling technique, often described as haphazard, is most useful in exploratory research.

non-probability sampling: sampling techniques that are relied on in inductive, qualitative research. The chances of any individual or entity being included in a study are not known when non-probability sampling techniques are used, and there is no sampling frame. The goals of representativeness and generalizability are not a concern with non-probability sampling. These techniques include convenience, quota sampling, purposive sampling, and snowball sampling.

non-proportional quota sampling: the non-probability quota sampling technique used when the quotas are set at an equal number per category regardless of the proportion that group represents in the larger target population. For example, if the categories you choose are based on ethnic groups, all ethnic groups would have the same quota even though they are not equally represented in the target population.

periodicity: the tendency for a pattern to occur at regular intervals in our sampling frame. If such a pattern exists, systematic random sampling should not be used.

probability sampling: sampling techniques that are relied on in deductive, quantitative research. The chances of any individual or entity being included in our study are known when probability sampling techniques are used and a sampling frame is available. The goal with these sampling techniques is to create a sample that is representative of the population and to obtain findings that are generalizable. These techniques include simple random sampling, systematic random sampling, stratified random sampling, and cluster sampling.

proportional quota sampling: the non-probability quota sampling technique used when the quotas per category are set at a number that is equal to the proportion that group represents in the larger target population. For example, if the categories you choose are based on ethnic groups and one ethnic group represents 30% of the target population, then the quota for that ethnic group category would be 30% of the sample.

purposive sampling: also sometimes called judgmental sampling, this is a non-probability sampling technique that involves identifying selection criteria and then hand-selecting our sample based on these criteria. For example, we may seek out the participation of known experts on a particular topic so we contact these experts as we know they possess the unique knowledge we hope to explore.

quota sampling: the non-probability sampling technique we use when we have categories within our population of interest and we set a predetermined number of observations, or a quota, per category to include in our study. These categories could be, for example, ethnic groups, genders, or age groups. So long as the observation is within that category, it can be included, and once that number of observations is reached, the quota is satisfied for that category. Quota sampling can be either proportional or non-proportional.

random selection: a core principle of probability sampling, random selection refers to a mathematical process whereby chance governs the selection process and every sampling element has an equal probability of being selected.

Randomizer: a website resource that contains a random number generator to assist researchers and students to create a random number table.

sampling bias: a concern about the potential of a sample not being representative of the population from which it is drawn.

simple random sampling: a probability sampling technique that starts with a sampling frame, involves sequentially numbering all units in the population and then uses a set of randomly generated numbers to choose the units to include in the sample. All units of the population have an equal and known probability of being included.

snowball sampling: the non-probability sampling technique we use when our population of interest is difficult to access. Each participant is asked to identify other participants who may be willing to partake in our research.

Stat Trek: a website resource that contains a random number generator to assist researchers and students to create a random number table.

strata: mutually exclusive subgroups or categories in our population from which samples are drawn using simple random sampling.

stratified random sampling: a probability sampling technique that involves dividing the target population into categories, or strata, listing all units within the strata (devising the sampling frame) and then randomly selecting within each of the strata. This technique ensures that populations that are not well represented in the population and may in fact not be included at all if a simple random sampling technique is used, are indeed included and well represented in the sample.

systematic random sampling: a probability sampling technique that starts with a sampling frame and involves dividing the number of units in the population by the desired number of units for the sample. A number within that interval range is then randomly chosen as the starting point, and every k th unit is selected until the desired sample size is reached. For example, if the population is 1000 and the desired sample is 100, then the interval is 1 to 10 ($1000/100$). If we randomly select the starting point between 1 and 10 of "3", then we choose every 10th unit after that (3, 13, 23, 33, 43, etc.).

Chapter Review

Crossword

Fill in the term in the right-hand column and it will display in the crossword puzzle. Be sure to include spaces where appropriate.

This interactive element is not available in this format. Visit the link or scan the QR code to access it online.

[View this Interactive Content online](#)



Discussion Questions

1. Relying on samples drawn solely from WEIRD societies can be problematic. Explain why and provide an example.
 2. Outline a few steps you would take if you are trying to decide on a sampling strategy when the population is Indigenous.
 3. Outline the key differences between non-probabilistic and probabilistic sampling. Choose one strategy from each category and describe a study where that sampling strategy would be the most appropriate and explain why.
-

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- 7b.1 Convenience Sampling

definition

Sampling techniques that are relied on in inductive, qualitative research. The chances of any individual or entity being included in a study are not known when non-probability sampling techniques are used, and there is no sampling frame. The goals of representativeness and generalizability are not a concern with non-probability sampling. These techniques include convenience, quota sampling, purposive sampling, and snowball sampling.

×Close definition

Sampling techniques that are relied on in deductive, quantitative research. The chances of any individual or entity being included in our study are known when probability sampling techniques are used and a sampling frame is available. The goal with these sampling techniques is to create a sample that is representative of the population and to obtain findings that are generalizable. These techniques include simple random sampling, systematic random sampling, stratified random sampling, and multi-stage cluster sampling.

×Close definition

A non-probability sampling technique that relies purely on ease of access. The observations of the chosen population of interest are readily available, such as people walking by on a street corner. This sampling technique, often described as haphazard, is most useful in exploratory research.

×Close definition

The non-probability sampling technique we use when we have categories within our population of interest and we set a predetermined number of observations, or a quota, per category to include in our study. These categories could be, for example, ethnic groups, genders, or age groups. So long as the observation is within that category, it can be included, and once that number of observations is reached, the quota is satisfied for that category. Quota sampling can be either proportional or non-proportional.

×Close definition

The non-probability quota sampling technique used when the quotas per category are set at a number that is equal to the proportion that group represents in the larger target population. For example, if the categories you choose are based on ethnic groups and one ethnic group represents 30% of the target population, then the quota for that ethnic group category would be 30% of the sample.

×Close definition

The non-probability quota sampling technique used when the quotas are set at an equal number per category regardless of the proportion that group represents in the larger target population. For example, if the categories you choose are based on ethnic groups, all ethnic groups would have the same quota even though they are not equally represented in the target population.

×Close definition

Also sometimes called judgmental sampling, this is a non-probability sampling technique that involves identifying selection criteria and then hand-selecting our sample based on these criteria. For example, we may seek out the participation of known experts on a particular topic so we contact these experts as we know they possess the unique knowledge we hope to explore.

×Close definition

The non-probability sampling technique we use when our population of interest is difficult to access. Each participant is asked to identify other participants who may be willing to partake in our research.

×Close definition

A core principle of probability sampling, random selection refers to a mathematical process whereby chance governs the selection process and every sampling element has an equal probability of being selected.

×Close definition

A probability sampling technique that starts with a sampling frame, involves sequentially numbering all units in the population and then uses a set of randomly generated numbers to choose the units to include in the sample. All units of the population have an equal and known probability of being included.

×Close definition

A probability sampling technique that starts with a sampling frame and involves dividing the number of units in the population

by the desired number of units for the sample. A number within that interval range is then randomly chosen as the starting point, and every k th unit is selected until the desired sample size is reached. For example, if the population is 1000 and the desired sample is 100, then the interval is 1 to 10 (1000/100). If we randomly select the starting point between 1 and 10 of "3", then we choose every 10th unit after that (3, 13, 23, 33, 43, etc.).

×Close definition

The tendency for a pattern to occur at regular intervals in our sampling frame. If such a pattern exists, systematic random sampling should not be used.

×Close definition

A probability sampling technique that involves dividing the target population into categories, or strata, listing all units within the strata (devising the sampling frame) and then randomly selecting within each of the strata. This technique ensures that populations that are not well represented in the population and may in fact not be included at all if a simple random sampling technique is used, are indeed included and well represented in the sample.

×Close definition

A probability sampling technique that does not begin with a sampling frame as a list of all units in the target population is not available, though a list of all clusters or groups within the population is. A random selection of clusters is chosen, and then a list of all units – or a sampling frame – within each cluster is created, making it possible to then conduct simple random sampling.

×Close definition

Small groups for which a sampling frame is available, thus allowing for the use of simple random sampling within the clusters when cluster sampling is used.

×Close definition

A concern about the potential of a sample not being representative of the population from which it is drawn.

×Close definition

6C: Reliability, Validity, and Trustworthiness

Learning Objectives

- Define reliability and describe the types of reliability.
- Define validity and describe additional types of validity.
- Analyze the rigour of qualitative measurement using the criteria of trustworthiness and authenticity.

We began our discussion on research design in [chapter 6a](#) by examining the process of measurement and how we conceptualize and operationalize our measures. As you may recall, this process requires us to become increasingly specific about what we mean by the concepts that are central to our research question. We also talked about variables and how they relate to one another. In part 2 of the research design section ([chapter 6b](#)), we delved further into the notion of causality and how we can say whether two variables that are correlated are indeed causally related. We also outlined specific criteria for establishing causality. The time dimension we use in our study is relevant to this discussion on causality, as are specific types of validity, namely, internal validity and external validity.

Now, we are left with a very important question: once we've defined our terms and specified the operations for measuring them, how do we know that our measures are any good? Without some assurance of the quality of our measures, we cannot be certain that our findings will have any meaning or that our findings will mean what we think they mean. When social scientists measure concepts, they aim to achieve reliability and validity in their measures. These two aspects of measurement quality are the focus of this final chapter on research design.

Reliability

The term **reliability** in measurement is about consistency. When a measure is reliable, in theory, it should yield the exact same result every time it is applied. To illustrate this concept of reliability, let's look at an example. Let's say our interest is in measuring the concepts of alcoholism and alcohol intake. What are some potential problems that could arise when attempting to measure this concept, and how might we work to overcome those problems? Perhaps we've decided to measure alcoholism by asking people to respond to the following question: Have you ever had a problem with alcohol? If we measure alcoholism this way, then it is likely that anyone who identifies as an alcoholic would respond "yes." This may seem like a good way to identify our group of interest, but think about how you and your peer group may respond to this question. Would participants respond differently after a wild night out compared to any other night? Could an infrequent drinker's current headache from last night's glass of wine influence how they answer the question this morning? How would that same person respond to the question before consuming the wine? In each case, the same person might respond differently to the same question at different points, so it is possible that our measure of alcoholism has a reliability problem.

One common problem of reliability with social scientific measures is memory. If we ask research participants to recall some aspect of their own past behaviour, we should try to make the recollection process as simple and straightforward for them as possible. Sticking with the topic of alcohol intake, if we ask respondents how much wine, beer, and liquor they've consumed each day over the course of the past three months, how likely are we to get accurate responses? Unless a person keeps a journal documenting their intake, there will very likely be some inaccuracies in their responses. On the other hand, we might get more accurate responses if we ask a participant how many drinks of any kind they have consumed in the past week.

Reliability can be an issue even when we're not reliant on others to accurately report their behaviours. Perhaps a researcher is interested in observing how alcohol intake influences interactions in public locations. They may decide to conduct observations at a local pub by noting how many drinks patrons consume and how their behaviour changes as their intake changes. What if the researcher has to use the restroom, and the patron next to them takes three shots of tequila during the brief period the researcher is away from their seat? The reliability of this researcher's measure of alcohol intake depends on their ability to physically observe every instance of patrons consuming drinks. If they are unlikely to be able to observe every such instance, then perhaps their mechanism for measuring this concept is not reliable.

Reliability also refers to the stability of the measure over time. If the measure yields consistent results when given multiple times, then the measure is considered reliable. For example, the Psychopathy Checklist-Revised (PCL-R) is a commonly used 20-item assessment tool in criminal justice contexts to assess risk for "serious criminality, violence, and poor treatment response" (Storey

et al., 2016, p. 136.). The PCL-R assesses both lifestyle factors, such as the need for stimulation, poor behaviour controls, and the failure to accept responsibility, and interpersonal factors, such as a lack of empathy, pathological lying, and manipulation (Storey et al., 2016). Using a variety of different population samples, the PCL-R has been shown to have strong **test-retest reliability**, meaning that scores are relatively the same each time the PCL-R is administered. If test-retest reliability is strong, any changes in the results between the tests should be due to an intervening factor. Moosburner et al. (2024) used the PCL-R to evaluate German offenders at the time of their incarceration and then again 18 months later. They found that the scores on the PCL-R showed small but significant reductions on the retest, which Moosburner et al. (2024) attributed to the intense treatment the offenders had received.

Additionally, you may need to assess **inter-rater reliability** if your study involves observing people's behaviours. Inter-rater reliability (also called inter-observer consistency) is the degree to which different observers agree on what happened. The PCL-R is used in a variety of criminal justice settings such as pre-sentence evaluations and correctional intakes; there is not just one person who administers the PCL-R in any institution. DeMatteo and Olver (2022) conducted a **meta-analysis** of published studies using the PCL-R, finding that across studies and populations, the PCL-R had strong inter-rater reliability. Scores of multiple observers should be consistent, though perhaps not perfectly identical. If two different observers come up with different ratings of the same concept, it is possible that one or both are not examining the concept correctly.

Finally, **internal reliability** (also called internal consistency) is an important concept, specifically when dealing with **scales**. The scores on each question of a scale should be correlated with each other, as they all measure parts of the same concept. Again, the PCL-R is a good example of this, with the interpersonal and lifestyle/deviance factors showing strong correlations, or relationships, among the factors (Storey et al., 2016).

Test-retest, inter-rater, and internal reliability are three important subtypes of reliability. Researchers use these types of reliability to make sure their measures are consistently measuring the concepts in their research questions.

Table 6c.1: Types of Reliability Summarized

Reliability type	Definition	Example
Test-retest reliability	When a measure yields the same results when applied multiple times to the same person.	When PCL-R scores remain the same for the same offender when administered at one age and then later at another age.
Inter-rater reliability	When different people administering the same measure on the same person yields the same results.	When different psychologists separately yield the same PCL-R score for the same offender.
Internal reliability	When the score of each question in a scale is correlated since they are measuring the same concept.	Interpersonal and lifestyle factors in the PCL-R .



Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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Validity

While reliability is about consistency and yielding the same results time after time, validity is about accuracy and truth. What image comes to mind when you hear the word “alcoholic”? Are you certain your image is similar to the image others have in

mind? If not, then we may be facing a problem of validity.

As discussed in [chapter 6b](#), for a measure to have validity, it must accurately measure what we think it does, and there are several facets of validity for researchers to consider. Internal validity and external validity were discussed in chapter 6b. Now, let's talk about other types of validity. Think back to when we initially considered measuring alcoholism by asking research participants if they have ever had a problem with alcohol. We realized that this might not be the most reliable way of measuring alcoholism because the same person's response might vary dramatically depending on how they are feeling that day. Likewise, this measure of alcoholism is not particularly valid. What is "a problem" with alcohol? For some, it might be having had a single regrettable or embarrassing moment that resulted from consuming too much. For others, the threshold for what is considered a "problem" might be different. Participants could define an alcohol problem in countless ways. If we are trying to objectively understand how many of our research participants are alcoholics, then this measure may not yield any useful results.

Through critical engagement with our measure for alcoholism "Do you have a problem with alcohol?", we have identified that it is flawed. We assessed its **face validity**, or whether it makes reasonable sense that the question measures what it intends to measure. Face validity is a subjective process. Sometimes, face validity is easy. For example, we would know that if a researcher tried to convey the extent of a participant's alcoholism by reporting how tall they are, this would not be valid because a measure of a person's height has nothing to do with alcoholism. Other times, face validity can be more difficult to assess. Perhaps we are interested in exploring the work stress of correctional officers (COs) in Canadian institutions. We could measure work stress by counting the number of times per week that a CO shows up late to work. This behaviour can be reasonably linked to increased stress at work; a person who is stressed at work may delay or avoid their workplace. But a mere count of lateness may not tell the whole story. Perhaps a CO drops their child off at daycare on certain mornings resulting in a late arrival, or they may have a work-related meeting in the community several days a week. Neither of these situations have anything to do with work stress; therefore, on the face of it, a simple count of lateness may not be the most valid way to measure our concept of interest.

In addition, our suggested measure of work stress is problematic because it is incomplete. **Content validity** assesses whether the measure includes *all* the possible meanings of the concept. Kocsis and Lavoie (2023) explored CO experiences of work stress during the COVID-19 pandemic. Recognizing that stress has many different dimensions and meanings, they used established scales on stress, workplace safety, and resiliency, and they also created scales on pandemic-related safety precautions and pandemic-related changes in responsibilities. By utilizing multiple measures for stress, Kocsis and Lavoie (2023) included all potential indicators of work stress established by the existing research literature as well as added those unique indicators related to COVID-19. Because of their attention to a fulsome measure of work stress, the study had strong content validity. As this study illustrates, a thorough review of the literature can assist us in recognizing the various dimensions and meanings that have been associated with the concepts of interest in our own research.

Another form of validity is **criterion validity**, which is an assessment of how well a measure is related to some other factor or concept. In other words, it involves showing how our measure predicts scores on some *other measure* that has been generally accepted as being valid. This type of validity includes two elements: predictive validity and concurrent validity (Carr et al., 2021). Let's say you have created (or found) a good scale, index, or typology to measure work stress. For instance, a valid measure of work stress might be able to predict future behaviours outside of work, such as relationship breakdowns or substance use. This is called **predictive validity**, and it means that your measure predicts things it should be able to predict. In this case, our measure predicts that if someone has a high level of work stress, then a year later, they will be more likely than someone with low work stress to engage in substance use. If we were to measure substance use *at the same time* as the scales encompassing work stress, we would be assessing concurrent validity. **Concurrent validity** is similar to predictive validity in that it assesses how one measure predicts scores on another measure, the difference being that both measures are given at the same time. In both cases, work stress measures are linked to already established and valid measures of substance use.

Construct validity is focused on whether the constructs being measured and the various attributes of the construct (or variable) relate to each other in predictable ways. Construct validity is often rooted in the theory that informs a study. This type of validity is intricately linked to our measurement decisions: have the constructs we have chosen been properly defined, and have we selected the best operations to measure the observations of these constructs? Let's return to the hypothetical example of researching alcoholism. We could create a scale with a few questions, such as whether the person has had multiple drinks on more than one occasion, if they have missed work or an important event because they were hungover, if they have engaged in risky or dangerous behaviour while drinking, and if others think they have a problem with alcohol. All these variables are indirect observables and are theoretically related to the construct of alcoholism. If our measure was high in construct validity, respondents with problems with alcohol would answer in similar ways to each other, while respondents without a problem with alcohol would answer in different ways. In other words, our measure would accurately capture what it means to have "a problem" with alcohol. If there is no pattern to our responses (i.e., no similarity from the responses of people who have a problem with alcohol), our measure is low in construct validity. We would have to revise our scale, going back to our theory and previous research to assess where we can and should improve our construct validity.

Perhaps we can look at another example to illustrate what construct validity is all about. Let's say we are interested in measuring whether or not couples are in love. We gather data on the extent to which a sample of couples are holding hands in public. If we use that as our sole measure of whether or not a given couple is in love, would that be a valid measure of the complex construct of love? I think many of you would agree that it is not. Many other dimensions of this construct would need to be included to achieve a more valid measure of this construct. Therefore, a study that chooses the observation of handholding as the only measure of love would be very low on construct validity.

Table 6c.2: Types of Validity Summarized

Validity Type	Definition	Example
Face validity	Assesses whether the chosen measure makes reasonable sense.	Work stress being measured by tardiness is low on face validity.
Content validity	Assesses whether the measure includes <i>all</i> the possible meanings of the concept.	Using multiple measures for stress, such as workplace safety and resiliency, increases content validity.
Criterion validity	Assessment of how well a measure is related to some other concept or factor. When the two measures are administered one after the other, this is predictive. When they are administered at the same time, it is concurrent.	Using a measure of work stress to measure the related concept of substance use. This can happen one year apart (predictive) or simultaneously (concurrent).
Construct Validity	Assessment of how well the constructs (or attributes of a construct) relate to each other in predictable and/or theoretical ways. Assessment of how well the constructs are operationalized to accurately measure the underlying concepts of interest.	Using multiple measures of alcoholism, or love, which are theoretically connected, and then assessing how strongly they relate.

The basic subtypes of validity presented above are enough to give you a strong sense of validity and why it is important in research, though there are certainly others you can read more about. Think of validity like a portrait: Some portraits look just like the person they are intended to represent, but other representations, such as caricatures and stick drawings, are not nearly as accurate. A portrait may not be an exact representation of how a person looks, but the extent to which it resembles the subject is important. The same goes for validity in measures: No measure is exact, but some measures are more accurate than others.

Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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When conducting research in Indigenous communities, it is important to consider existing research literature as well as consult with Indigenous Elders and communities to ensure that your research measures are valid in their view and you are not imposing outside Eurocentric or personally biased definitions. For instance, following the Supreme Court of Canada's decision in *R v. Gladue* (1999), courts are to consider the unique circumstances of Indigenous offenders during sentencing. These reports incorporate Indigenous perspectives on justice and aim to inform more equitable sentencing decisions. One unique circumstance often considered in sentencing that might need to be considered when conducting research is that of historical trauma and how that may manifest as depression, suicide, alcohol abuse, or other social problems. Indigenous community members often understandably define these social problems as resulting from historical and current inequities at the hands of the dominant culture; this has been agreed upon as the more valid conceptualization rather than as an individual choice or an indication of weakness of individual character. The latter conceptualizations are not only invalid but reflect racist, colonial perceptions.

Let us look at one more example of validity concerns related to research with Indigenous peoples: the PCL-R. Though many

studies have commented on the reliability of the measure when used on the general population, it is important to note that other studies and legal cases (see *Ewert v. Canada*, 2015) have raised concerns about the validity of the PLC-R when used with Indigenous offenders. The studies suggest that it has not been tested on large samples of Indigenous persons, and it may not accurately reflect culturally specific expressions of behaviour, emotion, or interpersonal norms. For example, Hart (1998) cautioned that the PCL-R's Western-based constructs may pathologize culturally normative behaviours in Indigenous populations, leading to inflated scores and misclassification. Similarly, Shepherd, Adams, McEntyre, and Walker (2014) found that the PCL-R showed poor predictive validity for violent recidivism among Australian Aboriginal offenders. These findings suggest a need for culturally adapted tools that consider the unique historical, social, and cultural experiences of Indigenous peoples to ensure the scores are valid.

If you are still confused about validity and reliability, Figure 6c.1 provides a visual representation. On the top left target, the shooter's aim is all over the place; it is neither reliable (consistent) nor valid (accurate). The top right target shows an unreliable and inconsistent shot, but it is centred around the target (accurate). The bottom left target demonstrates consistency, but the shooter's aim is reliably off-target and therefore invalid. The final bottom-right target represents a reliable and valid result. The shooter hits the target accurately and consistently. This is what you should aim for in your research.

Figure 6c.1 Graphic Representation of Reliability and Validity [\[Image description for Figure 6c.1\]](#)

Authenticity and Trustworthiness

The standards for measurement are different in qualitative and quantitative research for an important reason. Measurement in quantitative research is done objectively or impartially; that is, the researcher has minimal influence over the measurement process. They choose a measure, apply it, and read the results. Therefore, the accuracy and consistency depend more on the measure than on the researcher.

On the other hand, qualitative researchers are deeply involved in the data analysis process. There are no external measurement tools, like quantitative scales; rather, the researcher is the measurement instrument. Researchers build connections between different ideas that participants discuss and draft an analysis that accurately reflects the depth and complexity of what participants have shared. This is challenging for researchers as it involves acknowledging their own various biases and allowing the meaning that participants shared to emerge as the data are read. This process is not concerned with objectivity, as there is always some subjectivity in qualitative analysis. Here, we are more concerned with researchers rigorously engaging in the data analysis process. Because of the subjective nature of measurement and analysis in qualitative research, we have to think about reliability and validity slightly differently.

We assess the rigour of qualitative research through authenticity and trustworthiness. **Authenticity** refers to the “extent to which researchers fairly and faithfully show a range of different realities” (Polit & Beck, 2020, p. 416). Authenticity is not limited to the breadth of perspectives but also recognition that each perspective or reality has meaning and worth.

Trustworthiness, which encompasses the foundation of accuracy (validity) and consistency (reliability), refers to “the degree of confidence in data, interpretation, and methods used to ensure the quality of a study” (Connelly, 2016, p. 435). Trustworthiness is made up of four criteria: credibility, dependability, confirmability, and transferability.

Credibility refers to the accuracy of the results and the confidence of participants in the interpretations of the data. Bryman and Bell (2019) frame credibility as whether the findings are believable and “ring true for the people observed” (p. 205). There are a few methods that can be used to establish credibility. Researchers may seek assistance from another qualitative researcher to review or audit their work. As you might expect, it's difficult to view your own research without bias, so another set of eyes is often helpful. Another tool is **member checking** (also called respondent validation), where researchers solicit feedback from their participants. This process of member checking can happen at any stage of the process, for example, a review of interview transcripts to ensure the participants' perspectives are captured accurately or a review of a draft of the analysis or final report. Cesaroni et al. (2019) conducted talking circles with Indigenous youth, exploring their opinions on the overrepresentation of Indigenous youth in the Canadian criminal justice system. In collaboration with the community, the researchers established an Advisory Committee made up of “an Elder, a chief, an Indigenous knowledge keeper, Indigenous young people and Indigenous practitioners who work with high-risk Indigenous young people ” (Cesaroni et al., 2019, p. 116). Part of the agreement with the community was that any publications and reports from the research be approved by the Advisory Committee before being shared publicly. Not only was there member engagement at various stages of the research process, but the Advisory Committee was able to assess whether the findings of Cesaroni et al. (2019) “rang true” before releasing any results to others.

Credibility is akin to validity, as it mainly speaks to the accuracy of the research product. On the other hand, the criterion of

dependability is similar to reliability. As you recall, reliability is the consistency of a measure; if you give the same measure each time, you should get similar results. However, qualitative research questions and interview questions may change during the research process. How can reliability, or dependability, be achieved under such conditions?

Because qualitative research understands the importance of context, it would be impossible to control everything that makes a qualitative measure the same when given to each person. The location, the timing, or even the weather can influence participants to respond differently. To assess dependability, researchers maintain a comprehensive record of any changes and research decisions. This journal or log establishes transparency by showing that the study followed proper qualitative procedures and enables the researcher to clearly justify, describe, and account for any changes that emerge during the research process in their final report; it also enables another researcher to replicate the study should they wish. For example, when the author (Stevenson) was interviewing incarcerated men as part of her graduate work, one participant's interview was interrupted several times due to various reasons, including a legal hearing that required use of the interview room, a fire alarm, and a lockdown on the cell range. Clearly explaining how consent was reobtained each time the interview was restarted, how the previous conversation was recapped for the participant, and how the conversation proceeded despite interruptions formed part of the methodology of the final report. This transparency enabled other researchers to assess that good practices had been followed, contributing to the dependability of the study. Some researchers may consult another qualitative researcher to examine their logs and results to ensure dependability. Others may make their data available to other researchers along with their results to "audit" the findings, though this is not common practice due to the time-consuming nature of auditing research materials.

Confirmability is connected to objectivity and refers to the degree to which the results reported are linked to the data obtained from participants and not the researcher's bias. Although objectivity is not truly possible in social science research, the criterion of confirmability ensures that a researcher's results are grounded in what participants said. In other words, the researcher "has acted in good faith" (Bryman & Bell, 2019, p. 206) in their analysis process, acknowledged their personal biases, and not imagined or incorrectly interpreted the data.

The final criterion of **transferability** is focused on whether the findings can be applied in other settings or contexts, much like generalizability in quantitative research. One way that qualitative researchers can do this is by providing thick, rich, and detailed descriptions of the perspectives, voices, and experiences captured in their data. In Cesaroni et al.'s (2019) study, they offer pages of substantial detail showcasing the voices of the Indigenous youth who participated in the research. The research included the voices of Indigenous youth from the Anishinaabe, Haudenosaunee, and Métis communities, and the rich descriptions allow an understanding of how the impacts of colonization and residential schools, the loss of history, tradition and culture, and racism and stereotypes resonate with Indigenous youth across Canada. In this way, Cesaroni et al. (2019) establish the transferability of their findings.

These four criteria for trustworthiness were created as a reaction to criticisms of qualitative research as unscientific (Lincoln & Guba, 1986). They demonstrate that qualitative research is equally as rigorous as quantitative research, as qualitative research and measurement are conducted with the same degree of care and attention as quantitative research. While the standards may be different, they speak to the goals of accurate and consistent results that reflect the views of the participants in the study.

Table 6c.3: Trustworthiness Criteria in Qualitative Research Summarized

Criterion	Questions Being Asked
Dependability	Are the findings likely to be consistent over time or over subjects? Can another researcher conduct the same study and get similar results?
Confirmability	Are the findings accurately linked to the data? Have personal values or bias influenced the findings?
Credibility	Are you measuring what you think you are? How believable are the findings?
Transferability	Do the findings apply to other contexts or populations?

Conclusion

In this chapter, we focused on how we ensure that the measures we choose in our own research are indeed of good quality. We discuss the various types of reliability that can be used as a way to evaluate the quality of our research; we also expand on the types of validity. While reliability refers to the consistency of our measures, validity speaks to their accuracy.

In this chapter, we also discuss how to think about evaluating the quality of our measures when conducting qualitative research. We introduced the notions of authenticity and trustworthiness in this discussion, with emphasis on the fact that qualitative research is as rigorous as quantitative research, despite the fact that the standards of establishing reliability and validity differ. The research design decisions we make around measurement and measurement quality are crucial and are directly linked to our paradigmatic stance, our research purpose, and our research question.

Summary

- Reliability is a matter of consistency. What we mean when we say our measures are reliable is that they will yield the same results when repeatedly administered. There are three types of reliability: test-retest reliability, inter-rater reliability, and internal reliability.
- Validity is a matter of accuracy. The question we are dealing with here is whether our measures are actually measuring what we think they are measuring. The types of validity reviewed in this chapter are face validity, content validity, criterion validity, and construct validity.
- When conducting research in Indigenous communities, it is important to consider existing research literature as well as consult with Indigenous Elders and communities to ensure that your research measures are valid.
- Qualitative researchers assess rigor by using the criteria of trustworthiness and authenticity. Authenticity can be broken down into four criteria: dependability, confirmability, credibility and transferability.
- Both quantitative and qualitative research are equally rigorous, but the standards for assessing rigor differ between the two.

Key Terms

authenticity: one of the criteria used to assess the rigor of qualitative methods. It refers to the “extent to which researchers fairly and faithfully show a range of different realities” (Polit & Beck, 2020, p. 416). Authenticity is not limited to the breadth of perspectives, as it also includes recognition that each perspective or reality has meaning and worth.

concurrent validity: one aspect of criterion validity that refers to whether a measure is able to predict outcomes from another established measure given at the same time.

confirmability: a criterion of trustworthiness in qualitative research that refers to the degree to which the results reported are linked to the data obtained from participants.

construct validity: assessment of how well the constructs (or attributes of a construct) relate to each other in predicable and/or theoretical ways.

content validity: a type of validity that refers to whether the measure includes all the possible meanings of the concept.

credibility: a criterion of trustworthiness in qualitative research that refers to the degree to which the results are accurate and viewed as important and believable by participants.

criterion validity: a type of validity that refers to how well a measure is related to some other concept or factor. It can be either predictive or concurrent.

dependability: a criterion of trustworthiness in qualitative research that refers to the importance of ensuring that proper qualitative procedures were followed and that any changes that emerged during the research process are accounted for, justified, and described in the final report.

face validity: a type of validity that speaks to how plausible it is that the measure actually measures what it intends to.

internal reliability: a type of reliability, also sometimes called internal consistency, that refers to the degree to which scores on each question of a scale are correlated with each other.

inter-rater reliability: a type of reliability that refers to the degree to which different observers agree on what happened.

member checking: a method used to establish credibility in qualitative research. It typically involves collecting feedback from participants on transcripts, analysis at various stages of the research process, or drafts of final manuscripts or reports.

meta-analysis: a type of secondary data analysis in which findings from published studies are combined and analyzed together; typically, such research takes a quantitative approach.

predictive validity: one aspect of criterion validity; it addresses whether a measure predicts things it should be able to predict in the future.

reliability: the degree of consistency and stability of our measures.

scale: a composite measure of a variable or construct composed of multiple indicators with numerical scores assigned to response categories. For example, the PCL-R is a scale with 20 related items, scored 0 to 3, measuring different aspects of the construct of psychopathy.

test-retest reliability: a type of reliability that refers to how consistent results will be when a measure is given multiple times. Ideally, any changes in the results would be due to a change or intervening factor between the tests.

transferability: a criterion of trustworthiness in qualitative research that refers to the degree to which qualitative research findings can be applied in other settings or contexts.

trustworthiness: one criterion used to assess the rigor of qualitative research. Trustworthiness refers to the degree of confidence in data, interpretation, and methods used to ensure the quality of a study.

validity: this refers to the accuracy of our chosen measures. When we talk about validity, we are asking whether we are measuring what we actually intend to measure.

Chapter Review

Crossword

Fill in the term in the right-hand column and it will display in the crossword puzzle. Be sure to include spaces where appropriate.

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Discussion Questions

1. How do the types of reliability and validity align with the criteria of trustworthiness?
2. Why is it important to consult and work with Indigenous Elders and communities to ensure the validity of measures used to capture their perspectives?
3. How might a research measure appear to have face validity but still fail to meet content or criterion validity? Can you give an example where something “looks right” but doesn’t fully capture what it claims to measure?
4. How can poor inter-rater reliability in areas such as risk assessments, sentencing recommendations, or use-of-force evaluations lead to unequal or unjust outcomes in the criminal justice system?

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definition

The consistency and stability of measurement results over time. Reliable measures yield similar outcomes under consistent conditions across different instances of testing.

×Close definition

A type of reliability that refers to how consistent results will be when a measure is given multiple times. Ideally, any changes in the results would be due to a change or intervening factor between the tests.

×Close definition

A type of reliability that refers to the degree to which different observers agree on what happened.

×Close definition

A type of secondary data analysis in which findings from published studies are combined and analyzed together; typically, such research takes a quantitative approach.

×Close definition

A type of reliability, also sometimes called internal consistency, that refers to the degree to which scores on each question of a scale are correlated with each other.

×Close definition

A composite measure of a variable or construct composed of multiple indicators with numerical scores assigned to response categories. For example, the PCL-R is a scale with 20 related items, scored 0 to 3, measuring different aspects of the construct of psychopathy.

×Close definition

A type of validity that speaks to how plausible it is that the measure actually measures what it intends to.

×Close definition

A type of validity that refers to whether the measure includes all the possible meanings of the concept.

×Close definition

A type of validity that refers to how well a measure is related to some other concept or factor. It can be either predictive or concurrent.

×Close definition

One aspect of criterion validity; it addresses whether a measure predicts things it should be able to predict in the future.

×Close definition

One aspect of criterion validity that refers to whether a measure is able to predict outcomes from another established measure given at the same time.

×Close definition

Assessment of how well the constructs (or attributes of a construct) relate to each other in predicable and/or theoretical ways.

×Close definition

One of the criteria used to assess the rigor of qualitative methods. It refers to the “extent to which researchers fairly and faithfully show a range of different realities” (Polit & Beck, 2020, p. 416). Authenticity is not limited to the breadth of perspectives, as it also includes recognition that each perspective or reality has meaning and worth.

×Close definition

Trustworthiness refers to the degree of confidence in data, interpretation, and methods used to ensure the quality of a study.

×Close definition

Whether the claim is of a kind that, given what we know about how the research was carried out, we can judge it to be very likely to be true.

×Close definition

A method used to establish credibility in qualitative research. It typically involves collecting feedback from participants on transcripts, analysis at various stages of the research process, or drafts of final manuscripts or reports.

×Close definition

A criterion of trustworthiness in qualitative research that refers to the importance of ensuring that proper qualitative procedures were followed and that any changes that emerged during the research process are accounted for, justified, and described in the final report.

×Close definition

A criterion of trustworthiness in qualitative research that refers to the degree to which the results reported are linked to the data obtained from participants.

×Close definition

A criterion of trustworthiness in qualitative research that refers to the degree to which qualitative research findings can be applied in other settings or contexts.

×Close definition

6B: Research Design Part 2 – Causality, the Time Dimension and Validity

Learning Objectives

- Distinguish between independent and dependent variables.
- Distinguish between correlation and causation.
- Discuss the criteria for establishing causality.
- Distinguish between cross-sectional and longitudinal research designs.
- Describe the various longitudinal research designs as well as the retrospective design.
- Understand how the time dimension of our research relates to causality.
- Discuss the connection between research design, causality and validity.

Decisions about research design are layered and connected to one another. Our approach and research purpose, as well as our research question and the data available to answer that question, will guide many of these decisions. In the previous chapter, we introduced you to the measurement process and how conceptualization and operationalization require us to become very specific about what we mean by the concepts we are studying and how exactly we plan to measure and observe those concepts. What a variable is, how different variables are related to one another, and the level of measurement of our variables were reviewed.

In this chapter, we will elaborate on the relationships between variables and how we can determine if one variable did indeed cause the other. We will also introduce the time dimension and describe various time-connected research designs. This discussion will also explain how the time dimension in our study impacts our ability as researchers to say whether our findings indicate that there is a causal relationship between our variables of interest. We will end this chapter with a discussion of validity, with a specific focus on the types of validity relevant to our discussion on research design and causation.

Causality

One important part of the measurement process involves attending to issues of cause and effect. **Causality** refers to the idea that one event, behaviour, or belief will result in the occurrence of another subsequent event, behaviour, or belief. To assess causality, we must first categorize our variables as independent or dependent. An **independent variable** is a variable the researcher thinks might be useful in predicting or explaining this dependent variable. A **dependent variable** is the outcome variable the researcher has chosen to focus on. Often, researchers use more than one independent variable to collectively help us understand the dependent variable.

Knowing whether your variable is independent or dependent is important as we want to determine if one has an impact on the other. For instance, let us suppose you are researching whether the age of the defendant influences juror decisions of guilt. You develop a scenario in which you describe a fictitious robbery case, changing the age to create four otherwise identical scenarios (ages 15, 30, 45, and 60). You present the scenarios to participants and ask them to assess whether the person is guilty or not guilty based on the facts of the case. In this research, your independent variable is the age of the defendant, and the dependent variable is the assessment of guilt because your hypothesis is that the age of the defendant influences the assessment of guilt (for more on hypotheses, review [chapter 3](#) and [chapter 4](#)).

After identifying our independent and dependent variables, we must establish that there is a relationship – or **correlation** – between the two variables. This assessment can be done statistically, such as through a correlation analysis, which simply determines if and how two variables are related to each other: when one is present, the other is as well. Establishing a relationship can also be done theoretically or based on previous research. For the hypothetical study above, we would need to connect the variables of defendant age and assessment of guilt; existing research has already established this relationship. Research studies using mock jurors have shown that demographic variables of the defendant, such as their age, gender, and ethnicity, do influence the assessment of guilt (e.g., Barager et al., 2025; Pica et al., 2023).

Establishing a relationship between two variables also involves speaking to the directionality of that relationship. More specifically, we must be able to say that when one variable increases or decreases, the other variable increases or decreases. A **positive correlation** exists when variables change in the same direction (i.e., both increase or both decrease). Conversely,

a **negative correlation** exists when variables move in opposite directions. For instance, a study conducted by Heydon (2018) is a great example of a finding of a negative correlation. They found that increased meaningful consultation with First Nation communities regarding oil sands projects resulted in less environmental harm and social unrest. In other words, as consultation went up, environmental harm and social unrest went down.

Specific criteria need to be satisfied to say with confidence that the relationship between two variables moves beyond mere correlation (or relationship) toward causation. Establishing causation is much more straightforward in the physical sciences. For instance, we know that if we heat water to 100 degrees Celsius, it will boil each and every time, and that heating water to this temperature must occur *before* boiling will occur. But because the social sciences deal with complex human behaviours, identifying a relationship between two variables is rarely this clear-cut. One can say, for example, that a traumatic childhood is believed to be related to a person's substance abuse in adulthood, but we can't say that the trauma *causes* substance abuse in every instance. There are many other variables at play, and not everyone responds to trauma in the same way.

The main criteria for establishing causality include plausibility, temporality, and spuriousness. **Plausibility** refers to the degree that a claim that one event, behaviour, or belief causes another is reasonable and makes sense. For example, if a researcher observes a series of courtroom interactions during which a Crown prosecutor routinely talks over a criminal defense attorney, the researcher might begin to wonder whether prosecutors who have a propensity to speak loudly are more likely to have a propensity to interrupt other lawyers. However, the fact that there might be a relationship between the volume of a person's voice and their propensity for talking over other people does not mean that a prosecutor's loud voice *causes* them to talk over defense attorneys. In other words, just because there might be some correlation between two variables does not mean that a causal relationship between the two is really plausible. On the surface, it simply doesn't make sense. This criterion is two-pronged: not only must the two variables be related, but that correlation must be plausible.

The criterion of **temporality** means that a independent variable must precede the dependent variable in time. Let's return to the study by Kohm et al. (2012) discussed in [chapter 6a](#), wherein the researchers examined exposure to news media and fear of crime via a survey of both Canadian and American undergraduate students. They identified their independent variable as the news media source participants engaged with most for crime news and how much news they consumed. Their dependent variable was the fear of being the victim of crime, broken into 10 specific crimes. While Kohm et al. (2012) were able to state that there was a connection between their variables, specifically between viewing local news media about crime and higher fear of crime, they could not claim causality as they could not isolate the time element; there was no way to determine whether high levels of fear of crime came before or after exposure to crime news. The criterion of temporality is challenging to meet and should be considered in the methodological design of studies focusing on causality, as seen in studies whose purpose is explanation.

Finally, a **spurious relationship** is one in which an association between two variables appears to be causal but can in fact be explained by some third variable. Let's consider a real-world example of spuriousness. Did you know, for example, that high rates of ice cream sales have been shown to cause drowning? Of course, that's not really true, but there is a positive relationship between the two. In this case, a third variable, time of year, causes both high ice cream sales and increased deaths by drowning because the summer season brings increases in both. In other words, the presence of a third variable explains the apparent relationship between the two original variables. For more (often humorous) examples of spurious relationships, see [Spurious Correlations](#).

In sum, the following criteria must be met for a correlation to be considered causal:

1. There must be a correlation (positive or negative), and that correlation must be plausible.
2. The cause must precede the effect in time.
3. The relationship must be nonspurious.



Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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The Time Dimension

As indicated above, temporality is one of the criteria for determining causality. Indeed, the decisions we make as researchers about how to incorporate time into our research design are relevant to this discussion about causality: do we want to examine the social phenomenon that is the focus of our research question at one point in time, or do we want to examine it over a long period? This decision will impact our ability to say whether there is a change to be observed and whether our independent variable resulted in that change in the dependent variable. There are four main types of time-related studies: cross-sectional, longitudinal, retrospective, and prospective. Each type of study design can utilize a variety of data collection methods, again depending on the research question.

The most basic of these time-related study designs is the **cross-sectional research design**. Cross-sectional studies are focused on a single point in time, and they offer researchers a snapshot of respondents' lives, opinions, and behaviours at the time when the data were collected. Exploratory and descriptive studies tend to be cross-sectional in design, and common data collection methods include interviews, focus groups, surveys, and observations.

Let's consider an example of this type of research design to illustrate how it might work. Stevenson et al. (2018) used a survey to collect data from domestic violence shelter staff about programs and services available through the shelter for the pets of survivors of intimate partner violence. The survey focused on what was available *at the time* the survey was completed, capturing data at a moment in time. The study found that while there was an awareness of the challenges that survivors with pets faced (e.g., delays in leaving the relationship, fear of harm to the pets), there were few established pet-related programs in place.

To illustrate this study design further, let's take a look at another example, this time one that's hypothetical. Let's say we wanted to conduct interviews in 2019 that asked about people's perceptions of the police. In the summer of 2020, the death of George Floyd at the hands of police officer Derek Chauvin sparked national (and even international) protests. Imagine how responses to the same set of questions might have been different if people had been interviewed during or after that summer. This difference connects to one of the challenges of cross-sectional studies in that the events, opinions, behaviours, and other phenomena that cross-sectional studies are designed to assess do not generally remain stagnant. In addition, such studies often do not include any follow-up with participants to see if or how anything has changed. While cross-sectional surveys have many important uses, researchers must remember that a cross-sectional survey captures a snapshot of life and opinions as they were at the time that the survey was administered. When employing a cross-sectional design, we do not make any attempt to measure changes in perceptions over a period of time or to determine what might be the causes for those changes. We are simply describing what "is" at a particular time and in a particular place. As such, the cross-sectional design is most appropriate when our research purpose is exploratory or descriptive.

The **longitudinal research design** tries to overcome this problematic aspect of cross-sectional studies in enabling the collection of data over an extended period of time. Data collection methods – whether they are observations, interviews, surveys, etc. – are administered multiple times. The differences between cross-sectional and longitudinal research designs are shown in Figure 6b.1 below.

Figure 6b.1 Cross-sectional vs Longitudinal Research Design [\[Image description for Figure 6b.1\]](#)

There are three types of longitudinal studies: trend, panel, and cohort studies.

Researchers conducting **trend design** studies are interested in how people's inclinations change over time. A distinct feature of trend studies is that the same people may not be answering the researcher's questions each time. For example, the Canadian General Social Survey (GSS) – Canadians' Safety has been conducted every five years since 1988, focusing on experiences of victimization as well as perceptions of crime and the justice system (Statistics Canada, 2022). In the 2019 GSS, over 22,000 respondents over the age of 15 completed the survey. It is unlikely that the respondents who completed the survey in 2019 also completed the survey in 2014 or in 2024. Rather than focusing on change in an individual's specific experiences or what may be the reasons or causes for that change, the GSS instead is interested in the overall trends over time. Because of this more overall focus, it is not important that the same people participate in trend studies each time.

The second type of longitudinal study design offers a middle ground between trend and panel studies. In a **cohort design** study, a researcher identifies a category of people of interest and then regularly includes people who fall into that category. For example, researchers may identify people of specific generations (e.g., all born in the 1960s) or graduating classes, people who began work in a given industry at the same time, people who started university the same year, or perhaps people who have some specific life experience in common. Similar to a trend study, the same people don't necessarily participate from year to year, but all participants must meet the categorical criteria for inclusion in the study.

Lastly, in a **panel design** study, *the exact same people* participate in the study each time data are collected. For this reason, panel studies can be difficult and costly. Imagine trying to conduct interviews with the same 100 people every year for, say, five years in a row. Keeping track of where people live, when they move, and when they die takes resources that researchers often don't have. When the time and resources are available, however, the results can be quite powerful. In fact, if we observe that a person has changed their views on the topic that is the focus of our study from time point 1 to time point 2, we can ask them *why* they changed. In other words, the panel design is the only one that allows us to talk about causality to some degree. If the purpose of your research moves beyond mere exploration and description and you are focused on actually explaining something, then this design would be appropriate. Again, we cannot reiterate this enough: all of these research design decisions depend on what your goals are and what your research question is!

The University of Minnesota's **Youth Development Study (YDS)** offers an excellent example of a panel study (Mortimer, 2023). Since 1988, YDS researchers have administered an annual survey to the same 1,000 people. Study participants were in ninth grade when the study began, and they are now in their thirties. Several hundred papers, articles, and books have been written using data from the YDS. These data not only outline changes over this time period, but they also allow us to observe changes in specific participants and ask questions to determine the causes for the observed changes.

All three types of longitudinal studies share the strength of allowing a researcher to make observations over time. This means that if the behaviour or other phenomenon of interest changes over time, either because of some world event or because people age, the researcher will be able to capture those changes. However, **participant attrition** is a key disadvantage of a longitudinal study design. Participant attrition (also called participant mortality) occurs when participants drop out of the study, either because they wish to, they move and are no longer able to be contacted by the researcher, or they die (Carr et al., 2020). Generally, researchers attempt to account for this in their initial sample size, aiming to recruit more participants than is necessary at the beginning to compensate for a degree of attrition.

Longitudinal study designs are prospective in nature: they allow us to measure our variables of interest at one time and then follow up with respondents, either the same people or different ones, depending on the type of research design, at a later point in time. The final time-connected study design is a **retrospective design** study, where you ask people about their past experiences (Maxfield & Babbie, 2018). Let's take a look at an example to illustrate the difference between these two research designs. Let's say your goal is to determine how many current offenders who struggle with substance abuse witnessed substance abuse as children. You could ask them in an interview, a focus group or a survey to share childhood experiences that speak to their exposure to substance abuse in their formative years. This study would take a retrospective approach. Alternatively, if you wanted to examine the same issue of the impacts of substance use exposure on children, you could instead identify a subgroup of children in families in which substance use has been established, then follow those children throughout their lives and identify how many of them later also use or abuse illicit substances. This study is an example of a prospective approach in a longitudinal panel study design.

The challenge with retrospective studies is that memories are imperfect, and there may be missing or misremembered details. The passage of time and new experiences also colour memories. The General Social Survey (GSS) also has a retrospective element to it. For example, in the survey question block dealing with intimate partner abuse, respondents are asked to think about whether they have experienced various forms of victimization in the past five years (Statistics Canada, 2020). Answers could be inaccurate, as respondents may report on events that happened longer than five years ago, which could call into question the validity of the responses.

The challenge with prospective studies, as mentioned earlier, is that participant attrition is a primary concern. There are also a number of intervening variables that can be difficult to control over time within the research design. In the above example exploring the relationship between substance abuse exposure and later substance abuse, being exposed to sports or other prosocial extracurricular activities may change the trajectory of some children, or perhaps they have wonderful teachers and mentors along the way who offer support and encouragement that influences the choice to avoid substance use. Our ability to make causal inferences is hindered by such intervening variables.

Table 6b.1 Summary of Time-Connected Research Designs

Type of Design	Key Features	Things to Consider
Cross-sectional	snapshot at one time/place	<ul style="list-style-type: none"> no causal inferences best for exploration and description

Type of Design	Key Features	Things to Consider
Longitudinal	collection of data over multiple times	<ul style="list-style-type: none"> • participant attrition • large sample size needed to account for dropouts
Trend	overall population changes over time	<ul style="list-style-type: none"> • best for observing very general changes over time
Cohort	changes in the same subgroup of people over time	<ul style="list-style-type: none"> • cohorts can be people born in the same decade, starting a job or school in the same year, etc.
Panel	changes in the exact same people over time	<ul style="list-style-type: none"> • can ask to speak to the causes for changes between time 1 and time 2, etc.
Retrospective	asking people about their past	<ul style="list-style-type: none"> • memory loss • e.g., GSS



Stop and Take a Break!

Test your knowledge by answering a few questions on what you have read so far.

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The Connection Between Validity and Research Design

This discussion about whether we are correct when we say that one variable indeed causes another, or whether they are simply correlated, touches on an important aspect of research design: **validity**. Essentially, validity addresses the issue of whether the claims we make about our measures are accurate and whether our statements about causality are indeed correct. In other words, validity addresses the truthfulness of our claims.

In upcoming [chapter 6c](#), we discuss evaluating the quality of our measures – i.e. their validity and reliability. There are two specific types of validity that relate to the design of our research: internal validity and external validity.

Internal validity speaks to the criterion of causality that addresses spuriousness (criterion 3), concentrating on whether a variable (or variables) other than our independent variable is actually causing the change in the dependent variable. In other words, is some other variable coming “into” our study that we had not intended and is that “thing” actually causing the observed change?

Certain types of research methods increase the internal validity of our research, such as the experiment. In an experiment conducted in a laboratory under precise conditions, researchers have a great deal of control over what factors come into play while conducting the study. For example, participants confined to a laboratory for a full day with no access to the outside world would not have any outside influences. But, there are other factors that may come into play, such as one participant feeling ill, or another participant who is distracted by a lack of sleep the night before. While we can design our research to increase internal validity, we can never be absolutely 100% positive in a causal relationship.

External validity, on the other hand, is concerned with how generalizable our research findings are to the outside world. The question we are asking when we are dealing with external validity is: Can our findings about some variable causing change in another variable apply to some other situation or location? You may recall the rice alcohol study discussed in chapter 3 of this text. This study examined the use of rice alcohol in the Downtown Eastside of Vancouver in the late 1990s and early 2000s. The issue of external validity is relevant in this study: Would the findings about the impacts of the policy change also apply if the consumption of rice alcohol became an issue in Toronto? What about Calgary? What about if it happened again, now, in Vancouver? Studies like this that are conducted in a real-world setting, and where variables are at play much like in other real-world settings, typically have high external validity, especially if the study is conducted in another city with similar demographic and geographic characteristics. They can be generalized to other situations with similar conditions. But when a study is conducted in a highly controlled laboratory experiment, on the other hand, external validity is low as it is unlikely that what we learn in a laboratory would actually apply in real life.

As you can see, some methods have high external validity but low internal validity, while others have high internal validity but low external validity. It is not the case that one is always good and the other is not. These are all things to simply keep in mind when choosing your research method to ensure that the method you choose is the most appropriate to fulfill your research purpose and answer your research question.

Table 6b.2 Research Design-Related Validity Types Summarized

Validity Type	Questions Being Asked
internal validity	<ul style="list-style-type: none">• Are there outside variables coming into our study and impacting the relationship of our variables?• Causal criterion #3
external validity	<ul style="list-style-type: none">• Can our findings be generalized to some other time or place?

Conclusion

In this chapter, we elaborated on aspects of measurement that pertain specifically to causality. We discussed what needs to be established to say that our variables of interest are more than just co-related and that one actually causes the other. The type of research design we choose and how we incorporate the time element will impact our ability to say whether one variable in our study causes the other. Cross-sectional studies provide a snapshot of data at one time and in one place, and they are an appropriate design if the purpose of our research is to describe or explore some phenomenon, but not if we want to prove a cause-and-effect relationship conclusively. Longitudinal studies, on the other hand, collect data over multiple time periods. The panel design allows us to explore changes over time, with a particular eye to explaining cause-and-effect relationships.

Lastly, we touched on two different types of validity: internal and external validity. Some other types of validity will be reviewed in the next chapter along with ways to evaluate the quality of our chosen measures.

Summary

- A correlation of variables means that they are associated with one another, but specific criteria need to be established before we can say there is a causal relationship: plausibility, temporality, and non-spuriousness. The direction of the correlation must also be known, which can be positive or negative.
- The time dimension of our study impacts our ability to speak to whether one variable caused a change in another variable.
- Cross-sectional studies provide a snapshot of our phenomenon of interest, while longitudinal studies collect data over multiple points in time.
- The three longitudinal research designs are trend, cohort, and panel. The panel research design allows us to speak to causes for change over time as the research participants remain the same.
- The retrospective design requires us to ask participants to recall past events. The General Social Survey incorporates this research design.
- Two types of validity are related to our research design: internal validity and external validity. Internal validity is especially important to studies focused on causality.
- The validity of our research speaks to the accuracy of the measures we choose and the truthfulness of the causal inferences we make in our study.

 Key Terms

causation: the idea that one event, behaviour, or belief will result in the occurrence of another subsequent event, behaviour, or belief.

cohort design: a type of longitudinal study where data are collected at multiple time points from people who share a common characteristic or experience; for example, a graduating cohort from a university or residents of New York during 9/11.

correlation: when two variables are associated with one another, meaning when one is present, the other is also present. Correlation is necessary but not sufficient to show causation.

cross-sectional research design: a type of research design focused on a single point in time that offers researchers a snapshot of respondents' lives, opinions, and behaviours at the time the data were collected. An example could be a survey asking about respondents' current views on a high-profile court case or an interview querying how participants feel about a specific issue that captures their views and opinions at a single point in time.

dependent variable: this is the variable in a relationship that is caused by the independent variable. It is the "effect" or outcome.

external validity: an assessment of the ability to generalize findings from a study to a larger setting, group, or population.

independent variable: this is the variable in a relationship that causes a change in the dependent variable. It is the "cause."

internal validity: an assessment of whether the independent variable is the primary contributing factor (or cause) for change in the dependent variable; the ability to eliminate or control for rival plausible explanations for the change in the dependent variable.

longitudinal research design: a research design where data are collected at multiple time points on the same or similar research question; this includes trend, cohort, and panel longitudinal designs.

negative correlation: when two variables are related to one another and the directionality of that relationship is such that when found together, they change in the opposite directions. In other words, when one goes up, the other goes down or when one goes down, the other goes up.

panel design: a type of longitudinal study where data are collected from the *exact same people* at multiple time points.

participant attrition: also called participant mortality; when participants drop out of a longitudinal panel study for various reasons, including not wanting to continue, moving and not providing researchers with their new contact information, or death.

plausibility: a claim that one event, behaviour, or belief causes another is reasonable and makes sense. For example, claiming that ice cream sales "cause" drowning deaths is not plausible, whereas claiming that the absence of personal floatation devices like lifejackets causes an increase in drowning deaths is plausible.

positive correlation: when two variables are related to one another and the directionality of that relationship is such that when found together, they change in the same direction. In other words, when one goes up, the other also goes up, or when one goes down, the other also goes down.

retrospective design: a type of research design where people are asked about an event or experience in their past.

spurious relationship: a relationship in which an association between two variables appears to be causal but can in fact be explained by some third variable. For example, the increase in drowning deaths in the summer may be connected to hot weather and more people at the beach rather than an increase in ice cream sales.

temporality: a criterion for determining causality where a cause must come before its effect in time.

trend design: a type of longitudinal study where data are collected over multiple time points on/with the same question(s) but not necessarily from the same participants; the General Social Survey is a good example in which the same questions are asked of different Canadians to assess change over time.

validity: an assessment of whether researchers are measuring what they think they are and whether the claims researchers make are true.

Chapter Review

Crossword

Fill in the term in the right-hand column and it will display in the crossword puzzle. Be sure to include spaces where appropriate.

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Discussion Questions

1. Can you think of a real-world example where two things are related but one does not actually cause the other? Explain your example.
2. One of the criteria for causality is “temporal order” (the cause happens before the effect). Why do you think this is important?
3. Why might researchers choose a longitudinal study instead of a cross-sectional one when studying human criminal behaviour?
4. How does having strong internal validity help a researcher make a stronger case for causality in their study?

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definition

The idea that one event, behaviour, or belief will result in the occurrence of another subsequent event, behaviour, or belief.

×Close definition

The variable manipulated by researchers in a research study – its variation is hypothesized to cause changes in the dependent variable being measured.

×Close definition

The outcome variable that researchers measure in a research study – it is expected to change as a result of manipulations to the independent variable.

×Close definition

When two variables are associated with one another, meaning when one is present, the other is also present. Correlation is necessary but not sufficient to show causation.

×Close definition

When two variables are related to one another and the directionality of that relationship is such that when found together, they change in the same direction. In other words, when one goes up the other also goes up or when when goes down the other also goes down.

×Close definition

When two variables are related to one another and the directionality of that relationship is such that when found together, they change in the opposite directions. In other words, when one goes up, the other goes down or when one goes down, the other goes up.

×Close definition

A claim that one event, behaviour, or belief causes another is reasonable and makes sense. For example, claiming that ice cream sales “cause” drowning deaths is not plausible, whereas claiming that the absence of personal floatation devices like lifejackets causes an increase in drowning deaths is plausible.

×Close definition

A criterion for determining causality where a cause must come before its effect in time.

×Close definition

A relationship in which an association between two variables appears to be causal but can in fact be explained by some third variable. For example, the increase in drowning deaths in the summer may be connected to hot weather and more people at the beach rather than an increase in ice cream sales.

×Close definition

A type of research design focused on a single point in time that offers researchers a snapshot of respondents' lives, opinions, and

behaviours at the time the data were collected. An example could be a survey asking about respondents' current views on a high-profile court case or an interview querying how participants feel about a specific issue that captures their views and opinions at a single point in time.

×Close definition

A research design where data are collected at multiple time points on the same or similar research question; this includes trend, cohort, and panel longitudinal designs.

×Close definition

A type of longitudinal study where data are collected over multiple time points on/with the same question(s) but not necessarily from the same participants; the General Social Survey is a good example in which the same questions are asked of different Canadians to assess change over time.

×Close definition

A type of longitudinal study where data are collected at multiple time points from people who share a common characteristic or experience; for example, a graduating cohort from a university or residents of New York during 9/11.

×Close definition

A type of longitudinal study where data are collected from the exact same people at multiple time points.

×Close definition

Also called participant mortality; when participants drop out of a longitudinal panel study for various reasons, including not wanting to continue, moving and not providing researchers with their new contact information, or death.

×Close definition

A type of research design where people are asked about an event or experience in their past.

×Close definition

The degree to which a test measures what it claims to measure; it encompasses various forms such as internal validity (the accuracy within the study) and external validity (generalizability).

×Close definition

Refers specifically to whether observed effects within a study can confidently be attributed solely to manipulations made by researchers rather than other confounding factors.

×Close definition

An assessment of the ability to generalize findings from a study to a larger setting, group, or population.

×Close definition

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APPENDICES

- A: Example Informed Consent Form
- B: Example Qualitative Interview Guide
- C: Sample Coding Manual
- D: Sample Coding Sheet
- E: Sample Qualitative Coding Scheme
- F: Literature Review Matrix

A: Example Informed Consent Form

REB STUDY #XXXXXXXXXX

WEBER STATE UNIVERSITY INFORMED CONSENT

Title of the Research Study

Barriers and Concerns Related to Health Disparities in the African American Community in Utah.

Purpose of the Research Study

The study is based on findings that show health disparities in African American communities compared to other minority groups and Caucasians remains high. This research explores why certain health care facilities and resources remain underutilized. We want to find out about your experiences and opinions. You are being asked to participate in this study because you are of African American descent.

Number of People Taking Part in the Research Study

If you agree to participate, you will be one of 18 subjects who will be participating in this research.

Procedures for the Research Study

If you decide to be in this research study, you will be asked to sign this consent form after you have had all your questions answered and understand what your participation in the study involves. If you agree to participate and you are eligible, you will be part of a discussion (focus) group. The discussion group will last about 60 minutes. The focus group leader will ask you to talk about your experiences and opinions about health care related issues. The focus group will be audio recorded so we are sure to get everyone's ideas. Audio recordings and transcripts of the tapes will remain confidential. They may also remain anonymous if you choose to use a pseudonym (a substitute for your real name) during the discussion group. A brief survey will be handed out after the focus groups to gather some useful demographics. To remain anonymous the participants will use their pseudonyms.

Risks of Taking Part in the Research Study

The risk of participating is that you may feel discomfort when answering personal questions. Your health care information will be discussed openly in a group setting. The moderator of the focus group will be trained to keep the group conversation on track with the questions being asked. There will be no direct questions asked about specific health care problems. The questions will focus more on general experiences and perspectives. You will choose how much information to disclose during the discussion. You will be asked to sign the consent form. After the focus group has concluded, you must agree not to talk about any healthcare information that others might disclose during the focus group.

Benefits of Taking Part in the Research Study

The benefits will be getting your voice heard so that the researchers can better understand the barriers and concerns for African Americans regarding health care. Health care disparities in the African American communities have been consistently growing all throughout the nation and this research study hopes to understand why.

Alternatives to Taking Part in the Research Study

Instead of participating in the study, you may decline to participate in the focus group.

Costs/Compensation for Injury

The cost is about an hour of your time. You will receive an incentive for your participation at the start of the focus group. The compensation will be provided by the Project Success Coalition and will be valued at no more than \$25.

Confidentiality

Efforts will be made to keep your personal information confidential. While you may choose to disclose your name during the focus group, the transcripts of audio recordings will use pseudonyms (a substitute for your real name). Even so, we cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law. Your identity will be held in confidence in reports in which the study may be published.

Contacts for Questions or Problems

For questions about the study, contact the primary researcher, Dr. Monica Williams at [phone number] or .

For questions about your rights as a research participant or to discuss problems, complaints or concerns about a research study, or to obtain information, or offer input, contact the Chair of the IRB Committee at [IRB email address].

Voluntary Nature of the Research Study

Taking part in this study is voluntary. You may choose not to take part or may leave the study at any time. Leaving the study will not result in any penalty or loss of benefits to which you are entitled. Your decision whether or not to participate in this study will not affect your current or future relations with Weber State University or Project Success Coalition.

Consent to Participate

In consideration of all of the above, I give my consent to participate in this research study. If I so desire, I will be given a copy of this informed consent document to keep for my records.

Subject's Printed Name:

Subject's Signature:

Date:

Printed Name of Person Obtaining Consent:

Signature of Person Obtaining Consent:

Date:

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B: Example Qualitative Interview Guide

Community Responses to Violent Sex Offenders Interview Guide for Residents

I want to assure you that anything you say during this interview is confidential. Any time I report data from my research, I will not reveal your name or any other identifying information. With your consent, I would like to record this interview so that I can have a record of what we've talked about today.

Is it okay with you if I use the recorder?

[Turn on digital recorder if respondent consents.]

Overview of the Community

What kind of community is this from R's perspective?

Let's start by talking about your neighbourhood in general. What kind of place is it?

[Do you know your **neighbours**? Do people look out for each other? How? How often do you do things with people in the neighbourhood? How does your neighbourhood compare to others in the surrounding community?]

[What about the **local police**? How do they deal with problems in the area? Example (what kind of problems have you had to deal with in the neighbourhood?). Do you think they're sensitive to the needs of the community? Example? Tell me about your last interaction with the police. How did it go/What was it like?]

[What about the **local government** (i.e. board of supervisors, city council)? How sensitive are they to the needs of the community? How well do you think they handle issues that arise in the area? Example?]

How has the neighbourhood changed since you've lived here?

What do you like best about your community and neighbourhood?

What would you like to see changed about the neighbourhood and/or community?

Overview of the Response

R's understanding of the placement and community response.

Like I said earlier, I'm particularly interested in a specific issue, the placement of Mr. . Let's talk about what happened there. I'd like to get as much detail as you remember, so let's just start at the beginning.

Tell me about how you first heard about Mr. . [keep probing for what happened next]

[What did you think? What did you do when you first heard? Did you talk to other people about it? What did they say? What did they do? How did finding out about this make you feel? Did you contact local officials? What did they say or do?]

[What did you think during the community notification meeting? How did it go from your perspective? What happened in the days immediately after the notification meeting? What did you do? What did others do (residents and officials)?]

[After he moved in, what did you think? What were your feelings? What did other people say? What did you do? What did other people do?]

Personal Involvement in the Response

How did R react to the placement? What did R personally do before, during, and after the placement?

I want to get a better picture of the protests [or other activities that R mentions being involved in like meetings, etc]. Can you describe the scene to me?

[How many people were out there with you? What about law enforcement and/or local officials? What kinds of things did you do (signs, yelling, etc.)? What kinds of slogans did you chant or have written on signs? Did you personally chant or hold signs? What did you say/what was written on your sign?]

[What was the general feeling when you were there? What kind of mood were you in while you were there? How did that compare to the general mood of the group in general?]

[What kinds of responses did you get from passersby?]

Were there times when you felt you had to take action on your own? Example.

[Why did you feel like you had to act alone? How did you try to get other people involved? What kinds of things did people say in response to your efforts?]

Did you ever talk to anyone who didn't want to get involved? Anyone who wondered why you were doing what you were doing?

How did your involvement in these events change over time?

[Did you devote more/less time to the issue as time went on? Did you do different things in the beginning than you did in the end or vice versa?]

Why did your involvement change?

Purpose and Goals of the Response

What did R expect would happen? What exactly was R trying to achieve? How did R's goals contrast with others' goals?

Why did you personally get involved in this issue?

[What were you trying to achieve? What did you expect would happen as a result of your actions? Had you been involved in community events like this in the past?]

Why do you think this became such a big issue in the community?

[What were the general goals of the community's response? In what ways did the community achieve its goals? How did it fail?]

In what ways did you achieve your goals? In what ways did you not realize your goals?

[When did you realize that your goals wouldn't be met? How did that affect your involvement in the issue?]

Creating, Maintaining, and Breaking Down Community

What does the community look like now and what did it look like before the placement?

Earlier we talked about what kind of place your neighbourhood and community are. Let's talk a bit about how the response to Mr. affected these places.

How did the community's response to Mr. affect your community? [Get positive and negative]

[Do you feel closer now to your **neighbours** than before? Did you meet people you didn't know before? Have you kept in touch with people you worked with more than you used to? Example?]

[Do you feel better or worse about **local law enforcement** now? Why? What did they do that make you feel like this?]

[What about **local officials** like the county supervisors or city council? What's your feeling about them now? Why?]

[What about the general mood and feeling about the community? Do you feel better or worse about it now than before? Why?]

Has the community ever had to deal with similar issues in the past? Can you tell me about that issue?

How did the response then compare to what happened with Mr. ?

[What was similar? What was different? Compare on level of neighbours, police, officials]

Looking Toward the Future

R's plans to continue reactions, and what R thinks of the whole issue now.

Tell me about the most recent time you thought about Mr. . What went through your mind? What were your feelings? How much do you think about him now?

Have you done anything recently about Mr. ?

As far as you know, do others have any plans to continue their response to this sex offender?

[How likely do you think it is that the response to this sex offender will continue in the future?]

If this were to happen again in your community, what do you think you'd do differently next time? What do you think others (neighbours, law enforcement, officials) should do differently?

Demographic Info

- Age
- Race
- Last school level completed
- Family: Married? Children?
- Approximate household income
- How long lived in community?

I appreciate the time you've taken to answer my questions today. If you have any questions, please feel free to call or email me.
[Give respondent my business card.]

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C: Sample Coding Manual

Code	Inclusion	Notes and Exclusions
News Source	Online articles from Vancouver Sun, Victoria Times-Colonist Montreal Gazette, Toronto Star, CBC News	News sources not noted, any print articles
Date	Date at which article was last updated (e.g., “posted Jan 15, updated Jan 16” – record Jan 16)	Articles posted before or after 2021
Sex of offender	Male, Female, unknown, unspecified (use unspecified if there is no clear identification of offender)	Do not rely on name to determine sex of offender
Total offences	Total number of charges, listed offences or alleged offences in news article	
Interpersonal offences	Murder (all levels), attempted homicide, assault (all levels), robbery, sexual assault	Criminal harassment, criminal negligence; identity theft
Property offences	Theft (e.g., shoplifting, auto theft, smash and grab, credit cards), break and enter, destruction of property, possession of stolen goods	Fraud
Other offences	Drug possession, drug trafficking, dangerous driving, distracted driving, impaired driving	

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D: Sample Coding Sheet

News Source	Article Date	# words	Sex of offender	Total # of offences	# of interpersonal offences	# of property offences	# of other offences
Vancouver Sun	Jan 17, 2021	93	Unknown	3	2	1	0
Montral Gazette	Jan 22, 2021	293	Male	11	3	7	1
Vancouver Sun	Jan 23, 2021	572	Male	3	3	0	0
Victoria Times-Colonist	Jan 30, 2021	165	Unknown	2	2	0	0
Toronto Star	Jan 30, 2021	214	Female	4	0	1	3
CBC	Jan 30, 2021	679	Male	5	5	0	0

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E: Sample Qualitative Coding Scheme

Code	Inclusions	Notes
News Source	Online articles from Vancouver Sun, Victoria Times-Colonist Montreal Gazette, Toronto Star, CBC News	Exclude news sources not noted, any print articles
Date	Date at which article was last updated (e.g., “posted Jan 15, updated Jan 16” – record Jan 16)	Exclude articles posted before or after 2021
Sex of offender	Male, Female, unknown, unspecified (use unspecified if there is no clear identification of offender)	Do not rely on name to determine sex of offender Look for indicators like pronouns when name is used
Total offences	Total number of charges, listed offences or alleged offences in news article Focus on interpersonal offences: Murder (all levels), attempted homicide, assault (all levels), robbery, sexual assault	
Description of offences	How are the offences described? What language used (e.g., ‘brutal assault’ or ‘bar fight’)?	
Description of offender	Is the offender mentioned? Is the offender’s race/ethnicity mentioned? How is this described? How is the offender’s physical appearance described? What language is used (e.g., ‘slight build’ or ‘aggressive stance’)? How is the offender’s behaviour and demeanour described? What language is used (e.g., ‘arrested without incident’ or ‘resisting arrest’)?	

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F: Literature Review Matrix

Below is a Literature Review Matrix with an example of how it would be filled in.

Author/Date	Theoretical/ Conceptual Framework	Research Question(s)/Hypotheses	Methodology	Analysis & Results	Conclusions	Strengths of Research	Limitations of Research
<i>This is an easy way to keep references organized</i>	<i>What is the overarching perspective or position of the author(s)? Identified theory or framework?</i>	<i>This should be clearly stated somewhere in the paper; handy to have it at a glance!</i>	<i>How did the author(s) address the research question?</i> <i>Method?</i> <i>Sample?</i> <i>Analytic process?</i>	<i>What were the findings?</i> <i>The results?</i> <i>Also check the 'Discussion' section of journal articles for results.</i>	<i>What is the 'answer' to the research question?</i> <i>Why is the study important?</i> <i>Often found in the 'Discussion' section of journal articles, and also in the conclusion.</i>	<i>What does the study do well? Think about this in relation to your RQ!</i>	<i>What questions can the study not answer? Think about this in relation to your RQ!</i>
Stevenson (2018)	Human-animal bond; pets just as important to men as women in IPV situations; Masculinities theory	What is the role that pets play in situations of intimate partner violence, from the perspective of the male partner?	24 Interviews with men who had pets in relationship; three groups of men (serious IPV, less Serious IPV; no IPV); Thematic analysis (iterative, loosely following Braun and Clarke)	Major themes: unconditional love from pets but not partners; ability to trust pets but not partners; pets as possible protective factor from future abuse	Pets are an important positive relationship in the lives of men who have committed abuse against their partners; provide love and opportunity to do masculinity in a pro-social way; opportunities for inclusion of human-animal relationship in DV interventions	Understudied population; in-depth interviews using men's voice; show similar themes to women who have experienced IPV	Small sample; no inclusion of men who committed animal mistreatment (direction for future research)

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health care access
A: *Example Informed Consent Form*
health care barriers
A: *Example Informed Consent Form*
health disparities
A: *Example Informed Consent Form*
human subjects research
1: *Research Ethics in Criminology*

I

immersive research
9: *Field Research*
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C: *Sample Coding Manual*
independent variable
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6B: *Research Design Part 2 – Causality, the Time Dimension and Validity*
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1: Research Ethics in Criminology
A: Example Informed Consent Form
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inquiry

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12: Experiments
6C: Reliability, Validity, and Trustworthiness

interpersonal

D: Sample Coding Sheet

interview techniques

8: Interviews and Focus Groups

intimate partner violence

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J

justice

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K

knowledge creation

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L

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6A: Research Design Part 1 – Measurement, Conceptualization and Operationalization
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literature review

4: Research Questions
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Chapters
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Literature Review Matrix

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local government

B: Example Qualitative Interview Guide

longitudinal studies

6B: Research Design Part 2 – Causality, the Time Dimension and Validity

M

measurement

6C: Reliability, Validity, and Trustworthiness
Chapters

measurement methods

6A: Research Design Part 1 – Measurement, Conceptualization and Operationalization

measures of central tendency

14: Quantitative Data Analysis

measures of dispersion

14: Quantitative Data Analysis

media

D: Sample Coding Sheet

media analysis

10: Content Analysis

Methodology

5: The Literature Review

minority health issues

A: Example Informed Consent Form

Montreal

E: Sample Qualitative Coding Scheme

N

news

D: Sample Coding Sheet
E: Sample Qualitative Coding Scheme

notes

C: Sample Coding Manual

O

observation

9: Field Research

offences

C: Sample Coding Manual
D: Sample Coding Sheet

offender

C: Sample Coding Manual
D: Sample Coding Sheet
E: Sample Qualitative Coding Scheme

ontology

2: Paradigms and Theories

P

participant consent

8: Interviews and Focus Groups

participant experiences

A: Example Informed Consent Form

participant observation

9: Field Research

participant responses

6C: Reliability, Validity, and Trustworthiness

participant welfare

1: Research Ethics in Criminology

personal involvement

B: Example Qualitative Interview Guide

police

B: Example Qualitative Interview Guide

probability sampling

7B: 7b. Sampling Part 2 – Probability and Non-Probability Sampling Strategies

property

D: Sample Coding Sheet

Q

qualitative

3: Research Purposes, Approaches, and the Link to Methods

qualitative analysis

13: Qualitative Data Analysis
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qualitative data

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Qualitative Data Analysis

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Qualitative Interview Guide

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qualitative interviews

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qualitative methods

8: Interviews and Focus Groups

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qualitative research ethics

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quantitative

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quantitative data

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R

reliability

6C: Reliability, Validity, and Trustworthiness
Chapters

representation

10: Content Analysis

representativeness

7A: Sampling Part 1 – The Principles of Sampling

research

3: Research Purposes, Approaches, and the Link to Methods
5: The Literature Review

research design

6A: Research Design Part 1 – Measurement, Conceptualization and Operationalization
6B: Research Design Part 2 – Causality, the Time Dimension and Validity
Chapters

research ethics

1: Research Ethics in Criminology
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research findings

F: Literature Review Matrix

Research Gaps

5: The Literature Review

research methodologies

7B: 7b. Sampling Part 2 – Probability and Non-Probability Sampling Strategies

research methodology

12: Experiments

6A: Research Design Part 1 – Measurement, Conceptualization and Operationalization

8: Interviews and Focus Groups

F: Literature Review Matrix

research methods

10: Content Analysis

2: Paradigms and Theories

6C: Reliability, Validity, and Trustworthiness

7A: Sampling Part 1 – The Principles of Sampling Chapters

research questions

4: Research Questions

research strengths

F: Literature Review Matrix

researchdesign

3: Research Purposes, Approaches, and the Link to Methods

researchmethods

3: Research Purposes, Approaches, and the Link to Methods

residents

B: Example Qualitative Interview Guide

respect for persons

1: Research Ethics in Criminology

S

sampling

7A: Sampling Part 1 – The Principles of Sampling

7B: 7b. Sampling Part 2 – Probability and Non-Probability Sampling Strategies Chapters

sampling decisions

10: Content Analysis

sampling error

7A: Sampling Part 1 – The Principles of Sampling

sampling strategies

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sex

C: Sample Coding Manual

social change

2: Paradigms and Theories

social positionality

13: Qualitative Data Analysis

social science

4: Research Questions

6A: Research Design Part 1 – Measurement, Conceptualization and Operationalization

social science research

14: Quantitative Data Analysis

Social Sciences

2: Paradigms and Theories

socialscience

3: Research Purposes, Approaches, and the Link to Methods

statistical analysis

14: Quantitative Data Analysis

statistics

D: Sample Coding Sheet

study limitations

F: Literature Review Matrix

survey design

11: Surveys

survey methodology

11: Surveys

survey research

11: Surveys

T

thematic analysis

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theoretical framework

F: Literature Review Matrix

topics

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Toronto

E: Sample Qualitative Coding Scheme

trustworthiness

13: Qualitative Data Analysis

6C: Reliability, Validity, and Trustworthiness

types of surveys

11: Surveys

U

update

C: Sample Coding Manual

updates

E: Sample Qualitative Coding Scheme

V

validity

6B: Research Design Part 2 – Causality, the Time Dimension and Validity

6C: Reliability, Validity, and Trustworthiness Chapters

Vancouver

E: Sample Qualitative Coding Scheme

variables

6A: Research Design Part 1 – Measurement, Conceptualization and Operationalization

Victoria

E: Sample Qualitative Coding Scheme

W

Writing

5: The Literature Review

GLOSSARY

A

adverse events | Serious and unfavourable events that can occur in the context of research studies, which are typically unexpected. Examples include but are not limited to harmful incidents during data collection or unintended disclosure of identities of participants. REBs require that researchers report these events and may require that studies be halted until the issues are investigated and resolved.

aggregate data (or aggregations of data) | Data from multiple sources that are summarized and compiled to examine trends or statistical analysis. They are the sum of their component parts or smaller units of data.

ambient risk | Risk that is present in any environment, such as cold viruses.

annotated bibliography | A list of literature sources that includes a proper citation followed by a short descriptive summary or critical evaluation of the main details within the source.

anonymity | When the identity of the participant cannot be determined from the information provided. For example, the case of anonymous surveys where the participants are never known to the researcher and no identifying information is collected.

application | The purpose of social science research when the researcher seeks to find solutions to real-life issues. It involves either problem analysis, which asks "what if" questions as it relies on social science methods to determine the utility of some proposed solution, or evaluation research, which asks "what happened" questions in situations where a solution has already been implemented. This purpose can be combined with any one or more of the other purposes of research.

attributes | The categories/options of variation a variable can take. Variables are made up of a logical grouping of attributes. For example, the eye colour green is an attribute of the variable "eye colour."

authenticity | One of the criteria used to assess the rigor of qualitative methods. It refers to the "extent to which researchers fairly and faithfully show a range of different realities" (Polit & Beck, 2020, p. 416). Authenticity is not limited to the breadth of perspectives, as it also includes recognition that each perspective or reality has meaning and worth.

autonomy | The ability and right to make your own choices, such as whether to participate in research or not.

B

bar chart | A chart used to represent univariate distributions in a graphical format instead of a table. Bar charts are generally best to represent nominal, ordinal and grouped interval data with several categories.

bivariate statistics | Statistical tests that assess the extent of the relationship between two variables.

Boozhoo | Hello (in Anishinaabe/Ojibwe).

C

candidate themes | Themes that aim to tentatively explore meaning in relation to the research question(s) and the entire dataset. They are "candidates" for final themes but may not be selected.

causality | The idea that one event, behaviour, or belief will result in the occurrence of another subsequent event, behaviour, or belief.

citation bias | A bias which involves "citing or not citing a source for reasons other than its relevance and quality," with gender, race, ethnicity and nationality impacting the likelihood of being cited (Ray et al., 2024, p. 159).

classic experiments | A type of true experiment characterized by random assignment to treatment and control groups, allowing for the establishment of causal relationships between variables.

closed-ended questions | Quantitative interview questions that include a list of pre-determined response options from which the respondent must choose.

cluster sampling | A probability sampling technique that does not begin with a sampling frame as a list of all units in the target population is not available, though a list of all clusters or groups within the population is. A random selection of clusters is chosen, and then a list of all units – or a sampling frame – within each cluster is created, making it possible to then conduct simple random sampling.

clusters | Small groups for which a sampling frame is available, thus allowing for the use of simple random sampling within the clusters when cluster sampling is used.

codebook | A document or booklet that lists and describes all codes developed during qualitative data analysis. The document resembles a detailed legend that can be referred back to by the researcher to ensure all data passages have been correctly coded.

codes | Labels or tags given to words or phrases in qualitative data in the analysis stage to represent more complex ideas in simple form.

coding | The process of systematically organizing and labelling raw qualitative data to find patterns and themes, or conceptual categories.

- cohort design** | A type of longitudinal study where data are collected at multiple time points from people who share a common characteristic or experience; for example, a graduating cohort from a university or residents of New York during 9/11.
- cohort survey** | A longitudinal survey administered at more than one point in time to the same sub-category of people within the general population with the goal of examining overall changes over time within that same sub-category. An example of a cohort is people who are all born in the same decade.
- community-based research** | Where the research is driven by community concerns and needs and where the community is involved throughout the research process.
- comparison group** | A group in a quasi-experiment that does not receive the experimental treatment, serving as a benchmark to measure the treatment's effects. This group is crucial for establishing causal relationships and evaluating an intervention's effectiveness by providing a reference point against the experimental group.
- complete observation** | A role taken by a field researcher that involves solely observing the phenomenon of interest from a distance, with no participation.
- complete participation** | A role taken by a field researcher that involves being completely immersed into the phenomenon of interest and interacting with the members of that population in their natural setting, with or without their knowledge of your research intentions.
- concept** | The abstract notion or image that comes to mind when we think of some cluster of related observations or ideas.
- concept dimensions** | The specific aspects or elements of a concept that make that concept more measurable, manageable and easier to analyze.
- conceptualization** | The process of clearly and concretely defining key terms or concepts.
- concurrent validity** | One aspect of criterion validity that refers to whether a measure is able to predict outcomes from another established measure given at the same time.
- confidentiality** | The protection of research participants' identities by ensuring that identifying information is removed or altered from the final research report.
- confirmability** | A criterion of trustworthiness in qualitative research that refers to the degree to which the results reported are linked to the data obtained from participants.
- conflict of interest** | When a stake in a role held, either personal or professional, interferes with or overrides decisions made in another role. Decisions made are often for personal gain in one role and may not be the best decision in the role in which the decision is made. Researchers must reflect on and avoid any real or perceived conflicts of interest.
- confounding variables** | Extraneous factors that may influence the dependent variable, potentially leading to erroneous conclusions about the relationship between the independent and dependent variables.
- consciousness raising** | Making people aware of a social issue and their own relationship to that issue.
- consent** | When research participants agree to participate in research, they may provide consent. This decision should come only after being fully informed of all that they are being asked to do, as well as the risks and benefits of participating. Consent must be voluntary and free from pressure or persuasion to engage in the research.
- construct validity** | Assessment of how well the constructs (or attributes of a construct) relate to each other in predictable and/or theoretical ways.
- constructs** | Abstract concepts that cannot be directly or indirectly observed, such as socioeconomic status or masculinity; constructs can be defined, or "constructed," based on a collection of indirect observables. For example, socioeconomic status can be defined and measured by the variables of income, education, and occupation, which are indirect observables.
- content analysis** | A research method used to study communications such as texts or images and examine their meaning in a particular social context.
- content validity** | A type of validity that refers to whether the measure includes all the possible meanings of the concept.
- context-appropriate language** | Using words that fit the understanding of your participants.
- contingency question** | A question that is only asked to certain respondents based on their answers to a previous question.
- control group** | A group in an experiment that does not receive the experimental treatment or intervention, serving as a baseline to compare against the experimental group.
- convenience sampling** | A non-probability sampling technique that relies purely on ease of access. The observations of the chosen population of interest are readily available, such as people walking by on a street corner. This sampling technique, often described as haphazard, is most useful in exploratory research.
- correlation** | When two variables are associated with one another, meaning when one is present, the other is also present. Correlation is necessary but not sufficient to show causation.
- coyote codes** | Codes that are outliers.

credibility | Whether the claim is of a kind that, given what we know about how the research was carried out, we can judge it to be very likely to be true.

criterion validity | A type of validity that refers to how well a measure is related to some other concept or factor. It can be either predictive or concurrent.

critical paradigm | One of the paradigms in the social sciences. It focuses on power and inequality. According to this paradigm, power dynamics and biases play into all social interactions as well as research decisions and, as such, scientific research cannot be objective or value-free. Feminism is an example of a theory that falls under the critical paradigm.

cross-sectional research design | A type of research design focused on a single point in time that offers researchers a snapshot of respondents' lives, opinions, and behaviours at the time the data were collected. An example could be a survey asking about respondents' current views on a high-profile court case or an interview querying how participants feel about a specific issue that captures their views and opinions at a single point in time.

cross-sectional survey | A survey that is administered once, with no follow-up, providing a snapshot of respondents' opinions, beliefs, or preferences at that one point in time.

D

data sovereignty | Managing information in a way that is consistent with the laws, practices and customs of a particular nation.

deception | When the participant may not know that they are a part of a research project or are not informed in advance about the true purpose of the research project. There are very limited circumstances in which deception is justified or allowable, specifically where the risk is minimal, the absence of free, full and informed consent presents no risks to participant welfare, the research question can be answered no other way, and participants will be debriefed.

deductive approach | A research approach that begins with theory, then proceeds to the collection and analysis of the data and eventually results in testing whether or not the data support the theory. It can be described as moving from the general (theory) to the specific (data). The deductive approach to research typically employs quantitative methods. It can be used in combination with an inductive approach.

deficit perspective | An approach that focuses on what is wrong with an individual or community and narrows attention to explanation for the problem and how to solve it. When used within research, this perspective has tended to reify negative and colonial notions of Indigenous communities.

deficit theorizing | When researchers interpret community problems that are the product of structural factors as being caused by individual choices.

dependability | A criterion of trustworthiness in qualitative research that refers to the importance of ensuring that proper qualitative procedures were followed and that any changes that emerged during the research process are accounted for, justified, and described in the final report.

dependent variable | The outcome variable that researchers measure in a research study – it is expected to change as a result of manipulations to the independent variable.

description | The purpose of social science research when the researcher uses systematic observation of a phenomenon to describe or define it in detail. Counting or documenting observations is the typical scope of descriptive research. What, where and when questions are typically asked. This purpose can be combined with any one or more of the other purposes of research.

descriptive statistics | Statistics that focus on our sample data alone, such as frequency distributions, measures of central tendency and measures of dispersion for one or more variables in a study.

dichotomous response options | When a closed-ended survey question has only two response options, which are often exact opposites. For example, yes and no are dichotomous response options.

direct observables | Things that can be seen and observed with the naked eye, like the colour of a car or a street sign.

discourse analysis | The study of how language shapes meaning, power, and social relations.

Double-barreled questions | A survey question that includes two distinct issues in the same question. This type of wording should be avoided in survey construction.

E

ecological fallacy | An error pertaining to the unit of analysis that researchers must avoid, which involves making individual-level conclusions while relying on group-level data.

ecological validity | The extent to which research findings can be generalized to real-world settings – it assesses how well experimental conditions reflect actual environments.

emotional labour | The management of one's emotions in the context of doing work.

empirical level | A level of analysis that originates in or is based on observation or experience. It can be referred to as the level of actual observations and the analysis of actual data.

empirical questions | Questions that can be answered by observing experiences in the real world.

empiricism | The idea that all learning and knowledge comes only from experience and observations. If something cannot be seen or measured, it does not exist. Empiricism is a foundational concept within the positivist paradigm.

epistemology | A philosophical term that has to do with knowledge and deals with questions of how we know what we know and the ways we uncover knowledge.

ethical questions | Questions that ask about general moral opinions about a topic and cannot be answered through science.

ethnography | A qualitative method of field research that involves a long period of immersion within a field setting to understand the social context in all its nuanced complexity and then writing about that culture.

eugenics | The attempt to improve human populations through selective breeding and sterilization.

exhaustive | This is a quality of our variables, meaning all possible attributes are listed and every observation can fit with one attribute. In the context of survey research, this means that all possible response options are listed. For example, if eye colour is the variable, every possible attribute of eye colour should be listed (black, brown, grey, blue, and so on). Often, the option of “other” is included at the end of the survey response options listed to ensure each response option is accounted for.

experiment | A controlled investigation that tests hypotheses by manipulating independent variables and observing their effects on dependent variables, often using random assignment to attribute results to the manipulation rather than outside factors.

experimental group | The group in an experiment that receives the treatment or intervention being tested, allowing researchers to observe its effects compared to the control group.

experimental stimulus | The specific intervention or manipulation introduced by researchers in an experiment intended to elicit a response from participants.

explanation | The purpose of social science research when the researcher sets out to determine the cause(s) and effect(s) of some phenomenon of interest. Why and how questions are typically asked in explanatory research. This purpose can be combined with any one or more of the other purposes of research.

exploration | The purpose of social science research when the area of inquiry is new and little is already known on the topic. Assessing the extent of a phenomenon, generating initial ideas and testing the feasibility of a more extensive examination are all potential goals of exploratory research. This purpose can be combined with any one or more of the other purposes of research.

external validity | An assessment of the ability to generalize findings from a study to a larger setting, group, or population.

F

face validity | A type of validity that speaks to how plausible it is that the measure actually measures what it intends to.

feasibility | How likely it is that a study will be conducted, considering time and resource needs.

the field | The natural setting in which a phenomenon of interest exists and a field researcher is immersed during the course of their research.

field experiments | Experiments conducted in natural settings rather than controlled laboratory environments, providing insights into real-world behaviours and interactions.

field research | A qualitative research method that involves observing and interacting with the phenomenon of interest in the natural setting in which it occurs. The level of participation in the phenomenon of interest ranges on a continuum, from full observation to full participation.

fieldnotes | The notes taken by a field researcher on all observations as well as all researcher reflections and thoughts about what is observed throughout the course of the data collection phase of the research. These notes should be taken as soon as possible after the observations, or even during the observations if possible, and should be highly inclusive and detailed.

focus group | A qualitative research method that involves a guided group discussion with approximately 6–8 participants (the size depends on a number of factors) and a moderator. It is the interaction between group members that is key to generating data.

focused coding | A more narrow and refined process of organizing qualitative data that occurs after open coding, whereby the researcher narrows, collapses and/or merges themes or categories. These categories are then labelled, and data passages are re-sorted under each of these newly labelled categories.

frequency distributions | A table that visually displays the distribution of one variable through aggregated counts and percentages of participants in each category of the variable. These distributions allow researchers to easily interpret the data and identify any potential data entry errors.

G

gatekeepers | People who are in a position to grant or deny access to a social setting.

generalizability | One of the key concepts of sampling, it refers to the idea that a study's results will tell us something about a group larger than the sample from which the findings were generated.

grey literature | Literature or sources that have not undergone a peer-review process, but are still from a reputable source, such as the Government of Canada or a respected non-governmental organization.

grounded theory | When theory emerges through inductive data analysis. The theoretical constructs are rooted, or grounded, in empirical observations from the data collection stage of the research process.

group | This unit of analysis is the larger class of individuals the researcher wants to know more about. The group is the unit of analysis when your goal is to learn more about the dynamics of the group members and the features of the group as an entity in and of itself. A gang is an example of a unit of analysis at the group level.

H

harm | Any negative impact connected to participation in a research study. Harm can be temporary, like feeling sad in an interview, or longer term, such as the lasting trauma experienced by some of the participants in the Stanford Prison Experiment. Harm can come in many forms, including physical, psychological (e.g., emotional distress, embarrassment), financial (e.g., job loss), social or reputational harm (e.g., loss of status or respect within the community), and legal harm (e.g., possibility of prosecution should confidentiality be broken). While most of the focus is on harms to participants, these harms can also be experienced by researchers.

heterogeneous | When all elements within the population are different with respect to the relevant characteristics of interest, it is said to be heterogeneous and a larger, more strategically selected sample is needed.

homogeneous | When all elements within the population are similar with respect to the relevant characteristics of interest, it is said to be homogeneous and a small sample will suffice.

hypothesis | A statement about the relationship between two concepts that can be tested. It is typically written in "if, then" format.

I

identifying information | Any detail, alone or in conjunction with other details, which can identify a specific participant or their contributions. Information can be directly identifying, like a name or detailed physical description, or indirectly identifying, such as a phone number or street of residence.

identity bias | Uncertainty or inconsistency in how individuals interpret and report identity-based questions.

ideological/political stance | One of the errors of casual human inquiry that involves allowing our own political, religious and/or ideological beliefs cloud our ability to examine an issue objectively.

illogical reasoning | One of the errors of casual human inquiry that involves claiming that an exception to a rule or established pattern is proof of that rule or pattern. The gambler's fallacy is an example of illogical reasoning.

in-depth interview | A qualitative research method that is often referred to as a conversation with purpose. The interviewer asks the respondent(s) questions, usually face-to-face, with the goal of capturing the interviewee's own words. This method is particularly suited for complex or sensitive topics whereby the researcher is seeking in-depth data.

inaccurate observation | One of the errors of casual human inquiry that involves making observations in a non-systematic, non-deliberate way, leading to erroneous conclusions. The validity of eyewitness testimony is called into question because of inaccurate observations.

independent variable | The variable manipulated by researchers in a research study – its variation is hypothesized to cause changes in the dependent variable being measured.

indicators | Empirical observations taken to represent the ideas we are interested in studying. Specifying indicators is the final step of the operationalization process.

Indigenous | A term that refers to the original people or species who lived in a place, such as the Americas before colonization.

Indigenous data sovereignty | Indigenous data sovereignty refers to "the fundamental rights of Indigenous Peoples' to control, access, interpret, manage, and collectively own data about their communities, lands, and cultures" (SFU, 2024).

Indigenous paradigm | One of the paradigms in the social sciences. It is centred on the concept of relationality, and it urges a decolonial and anticolonial approach within the social sciences. Cultural knowledge and oral tradition are paramount within this paradigm, as is social change.

Indigenous way of knowing | Refers to diverse knowledge systems across different Indigenous communities based on their spiritual and cultural practices, ecological understanding of the land and intergenerational wisdom.

Indigenous ways of knowing | Refers to diverse knowledge systems across different Indigenous communities based on their spiritual and cultural practices, ecological understanding of the land and intergenerational wisdom.

indirect observables | Things we cannot see with the naked eye and require more complex assessment or inferences, such as place of birth or income.

individual | This unit of analysis is the individual person the researcher wants to know more about. The individual is the most common unit of analysis in criminology studies, which typically seek to describe characteristics of individual offenders or victims. Victims of domestic violence are an example of a unit of analysis at the individual level.

inductive approach | A research approach that begins with the collection of data, then proceeds to the analysis of the data and eventually results in the generation of a general set of theoretical propositions. It can be described as moving from the specific (data) to the general (theory). The inductive approach to research typically employs qualitative methods. It can be used in combination with a deductive approach.

inferential statistics | Statistics where we use our sample data to make inferences to a larger population from which our sample is drawn. This is based in probability theory.

informed consent | This is achieved when participants make a decision about being involved in a particular research study based on being provided with full and complete information about the study and what they are being asked to do. Informed consent can be communicated in writing (e.g., signed document or email), verbally (e.g., stated at the beginning of an interview), or in other ways (e.g., handshake, remaining in a public space).

inter-rater reliability | A type of reliability that refers to the degree to which different observers agree on what happened.

internal reliability | A type of reliability, also sometimes called internal consistency, that refers to the degree to which scores on each question of a scale are correlated with each other.

internal validity | Refers specifically to whether observed effects within a study can confidently be attributed solely to manipulations made by researchers rather than other confounding factors.

interval level of measurement | Variables at this level of measurement can be rank ordered and the distance between ranks is known, but there is no true zero point.

interval/ratio response options | When a closed-ended survey question has response options that are numeric and can be rank ordered. Ratio response options include the possible response of zero, making it possible to conduct certain statistical analyses. For example, it is possible that someone has committed zero crimes.

interview | A qualitative research method that involves directly interacting with respondents and collecting qualitative data by asking questions to one or more people and recording responses.

interview guide | The document containing questions or topics that the interviewer plans to cover during the course of a qualitative interview. It is referred to as a guide as it is not rigid, serving only as a reference of what they intend to cover.

J

jottings | Short notes one makes on the fly while in the field.

journaling | Recording your reactions, emotional state, and personal experiences while conducting fieldwork.

L

laboratory experiments | Controlled experiments conducted in a structured environment where variables can be manipulated precisely, often yielding high internal validity but potentially low ecological validity.

latent content | The deeper, underlying meaning of a text or image that is not immediately apparent to those who examine it.

leading questions | Questions that elicit a researcher-desired response.

levels of measurement | The way in which attributes of a variable are related to one another. There are four levels of measurement: nominal, interval, ordinal and ratio.

Likert-scale | A type of quantitative survey question where the respondents are asked to rate their opinion about given statements on a scale that ranges from "strongly agree" to "strongly disagree."

line graph | A chart used to represent univariate distributions in a graphical format instead of a table. Line graphs are generally best for representing interval- or ratio-level data.

literature map | A way to organize and present main ideas and identify connections between and among literature on a particular topic; it is typically presented in a graphic or flow chart format to make sense of the overall trends and themes in a body of literature.

literature review | A comprehensive survey of what has been written about a particular topic, theory, or research question.

longitudinal research design | A research design where data are collected at multiple time points on the same or similar research question; this includes trend, cohort, and panel longitudinal designs.

longitudinal survey | A survey that is administered at more than one point in time, allowing changes in responses to be recorded. There are three types of longitudinal surveys: trend, panel, and cohort.

M

manifest content | The surface-level reading of a text or image or what is easily observable to those who examine it.

markers | Something a speaker says about something else while speaking that you want to mark and come back to later.

mean | A measure of central tendency that represents the arithmetic average of an interval or ratio variable.

measurement | The process of describing and ascribing meaning to key facts, concepts, or other phenomena under investigation. This includes both conceptualization and operationalization.

measures of central tendency | Statistics that provide a measure of where participants cluster, the typical response or the average response in a variable. The three measures of central tendency are mode, median and mean.

measures of dispersion | Statistics that provide information on how responses on a variable differ from or are dispersed around a measure of central tendency. They compliment the measure of central tendency. The three measures of dispersion are range, variance and standard deviation.

median | A measure of central tendency that represents the midpoint in a distribution of an ordinal variable.

member checking | A method used to establish credibility in qualitative research. It typically involves collecting feedback from participants on transcripts, analysis at various stages of the research process, or drafts of final manuscripts or reports.

memos | Notes that the researcher develops about their data regarding interpretation and relationships within the data.

meta-analysis | A type of secondary data analysis in which findings from published studies are combined and analyzed together; typically, such research takes a quantitative approach.

mixed-method approach | A research approach that combines qualitative and quantitative methods. While these methods have often been discussed as competing, they actually can be complementary, and the decision to combine methods should be based on the research question at hand and the data that exists to answer it.

mode | A measure of central tendency that represents the most frequently occurring category of a nominal variable.

moderator | The researcher, or other individual, who is responsible for posing questions or topics and guiding the group discussion in a focus group while ensuring all participants have an opportunity to participate. The responses of focus group participants as well as interactions amongst group members are recorded and observed by the moderator.

multivariate statistics | Statistical tests that assess the extent of the relationship between three or more variables. Typically, we examine the impact of multiple independent variables on a single dependent variable.

mutually exclusive | A quality of our variable that means that all attributes are distinct and do not overlap. As such, no observation can be classified into more than one attribute. In the context of survey research, this means that the response options do not overlap and only one response option would apply.

N

narrative analysis | A qualitative research method that examines how stories and personal accounts shape meaning, identity, and social reality.

Natural science | A branch of science that deals with the physical world.

negative correlation | When two variables are related to one another and the directionality of that relationship is such that when found together, they change in the opposite directions. In other words, when one goes up, the other goes down or when one goes down, the other goes up.

negatively worded question | A survey question that includes the words "no", "not", or "never". This question wording should be avoided in survey construction.

Negatively worded questions | A survey question that includes the words "no", "not" or "never". This type of wording should be avoided in survey question construction.

nominal level of measurement | This is the most basic level of measurement, and the attributes are only named, with no ranking of attributes. The variable "eye colour" is an example of a nominal-level variable.

nominal response options | When a closed-ended survey question has two or more response options that are words that cannot be rank ordered. Gender is an example of a nominal variable, with the nominal response options of male, female, transgender, etc.

non-equivalent comparison group | A group used for comparison that is not randomly assigned, which may introduce bias and affect the validity of conclusions drawn from the study.

non-probability sampling | Sampling techniques that are relied on in inductive, qualitative research. The chances of any individual or entity being included in a study are not known when non-probability sampling techniques are used, and there is no sampling frame. The goals of representativeness and generalizability are not a concern with non-probability sampling. These techniques include convenience, quota sampling, purposive sampling, and snowball sampling.

non-proportional quota sampling | The non-probability quota sampling technique used when the quotas are set at an equal number per category regardless of the proportion that group represents in the larger target population. For example, if the categories you choose are based on ethnic groups, all ethnic groups would have the same quota even though they are not equally represented in the target population.

O

objectivism | One of the aspects of ontology that states that social entities exist independently of the social actors concerned with their existence.

observer-as-participant | The researcher observes a group but is not a member and only interacts indirectly with the group.

ontology | The study, theory or science of being. It is concerned with the nature of reality.

open coding | The process of organizing and labelling qualitative data to find patterns and themes without allowing any preconceived notions or ideas to guide the process.

open-ended questions | Qualitative interview questions that do not include possible response options but rather require the interviewee to provide responses in their own words.

operational definition | A precise definition of how a variable or concept is to be measured.

operationalization | The process of explaining precisely how a concept will be measured. In other words, what exact operations will be performed (e.g., what observation will be made or what survey question will be asked) to measure that concept.

ordinal level of measurement | Variables at this level of measurement are like nominal variables in that they are categories, but they can be rank ordered. The distance between ranks is not known.

ordinal response options | When a closed-ended survey question has two or more response options that can be rank ordered. For example, socioeconomic status can be ranked as low, middle and high. Note that no specific numeric value is assigned to each of the ranks at the ordinal level of measurement.

organization | This unit of analysis is a more formal class of individuals the researcher wants to know more about. Like the group, the organization is the unit of analysis when your goal is to learn about the dynamics of the organization and the features of the organization in and of itself. Police detachments are an example of a unit of analysis at the organizational level.

outliers | Extremely high or low scores in a distribution that make the mean an inaccurate measure of central tendency when dealing with interval- or ratio-level data. These outliers positively or negatively skew data.

overgeneralization | One of the errors of casual human inquiry that involves assuming that a few similar events are proof of a much larger pattern.

P

panel design | A type of longitudinal study where data are collected from the exact same people at multiple time points.

panel survey | A longitudinal survey administered at more than one point in time to the exact same people, thus allowing individual changes to be recorded.

paradigm | A way of viewing the world or a frame of reference we use to organize our thoughts and observations. They are mental models we use to understand our human experiences. There are five paradigms in the social sciences

participant attrition | Also called participant mortality; when participants drop out of a longitudinal panel study for various reasons, including not wanting to continue, moving and not providing researchers with their new contact information, or death.

participant observation | A role taken on by a field researcher that involves both participating in interactions and observing the phenomenon of interest in its natural setting.

participant-as-observer | The researcher observes a group by becoming a member, to the extent possible, establishing relationships and directly interacting with the group.

participatory action research (PAR) | An approach where researchers and participants work together to understand a problem within the community and attempt to change it.

peer-reviewed sources | Also called scholarly or academic sources, peer-reviewed sources have undergone an evaluation and review process by other experts in the topic area for quality and the significance of the contribution to knowledge prior to publication.

periodicity | The tendency for a pattern to occur at regular intervals in our sampling frame. If such a pattern exists, systematic random sampling should not be used.

pie chart | A chart used to represent univariate distributions in a graphical format instead of a table. Pie charts are generally best to represent a small number of categories at the nominal or ordinal level.

plausibility | A claim that one event, behaviour, or belief causes another is reasonable and makes sense. For example, claiming that ice cream sales “cause” drowning deaths is not plausible, whereas claiming that the absence of personal floatation devices like lifejackets causes an increase in drowning deaths is plausible.

population | The large set of all the people, things or events one wants to learn more about in our research and from which the sample is drawn.

positionality statements | Also known as reflexivity statements, these are either written or verbal declarations of a researcher’s identity or background. Such statements can help researchers and others to identify or acknowledge biases or perspectives that the researcher may hold that affect their research. Statements can include information related to the person’s gender, ethnicity, class, and any other relevant social characteristics that can help others understand lenses through which the researcher may be interpreting their findings.

positive correlation | When two variables are related to one another and the directionality of that relationship is such that when found together,

they change in the same direction. In other words, when one goes up the other also goes up or when when goes down the other also goes down.

positivism | One of the paradigms in the social sciences. It was introduced by French philosopher Auguste Comte. It holds that the creation of scientific knowledge should be restricted to what researchers can observe and measure, and it operates according to the principles of objectivity, knowability, and deductive logic. Biological theories of crime fall under the positivist paradigm.

post-test | A measurement taken after an experimental treatment has been administered that is used to assess any changes resulting from the intervention compared to pre-test measurements.

post-test-only control group design | An experimental design where only post-test measurements are taken after administering treatments without pre-tests, simplifying analysis while still allowing for comparisons between groups.

post-test-only non-equivalent groups design | A quasi-experimental design where groups are compared based on post-test results without random assignment; it is often used when randomization is impractical or unethical.

postmodernism | One of the paradigms in the social sciences. It asserts that truth in any form may or may not be knowable. Postmodernists see crime as a social construct resulting from complex interactions between individuals and that by studying a phenomenon or behaviour like crime, researchers are essentially creating crime by using human language to describe and investigate it. Cultural criminology is an example of a criminological theory within the postmodernism paradigm.

pre-test | A measurement taken before an experimental treatment is administered – it serves as a baseline for assessing changes due to interventions during post-testing.

predictive validity | One aspect of criterion validity; it addresses whether a measure predicts things it should be able to predict in the future.

primary data | Data sources used in research that are accessed and used by the researcher in their original and raw form.

primary sources | Research data in the form of text or images in their original state, without having been modified, compiled, or analyzed by someone else.

privacy | The right to control information about yourself, including how information is collected, held, and disseminated. Expectations of privacy may differ based on situation, for example, lower expectations of privacy when in a public space and higher expectations of privacy in your own home. Privacy is closely connected to consent and confidentiality.

probability sampling | Sampling techniques that are relied on in deductive, quantitative research. The chances of any individual or entity being included in our study are known when probability sampling techniques are used and a sampling frame is available. The goal with these sampling techniques is to create a sample that is representative of the population and to obtain findings that are generalizable. These techniques include simple random sampling, systematic random sampling, stratified random sampling, and multi-stage cluster sampling.

probe | A request for additional information.

prompt | Used to encourage a speaker to speak about a topic.

proportional quota sampling | The non-probability quota sampling technique used when the quotas per category are set at a number that is equal to the proportion that group represents in the larger target population. For example, if the categories you choose are based on ethnic groups and one ethnic group represents 30% of the target population, then the quota for that ethnic group category would be 30% of the sample.

pseudonyms | Fictitious names or aliases that people adopt for themselves for a particular purpose. In the context of research, a researcher may ask a participant to select an alias that is used to organize research materials associated with the participant without identifying the participant.

purposive sampling | Also sometimes called judgmental sampling, this is a non-probability sampling technique that involves identifying selection criteria and then hand-selecting our sample based on these criteria. For example, we may seek out the participation of known experts on a particular topic so we contact these experts as we know they possess the unique knowledge we hope to explore.

Q

qualitative content analysis | A research method that relies on identifying themes and examining the underlying meaning of those themes in textual data so they can be contextualized.

qualitative methods | Research methods that involve the collection of non-numerical data, such as words and pictures. Interviews, focus groups, and field research are examples of qualitative methods. Once data are collected, they require analysis strategies such as thematic coding, which involves allowing themes to emerge from the data. Qualitative methods are interpretive and inductive in nature.

quantitative content analysis | A research method that relies on assigning numerical values to information in the texts under study so they can be analyzed using various statistical procedures.

quantitative methods | Research methods that involve the collection of numerical data. Survey research and experiments are examples of quantitative methods. The data collected as a result of these quantitative methods requires statistical analysis and is typically presented in graphs and charts. Quantitative methods are positivist and deductive in nature.

quasi-experimental designs | Research designs that resemble true experiments but lack random assignment – they are useful when ethical or practical considerations prevent randomization.

quota sampling | The non-probability sampling technique we use when we have categories within our population of interest and we set a predetermined number of observations, or a quota, per category to include in our study. These categories could be, for example, ethnic groups, genders, or age groups. So long as the observation is within that category, it can be included, and once that number of observations is reached, the quota is satisfied for that category. Quota sampling can be either proportional or non-proportional.

R

Random assignment | The process of assigning participants randomly to different groups (experimental or control) within an experiment to ensure each participant has an equal chance of being placed in any condition.

random selection | A core principle of probability sampling, random selection refers to a mathematical process whereby chance governs the selection process and every sampling element has an equal probability of being selected.

Randomizer | A website resource that contains a random number generator to assist researchers and students to create a random number table.

range | A measure of dispersion that represents the difference between the highest and lowest observed value in a variable.

ratio level of measurement | Variables with this level of measurement can be rank ordered, the distance between the ranks is known, and there is also a true zero point. As such, more sophisticated analyses can be conducted with variables at the ratio level.

reactivity | The effect derived from contact/communication between the researcher and research participant. Research that involves close or prolonged interaction between the researcher and participant is expected to increase reactivity, whereas research that does not involve such contact is expected to minimize reactivity.

recall bias | Inaccurate or incomplete memory of past events or behaviours.

reciprocity | The act of giving something back to research participants and the research community, rather than simply extracting data from them, as has been the historical tendency. It is a concept grounded in relationships and based on trust and openness, and is integral in research with Indigenous peoples.

reflexivity | Examining one's own reactions, thoughts, feelings, and social position in regard to your research.

reification | The assumption that abstract concepts exist in some concrete, tangible way.

relational accountability | Being responsible both for participants but also communities at large, the environment, the land, homelands, ancestors, and lived history.

reliability | The consistency and stability of measurement results over time. Reliable measures yield similar outcomes under consistent conditions across different instances of testing.

representativeness | One of the key concepts of sampling, it refers to the extent to which our sample resembles the population from which it is drawn. A representative sample is one that captures the variation that exists in the population.

research question | A question that can be answered using empirical and social scientific knowledge. Strong research questions should be phrased as a question, clearly focused, have more than one plausible answer (not a yes/no question), and consider multiple concepts or variables.

research-sharing circles | Research conducted using sharing or talking circles.

response options | The answer options that respondents can select from when responding to quantitative, closed-ended survey questions

response rate | The percentage of responses you receive relative to the number of surveys you distribute.

retrospective design | A type of research design where people are asked about an event or experience in their past.

S

sample | A subset of the larger target population that is directly included in our research and from which we collect observations.

sampling | The process of selecting a subset of the population to include in your study.

sampling bias | A concern about the potential of a sample not being representative of the population from which it is drawn.

sampling error | The difference in results or outcomes between the sample and a population.

sampling frame | An exhaustive and complete list of all the possible units of analysis that could theoretically be included in our study from the larger population. The sampling frame is a necessary part of probability sampling.

saturation | The point at which no new codes or themes are being produced.

scale | A composite measure of a variable or construct composed of multiple indicators with numerical scores assigned to response categories. For example, the PCL-R is a scale with 20 related items, scored 0 to 3, measuring different aspects of the construct of psychopathy.

scientific openness | The commitment to publicly and freely share the products, means and results of our research with other researchers as well as with communities at large.

secondary sources | Research data in the form of text or images that have already been compiled, summarized, or analyzed by someone else.

selective observation | One of the errors of casual human inquiry that involves only paying attention to an established pattern of events while

ignoring any information that suggests otherwise.

self-administered questionnaire | A survey that is completed by the respondent on their own time, either in hard copy or online.

self-disclosure | The amount of information a person reveals about themselves.

semi-structured | A type of qualitative interview format whereby the interviewer asks a series of open-ended questions but is not bound by the wording or ordering of questions from one interview to the next.

simple random sampling | A probability sampling technique that starts with a sampling frame, involves sequentially numbering all units in the population and then uses a set of randomly generated numbers to choose the units to include in the sample. All units of the population have an equal and known probability of being included.

situational risk | Risk that comes from working in a dangerous situation, such as getting shot as a soldier.

snowball sampling | The non-probability sampling technique we use when our population of interest is difficult to access. Each participant is asked to identify other participants who may be willing to partake in our research.

social artifact | This unit of analysis is the product of social beings and their behaviour the researcher wants to know more about. These are inanimate objects, such as news articles.

social constructionism | One of the paradigms in the social sciences. It posits that social context and interactions shape individual and social realities and that there is no objective reality or truth out there waiting to be discovered. It is the opposite of positivism. Labelling theory is an example of a theory that falls under the social constructionist paradigm.

social desirability bias | Occurs when people attempt to present a better image of themselves than might really be the case.

Social science | A branch of science that studies human societies and social relationships.

Solomon four-group design | An advanced experimental design involving four groups – two receiving pre-tests and two not – allowing researchers to independently assess both pre-test effects and treatment impacts.

spurious relationship | A relationship in which an association between two variables appears to be causal but can in fact be explained by some third variable. For example, the increase in drowning deaths in the summer may be connected to hot weather and more people at the beach rather than an increase in ice cream sales.

standard deviation | A measure of dispersion that represents the square-root of the average of the squared deviations from the mean. This value is transformed back in the original units of the variable so it can be interpreted.

Stat Trek | A website resource that contains a random number generator to assist researchers and students to create a random number table.

strata | Mutually exclusive subgroups or categories in our population from which samples are drawn using simple random sampling.

stratified random sampling | A probability sampling technique that involves dividing the target population into categories, or strata, listing all units within the strata (devising the sampling frame) and then randomly selecting within each of the strata. This technique ensures that populations that are not well represented in the population and may in fact not be included at all if a simple random sampling technique is used, are indeed included and well represented in the sample.

strength-based research | Research that focuses on community capacities rather than deficits.

strengths-based perspective | A perspective which focuses on the inherent strengths, capabilities and resources of individuals and communities in responding to challenges that they may be facing. This is typically referred to in the context of research with or on Indigenous peoples.

subjectivism | One of the aspects of ontology. It means that social phenomena are created from the perceptions and actions of the social actors who are concerned with their existence.

survey research | A method of collecting data by asking people questions, typically through questionnaires, to gather information about their attitudes, behaviours, or personal characteristics.

systematic random sampling | A probability sampling technique that starts with a sampling frame and involves dividing the number of units in the population by the desired number of units for the sample. A number within that interval range is then randomly chosen as the starting point, and every kth unit is selected until the desired sample size is reached. For example, if the population is 1000 and the desired sample is 100, then the interval is 1 to 10 (1000/100). If we randomly select the starting point between 1 and 10 of "3", then we choose every 10th unit after that (3, 13, 23, 33, 43, etc.).

T

temporality | A criterion for determining causality where a cause must come before its effect in time.

test-retest reliability | A type of reliability that refers to how consistent results will be when a measure is given multiple times. Ideally, any changes in the results would be due to a change or intervening factor between the tests.

thematic analysis | A qualitative method for identifying, analyzing, and interpreting patterns (themes) within data.

thematic mapping | Creating visual maps of candidate themes to explore relationships, interconnections, and meanings between candidate

themes.

theoretical level | A level of analysis that is abstract and based on generalizable ideas. This level of analysis involves outlining how ideas and concepts are related to one another to explain some social phenomenon or behaviour.

theory | A set of systematically interrelated ideas intended to explain a social phenomenon or behaviour. Theories are narrower and more focused than a paradigm. Theories help us answer the “why” and “how” questions we often have about the patterns we observe in social life. Social disorganization theory is an example of a theory in criminology.

topic | An area of interest or a subject the researcher might be interested in learning more about.

traditional ecological knowledge | Knowledge acquired through generations regarding local ecosystems and species interactions; it informs participatory approaches within criminological research contexts related to environmental crime or justice issues.

transcribe | The process of converting audio data into written form, verbatim, while also making note of who each speaker was as well as nonverbal cues.

transferability | A criterion of trustworthiness in qualitative research that refers to the degree to which qualitative research findings can be applied in other settings or contexts.

trauma-informed approach | The need to recognize a participant's life experience so they are not re-traumatized by the research.

trend design | A type of longitudinal study where data are collected over multiple time points on/with the same question(s) but not necessarily from the same participants; the General Social Survey is a good example in which the same questions are asked of different Canadians to assess change over time.

trend survey | A longitudinal survey administered at more than one point in time to the same target population with the goal of examining overall changes in that population. The respondents are not necessarily the same at each point in time.

true experiments | Research designs characterized by the random assignment and manipulation of independent variables, enabling strong causal inference regarding relationships among variables studied.

trustworthiness | Trustworthiness refers to the degree of confidence in data, interpretation, and methods used to ensure the quality of a study.

Two-eyed seeing | A way of viewing the world that considers both Indigenous and Western knowledges and worldviews.

U

unit of analysis | The unit we hope to learn more about through the course of our research. The research question determines the unit of analysis. The four units of analysis relevant for criminologists are individual, group, organization, and social artifact.

unit of observation | The person or thing you actually collect data from in your study. It is sometimes, but not always, the same as the unit of analysis.

univariate analysis | Statistics on one variable in our sample, such as the mean and standard deviation.

unobtrusive method | Also referred to as nonreactive method – a research approach characterized by the lack of contact between the researcher and research participant such that the researcher does not intrude into the lives of those they are studying, and the participant does not react in a particular way due to the presence or influence of the researcher.

V

validity | The degree to which a test measures what it claims to measure; it encompasses various forms such as internal validity (the accuracy within the study) and external validity (generalizability).

value-neutral | Maintaining impartiality and objectivity.

variables | The indicators a researcher develops to measure abstract concepts pertinent to their study. It is something with a quantity or quality that can vary.

variance | A measure of dispersion that represents the average of the squared deviations from the mean. This value is in squared units so it is difficult to interpret as a measure of dispersion.

voluntariness | When participants exercise free will in choosing to be studied by researchers. In other words, it is their choice to participate in the research study and they are not compelled to do so by other factors.

volunteer bias | A data distortion that happens when the people that volunteer are somehow different than the rest of the general population.

vulnerability | A compromised ability to make choices in the context of research, either because of medical reasons (e.g., dementia), age (e.g., children), or social reasons (e.g., limited access to rights or power). Vulnerability can also refer to groups who have historically been exploited or excluded from research, such as prisoners, women, and Indigenous Peoples.

W

Western ways of knowing | A system of acquiring knowledge primarily based on logic, objectivity, and empirical observation.

Versioning History

This page lists major changes to this book with major changes marked with a 1.0 increase in the version number and minor changes marked with a 0.1 increase.

Version	Date	Change
1.0	December 19, 2025	Pressbook Created

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Image Descriptions

Figure 1.1

Flowchart showing the Research Ethics Board (REB) review process. The process begins with the researcher submitting an ethics application, followed by REB review, feedback and revisions, revised application re-submission, REB review of revised application, and REB application approval. After approval, the researcher conducts research and submits the final report to REB when complete. The flowchart includes several feedback loops and possibilities for additional revisions, adverse event reporting, protocol modifications, and project reconsideration.

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Figure 2.1

Hierarchical diagram showing the research framework from ontology to analysis. Starting with ontology at the top, flowing down through epistemology, paradigm (with five branches: positivism, social constructionism, critical paradigm, postmodernism, and indigenous paradigm), theory, research question, approach (deductive or inductive), method (quantitative, qualitative, or mixed methods), and finally analysis (quantitative analysis or qualitative analysis). The quantitative methods options listed and reviewed in the text include surveys, experiments and quantitative content analysis, while the qualitative methods options listed and reviewed in the text include interviews and focus groups, field research and qualitative content analysis.

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Figure 2.2

Horizontal double-ended arrow diagram showing the continuum from positivism to postmodernism. Positivism is positioned on the left, representing total objectivity, postmodernism on the right, representing total subjectivity, with social constructionism, critical paradigm and Indigenous paradigm in the centre.

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Figure 3.1

Circular diagram illustrating the four purposes of social science research. The centre shows 'Social Science Research Purposes' with four connected circles around it labelled: Exploration, Explanation, Description, and Application. Dotted lines connect all four purposes to show that they are not mutually exclusive, and often, research projects have more than one purpose.

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Figure 3.2

A pyramid diagram showing an inductive research approach with three levels. At the top (specific level): '1. Observations', in the middle: '2. Analyse data & Look for patterns', and at the bottom (general level): '3. Develop theory'. Arrows indicate the flow from specific observations down to general theory development.

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Figure 3.3

Inverted pyramid diagram showing deductive research approach with three levels. At the top (general level): '1. Theory', in the middle: '2. Observations', and at the bottom (specific level): '3. Test Theory'. Arrows indicate the flow from general theory upward

to specific testing.

[Return to Figure 3.3](#)

Figure 5.1

Inverted triangle funnel diagram illustrating the literature review process. Three sections from top to bottom: 'BROAD' (General Overview of Research Topic), 'NARROW' (More Focused Review in the Area of Interest; Identify Ideas and Hypotheses; Critical Evaluation of Literature), and 'SPECIFIC' (Develop Research Question(s) to Address Gaps in Literature). With each level, the focus becomes clearer and more refined.

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Figure 5.2

Circular flowchart showing the iterative literature review process. Eight connected stages: Identify Topic leads to Broad Literature Search leads to Critical Review of Relevant Research leads to Revise Research Question leads to Synthesis of Literature leads to Data Collection leads to Revise Literature Review Based on Method leads to Data Analysis leads to Revise Literature Review Based on Results leads to Discussion and Conclusion Placing Results in the Context of the Broader Literature (which connects back to the beginning).

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Figure 5.3

Literature map diagram that uses intimate partner violence research categories as an example of how to organise literature. Central circle labeled 'Literature Map Topic: Intimate Partner Violence' with four connected categories: Physical Violence (examples: hitting, punching, shoving, weapons; differences in injuries), Emotional & Mental Abuse (examples: insults, put-downs, gaslighting; told 'crazy' or 'stupid'), Coercive Control (isolation tactics, controlling where someone goes or what they do; listening to phone calls), and Financial Abuse (controlling finances, not allowing access to money, taking paycheques). Each category includes relevant research citations.

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Figure 6a.1

Diagram illustrating the concept of Socioeconomic Status (SES) with three elements: occupation, education and income. A survey question is provided to measure the element of Income, asking about annual household income with categories from under 50k to over 100k. A survey question is provided to measure the element of Occupation, including categories from unemployed to white collar professions. Lastly, a survey question is provided to measure the element of Education, including categories from less than high school to a graduate degree.

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Figure 6a.2

Hierarchical diagram showing the process of conceptualisation, moving from a general research question to specific indicators. Starting with the research question 'How does crime vary across Canada?' at the top, flowing down through: Conceptualisation (crime as socially constructed categorisation), Nominal Definition (crime as acts prohibited in the Canadian Criminal Code), Operational Definition (crime as Criminal Code offences recorded by police), and Indicators (bodily harm offences, property crime offences).

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Figure 6a.3

A stepped diagram showing levels of measurement from least to most sophisticated. Four ascending levels: Nominal (Attributes are only named – least sophisticated), Ordinal (Attributes can be ordered), Interval (Distance is meaningful), and Ratio (Absolute zero – most sophisticated).

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Figure 6b.1

Comparison diagram showing two research design types. Left side: Cross-sectional Study – ‘Data collected at a single point in time’ with a timeline showing one data collection point. Right side: Longitudinal Study – ‘Data collected over multiple points in time’ with a timeline showing multiple data collection points.

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Figure 6c.1

Diagram illustrating the concepts of reliability and validity using a shooting target analogy. The image shows four circular shooting targets, each demonstrating different combinations of reliability and validity through the clustering and positioning of shots (representing measurement attempts). Top left: low reliability and low validity – the shooter’s aim is all over the place and is neither consistent (unreliable) nor accurate (it is not valid). Top right: low reliability and high validity – shows an unreliable and inconsistent shot, but it is centred around the target (accurate). Bottom left: high reliability and low validity – the shots are clustered in one spot so the target demonstrates consistency, but the shooter’s aim is reliably off-target and therefore invalid. Bottom right: high reliability and high validity – the shots are all clustered reliably in the same spot and are centred directly and accurately on the target. This visualisation demonstrates how measurements can be consistent (reliable) without being accurate (valid), and vice versa.

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Figure 7a.1

Cross-shaped diagram showing four units of analysis in social research. Centre: ‘Units of Analysis’ with four connected ovals: ‘Individual’ (top), ‘Group’ (right), ‘Organisation’ (left), and ‘Social Artefact’ (bottom), representing the different units of analysis that can be the focus of a social science research study.

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Figure 7a.2

Triangular hierarchy showing the relationship between population, sampling frame, and sample. Bottom level: ‘POPULATION’ (large, diverse group of multicoloured figures). Middle level: ‘SAMPLING FRAME’ (smaller subset of figures with arrows pointing up from the population). Top level: ‘SAMPLE’ (smallest group of three figures with arrow pointing up from sampling frame), illustrating how samples are drawn from sampling frames, which represent accessible portions of the target population.

[Return to Figure 7a.2](#)

Figure 7a.3

Diagram comparing representative versus unrepresentative sampling. The top shows ‘Target Population’ with six distinct groups of figures in different colours arranged in a grid. Bottom shows two sampling outcomes: ‘Representative Sample’ (left) contains figures proportionally representing all six population groups, while ‘Unrepresentative Sample’ (right) contains figures from only some population groups, missing key demographic segments.

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Figure 7a.4

Two circles comparing sample composition. The left circle labelled 'Homogeneous' shows uniform dark-coloured dots representing similar participants. The right circle labelled 'Heterogeneous' shows mixed dark and light dots representing diverse participants with varying characteristics.

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Figure 7b.1

Convenience sampling illustration showing the selection of participants from a diverse group who are closest to us and easy to access, with no systematic method of selection.

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Figure 7b.2

Quota sampling illustration showing six different demographic groups (represented by different colored figures) with dashed outlines indicating how the same number of participants are selected from each group, and the selection of new participants halts once the quota per group is satisfied.

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Figure 7b.3

Purposive sampling diagram showing the strategic, specific selection of participants with salient characteristics of interest.

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Figure 7b.4

Snowball sampling diagram illustrating how research participants recruit additional participants through their social networks. Initial participants connect to and recruit others in their networks, creating a chain reaction effect. The diagram shows two distinct network clusters – one in black/grey figures and another in blue figures – demonstrating how snowball sampling spreads through connected social groups.

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Figure 7b.5

Simple random sampling illustration showing that diverse participants that are randomly distributed throughout the population are selected for the sample, with each potential participant having an equal chance of being selected regardless of their characteristics or position.

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Figure 7b.6

Systematic random sampling diagram showing participants arranged in a line with every 3rd person selected, illustrating the systematic random selection process where researchers select every nth individual from a list or sequence.

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Figure 7b.7

Stratified random sampling diagram showing six distinct strata or groups. Once the researcher divides participants into these homogenous groups, simple random sampling is used to ensure that each group is equally represented in the sample, even if they are not equally represented in the population.

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Figure 7b.8

A cluster sampling illustration showing that cluster sampling occurs in stages. The first stage involves dividing the population into clusters for which a list exists. Then, clusters are randomly selected. Next, participants within each of these clusters are randomly selected. This multi-stage process is needed as there is no list or sampling frame for each unit in the population, but there is a list of clusters of units.

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Figure 7b.9

A diagram illustrating the relationship between population and sample in research. Shows a large population group in one box with an arrow labelled 'sampling' pointing to a smaller sample group in another box. A return arrow labelled 'Inference' shows how findings from the sample are applied back to understand the population.

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Figure 9.1

A horizontal double-ended arrow diagram showing the continuum of the various roles that a field researcher can take, from full participation on the left to full observation on the right. Full participation involves fully participating in the group or community in question in a covert fashion, which may raise ethical concerns. This role provides a deep subjective understanding of the phenomenon but risks losing objectivity. Full observation, on the other hand, involves no participation on the part of the researcher. While this is the most objective role a field researcher can take, as there is no way to influence participants, they have no access to the meaning people ascribe to their behaviour. In the middle of the diagram are 2 other roles: participant-as-observer, where the researcher participates somewhat while also observing, allowing the researcher to develop a rapport with the participants, and observer-as-participant where the researcher observes from afar, making it more objective but also making it more difficult to access the subjective meaning of the participants. There are pros and cons to each role.

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Figure 12.1

Solomon Four Group Design diagram showing the two groups in a true experimental design – the experimental group (pre-test, stimulus and then a post-test) and control group (pre-test and post-test only) – as well as two additional groups. These two additional groups include the experimental group 2, which receives only the stimulus and a post-test, and the control group 2, which receives only the post-test. This design variation allows for a more nuanced look at the role of the stimulus.

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Figure 12.2

Circular diagram illustrating the connection between the Two-Eyed Seeing approach and Participatory Action Research (PAR) with Indigenous Research Methodology. The circle shows different stages. Research Planning connects with Community Engagement,

which involves defining research needs, community sanction, negotiating partnership, and accountability. Research Implementation connects with Capacity Building, which involves tools, training, individual consent, gathering stories, member checking, and making meaning. Production of Knowledge connects with Empowerment, which involves academic publications, sharing collective stories, results to communities, and results to participants. Lastly, Action connects with Self-Determination, which involves proposal development, program development, and knowledge for use. Central principles include relevance, reciprocity, respect, and responsibility.

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Figure 13.1

Linear research process diagram showing six connected stages: Research Questions lead to Theory leads to Research Design lead to Data Collection leads to Analysis leads to Dissemination. Multiple feedback arrows show how later stages can inform earlier ones, demonstrating the iterative nature of research where findings may lead to refinement of theory, research design, or data collection methods.

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Figure 13.3

Thematic map showing relationships between candidate themes. This map uses themes that emerged in interviews examining the human-animal bond. Candidate themes include 'Unconditional Love' (always happy to see you, no judgment), 'Pet Parent' (part of the family, like my child), 'Responsibility' (time, financial/money, energy), 'Rescuing' (saving pet from bad situation, they saved me for mental health), 'Good for people' (distraction from problems, social/way to meet people, good for kids), and 'Burden' (connecting responsibility and burden with bidirectional arrows). Various connections are shown between candidate themes with descriptive arrows.

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Figure 14.1

A balance scale diagram illustrating the measure of central tendency called the median. Two groups of five diverse figures each are shown balanced on a scale, representing how the median is the case that divides the frequency distribution in half.

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Figure 14.6

Pie chart example showing homicide data for each year in Canada from 2019-2023. The chart displays segments in different colours (teal, orange, green, light blue, and purple) with values labelled as 691 for 2019, 765 for 2020, 801 for 2021, 882 for 2022, and 778 for 2023.

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Figure 14.7

Bar chart example displaying the proportion of persons accused of intimate partner violence by ethnicity. Four vertical bars show percentages: Caucasian at 61% (orange bar, tallest), Indigenous at 26% (purple bar), South Asian at 8% (green bar), and Other Ethnicities at 5% (red bar, shortest).

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Figure 14.8

Line graph example showing homicide rate per 100,000 population by Indigenous identity and gender over time, from 2009 to 2021. Three lines track different groups: Indigenous Women & Girls (blue line, fluctuating between approximately 3.5-5.2), Non-Indigenous Women & Girls (orange line, relatively stable around 0.7-0.9), and Men & Boys (green line, gradually increasing from about 2.7 to 3.1). This demonstrates how line graphs display changes in multiple variables over time periods.

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