CRITICAL THINKING IN ACADEMIC RESEARCH



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Critical Thinking in Academic Research (Gruwell and Ewing)

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Introduction

1



One of the primary goals of attending college is to become a critical thinker. As students evolve into lifelong learning they will have to navigate an incredible amount of information related to their studies and personal lives. The ability to explore their world will be dependent on their research and information literacy skills. In fact, when employers were asked about the information skills desired in new employees, they “placed a high premium on graduates’ abilities for searching online, finding information with tools other than search engines, and identifying the best solution from all the information they had gathered” (Head, 2012).

Critical Thinking in Academic Research will introduce students to the techniques and principles of critical thinking. However, a commitment to lifelong learning is required for critical thinking, it takes more that a single course or reading a book. In order for students to develop their own arguments, they need to find supporting evidence. This text provides guidance on developing research questions and finding resources to answer the questions.

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CHAPTER OVERVIEW

1: What is Critical Thinking?

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1.1: What is Critical Thinking?

Critical thinking is one of those things that most people are in favor of – especially in colleges and universities. But people in different fields and traditions have varying definitions, and it is not obvious that all are in favor of the same thing. How should we decide on a definition?

The American Association of Colleges and Universities came up with a definition of critical thinking that we will use as a starting place.

“Critical Thinking is a habit of mind characterized by the comprehensive exploration of issues, ideas and artifacts before accepting or formulating an opinion or conclusion” (AAC&U, 2017).

Here are a few things to notice about this definition as we begin exploring this topic:

- Critical thinking is characterized as a habit of mind. One college class is not enough to develop a habit, so one college class is not going to create “critical thinkers.” Instead, this class will introduce you to some component skills of the habit. Your routine and daily decisions will determine whether you develop (or deepen) the habit — or leave what you learn as you go on about your life.
- We assume that the people reading this book will vary with respect to critical thinking habits. Some people will come in already practiced and quite skilled. For them, our discussion about critical thinking will offer ways to think about and double-check their current habits. Others will enter the read believing they are already critical thinkers — already skilled in the habits of thoughtfulness — but will be exposed to vocabulary and ideas that challenge that pre-existing belief.
- The basic value judgment involved in critical thinking, as this field has grown out of the European philosophical tradition, is this: when issues are important, reflective opinions are more valuable than opinions of the moment. It follows from this that when an issue is important, it is worthwhile to have the skills available to think deeply and well. Those are the skills we will be focusing on in this book.
- The definition of critical thinking doesn’t state it, but there is a value judgment implicit in the attention within colleges and universities to critical thinking. The assumption is that it is good to be reasonable and bad to be unreasonable. As a critical thinker, one issue you will be asked to confront over and over in this class: IS CRITICAL THINKING SO IMPORTANT AS TO WARRANT ALL THIS ATTENTION AND ENTHUSIASM? As you get increasingly clear about what critical thinking looks like (in academia), you will be able to think more clearly about the value assumption. Is it worth all the work?

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1.2: Thinking Fast and Slow



One way of thinking about thinking focuses attention to the fact that humans have two different ways of arriving at beliefs or opinions. Similar to the contrast between opinions of the moment and reflective or deliberative opinions, one method is FAST and easy but less reliable and the other is SLOW and takes lots of hard work but is more reliable. In the discipline of critical thinking, reasoning is judged better if it is more reliable.

The goal of slow thinking or critical thinking is to determine which claims are true. So accuracy is the standard by which slow thinking is considered better thinking. But from an evolutionary perspective, there are times when "jumping to a conclusion" is better than taking the time to reflect and deliberate, even if it is less reliable. If a dangerous predator is coming your way, moving to safety FAST will keep you alive. It may be that you will jump and run for cover in situations where there is no real danger. But better to be wrong and alive, according to the people doing evolutionary psychology.

Slow thinking is often referred to as "deliberative," and the verb form is to deliberate.

We all come up against all sorts of occasions in our lives requiring fast action, with no time to deliberate. But the skills you will practice all take time. They are for when you can think ahead or you have lived through a fast decision and want to think critically about the decision you made, keeping open that you might well have done something else if you had the luxury of time to reflect.

A process like this has been developed and routinely used by the U.S. military. The idea is not to point fingers at people who had to choose fast, and whose decisions in hindsight can be seen clearly to not have been the best. Instead, the point of an after-action review is to take time, after the fact of action, to think over the available options and the pros and cons of each choice with the intention to deepen our learning in preparation for future contexts requiring fast choice. Much of what we will be doing in the class is like an after-action review.

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1.3: How Confident Are You in Your Reasoning Skills?

Many people tend to overestimate their critical thinking skills. Here is just one example of documentation of this trend, from a business website, MindEdge, focused on helping students develop skills many employers say they want in college graduates:

“The second annual State of Critical Thinking survey from MindEdge asked respondents to complete a brief quiz requiring them to use digital literacy and critical thinking skills. “[…] In 2017, 44 percent of survey respondents received an ‘F’ on the critical thinking quiz. In 2018, 52 percent of respondents failed the quiz” (Ascione, 2020).



Many students taking a critical thinking course report a curve in their sense of confidence as thinkers. Like people in the MindEdge survey, they start out thinking they are pretty good thinkers. Then somewhere in the first third of the class, that sense of confidence takes a hit. The complexities of slow thinking can be hard to grasp at first. The homework and quizzes can feel confusing or tough. But as the term progresses, the techniques become more routine and less bewildering. Though slow thinking ALWAYS requires us to use a limited supply of our mental energy. This short excerpt from Kahneman’s work is a nice introduction.

Before you move further along there are some tenets to keep in mind. These will be covered in the next section.

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1.4: Thinking in an Informed Way



Informed reasoning is based on claims that can be substantiated. In other words, your opinion should be based on fact and not on personal opinion. In today's world where we've become ever more involved in using technology as a resource for information, it is crucial that we have the ability to think in an informed way in order to be able to decipher the barrage of information available to us.

The ability to form and articulate opinions is extremely important in all facets of life. As citizens, people need to form opinions about political issues and leaders in order to vote responsibly. We must form opinions about social issues, and we form opinions about the people we work and interact with on a daily basis. However, simply having an opinion about a given topic is not enough. In this age of information, if we want to effectively share our opinions with others, we must be educated about the topics we are discussing.

Whether writing a letter to the editor about a local issue or trying to convince your boss that you've developed a great business strategy or convincing your parents that you should have a specific privilege, presenting an informed, educated opinion is much more effective than sharing one based on emotion or personal experience alone.

In addition to being informed, you must consider both your values and assumptions. All color your thinking and require you to reflect and practice slow thinking as you develop your own opinions.

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1.5: A Word About Values



Three types of values

Values are standards or ideals with which we evaluate actions, people, things, or situations. Beauty, honesty, justice, peace, generosity are all examples of values that many people endorse. In thinking about values it is useful to distinguish them into three types:

- Personal values: values endorsed by an individual. For example, some people regard family as their most important value and structure their lives so that they can spend more time with their family. Other people might value success instead, and give less time to their families in order to achieve their goals.
- Moral values: values that help determine what is morally right or wrong, e.g. freedom, fairness, equality, well-being, etc… Those which are used to evaluate social institutions are sometimes also known as political values.
- Aesthetic values: values associated with the evaluation of artwork or beauty.

The Role of Facts and Values

The following are descriptive statements. they purport to describe facts :

- This is a sharp knife.
- Mozart and Beethoven are composers.
- Ann believes that freedom of speech is important.

These, however, are statements about values :

- This knife is a very useful kitchen tool
- Mozart is a greater composer than Beethoven
- Freedom of speech should be protected

Philosophers usually distinguish between two kinds of values: intrinsic and extrinsic. Something is supposed to have extrinsic value when it is not valued for its own sake, but because it contributes to some further purpose, or because it helps bring about something else of value. So a particular kitchen knife might be said to be very valuable in this extrinsic sense – it is valued not for its own sake but because it can be used to satisfy certain culinary purposes that we treasure.

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1.6: What About Assumptions?

Like any human activity, the practice of critical thinking requires several assumptions to make sense. For people who don't share



the assumptions, the whole process can be experienced as confusing or nonsensical. Here is a partial list of assumptions that sometimes cause trouble for people new to critical thinking.

1. Critical thinking (CT) is evaluative. An evaluation is a statement that compares what is the case to a standard about how things should be. CT requires people to make lots of judgments about good and bad, right and wrong, what we should or shouldn't do. The standard of evaluation used in critical thinking for reasoning is reliability. Good reasoning is reliable, and bad reasoning is unreliable.
2. In CT, reasoning implies evaluation, both individual ("You should recycle your aluminum!") and collective ("We should abolish the death penalty!"). Each statement can be supported by reasons, and the reasons can be evaluated as better or worse.
3. In CT, truth is treated as absolute — not partial, changing, or relative to different points of view.
4. The ultimate "should" in critical thinking is this: you should not contradict yourself. There are other "should" statements, but they are all based on this idea that self-contradiction is bad. Contradictory statements, by definition, cannot all be true, and based on #3 above that means they can't be partly true, or true to some people but not others. A statement that is self-contradictory is absolutely, eternally, necessarily and inevitably not true.

If you don't agree with one or more of the above assumptions, expect some trouble even understanding what is going on when trying to use critical thinking. The assumptions listed above are offered not to convince you to accept any of these assumptions or to "prove" them in the formal (CT) sense, but just to offer a bit more about what is assumed in this field.

There is also one more assumption to consider, that is people shouldn't judge other people's opinions.

Critical thinking requires energetically judging other people's opinions (along with our own!) – not in isolation, but in relation to each other. That is, CT requires asking if the reason given to support or back up an opinion is a good one. If no good reason can be found to support an opinion, that opinion is treated as unsupported or unproved. Generally, opinions are better if proved, and not as good if unproved. By extension, there is a preference for reflective opinions arrived at through slow thinking over opinions of the moment which are formed in fast thinking.

Many people put the majority of their critical thinking energy into judging the thinking of those they disagree with. Our hope is that you will have come to understand that thinking carefully about your own beliefs is worth more of your time, and that you will have come to appreciate the vital importance of people who do not share your same ideas to your process of slow thinking.

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CHAPTER OVERVIEW

2: Barriers to Critical Thinking

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2.2: Social Conditioning
2.3: Labeling
2.4: Stereotypes
2.5: Fallacies

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2.1: Barriers to Critical Thinking



Preconceived ideas are ideas that decisively influence our thinking, but which we have not critically reflected upon. Not all preconceived ideas are fallacious (based on false assumptions). However, we must constantly consider our preconceived ideas critically to test their validity. In critical reflection we ask about the grounds for holding a belief. Do these grounds withstand rational scrutiny? Is there sufficient evidence to support the belief? Is the belief appropriate in its context? What weight should we give to counterarguments and counterexamples? And so on.

There are two main obstacles to clear thinking: preconceived ideas and fallacies. Preconceived ideas could be broadened to include social conditioning, labeling, and stereotypes. The section below will give you the opportunity to learn to recognize these obstacles to clear thinking.

Try your luck with this riddle

“A man and his son are driving together on a stormy night. They have an accident in which the father is killed and his son badly injured. The boy is taken to the local hospital and requires urgent surgery. He is prepared for the operation and wheeled into the operating room. The surgeon arrives, looks at the boy and says, “I cannot operate on my own son”.

How is this possible?

1. The man is the boy’s _____
2. The boy is the surgeon’s _____
3. The surgeon is the boy’s _____

Ask a few friends, colleagues or family. See how they fare with the same riddle.

Answer: To many people the story presents a riddle. But the answer is obvious. The surgeon is the boy’s mother. The story is a riddle only if we have a preconceived idea which associates being a surgeon with being male. There is no good reason to hold this idea.

Now we will explore how preconceived ideas such as social conditioning, labeling and stereotyping affect our capacity for critical reasoning. The topic of preconceived ideas is an interesting field and it is worth exploring the various forms they take ranging from racial and gender stereotypes to the inability to see ourselves clearly.

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2.2: Social Conditioning

We are sure you will agree that we all inherit or assimilate certain biased attitudes and values from our parents, schools, friends, and so on. Many of these attitudes and values come to us before we are able to test them for their validity. Later on in life, some of these attitudes and values seem to be obviously true



and we do not think about whether we need to question them. Simply by the accident of birth, we find ourselves in a particular place at a particular time in history. The customs, social institutions and material setting of that place and time decisively influence the way we see the world. This background frames our view so much that it is only with difficulty that we can turn around and critically assess the framework itself.

Here is an interesting activity illustrating that we are conditioned to see only what we want to see. Access your own preconceived ideas by doing the activity. Read aloud the colors, and not the words, you see in the list below.



Think about it: Did you read the correct colors or were you influenced by the visual colors of the words? This activity clearly illustrates our social conditioning.

Preconceived ideas are embedded in, and borrow their “obviousness” from, our social conditioning framework. The ideal of critical thinking is to step outside this framework and make judgments in the manner of an ideal observer. While the standard of absolute objectivity may be regarded as a regulative ideal, it would be naïve to think that this can be achieved, especially when it comes to issues such as morality, justice and aesthetics. But skepticism about the possibility of absolute objectivity need not deflect us from attempting to achieve some distance from our social backgrounds and the preconceived ideas we grew up with. Social conditioning is an obstacle to critical reasoning, but it is not an insurmountable obstacle.

As we learn the names for different things and how to go about operating as human beings in society, we are told what is good and what is bad, what is to be desired and what is to be avoided, and what it means to be in the world in general. Most of this is perfectly innocent and practical, but our parents’ or guardians’ various judgments of themselves and of the world will creep in whether we are aware of it or not. In simplified terms, some people have a positive outlook on life while others have a negative outlook, and whether our parents believe they live in a world that is threatening and negative, or one that is helpful and positive, will have a deep impact on our psyche.

If our parents live in the illusion that money is important, politicians are corrupt, marriage is nothing special, and work is tedious, then that becomes part of our own outlook as well. Some of these negative beliefs are so deeply ingrained in our society that we don’t even notice them, and they then become stuck in our subconscious while our context and perspective are still relatively limited.

Consider the following claims (or opinions) about two people from different backgrounds and then answer the questions that follow:

- Peter grew up in the wealthy northern suburbs of New York City. Therefore, Peter is likely to believe in the values of individuality and the superiority of capitalism.
- Paul grew up in a poor suburb of Detroit, MI. Therefore, Paul is likely to believe in the value of community and the superiority of socialism.

1. Do you think that these claims are based on sound reasoning? Why? Why not?
2. Would you say that these claims are based on preconceived ideas? Why? Why not?

3. What preconceived ideas are embedded in these arguments?

Think about it: These claims are not outcomes of reflective critical reasoning. Rather, they are assumptions based on preconceived ideas about socioeconomic class and personal identity and values.

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2.3: Labeling



Labels are a useful way of focusing on a particular feature of a group of people or things when that feature is relevant to the context. For example, when we are discussing which venue to use for a meeting, we may label someone as a person with a “disability”. Here the label would be relevant to the considerate treatment of someone who is confined to a wheelchair, for example. But labeling people may sometimes hide other important and relevant features and cause us to prejudice someone’s interests. Labeling someone “doctor” may encourage us to accept her opinions on matters outside her area of expertise. Labeling a political party “democratic” may encourage us to accept its policies blindly just because we support the ideals of democracy.

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2.4: Stereotypes

Stereotypes are generalizations, or assumptions, that people make about the characteristics of all members of a group, based on an image (often wrong) about what people in that group are like.



We need labels to make quick judgments, but relying on labels leads to stereotyping and prejudice. We ignore individual differences. Soon we see only the label. We usually stereotype groups to which we do not belong. The poor stereotype the rich and the rich stereotype the poor. Kids stereotype “old folks”, who in turn stereotype “today’s kids”. We have trouble identifying individual members of groups we stereotype. To us, “they all look alike”. Police notice this when witnesses try to pick the guilty person out of a line-up consisting entirely of one ethnic group. Many of us hold a stereotype that “bad guys” should look bad; learned probably from watching movies and television. But the most evil criminals can look very ordinary. Believers in the “criminal stereotype” sometimes protect themselves against the label only to fall victim to the reality.

Nations at war create stereotypes to label the enemy. Soldiers find killing humans like themselves difficult. So, propaganda departments create labels for the enemy so that they appear less than human, and therefore more “killable”. This process is called dehumanization. When those stereotyped believe the label applied to them it becomes a “self-fulfilling prophecy”. The label encourages behavior that makes the label come true.

Many, and possibly most, judgments of people based on membership in a group are likely to be based on stereotyping. Statements that begin with “people like you”, or “you people” are likely stereotypes even if you believe they are factual. We think the best way to overcome a stereotype is by personal contact. The more individuals in a group you know personally, the more difficult it is to believe a stereotype. In this regard, we would like to encourage you to make contact with fellow students who belong to cultural groups other than yours, because exposure to individual differences is part of a true education. Travel can have the same effect. As simple a stereotype as “Scandinavians are blue-eyed blondes” is challenged by a trip to Sweden, Finland, or Denmark where simple observation proves it false.

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2.5: Fallacies



A fallacy is a deceptive argument that tries to persuade us to accept the claim that is being advanced, but the reasons in support of the claim are irrelevant or inappropriate. Put differently, a fallacy is an error in reasoning. This differs from a factual error, which is simply being wrong about the facts.

As you will see, some basic background information on fallacies is provided in the suggested online references. In this reading, we shed some more light on the topic. Please remember that while it is important to consult multiple sources, the outcome of the learning process should be that you will be able to recognize inadequacies in arguments. In the section below, we will introduce you to some of the most common fallacies. There are many more types of fallacies that are not covered in this reading, such as the argument from ignorance, appeal to force (or coercion), appeal to the masses, appeal to pity, appeal to spite, shifting the burden of proof, post hoc reasoning, red herring fallacy, affirming the consequent, denying the antecedent, et cetera.

Slippery slope argument

A slippery slope argument leads one from seemingly unimportant and obviously true first premises to calamitous and exaggerated consequences in the conclusion. The “slippery slope” argument format is essentially that if you make any exceptions to a rule, or if you make rules that depend on fine distinctions, pretty soon people will be ignoring the rule or rules entirely because they won’t accept the difference between the exception and everything else. This kind of fallacy is also known as the “give an inch”, or the “crack in the foundation” argument. As the names suggest, the point of departure in this kind of “argument” is that if you allow exceptions to a rule, it creates a slope away from the absoluteness of the rule, down which people will slide further and further until they will not obey the rule at all. In other words, “if you give people an inch, they will take a mile”.

This sort of “reasoning” is fallacious because there is no reason to believe that one event must inevitably follow from another without an argument for such a claim. This is especially clear in cases in which there are a significant number of steps or gradations between one event and another.

Examples of slippery slope arguments:

1. “We have to stop the rise in tuition fees! The next thing you know, they’ll be charging $50,000 a semester!”
2. “You can never give anyone a break. If you do, they’ll walk all over you.”

Straw man argument

A straw man is someone without substance, who can be easily defeated. Sometimes an opponent will respond to an arguer’s claim by interpreting it in a way that makes it easy for him to knock down the argument. He deliberately ignores the strong points of the argument and attacks a straw man.

For example:

Suppose an arguer claims that nonhuman animals should be accorded rights to protect them from unnecessary suffering because of their sensitivity to pain. A respondent says that this is unacceptable because animals are stupid and therefore would not be able to claim their rights anyway.

Note: This is not what was claimed in the original argument. The opponent attacks a straw man, rather than the real issue.

To identify a straw man argument, you must be familiar enough with the topic in question to recognize when someone is setting up a caricature. Understanding when someone is using this deceptive tactic is the best way to call attention to the weakness of the straw man position.

Begging the question

As you will see in the online references, the fallacy of begging the question occurs when what is supposedly proved by the conclusion of an argument is already assumed to be true in the premises. In other words, the very thing you are trying to prove (your conclusion) is presupposed in the supporting argument (your premises). This is sometimes called “circular reasoning”. Carefully look at the following example:

Deliberately ending the life of a fetus is murder. So it should be clear that abortion is nothing but the illegal killing of the fetus.

The premise of this argument and its conclusion make exactly the same claims, because “abortion” means the “deliberate ending of the life of a fetus” and “murder” means “illegal killing”. The premise gives no support to the conclusion and the argument begs the question.

The fallacies discussed above make it clear why it is important to know how to take apart an argument and examine its constituent parts. By moving beyond the wordiness, it is possible to look at each piece individually and see that we just have the same ideas being presented more than once.

Ad hominem argument

An ad hominem argument attacks the character or circumstances of the person who is making a claim rather than challenging the claim itself.

Example:

John Teller’s argument is exactly what one can expect from an atheist like him. In this example, the person is attacked rather than the soundness of her argument.

Note that there are three forms of an ad hominem argument:

- a personal attack on a person’s character
- an attack on the circumstances of the person advancing a claim, and
- an attack on a person’s interests.

False appeal to authority

The fallacy of false appeal to authority takes place when an authority or famous person is quoted in order to get the conclusion the speaker wants rather than providing solid evidence to confirm or refute the claim. The fallacy of false appeal to authority occurs when the “authority” cited is not an expert in the field under discussion.

For example, there is nothing wrong with human cloning. I know this because my medical doctor said that human cloning is morally justified.

The authority cited in this example is an expert in the field of medicine, but he or she is not an expert in the field of ethics. To get his claim accepted, the arguer is committing the fallacy of false appeal to authority because he is quoting an authority who is not, in fact, an authority in the field being discussed.

False dilemma

The fallacy of false dilemma occurs when an “either-or” choice is presented when, in fact, there are more than two alternatives. Here is an example:

Let’s face it, John. Either you are going to be aggressive and show her who’s the boss or you are going to let her walk all over you. I don’t need to tell you what you should do. A man’s gotta do what a man’s gotta do.

Here the fallacy of false dilemma is committed because the arguer presents only two alternatives when, in fact, there are more options available for dealing with the situation at hand. This kind of either-or argument ignores the complexity of the issue.

Hasty generalization

This fallacy occurs when a generalization is made on the basis of insufficient evidence. For example:

Mr. Williams claims: “All good engineers are men because I have not come across any good female engineers”.

Here, Mr Williams commits the fallacy of hasty generalization because he has not looked into all cases of engineers, male or female. The reason Mr. Williams offers for his claim or generalization is insufficient or ill-considered.

Summary

We have noted several common fallacies in reasoning. But an argument can fail in many other ways. The point is not to look out for particular fallacies only, but to develop a sense of when an argument is going astray. We can only develop this sense with practice. In subsequent Modules, you will be introduced to the techniques of argument analysis and argument evaluation in detail. But, in the end, successful critical and philosophical reasoning relies on acquiring a knack for recognizing bad arguments.

For additional information on fallacies check out:

- Fallacy Files
- Thou Shalt Not Commit Logical Fallacies

Exercises – Identify the Fallacy

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CHAPTER OVERVIEW

3: Analyzing Arguments

3.1: Is It an Argument?
3.2: Standard Argument Form
3.3: Kinds of Arguments
3.4: Explanations and Reported Arguments

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3.1: Is It an Argument?



Arguments are made up of statements organized around the act of inference with the background purpose of providing an answer to an issue. This means that all arguments involve collections of statements. But not all collections of statements are arguments. Much of what is read these days, or listened to, is not an argument in the critical thinking sense. A news report on television or in a traditional newspaper is usually just that, a report or description of information that is meant to describe what has happened, where, and when. Sometimes reporters provide their own perspective on the story or an analysis of events, and these activities could be considered to be presenting an argument. The defining factor is whether reasons are being provided to answer a question, sometimes called an issue, in a particular way. In a traditional newspaper, the op-ed section is where you are most likely to find some kind of argument, although sometimes writers simply express an opinion without offering reasons or take the opportunity to rant. Beyond the news outlets, we are constantly bombarded by arguments, with advertising as one common source.

One way to determine if a passage contains an argument is to look for an issue and conclusion. Is there a question being addressed? It might be stated, or unstated, but if you can identify an issue, you have a strong clue there is an argument.

Here is a passage with the conclusion underlined, and the issue in italics:

> Doomsday preppers expect the infrastructure of contemporary life to be compromised or destroyed through a catastrophe in the near future. *Is it rational to be a prepper?* One key issue in the ongoing debate is how likely a doomsday scenario is. It is irrational to use finite resources to prepare for an emergency that is extremely unlikely. On the other hand, it is irrational to refuse to prepare for emergencies that are very likely to happen. Given the many ways our infrastructure can crash – conventional or nuclear war, coordinated terrorist attacks, catastrophic weather events, infrastructure fragility, etc — I think an emergency is very likely to happen in the near future. That's why I think prepping makes sense.

A second way to decide if a passage contains an argument is to look for **indicator words (markers)**–words or phrases which indicate that a person is using a statement as either a premise OR a conclusion.

Premise indicators are followed by sentences functioning as premises. Common premise indicators are:

- because
- since
- for
- provided that
- implies (that)
- for the reason that
- assuming that
- inasmuch as

The premise follows a premise indicator word or phrase and the conclusion often precedes the indicator. Conclusion indicators are **followed by sentences functioning as the conclusion**.

Common conclusion indicators are:

- so
- thus
- hence
- therefore
- it follows (that)
- consequently

- supports (that)
- suggests (that)
- we may conclude (that)
- for this reason
- implies that
- means that

The conclusion FOLLOWS the conclusion indicator word or phrase, and the premises often precede the indicator word or phrase.

The list of indicator words is not exhaustive, meaning there are more indicators than those listed here. Also, some of these words or phrases can have other uses. For this reason, they can only be treated as offering clues or hints. You can combine the hunt for indicator words with the first method – looking for an issue and conclusion. If you find what you think is a conclusion and then find or articulate the issue it relates to, you have good reason to think you have located an argument. You then need to examine if there is at least one premise that is used to provide support for the conclusion. Ask yourself, “Does the author/speaker give any reason that lends support to why they think this way?” If no easily identifiable reason is given, then it is most likely not an argument.

One key feature of fast-thinking mode is this: people EVALUATE reasoning they encounter before they ANALYZE it. If we slow ourselves down, we reverse this order. We want to make sure we understand what someone’s thinking IS before we decide if it is good or bad.

Your own reasoning as it passes through your consciousness might feel convincing. Or it might trip a feeling of doubt. Either way, if the matter is important, you might want to move into slow-thinking mode and analyze your own reasoning as a way of double-checking.

Exercise: Argument or Not?

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3.2: Standard Argument Form

To analyze an argument is to do an “active listening” step. The point is to make sure you understand what the argument actually is before turning to the evaluative question: is it a good argument?

Standard argument form is a graphical method for displaying arguments, making plain the purpose of a statement by its placement. Premises are separated, numbered, and placed above a line, and the conclusion is placed below the line. The act of inference is represented with three dots (or the word “so”) placed next to the conclusion.

1)

2)

SO

Some cases are straightforward. Here is a passage, followed by the analysis into standard form.

> I have a dental cleaning scheduled for June fourth. Wow, since today is the third, I guess that means the appointment is for tomorrow.
>
> Issue: Is my dental cleaning tomorrow?
>
> 1) My dental cleaning is scheduled for the fourth.
>
> 2) Today is the third.
>
> ---
>
> SO: my dental cleaning is tomorrow.

The explicit indicator word is “since.” The premise follows that indicator. The conclusion is in the clause following the comma.

If we straightened the sentence, it would read:

> The appointment is for tomorrow **since** today is the third.

This follows a classic pattern:

> (Conclusion) since (premise.)

Note: in the analysis, the words “I guess” were left out. These words signal a thinking process is happening, and can also signal how much conviction the thinker has in their own thinking. “I guess” signals a lack of confidence. If the passage had said, “that means my appointment must be tomorrow,” a higher degree of confidence would be signaled. In general, these confidence-signaling words and phrases are not themselves part of the argument.

Here is another example:

> If we want to increase defense spending, we would have to either cut domestic programs or raise taxes. You know when conservatives are in control, they aren’t going to raise taxes. So, the increase in defense spending means a cut to domestic programs, for sure.
>
> Issue: Will increased defense spending mean a cut to domestic programs?
>
> 1) To increase defense spending requires cutting domestic spending or increasing taxes.
>
> 2) Conservatives are in control.
>
> 3) Taxes won’t be increased when conservatives are in control.
>
> ---
>
> SO: an increase in defense spending means a cut to domestic programs.

This analysis is more complicated, but the first step is spotting the indicator word “so.” This gives us a clue that the last sentence is the conclusion. We then articulate the issue by putting the conclusion in the form of a question. The statements preceding the conclusion indicator are premises.

We could treat this passage as listing only two premises since the premises are presented in two separate sentences. But for purposes of evaluation, it is better to list more instead of fewer premises. It allows a greater chance for finding common ground among people coming to an issue from different points of view.

Note: the phrase “for sure” in the original passage signals the thinker has a high degree of confidence in their thinking. It was left out when putting the argument into standard form.

Standard Form Examples

Most people don’t like to be lied to. So, if you lie to someone, and they find out, they are probably not going to like it.

Issue: How do people react to be being lied to?

1) Most people don’t like to be lied to

SO: if you lie to someone, they are not going to like it.

I am working full time and going to school full time, so you know I don’t get enough sleep!

Issue: Do I get enough sleep?

1) I am working full time

2) I am going to school full time

SO: I don’t get enough sleep.

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3.3: Kinds of Arguments

Contemporary Western philosophy treats arguments as coming in two main types, deductive and inductive. The basic distinction and difference will be mentioned here.

Deductive arguments are arguments in which the premises (if true) guarantee the truth of the conclusion. The conclusion of a successful deductive argument cannot possibly be false, assuming its premises are true. This is what it means to label an argument as "valid" in logic. The form or structure of a deductive argument is the essential aspect to consider. Somewhat counter-intuitively, the premises do not need to be true for the conclusion to be true.

Arguments are a linguistic representation of an inference. So, using slightly different terminology, we can define *deductive inferences*. In a successful deductive inference, the premises and the denial of the conclusion constitute an inconsistent set of statements. An alternative way to describe the same relation: in a successful deductive inference, the truth of the premises makes the falsity of the conclusion logically impossible. A successful deductive inference is *valid*.

Deductive Example

1) All dogs are mammals.

2) All mammals breathe air.

SO: All dogs breathe air.

Inductive arguments are arguments with premises which make it likely that the conclusion is true but *don't absolutely guarantee its truth*. Inductive arguments are by far the most common type of argument we see in our daily lives. We can assess inductive arguments along a spectrum of successful (stronger) to unsuccessful (weaker). The more successful (stronger) argument suggests that the premises mean the conclusion is probably true, with a high degree of likelihood. It is important to remember that inductive arguments can never fully guarantee the truth of the conclusion.

Using slightly different terminology, we can consider inductive inferences, referring to the actual thinking process in someone's mind. In a successful inductive inference, the truth of the premises makes the falsity of the conclusion possible, but unlikely. Inductive inferences can be evaluated as "stronger" or "weaker" depending on the probability.

Inductive Example

1) The Interstate Bridge is regularly inspected by qualified engineers.

2) Vehicles have been driving over it for years.

SO: It will be safe to drive over it tomorrow.

One thing that makes applying the distinction between deductive and inductive arguments a bit tricky is this: we can't look only at the premises OR only at the conclusion. Instead, we need to focus on the *relationship* between the premise(s) and the conclusion to tell what kind of argument we have.

A further contributor to trickiness: we can't be distracted by the question of whether the statements are true or false. To classify an argument as deductive or inductive, we need to grant that the premises are true in a hypothetical way. We have to ask the question, "If those premises were true, would it be IMPOSSIBLE for the conclusion to be false?" If so, it is a deductive argument. Or "If those premises were true, would it be UNLIKELY, but still possible, that the conclusion is false? If so, it is an inductive argument.

As an example, consider this valid deductive argument:

1) All clouds are made out of spun sugar.

2) Anything made out of spun sugar is high in calories.

SO: All clouds are high in calories.

This argument is deductively successful because the truth of the premises would make the falsity of the conclusion impossible. Odd, isn't it?

Some arguments are presented with premises missing. In those cases, the determination of deductive or inductive will depend on how that premise is filled in.

For example: I had an apple for lunch, so I had something healthy!

Deductive	Inductive
P1) I had an apple for lunch. P2) All apples are healthy. (implied) SO I had something healthy	P1) I had an apple for lunch. P2) Most apples are healthy. (implied) SO I had something healthy

Exercise: Deductive or Inductive?

Determine if the following arguments are deductive or inductive. It is a good idea to put the arguments in standard form first, so you are clear about the relation between premises and conclusion.

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3.4: Explanations and Reported Arguments

The “reason” aspect of determining whether some passage is or contains an argument is crucial. For example, pick up any newspaper or online news source that has an op-ed section. If you peruse through the articles you might at first think that every article contains an argument, or is an argument. However, when you carefully apply the two steps on the previous page, you should begin to realize that sometimes the opinion is simply an unsupported fast-thinking opinion and sometimes it’s a full-on rant. The author makes a statement that seems like a conclusion (i.e., they take a stance on something), but fails to provide any support or reasoning as to why they have that opinion or thought. Again, ask yourself, “Are there any reasons given as to why they think this way?”

There are two other common cases that at first appear to be arguments, but in fact, are not considered “original” arguments:

> **Reported arguments** are statements which say that so-and-so argued in a certain way. These kinds of arguments are simply a report (like a book report) of someone else’s argument. It could be analyzed as an argument, but it is possible something was omitted or added by the person who did the reporting.
>
> **Explanations** can be hard to distinguish from arguments because they attempt to show why or how something happens (or has happened). Put more succinctly, an explanation is a statement or statements offered in answer to the question “why did that event occur?” Explanations can be in the form of cause/effect relationships, natural laws, functions or underlying mechanisms (from Stephen Carey’s Beginners Guide to the Scientific Method). These are not arguments in the sense we are using the word because there is little if any reason to doubt the truth of the conclusion. With this in mind, the vast majority of reports about scientific studies or discoveries are simply descriptions of the findings. There may be a latent argument about how the study or discovery could be applied to society or the world, but this is usually at the end of the report.

Reported Argument, Explanation, or Original Argument?

Review each statement and determine if it’s a reported argument, explanation, or original argument.

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CHAPTER OVERVIEW

4: Making an Argument

4.1: Making an Argument
4.2: Components of an Argument
4.3: Order of the Components
4.4: Where You Get the Components
4.5: Helping Others Follow

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4.1: Making an Argument

Scholarly conversation makes an argument for a point of view

Nearly all scholarly writing makes an argument. That's because its purpose is to create and share new knowledge so it can be debated to confirm, disprove, or improve it. That arguing takes place mostly in journals and scholarly books and at conferences. It's called the scholarly conversation, and it's that conversation that moves forward what we humans learn and know.

Your scholarly writing for classes should do the same—make an argument—just like your professors' journal article, scholarly book, and conference presentation writing does. You may not have realized that the writing you're required to do mirrors what scholars in universities, the country, and all over the world must do to create new knowledge and debate it. Most arguments put forth a new theory, hypothesis, or new view of a current or ongoing issue. Of course, you're probably a beginner at constructing arguments in writing, while most professors have been at it for some time. And your audience, for now, also may be more limited than your professors. But the process is much the same. As you complete your research assignments, you, too, are entering the scholarly conversation.

Making an argument means trying to convince others that you are correct as you describe a thing, situation, relationship, or phenomenon and to persuade them to take a particular action. This skill is important not just in college, but also for nearly every professional job you hold after college. So learning how to make an argument is good job preparation, even if you do not choose a scholarly career.

If you realize that your final product for your research project is to make an argument, you will have a significant head start. By keeping this in mind you will know that the resources you're going to need are those that support the components of an argument for are writing your audience.

Happily (and not coincidentally), most of those components coincide with the information needs we'll be talking about. We will be discussing meeting information needs by using a variety of resources that will enable you to write the corresponding argument component in your final product.

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4.2: Components of an Argument

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4.3: Order of the Components

One common arrangement for argument essays and term papers is to begin the essay with an introduction that explains why the situation is important—why the reader should care about it. Your research question will probably not appear in the introduction, but your answer to it (your thesis, or claim) usually appears as the last sentence or two of the introduction.

The body of your essay or paper follows and consists of:

- Your reasons why the thesis is correct or at least reasonable.
- The evidence that supports each reason, often occurring right after the reason the evidence supports.
- An acknowledgment that some people could have objections, reservations, counterarguments, or alternative solutions to your argument and a statement of each. Posters often don't have room for this component.
- A response to each acknowledgment that explains why that criticism is incorrect or not very important. Sometimes you might have to concede a point you think is unimportant if you can't really refute it.

After the body, the paper or essay ends with a conclusion, which states your thesis in a slightly different way than occurred in the introduction. The conclusion also may mention why research in this situation is important. Again, posters often don't have much room for this component.

A Blueprint for Argument

It's no accident that people are said to **make** arguments—they're all constructed, and these components are the building blocks. The components are important because of what they contribute. Each generally, though not always, appears in a certain order because they build on or respond to one another.

For example, diagrammed in the image below, the thesis or claim is derived from the initial question. The reasons are bolstered by evidence to support the claim. Objections are raised, acknowledged, and subsequently responded to.



The components of the argument build on each other.

Exercises: Order of argument components

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4.4: Where You Get the Components

Here, again, are the components we'll cover:

- The research question you (or your professor) want to answer
- Your claim or thesis.
- One or more reasons for your thesis.
- Evidence for each reason.
- Others' objections, counterarguments, or alternative solutions.
- Your acknowledgment of others' objections, counterarguments, or alternative solutions.
- Your response to others' objections, counterarguments, or alternative solutions.

The Question You Want to Answer

Sometimes your professor will give you the research question, but probably more often he or she will expect you to develop your own from an assigned topic. You will learn how to develop research questions in another section. Though vitally important, they are often not stated in essays or term papers but are usually stated in reports of original studies, such as theses, dissertations, and journal articles.

✔ ✔ Examples: Research Questions

- How do some animals' bones help control their weight?
- Did the death of his beloved daughter have any effect on the writings of Mark Twain?

Your Claim or Thesis

You write the claim or thesis, it doesn't come directly from a resource. Instead, it is the conclusion you come to in answer to your research question after you've read/listened to/viewed some sources. So it is a statement, not a question or a hypothesis that you plan to prove or disprove with your research.

After you've read/listened to/viewed more sources, you may need to change your thesis. That happens all the time–not because you did anything wrong but because you learned more.

✔ ✔ Examples: Revised Thesis

- Bone cells monitor whether more or less weight is pressing down on the skeleton and send biochemical signals to appetite centers in their brains to turn appetite down or up, accordingly.
- Mark Twain wrote more urgently and with less humor during the four years immediately after the death of his daughter.

One or More Reasons

You write what you believe makes your claim or thesis (the answer to your research question) true. That's your reason or reasons. Each reason is a summary statement of evidence you found in your research. The kinds of evidence considered convincing vary by discipline, so you will be looking at different resources, depending on your discipline. How many reasons you need depends on how complex your thesis and subject matter are, what you found in your sources, and how long your essay or term paper must be. It's always a good idea to write your reasons in a way that is easy for your audience to understand and be persuaded by.

✔ ✔ Examples: Reasons

- Animals, including humans, have a biological tendency to regain any weight that they lose and lose any weight that they gain, seemingly in an effort to maintain whatever weight they have sustained for some time. Skeletons are logical places where any gains or losses could be noted, and recent studies seem to show that osteocytes (a kind of bone cell) are involved in whether appetites go up or down after weight gain or loss.
- My content analysis and a comparison of publication rates four years before and after Mark Twain's daughter died indicate that his writing was more urgent and less humorous for four years after. It is reasonable to conclude that her death caused that change.

Evidence for Each Reason

You write this also. This is the evidence you summarized earlier to support each of the reasons that your thesis is true. You will be directly quoting, paraphrasing, and summarizing your sources to make the case that your answer to your research question is correct, or at least reasonable.

✔ ✔ Examples: Evidence for Reasons

- Report the results of studies about osteocytes' possible effect on weight gain or loss.
- Report the results of your comparison of writing content and publication rate before and after Twain's daughter's death.

Others' Objections, Counterarguments, or Alternative Solutions

Do any of your sources not agree with your thesis? You'll have to bring those up in your term paper. In addition, put yourself in your readers' shoes. What might they not find logical in your argument? In other words, which reason(s) and corresponding evidence might they find lacking? Did you find clues to what these could be in your resources? Or maybe you can imagine them thinking some aspect of what you think is evidence doesn't make sense.

✔ ✔ Examples: Objections, Counterarguments, or Alternative Solutions

- Imagine that some readers might think: The hormone leptin is released by fat cells when they are added to animals' bodies so it is leptin that tells appetite centers to turn down when weight is gained.
- Imagine that some readers might think: Computerized content analysis tools are sort of blunt instruments and shouldn't be used to analyze Twain's work.

Your Acknowledgement of Others' Objections, Counterarguments, or Alternative Solutions

So what will you write to bring up each of those objections, counterarguments, and alternative solutions? Some examples:

- I can imagine skeptics wanting to point out…
- Perhaps some readers would say…
- I think those who come from XYZ would differ with me…

It all depends on what objections, counterarguments, and alternative solutions your audience or your imagination come up with.

✔ ✔ Examples: Acknowledgement of Objections, Counterarguments, or Alternative Solutions

- Some readers may point out that the hormone leptin, which is released by fat cells, signals appetite centers to lower the appetite when weight is gained.
- Readers may think that a computerized content analysis tool cannot do justice to the subtleties of the text.

Response to Others' Objections, Counterarguments, or Alternative Solutions

You must write your response to each objection, counterargument, or alternative solution brought up or that you've thought of. You're likely to have found clues for what to say in your sources. The reason you have to include this is that you can't very easily convince your audience until you show them how your claim stacks up against the opinions and reasoning of other people who don't at the moment agree with you.

✔ ✔ Examples: Response to Others' Objections, Counterarguments, or Alternative Solutions

- But leptin must not be the entire system since many animals do keep on the new weight.
- Unlike other content tools, the XYZ Content Analysis Measure is able to take into account an author's tone.

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4.5: Helping Others Follow

The ideas and examples in this section are informed by *They Say/I Say* from Gerald Graff and Cathy Birkenstein. The fourth edition of *They Say/I Say* provides templates of actual language to be used in written arguments. This can be extremely helpful for beginning writers because it takes some of the mystery out of what to say and when to say it. For these templates, check the book out from your library. You can help readers follow your argument by inserting phrases that signal why you're doing what you're doing. Here are some examples:

- **To state that what you're saying in your thesis (answer to your research question) is in opposition to what others have said:**
  - "Many people have believed …, but I have a different opinion."
- **To move from a reason to a summary of a research study that supports it (evidence).**
  - "Now let's take a look at the supporting research."
- **To introduce a summary of a resource you've just mentioned.**
  - "The point they make is…"
- **If the objection is that you're not being realistic.**
  - "But am I being realistic?"
- **To acknowledge an objection you believe a reader could have.**
  - "At this point, I should turn to an objection some are likely to be raising…"
- **To move from the body of an essay to the conclusion.**
  - "So in conclusion…"

Phrases like these can grease the skids of your argument in your readers' minds, making it a lot easier for them to quickly get it instead of getting stuck on figuring out why you're bringing something up at a particular point. You will have pulled them into an argument conversation.

✓ ✓ Examples: The Language of Arguments Done

The blog that accompanies the book *They Say/I Say* with Readings, by Gerald Graff, Cathy Birkenstein, and Russel Durst, contains short, elegantly constructed contemporary arguments from a variety of publications. Take a look at the They Say/I Say blog for a moment and read part of at least one of the readings to see how it can be helpful to you the next time you have to make a written argument.

Additional Advice Sources

Take a look at these sites for argument essay advice for students:

- Writing Mechanics – Ohio State Center for the Study and Teaching of Writing
- Argument in College Writing – Excelsior Online Writing Lab (OWL)
- Argument Handout – University of North Carolina Writing Center

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CHAPTER OVERVIEW

5: Research Questions

5.1: The Purpose of Research Questions
5.2: Background Reading
5.3: Narrowing a Topic
5.4: Regular vs. Research Questions
5.5: Influence of a Research Question
5.6: Developing Your Research Question

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5.1: The Purpose of Research Questions

Both professional and successful student researchers develop research questions. That's because research questions are more than handy tools; they are essential to the research process. Thinking critically about a topic and crafting a question should be fundamental to your research.

By defining exactly what the researcher is trying to find out, these questions influence the steps taken to conduct the research. That's true even if the research is not for academic purposes but for other areas of our lives. For instance, if you're seeking information about a health problem to learn whether you have anything to worry about, research questions will make it possible for you to more effectively decide whether to seek medical help–and how quickly. Or, if you're researching a potential employer, having developed and used research questions will mean you're able to more confidently decide whether to apply for an internship or job at that company. The confidence you'll have when making such decisions will come from knowing that the information you use was gathered by conscious thought rather than serendipity and whim.

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5.2: Background Reading

It's wise to do some more reading about that narrower topic once you have it. For one reason, you probably don't know much about it yet. For another, such reading will help you learn the terms used by professionals and scholars who have studied your narrower topic. Those terms are certain to be helpful when you're looking for sources later, so jot them down or otherwise remember them. For instance, if you were going to research the treatment of children with coronavirus, this background reading would teach you that professionals and scholars usually use the term instead COVID-19 instead of coronavirus when they write about it. Often, they also use SARS-CoV-2 infection or 2019-nCOV infection to identify the strain. If you didn't learn that, you would miss the kinds of sources you'll eventually need for your assignment. Keep in mind your ability to think slowly in order to throughly explore a given topic.

Most sources other than journal articles are good sources for this initial reading, including the *New York Times* or other mainstream American news outlets, Wikipedia, encyclopedias for the discipline your topic is in (horticulture for the crabapple bud development topic, for instance), dictionaries for the discipline, and manuals, handbooks, blogs, and web pages that could be relevant. This initial reading could cause you to narrow your topic further, which is fine because narrower topics lead to greater specificity for what you want to find out. After this upfront work, you're ready to start developing the research question(s) you will try to answer for your assignment.

✔ ✔ Tip: Keeping Track of Your Information

While you are in the background reading phase of your research you will come across a lot of sources and don't know yet if they will prove useful in the long run. A handy type of software to help you keep track of all your findings is called citation management software. It will also be extremely valuable when it comes to using the resources you end up needing. There are several that are freely available. Take a look at Zotero, Mendeley, or Citavi.

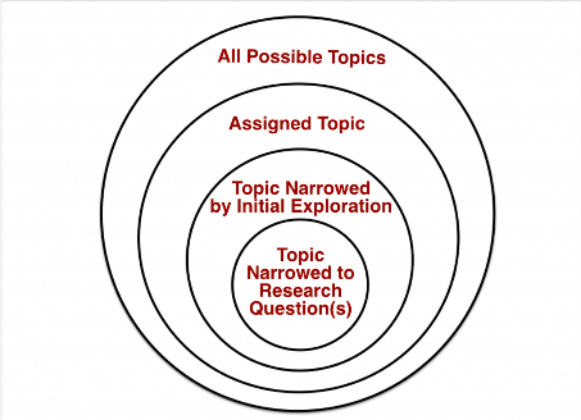
Fuel Your Inspiration

It's worth remembering that reading, scanning, looking at, and listening to information resources is very useful during any step of the process to develop research questions. Doing so can jog our memories, give us details that will help us focus, and help us connect disparate information–all of which will help us come up with research questions that we find interesting. The time spent exploring your topic will aid the direction of your research and ultimately the information resorces that you will utlize during the search process.

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5.3: Narrowing a Topic

Process of Narrowing a Topic



Visualize narrowing a topic as starting with all possible topics and choosing narrower and narrower subsets until you have a specific enough topic to form a research question.

All Possible Topics – You'll need to narrow your topic to do research effectively. Without specific areas of focus, it will be hard to even know where to begin.

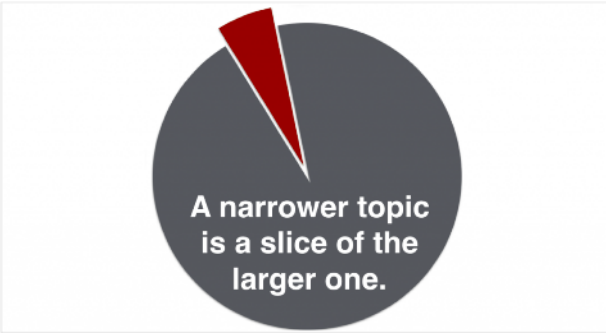
Assigned Topics – Ideas about a narrower topic can come from anywhere. Often, a narrower topic boils down to deciding what's interesting to you. One way to get ideas is to read background informati

Topic Narrowed by Initial Exploration – It's wise to do some background reading about that narrower topic to a) learn more about it and b) learn specialized terms used by professionals and scholars v

Topic Narrowed to Research Question(s) – A research question defines exactly what you are trying to find out. It will influence most of the steps you take to conduct the research.

Why Narrow a Topic?

Once you have a need for research—say, an assignment—you may need to prowl around a bit online to explore the topic and figure out what you actually want to find out and write about. For instance, maybe your assignment is to develop a poster about "spring" for an introductory horticulture course. The instructor expects you to narrow that topic to something you are interested in and that is related to your class.



Another way to view a narrowed topic is as a sliver of the whole topic.

Ideas about a narrower topic can come from anywhere. In this case, a narrower topic boils down to deciding what's interesting to you about "spring" that is related to what you're learning in your hortic to get ideas would be to read about spring in Wikipedia, a reference database such as CREDO, or a subject encyclopedia. Look for things that seem interesting and relevant to your class, and then let possibilities that are more narrow than the enormous "spring" topic. Be sure to pay attention to the references at the bottom of most Wikipedia pages and pursue any that look interesting. Your instru scholarly sources that you could eventually decide to use and cite.

Or, instead, if it is spring at the time you could start by just looking around, admire the blooming trees on campus, and decide you'd like your poster to be about bud development on your favorites, the c

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Jada Narrows Her Topic and Works on a Research Question

The Situation: Jada, an undergraduate, has been assigned a research paper on Antarctica. Her professor expects students to narrow the topic to something more specific about Antarctica because they won't have time to cover that whole topic. Then they are to come up with a research question that their paper will answer.

The professor explained that the research question should be something they are interested in answering and that it must be more complicated than what they could answer with a quick Google search. She also said that research questions often start with either the word "how" or "why."

Try it out:

1. Read what Jada is thinking below as she tries to do the assignment.
2. After the reading, answer the questions based on your own approach to research.
3. Check your answers with ours.
4. Keep this passage in mind the next time you start a research topic and mimic the process that Jada uses.



Jada's Thoughts

Okay, I have to write—a research paper—about Antarctica. I don't know anything about that place—and I can't think of a single thing I'd like to know about Antarctica. Calls for Wikipedia, I guess.

Guess I'll go here https://en.Wikipedia.org/wiki/Antarctica. Just skimming. Pretty boring stuff. Oh, look– Antarctica's a desert! I guess "desert" doesn't have to do with heat. That's interesting. Why is it considered a desert, there's lots of snow and ice there. Have to think about that—what makes a desert a desert.

It says one to five thousand people live there in research stations. Year-round. And there is no evidence that it was seen by humans until the 19th century. I never thought about whether anybody lived in Antarctica first, before explorers and scientists.

Lots of names—explorers, others. It says Amundsen reached the South pole first. Who's Amundsen? But wait. It says, "One month later, the doomed Scott Expedition reached the pole." Doomed? Doomed is always interesting. Where is there more information about the Scott Expedition? There is only one sentence. Why would they have just that one sentence? I'll have to click on the Scott Expedition link.



Members of the Robert F. Scott Expedition

Terra Nova…

But it gives me a page called Terra Nova Expedition. What does that have to do with Scott? Who was he and why was his expedition doomed? There he is in a photo before going to Antarctica. Guess he was English. Other photos show him and his team in the snow. Oh, the expedition was named Terra Nova after the ship they sailed this time—in 1911. Scott was also there earlier on another ship.

Lots of info about preparing for the trip. Then stuff about expedition journeys once they were in Antarctica. Not very exciting—nothing about being doomed.

Wait. The last paragraph of the first section says "For many years after his death, Scott's status as a tragic hero was unchallenged," but then it says that in the 20th-century people looked closer at the expedition's management and at whether Scott and some of his team could be personally blamed for the catastrophe. That "remains controversial," it says. Catastrophe? Personally, blamed? Hmm.

Back to skimming. It all seems horrible to me. They actually *planned* to kill their ponies for meat. Everything was extremely difficult. And then when they arrived at the South Pole, they found that the explorer Amundsen had beaten them. Must have been a big disappointment.

The homeward march was even worse. The weather was bad. The dog sleds that were supposed to meet them periodically with supplies didn't show up. Or maybe the Scott group was lost and didn't go to the right meeting places. Maybe that's what that earlier statement meant about whether the decisions that were made were good ones. Scott's diary said the crystallized snow made it seem like they were pushing and pulling the sleds through *dry sand*.



Antarctica

Rocks?!

It says that before things turned really bad, Scott allowed his men to put 30 pounds of rocks with fossils on the sleds they were pushing and dragging. Now was that sensible? But here it says that those rocks are the proof of continental drift. So how did they know those rocks were so important? Was that knowledge worth their lives? Could they have known?

Scott's diary is quoted about their troubles on the expedition—the relentless cold, frostbite, and the deaths of their dogs. One entry tells of a guy on Scott's team "now with hands as well as feet pretty well useless" voluntarily leaving the tent and walking to his death. The diary says that the team member's last words were "I am just going outside and may be some time."

They all seem lost and desperate but still have those sleds. Why would you keep pulling and pushing those sleds containing an extra 30 pounds of rock when you are so desperate and every step is life or death?



Last page from the Robert F. Scott Diary

A diary…

Then there's Scott's last diary entry, on March 29, 1912. "… It seems a pity but I do not think I can write more.". The diary apparently gave lots of locations of where he thought they were but maybe they were lost. It says they ended up only 11 miles from one of their supply stations.

I'd love to see that diary. Wouldn't that be cool? Online? I'll Google it. Yes! it's at the British Museum. Look at that! I can see Scott's last entry IN HIS OWN HANDWRITING! And there's a digital copy too.

I wonder if I should narrow my topic to just the controversy over whether the expedition was doomed because of the bad decisions made by Scott and his crew? Maybe it's too big a topic if I consider the decisions of all team members. Maybe I should just consider Scott's decisions. They should be noted in the diary.

So what research question could come from that? Maybe: how did Scott's decisions contribute to his team's deaths in Antarctica? Need to be more focused: How did Scott's decisions after reaching the South Pole help or hurt the chances of his team getting back safely? There are several of his decisions discussed on the Wikipedia page, and I know there are sources at the bottom of that page.



Map of Antarctica

Really, a desert?

Let me think—what else did I see that was interesting or puzzling about all this? I remember being surprised that Antarctica is a desert. So maybe I could make the desert of Antarctica my topic. My research question could be something like: Why is Antarctica considered a desert? But there has to be a definition of deserts somewhere online, so that doesn't sound complicated enough. Maybe those rocks with the fossils in them. It's just so hard to imagine desperate explorers continuing to push those sleds with an extra 30 pounds of rocks on them. Did they somehow know how important they would be? Why didn't they ditch them? Or maybe they just didn't realize how close to death they were. Maybe I could narrow my Antarctica topic to those rocks.

Maybe my topic could be something like The rocks that Scott and his crew found in Antarctica that prove continental drift. Maybe my research question could be: How did Scott's explorers choose the rocks they kept? Or maybe I should stick with why Scott and his crew made bad decisions.



I should ask.

I think my professor is the only one who can tell me whether my question about the rocks has enough to do with Antarctica. Since she's the one who will be grading my paper. But a librarian can help me figure out the other things. So Dr. Sanders and a librarian are next.

Questions

1. Was Jada's choice to start with Wikipedia a good choice? Why or why not?
2. Have you ever skimmed resources first and then read more deeply later?
3. At what points does Jada think about where to look for information?
4. At the end of this session, Jada hasn't yet settled on a research question. So what did she accomplish? What good was all this searching and thinking?

Our Answers

1. **Was Jada's choice to start with Wikipedia a good choice?** Although not usually cited in research papers, Wikipedia is a good place to learn more about all kinds of topics. Information is usually general in nature and you can check out the references at the bottom of the page. Use those links to find additional resources. This may lead you to library based sources like subject dictionaries, encyclopedias, or guides.
2. **Have you ever skimmed resources first and then read more deeply later?** When first exploring your topic you may choose to skim resources. That is a very brief read looking for interesting and useful information. Later when you select a topic and look for resources that provide deeper, more focused information.
3. **At what points does Jada think about where to look for information?** After receiving the core part of the topic (Antarctica), she begins looking for general information and becomes curious about the Scott expedition. As she learns more she thinks about where she can look for additional information, such as the diary mentioned in Wikipedia..
4. **At the end of this session, Jada hasn't yet settled on a research question. So what did she accomplish? What good was all this searching and thinking?** The background information that Jada looked at helped her to focus on the problems with the Scott Expedition. She slowly narrows down some of the issues and centers on the weight of the rocks. She considers two different questions (one more narrow than the other) and intends to seek input from the professor and librarian. Taking the time to explore her topic has given her ideas useful for a solid research question.

Exercise: Determine the Topic Order

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https://minnstate.pressbooks.pub/ctar/?p=59#h5p-7

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5.4: Regular vs. Research Questions

✔ ✔ Examples: Regular vs. Research Questions

Regular Question: What time is my movie showing at Lennox on Friday?

Research Question: How do “sleeper” films end up having outstanding attendance figures?

Regular Question: How many children in the U.S. have allergies?

Research Question: How does his or her country of birth affect a child’s chances of developing asthma?

Regular Question: Where is the Apple, Inc. home office?

Research Question: Why are Apple’s marketing efforts so successful?

Regular Question: What is COVID?

Research Question: How could decision-making about whether to declare a pandemic be improved?

Regular Question: Does MLA style recommend the use of generic male pronouns intended to refer to both males and females?

Research Question: How do age, gender, IQ, and socioeconomic status affect whether students interpret generic male pronouns as referring to both males and females?

Exercise: Identify the Research Question

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https://minnstate.pressbooks.pub/ctar/?p=61#h5p-8

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://minnstate.pressbooks.pub/ctar/?p=61#h5p-9

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5.5: Influence of a Research Question

- What you're interested in finding out.
- What is feasible for you to find out given your time, money, and access to information sources.
- How to find information, including what research methods will be necessary and what information sources will be relevant.
- What kind of claims you'll be able to make or conclusions you'll be able to draw about what you found out.

For academic purposes, you may have to develop research questions to carry out both small and large assignments. A smaller assignment may include doing research for a class discussion or to, say, write a blog post for a class; larger assignments may have you conduct research and critical assessment, then report it in a lab report, poster, term paper, or article. For large projects, the research question (or questions) you develop will define or at least heavily influence:

- Your **topic**, which is a part of your research question, effectively narrows the topic you've first chosen or been assigned by your instructor.
- What, if any, **hypotheses** you test.
- Which **information sources** are relevant to your project.
- Which **research methods** are appropriate.
- What claims you can make or **conclusions** you can come to as a result of your research, including what **thesis statement** you should write for a term paper or what you should write about in the results section based on the data you collected in your science or social science study.



Your research question drives your hypothesis, research methods, sources, and your claims or conclusions.

Influence on Thesis

Within an essay, poster, or term paper, the thesis is the researcher's answer to the research question(s). So as you develop research questions, you are effectively specifying what any thesis in your project will be about. While perhaps many research questions could have come from your original topic, **your question states exactly which one(s) *your* thesis will be answering**. For example, a topic that starts as "desert symbiosis" could eventually lead to a research question that is "how does the diversity of bacteria in the gut of the Sonoran Desert termite contribute to the termite's survival?" In turn, the researcher's thesis will answer that particular research question instead of the numerous other questions that could have come from the desert symbiosis topic.

Developing research questions is all part of a process that leads to the specificity of your project.

✔ ✔ Tip: Don't Make These Mistakes

Sometimes students inexperienced at working with research questions confuse them with the search statements they will type into the search box of a search engine or database when looking for sources for their project. Or, they confuse research questions with the thesis statement they will write when they report their research. The activity below will help you sort things out.

Influence on Hypothesis

If you're doing a study that predicts how variables are related, you'll have to write at least one hypothesis. The research questions you write will contain the variables that will later appear in your hypothesis(es).

Influence on Resources

You can't tell whether an information source is relevant to your research until you know exactly what you're trying to find out. Since it's the research questions that define that, they divide all information sources into two groups: those that are relevant to your research and those that are not—all based on whether each source can help you find out what you want to find out and/or report the answer.

Influence on Research Methods

Your research question(s) will help you figure out what research methods you should use because the questions reflect what your research is intended to do. For instance, if your research question relates to describing a group, survey methods may work well. But they can't answer cause-and-effect questions.

Influence on Claims or Conclusions

The research questions you write will reflect whether your research is intended to describe a group or situation, to explain or predict outcomes, or to demonstrate a cause-and-effect relationship(s) among variables. It's those intentions and how well you carry out the study, including whether you used methods appropriate to the intentions, that will determine what claims or conclusions you can make as a result of your research.

Exercise: From Topic to Thesis Statement

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5.6: Developing Your Research Question

Steps for Developing a Research Question

The steps for developing a research question, listed below, can help you organize your thoughts.

Step 1: Pick a topic (or consider the one assigned to you).

Step 2: Write a narrower/smaller topic that is related to the first.

Step 3: List some potential questions that could logically be asked in relation to the narrow topic.

Step 4: Pick the question that you are most interested in.

Step 5: Change that question you're interested in so that it is more focused.

Writing a Research Question from Cluny Library

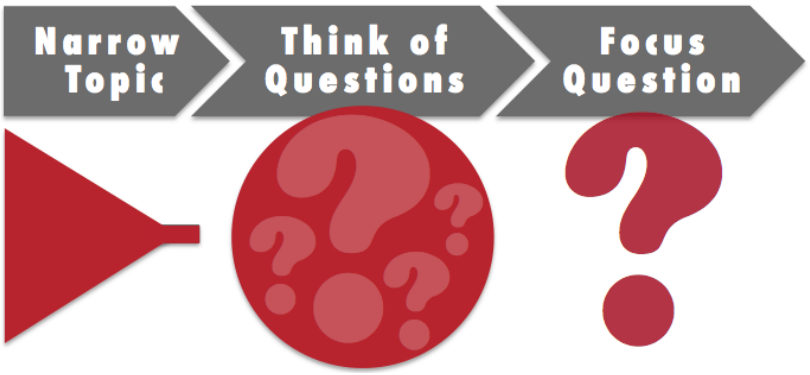
One or more interactive elements has been excluded from this version of the text. You can view them online here: https://minnstate.pressbooks.pub/ctar/?p=67#oembed-1

Practice

Once you know the steps and their order, only three skills are involved in developing a research question:

- Imagining narrower topics about a larger one,
- Thinking of questions that stem from a narrow topic, and
- Focusing questions to eliminate their vagueness.

Every time you use these skills, it's important to evaluate what you have produced—that's just part of the process of turning rough drafts into more finished products.



Three steps for developing a research question

How to Focus Questions

The research questions below are not focused enough. Read the original question and use the question prompts to think about how you would make them more specific.

Question 1: Why have most electric car company start-ups failed?

- Which companies are we talking about? Worldwide or in a particular country?

Question 2: How do crab apple trees develop buds?

- There are several kinds of crab apples. Should we talk only about one kind? Does it matter where the crab apple tree lives?

Question 3: How has NASA helped America?

- NASA has had many projects. Should we focus on one project they completed? Or projects during a particular time period?

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CHAPTER OVERVIEW

6: Sources and Information Needs

6.1: Sources and Information Needs
6.2: Sources to Meet Needs
6.3: Thinking About the Roles of Sources
6.4: Synthesis of Your Own Ideas
6.5: BEAM- A Solution that Might Shine
6.6: Using BEAM
6.7: Practice with BEAM
6.8: BEAM Reference Chart
6.9: Planning Your Sources

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6.1: Sources and Information Needs



It’s easier to find appropriate sources when you start with a plan.

This section and the section on Types of Sources work together. That’s because knowing the kinds of information in each category of sources will help you choose the right kind of information to meet each of your information needs. **And some of those needs are very specific.**

Information needs are why you require sources. Meeting those needs is what you will do with sources as you complete your research project.

Here are those needs:

- To learn more background information.
- To answer your research question(s).
- To convince your audience that your answer is correct or, at least, the most reasonable answer.
- To describe the situation surrounding your research question for your audience and explain why it’s important.
- To report what others have said about your question, including any different answers to your research question.

The verbs in the list of information needs above tell you exactly how you’ll use sources to carry out your research and create your final product: to learn, answer, convince, describe, and report. But you won’t be doing any of that alone.

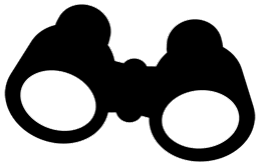
Your sources will give you information with which to reason. They’ll also give you direct quotes and information to summarize and paraphrase as you create your final product. In other words, your sources will support you every step of the way during your research project.

Needs and Final Products

Background information may seldom appear directly in any final product. But meeting each of the other information needs will result in written sections of a research paper. For final products other than papers, you’ll have the same needs and will use sources to meet them. But not all needs will result in a section of your final product.

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6.2: Sources to Meet Needs



Get a good look at your topic through background reading.

To Learn Background Information

When you first get a research assignment and perhaps for a considerable time afterward, you will almost always have to learn some background information as you develop your research question and explore how to answer it.

Sources from any category and from any subgroup within a category – except journal articles – can meet your need to learn background information and understand a variety of perspectives. Journal articles are usually too specific to be background information. From easy-to-understand to more complex sources, read and/or view those that advance your knowledge and understanding.

For instance, especially while you are getting started, secondary sources that synthesize an event or work of art and tertiary sources such as guidebooks can be a big help. Wikipedia is a good tertiary source of background information.

Sources you use for background information don't have to be sources that you cite in your final report, although some may be.

One important reason for finding background information is to learn the language that professionals and scholars have used when writing about your research question. That language will help you later, particularly when you're searching for sources to answer your research question.

To identify that language, you can always type the word glossary and then the discipline for which you're doing your assignment in Google.

Here are two examples to try:

- Glossary neuroscience
- Glossary "social media marketing"

Putting a phrase in quotes in most search boxes ensures that the phrase will be searched rather than individual words.



Your research question may call for qualitative or quantitative resources.

To Answer Your Research Question

You have to be much pickier with sources to meet this need because only certain choices can do the job. Whether you can use quantitative or qualitative data depends on what your research question itself calls for.

Only primary and secondary sources can be used to answer your research question and those need to be professional and/or scholarly sources for most disciplines (humanities, social sciences, and sciences). But the arts often require popular sources as primary or secondary sources to answer research questions. Also, the author's purpose for most disciplines should be to educate

and inform or, for the arts, to entertain and perhaps even to sell. Keep in mind that primary sources are those created at the same time as an event you are researching or that offer something original, such as an original performance or a journal article reporting original research. Secondary sources analyze or otherwise react to secondary sources. Because of the information lifecycle, the latest secondary sources are often the best because their creators have had time for better analysis and more information to incorporate.

Example: Quantitative or Qualitative Data

Suppose your research question is “How did a particular king of Saudi Arabia, King Abdullah, work to modernize his country?”

That question may lend itself to qualitative descriptive judgments—about what are considered the components of modernization, including, for instance, what were his thoughts about the place of women in society.

But it may also be helped by some quantitative data, such as those that would let you compare the numbers of women attending higher education when Abdullah became king and those attending at the time of his death or, for instance, whether manufacturing increased while he reigned.

So looking for sources that provide both quantitative and qualitative information (not necessarily in the same resource) is usually a good idea.

If it is not clear to you from the formats of sources you are assigned to read for your course, ask your professor which formats are acceptable to your discipline for answering your research question.

Sources to Answer Your Research Question

- **Quantitative or Qualitative:** Will be determined by the question itself.
- **Fact or Opinion:** Professional and scholarly for most disciplines; the arts often use popular, as well.
- **Scholarly, Professional, or Popular:** Professional and scholarly for most disciplines; the arts often use popular, as well.
- **Primary, Secondary, or Tertiary:** Primary and secondary.
- **Publication Format:** Those acceptable to your discipline.



Sources that meet the approval of your audience will be more convincing.

To Convince Your Audience

Convincing your audience is similar to convincing yourself and it takes the same kinds of sources—as long as your audience is made up of people like you and your professor, which is often true in academic writing. That means using many of those sources you used to answer your research question.

When your audience isn’t very much like you and your professor, you can adjust your choice of sources to meet this need. Perhaps you will include more that are secondary sources rather than primary, some that are popular or professional rather than scholarly, and some whose author intent may not be to educate and inform.

Sources to Convince Your Audience

- **Quantitative or Qualitative Data:** Same as what you used to answer your research question if your audience is like you and your professor. If you have a different audience, use what is convincing to them.

- **Fact or Opinion:** Those with the purpose(s) you used to answer your research question if your audience is like you and your professor. If you have a different audience, you may be better off including some sources intended to entertain or sell.
- **Scholarly, Professional, or Popular:** Those with the same expertise level as you used to answer the question if your audience is like you and your professor. If you have a different audience, you may be better off including some popular sources.
- **Publication Mode:** Primary and secondary sources if your audience is like you and your professor. If you have a different audience, you may be better off including more secondary sources than primary.
- **Publication Format:** Those acceptable to your discipline, if your audience is like you and your professor.



Use sources to frame the situation.

To Describe the Situation

Choosing what kinds of sources you'll need to meet this need is pretty simple—you should almost always use what's going to be clear and compelling to your audience. Nonetheless, sources intended to educate and inform may play an out-sized role here.

But even then, they don't always have to educate and inform *formally*, which opens the door to using sources such as fiction or the other arts and formats that you might not use with some other information needs.

Sources to Describe the Situation

- **Quantitative or Qualitative:** Whatever you think will make the description most clear and compelling and your question important to your audience.
- **Fact or Opinion:** Often to educate and inform, but sources don't have to do that *formally* here, so they can also be to entertain or sell.
- **Scholarly, Professional, or Popular:** Whatever you think will make the description most clear and compelling and your question important to your audience.
- **Primary, Secondary, or Tertiary:** Whatever you think will make the description most clear and compelling and your question important to your audience. Some disciplines will not accept tertiary for this need.
- **Publication Format:** Whatever you think will make the description most clear and compelling and your question important to your audience. Some disciplines will accept only particular formats, so check for your discipline.

To Report What Others Have Said

The choices here about kinds of sources are easy: just use the same or similar sources that you used to answer your research question that you also think will be the most convincing to your audience. Look for sources about how others have treated your research question

Exercise: Name the type of source

An interactive H5P element has been excluded from this version of the text. You can view it online here: https://minnstate.pressbooks.pub/ctar/?p=79#h5p-13

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6.3: Thinking About the Roles of Sources

Another way to think about sources is to consider the role a source will play in your research assignment. Does this nightmare sound like how you feel every time you have to write a term paper?

> *Your team is playing in the big game and you're the coach. (Maybe the real coach missed the plane. Who knows–it's a nightmare!) The stakes are high. You know your players are good athletes—you have access to the best and plenty of them. But you don't really know good strategies for the game, so you don't quite know how to use your players. For instance, is it better to keep your quarterback fresh by substituting often? Your kicker is not as bulky as your tackles. Is that typical of good kickers or should you find somebody else? And what about your linemen—can they tackle as well as block?*

What makes this a nightmare is *not knowing* how to use your players in a high-pressure game. Unfortunately, that situation is similar to writing a research paper if all you know are directions like these:

> Your paper must be in 12 pt. font, Times New Roman, double spaced with no more than 1″ margins, and include a minimum of 8 total articles comprised of:
>
> - At least 2 peer-review articles
> - 3 (no more than 6) popular articles (magazine or newspaper)
> - 2 (no more than 4) electronic sources (website or blog)

So you know you need sources. But directions like those aren't much help with what to actually *do* with the sources in your paper. Even with credible sources, it's very difficult to write a persuasive paper until you learn the roles that sources play—how you can use them—within your paper.

But who said anything about a *persuasive* paper? Perhaps one of the things you don't know is that with most research papers and essays, the *unstated expectation* is that you will use your sources to make an argument. That's because most scholarly writing makes an argument. You will be arguing that your answer to your research question (your thesis) is correct, or at least reasonable.

Obviously, it's high time someone helped you learn all this!

For both professionals and student researchers, successful scholarly writing uses sources to fill various roles within the research paper, journal article, book, poster, essay, or other assignments.

Those roles all have to do with rhetoric—the art of making a convincing argument. Putting your sources to work for you in these roles can help you write in a more powerful, persuasive way—to, in fact, win your argument.

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6.4: Synthesis of Your Own Ideas

- What was the author really trying to say?
- What parts of them do you agree with?
- What parts of them do you disagree with?
- Did they leave anything out?
- What does an author's work lead you to say?

It's wise to not only analyze—take apart for study—the sources, but also to try to combine your own ideas with those presented in class and in the resources. Professors frequently expect you to interpret, make inferences, and otherwise synthesize—bring ideas together to make something new or find a new way of looking at something old. It might help to think of synthesis as the opposite of analysis.

Getting Better at Synthesis

To get an A on essays and papers in many courses, such as literature and history, when you write in reaction to others' work you should use synthesis to create new meaning or show a deeper understanding of what you learned. To do so, it helps to look for connections and patterns. One way to synthesize when writing an argument essay, paper, or other project is to look for themes among your sources. So try categorizing ideas by topic rather than by resource—making associations across sources. Synthesis can seem difficult, particularly if you are used to analyzing others' points but are not used to making your own. Like most things, however, it gets easier as you get more experienced at it. So don't be hard on yourself if it seems difficult at first.

Example: Synthesis in an Argument



Imagine that you have to write an argument essay about Woody Allen's 2011 movie *Midnight in Paris*. Your topic is "nostalgia," and the movie is the only resource you can use. In the movie, a successful young screenwriter named Gil is visiting Paris with his girlfriend and her parents, who are more politically conservative than he is. Inexplicably, every midnight he time-travels back to the 1920's Paris, a time period he's always found fascinating, especially because of the writers and painters—Hemingway, Fitzgerald, Picasso—that he's now on a first-name basis with. Gil is enchanted and always wants to stay. But every morning, he's back in real-time—feeling out of sync with his girlfriend and her parents.

You've tried to come up with a narrower topic, but so far nothing seems right. Suddenly, you start paying more attention to the girlfriend's parents' dialogue about politics, which amount to such phrases as "we have to go back to…," "it was a better time," "Americans used to be able to…" and "the way it used to be." And then it clicks with you that the girlfriend's parents are like Gil—longing for a different time, whether real or imagined. That kind of idea generation is synthesis.

You decide to write your essay to answer the research question: How is the motivation of Gil's girlfriend's parents similar to Gil's? Your thesis becomes "Despite seeming to be not very much alike, Gil and the parents are similarly motivated, and Woody Allen meant *Midnight in Paris*'s message about nostalgia to be applied to all of them." Of course, you'll have to try to convince your readers that your thesis is valid and you may or not be successful—but that's true with all theses. And your professor will be glad to see the synthesis.

There is a lot more you can learn about creating synthesis in scholarly writing. One place synthesis is usually required is in literature reviews for honors' theses, master's theses, and Ph.D. dissertations. In all those cases, literature reviews are intended to contribute more than annotated bibliographies do and to be arguments for the research conducted for the theses or dissertations. If

you are writing an honors thesis, master's thesis, or Ph.D. dissertation, check out Susan Imel's Writing a Literature Review for more advice.

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6.5: BEAM- A Solution that Might Shine

Role for Sources	How to Use Them	Kinds of Sources That Can Have That Role*
Background**	Writers rely on these sources for general factual information. For instance, a writer could use background information to introduce a setting, situation, or problem in the term paper.	Usually secondary sources and tertiary sources, but, basically, just anything other than journal articles that report original research. Some examples: literature review articles, non-fiction books, and biographies (secondary) and field guides and Wikipedia (tertiary).
Exhibits or Evidence	Writers interpret and analyze sources like these in the same way they are used as exhibits and evidence in a museum or a court.	Usually primary sources. Some examples: newspaper articles from the time in question, works of literature or art, and research articles.
Argument	Writers engage with these sources that they agree with or disagree with. The sources are usually written by scholars in their field. For instance, writers often include sources that describe earlier work that is specifically relevant to their own research question and their thesis (what they consider to be the answer to that question.)	Usually primary and secondary sources. Some examples of primary sources: research articles in the sciences and humanities and recordings of performances in the arts. Some examples of secondary sources: commentaries and criticisms, such as those that appear in literature reviews, textbooks, and blogs that comment on research.
Method or Theory	Writers follow the key terms, concepts, or manner of working that are explained in these sources. That is, they pay attention to and use the relevant work of others before them to carry out their own work and then describe it in the term paper.	Often secondary sources. Some examples: literature reviews, textbooks, and blogs that comment on research.

*See Primary, Secondary, and Tertiary Sources

**See Background Reading

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6.6: Using BEAM

Example: Manufacturing Taste

Booker, M. K. (2012). Manufacturing taste: The culture industry, children's culture, and the globalization of American values. *Pop Culture Universe: Icons, Idols, Ideas*. ABC-CLIO.

BEAM: Background Sources

Background sources should be noncontroversial—the author accepts information from these sources as being authoritative (and expects readers to, as well). In other words, the sources (and the information gleaned from them) are generally trusted or undisputed. That information can serve as the incontestable foundation for your claims.

Background information is common knowledge (e.g. the sky is blue) and not necessary to cite. It's recommended that you cite a background source if you're unsure if it's common knowledge. It can be difficult to make this determination, so it's always a good idea to consult your professor.

Let's look at a statement in the first paragraph of the pop culture essay:

Thus, the corporate giants of the American Culture Industry (themselves now mostly multinational conglomerates) clearly must pay attention to the demands of audiences around the world in formulating, producing, and promoting the specific films, television, music, and other artifacts that are the stuff of popular culture.

How do you know that the "corporate giants are mostly multinational conglomerates" as stated in the first sentence? Or that the items listed are indeed the stuff of popular culture? These are examples of common knowledge.

Looking a little deeper…

Without context, this paragraph could also be the conclusion of a paper about what corporations should do (demonstrating the ongoing nature of knowledge itself). But the paper is not about making recommendations to the American Cultural Industry. This is an assertion that the author uses to help set up his different arguments and is meant to be taken at face value. So it's an example of how the same source can play different roles in different written assignments—all depending on how writers use them.

There is more about background sources at Background Reading.

BEAM: Exhibit and Evidence Sources

Generally, exhibit and evidence sources are works of literature (or other media), collected data, or some observed phenomenon, etc. that you have been asked to write about. They are what you analyze or interpret.

Looking again at the pop culture essay, the exhibits being examined are pop culture and American (as well as global) values. Specifically, the essay is examining the relationship between the two:

On the other hand, the international success of Toy Story 3, a film that deals with anthropomorphized toys and is thus essentially a consumerist fantasy of commodities come to life, also suggests that global distribution of the products of the American Culture Industry is beginning to have an impact on the tastes and values of audiences even outside the United States.

Exhibit sources are not limited to examples in the humanities; they could also be data that was collected in a scientific experiment or by a website's user survey. They can also simply serve as examples that help support a claim.

BEAM: Argument Sources

Argument sources provide you with the other voices in the academic conversation about your topic. Who else has done similar research, and how should your paper respond to what they've said? Does your paper refine or extend an existing hypothesis someone else has tested? If so, those sources belong in your paper.

Sometimes the purpose of including an argument source is to disagree with it and definitively indicate a different direction.

From our pop culture essay example:

Althusser's work remains compelling, despite the fact that theorists such as Michel de Certeau and John Fiske have argued that individuals actually have a considerable ability to resist and oppose the messages conveyed to them by official ideology, in popular

culture and elsewhere.

The author is taking part and taking a stand in the ongoing scholarly discussion of culture, although this endorsement of Althusser's work could possibly be considered a method source if the argument in the article went in a different direction.

BEAM: Method Sources

While argument sources help you frame your paper within the larger scholarly discussion about your topic and exhibits provide a focal point, method sources help provide underlying and sometimes implicit assumptions for your argument or analysis.

For some research, these are literally the methods you use to collect data like a focus group or a particular statistical analysis, and they provide justification for them. In other research, your paper might reveal a leaning toward a major attitude or school of thought within a discipline.

As a persuasive piece of writing, the essay has this intrinsic thread of caution and warning that is summed up in its conclusion:

The children's film industry might not be quite as sinister as the tobacco industry, with its efforts to addict children to cigarettes. […] Meanwhile, the lives of those audiences are now being increasingly saturated by popular culture, making it more and more difficult for individuals to form attitudes, opinions, and values that are independent of the messages promulgated by the Culture Industry.

While this is a subtle example, you would generally cite or at least credit your methods and theories that frame your analysis in your bibliography.

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6.7: Practice with BEAM

Abstract

The article reports on visual literacy and the psychological aspects of photography. The author offers his opinions on the complexities of photographs and reports on the various levels of meaning behind picture taking. Particular attention is given to the psychological aspects of photography and photographers. Additional article topics include the importance of historical photographs, the impact of the Internet and digital media on the profession, as well as the importance of preserving photographs.

Passage 1

Solving one scholarly problem – the need to sort out an image's multiple meanings – opens a clear view of others. No matter how mundane, utilitarian, or circumscribed a photograph's origins may be, an image is not a sentence. Images are forms of sensory data, processed by the right brain. No matter how judicious and objective a historian fancies herself, a photograph will elicit projections and associations in her, stir her imagination, before she even notices what is happening to her. A photograph "is a function, an experience, not a thing," said Minor White, a mid-twentieth-century photographer whom Walt Whitman would have recognized as a fellow poet. "Cameras are far more impartial than their owners and employers," White went on to say. "Projection and empathy [are] natural attributes in man…the photograph invariably functions as a mirror of at least some part of the viewer."

SOURCE CITED: Minor White, "Equivalence: The Perennial Trend," PSA Journal, 29 July 1963), 17. 20.

Passage 2

The problem is not that there are too few images, but too many. Historical photographs exist in huge numbers, in well-ordered collections, presided over by knowledgeable curators. More and more of the collections are being digitized. Overload and saturation are only a mouse click away.

One example: in the Prints and Photographs Division of the Library of Congress there are 164,000 black-and-white photographs made between 1935 and 1945 by photographers employed by the Farm Security Administration and the Office of War Information.

SOURCE CITED: "America from the Great Depression to World War 11: Photographs from the FSA-OWI, 1955-1945," Library of Congress: American Memory, http://memory.loc.gov/ammem/fsowhome.html

Our Answer

The source referred to in Passage 1 is probably a background source. The author is offering White's definition as fact. It helps support one of the author's assertions about the nature of photographs.

The source referred to in Passage 2 is an exhibit source. The author is using the Library of Congress's photographic archive as a self-evident example to support the claim that information overload is a potential problem.

Now you're ready to do role identification in a research paper you've already written. In the future, it may be helpful to do the same as a final check on research papers you are about to turn in.

Self-Check

Directions: Re-read your research paper. (If you've already gotten feedback from your professor on this paper, also look to see whether any of that feedback applies to the roles you gave your sources.) Then consider the questions below. If you can't answer "Yes" to every question, reconsider how you have used the sources in your paper.

Do My Sources Have the Right Roles?

- Have I used background information to introduce a setting, situation, or problem in the paper or essay?
- Did I cite or not cite the background information appropriately?
- Did I avoid using journal articles that report original research for my background information?
- Did I interpret and analyze sources as though they are exhibits or evidence in my argument?
- Were primary sources those that played the role of exhibits and evidence?
- Did I discuss and cite what others have written about my research question?
- Did I include writers who both agree and disagree with what I say is my answer to the research question?
- Did I avoid using tertiary sources to support my thesis?
- Did I make it clear where key terms, concepts, and manner of working that I used in my research were used first by others?
- Were my sources for useful key terms, concepts, and manner of working secondary sources?

Where to Go From Here

Now that you have a better understanding of how sources are used in a paper, review Making an Argument, which can help you plan and structure your research paper.

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6.8: BEAM Reference Chart

Use this BEAM Reference Chart to help you quickly determine how you might find or use a source.

BEAM Reference Chart

Kind of Source:	**Background**	**Exhibits (or Evidence)**	**Argument**	**Methods**
Definition:	Undisputed information	Object of analysis	Context of analysis	Underlying assumptions
Where to Find	Biographies, almanacs, encyclopedias, data repositories, or other reference sources	Any variety of scholarly or popular sources. Or the result of data collection or other novel production of information	Scholarly journals or books	Scholarly journals or books
Literatureesearch Question: *How are we to regard Jane's marriage to Rochester?*	Encyclopedia article on Evangelism Biography of the Brontës	The text of *Jane Eyre*ontemporary cultural documents and reviews	Scholarly books or articles that have addressed this issue	Specific references to critical theories or methods -- feminism, post--colonialism, etc.
Social Sciencesesearch Question: *How does gender socialization impact college--age drinking behaviors and attitudes?*	Current statistics on college--level drinking Current relevant cultural artifacts (ads, movies, etc.)	Field observations of gender differences in drinking at a party Audiotapes of focus group interviews (researchers must design the questions and code the transcripts)	Scholarly articles and papers that address gender socialization as potentially related college-age drinking	Citations to competing sociological theorists or theories about gender socialization Citations of particular research methodologies
Businessesearch Question: *Is consumer choice influenced by ads when favorable info is delayed?*	Current beliefs and intuitions about the presentation of information and how consumers make decision	Electronic data collected from online tasks	Scholarly articles that debate the relative impact of information according to timing	References to data analysis methods Citation of web design methods for online tasks
Health Sciencesesearch Question: *What strategies are useful for control and screening for a diabetic complication that causes blindness in Eastern Mediterranean regions?*	Standards for screening for a diabetic complication that causes blindness Current statistics regarding diabetes and blindness in Eastern Mediterranean countries	Projections of future diabetic complications in the region Potential strategies to be utilized by public health organizations in regard to the problem	Benefits and costs of a screening program	Implicit public health mission to reduce or prevent blindness in diabetes patients

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6.9: Planning Your Sources

Where sources are located is generally organized by audience expertise level—by whether they are popular, professional, or scholarly sources. Popular and professional are often grouped together. But scholarly sources tend to hang out by themselves. That's why searching Google Scholar locates more of them than just plain old Google, and an academic library has more scholarly sources than a public library.

Even if you are not using our planning table, before you start looking, try the Plan for Sources table below along with the suggestions made in this section to think through what sources you'll need for your own research project. There's also an example plan for sources filled in for a term paper. Having your Plan for Sources always at your side while you search for sources will guide where you look and what you're willing to accept. It will help you keep track of whether you have found the right resources.

You can download the table at Planning your sources. Using this table doesn't mean you can't change your mind if you later find another kind of source that looks too good to pass up. But making a plan first will ensure that you don't just grab any source you come across. The few minutes you take to complete the table will save you time later. And it's nice to have a plan all in one place that you can put into action!

✓ ✓ **Example:** Sample "Plan for Sources" Table

PLAN FOR SOURCES

Course: ARTS & SCIENCES 3200	Due Date: 2/15/16	Type of Final Product: term paper
Research Question: In what ways has the checklist movement affected surgery patient outcomes in U.S. hospitals?		

Information Needs		Kinds of Sources (Popular, Professional, or Scholarly) That Should Meet Each Need	Publication Formats Likely to be Helpful in Meeting Each Need	Where to Look
To learn more background information	✔	Popular Professional	Any, including magazine articles, professional blogs, and association websites and publications	Google and Bing
To answer your research question and convince your audience	✔	Professional Scholarly	Books Research journal articles Conference papers	Library catalog Library databases Google Scholar
To report what others have said	✔	Professional Scholarly	Any, including professional blogs and association websites and publications Research journal articles Conference papers	Google and Bing Library databases Google Scholar
To describe the situation and why it's important	✔	Popular Professional	Any, including magazine articles, professional blogs, and association websites and publications	Google and Bing

Completing the table puts all your planning in one place.

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CHAPTER OVERVIEW

7: Types of Sources

7.1: Categorizing Sources
7.2: Quantitative or Qualitative Information
7.3: Fact or Opinion
7.4: Primary, Secondary and Tertiary Sources
7.5: Popular, Professional, and Scholarly
7.6: Publication Formats and the Information Lifecycle
7.7: Scholarly Articles as Sources
7.8: News as a Source
7.9: Data as Sources
7.10: People as Sources

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7.1: Categorizing Sources

Once you have your research question, you'll need information sources to answer it and meet the other information needs of your research project.

In this section about categorizing sources, you will develop a sophisticated approach when making selections and you'll save time in the long run because you'll understand the "big picture". That big picture will be useful as you plan your own sources for a specific research project, which you learned about in the section Sources and Information Needs.

You'll usually have a lot of sources available to meet the information needs of your projects. In today's complex information landscape, just about anything that contains information can be considered a potential source.

Here are a few examples:

- Books and encyclopedias
- Websites, web pages, and blogs
- Magazine, journal, and newspaper articles
- Research reports and conference papers
- Field notes and diaries
- Photographs, paintings, cartoons, and other artworks
- TV and radio programs, podcasts, movies, and videos
- Illuminated manuscripts and artifacts
- Bones, minerals, and fossils
- Preserved tissues and organs
- Architectural plans and maps
- Pamphlets and government documents
- Music scores and recorded performances
- Dance notation and theater set models

With so many sources available, the question usually is not whether sources exist for your project but which ones will best meet your information needs.

Being able to categorize a source helps you understand the kind of information it contains, which is a big clue to (1) whether it might meet one or more of your information needs and (2) where to look for it and similar sources.

A source can be categorized by:

- Whether it contains quantitative or qualitative information or both
- Whether the source is objective (factual) or persuasive (opinion) and may be biased
- Whether the source is a scholarly, professional, or popular publication
- Whether the material is a primary, secondary, or tertiary source
- What format the source is in

As you may already be able to tell, sources can be in more than one category at the same time because the categories are not mutually exclusive.

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7.2: Quantitative or Qualitative Information

One of the most obvious ways to categorize information is by whether it is quantitative or qualitative. Some sources contain either quantitative information or qualitative information, but sources often contain both.

Many people first think of information as something like what's in a table or spreadsheet of numbers and words. But information can be conveyed in more ways than textually or numerically.

Quantitative Information – Involves a measurable quantity—numbers are used. Some examples are length, mass, temperature, and time. Quantitative information is often called data, but can also be things other than numbers.

Qualitative Information – Involves a descriptive judgment using concept words instead of numbers. Gender, country name, animal species, and emotional state are examples of qualitative information.

Take a quick look at the example table below. Another way we could display the table's numerical information is in a graphic format —listing the students' ages or GPAs on a bar chart, for example, rather than in a list of numbers. Or, all the information in the table could be displayed instead as a video of each student giving those details about themselves.

✓ ✓ **Example:** Data Table with Quantitative and Qualitative Data

This table illustrates that information can include a range of formats, including pictures.

Last Name	First Name	Age	Rank	Major	Gender	Current GPA	Photo
Adams	Grace	19	Sophomore	English	Female	3.78	
Bloomfield	Erika	21	Junior	Physics	Female	3.89	
Chow	Kimmie	20	Senior	Political Science	Female	3.77	
Crutchfield	Seth	23	Senior	Psychology	Male	3.58	
Fitch	Fredrick	18	Freshman	Art	Male	4.0	
Grover	Oscar	26	Junior	Biology	Male	3.32	

Increasingly, other formats such as images, sound, and video may be used as information or used to convey information. Some examples:

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7.3: Fact or Opinion

Thinking about the reason an author produced a source can be helpful to you because that reason was what dictated the kind of information they chose to include. Depending on that purpose, the author may have chosen to include factual, analytical, and objective information. Or, instead, it may have suited their purpose to include information that was subjective and therefore less factual and analytical. The author's reason for producing the source also determined whether they included more than one perspective or just their own.

Authors typically want to do at least one of the following:

- Inform and educate
- Persuade
- Sell services or products or
- Entertain

Combination of Purposes

Sometimes authors have a combination of purposes, as when a marketer decides they can sell more smartphones with an informative sales video that also entertains us. The same is true when a singer writes and performs a song that entertains us but that they intend to make available for sale. Other examples of authors having multiple purposes occur in most scholarly writing.

In those cases, authors certainly want to inform and educate their audiences. But they also want to persuade their audiences that what they are reporting and/or postulating is a true description of a situation, event, or phenomenon or a valid argument that their audience must take a particular action. In this blend of scholarly author's purposes, the intent to educate and inform is considered to trump the intent to persuade.

Why Intent Matters

Authors' intent usually matters in how useful their information can be to your research project, depending on which information need you are trying to meet. For instance, when you're looking for resources that will help you actually decide how to answer your research question or evidence for your answer that you will share with your audience, you will want the author's main purpose to have been to inform or educate their audience. That's because, with that intent, they are likely to have used:

- Facts where possible.
- Multiple perspectives instead of just their own.
- Little subjective information.
- Seemingly unbiased, objective language that cites where they got the information.

The reason you want that kind of resource when trying to answer your research question or explaining that answer is that all of those characteristics will lend credibility to the argument you are making with your project. Both you and your audience will simply find it easier to believe—will have more confidence in the argument being you are making—based on your selected resources.

Resources whose authors intend only to persuade others won't meet your information need for an answer to your research question or evidence with which to convince your audience. That's because they don't always confine themselves to facts. Instead, they tell us their opinions without backing them up with evidence. If you used those sources, your readers will notice and not believe your argument.

Fact vs. Opinion vs. Objective vs. Subjective

Need to brush up on the differences between fact, objective information, subjective information, and opinion?

Fact – Facts are useful to inform or make an argument.

Examples:

- The United States was established in 1776.
- The pH levels in acids are lower than pH levels in alkalines.
- Beethoven had a reputation as a virtuoso pianist.

Opinion – Opinions are useful to persuade, but careful readers and listeners will notice and demand evidence to back them up.

Examples:

- That was a good movie.
- Strawberries taste better than blueberries.
- George Clooney is the sexiest actor alive.
- The death penalty is wrong.
- Beethoven's reputation as a virtuoso pianist is overrated.

Objective – Objective information reflects a research finding or multiple perspectives that are not biased.

Examples:

- "Several studies show that an active lifestyle reduces the risk of heart disease and diabetes."
- "Studies from the Brown University Medical School show that twenty-somethings eat 25 percent more fast-food meals at this age than they did as teenagers."

Subjective – Subjective information presents one person or organization's perspective or interpretation. Subjective information can be meant to distort, or it can reflect educated and informed thinking. All opinions are subjective, but some are backed up with facts more than others.

Examples:

- "The simple truth is this: As human beings, we were meant to move."
- "In their thirties, women should stock up on calcium to ensure strong, dense bones and to ward off osteoporosis later in life."*

*In this quote, it's mostly the "should" that makes it subjective. The objective version of the last quote would read: "Studies have shown that women who begin taking calcium in their 30s show stronger bone density and fewer repercussions of osteoporosis than women who did not take calcium at all." But perhaps there are other data showing complications from taking calcium. That's why drawing the conclusion that requires a "should" makes the statement subjective.

Exercise: Fact, Opinion, Objective, or Subjective?

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7.4: Primary, Secondary and Tertiary Sources

Another information category is publication mode and has to do with whether the information is

- Firsthand information (information in its original form, not translated or published in another form).
- Secondhand information (a restatement, analysis, or interpretation of original information).
- Third-hand information (a summary or repackaging of original information, often based on secondary information that has been published).

The three labels for information sources in this category are, respectively, primary sources, secondary sources, and tertiary sources.

Type of Source	Example
Primary Source Original, Firsthand Information)	J.D. Salinger's novel Catcher in the Rye.
Secondary Source Secondhand Information)	A book review of Catcher in the Rye, even if the reviewer has a different opinion than anyone else has ever published about the book- he or she is still just reviewing the original work and all the information about the book here is secondary.
Tertiary Source Third-hand Information)	Wikipedia page about J.D. Salinger.

When you make distinctions between primary, secondary, and tertiary sources, you are relating the information to the context in which it was created. Understanding this relationship is an important skill that you'll need in college, as well as in the workplace. The relationship between creation and context helps us understand the "big picture" in which information operates and helps us figure out which information we can depend on. That's a big part of thinking critically, a major benefit of actually becoming an educated person.

Primary Sources – Because it is in its original form, the information in primary sources has reached us from its creators without going through any filter. We get it firsthand. Here are some examples that are often used as primary sources:

- Any literary work, including novels, plays, and poems.
- Breaking news.
- Diaries.
- Advertisements.
- Music and dance performances.
- Eyewitness accounts, including photographs and recorded interviews.
- Artworks.
- Data.
- Blog entries that are autobiographical.
- Scholarly blogs that provide data or are highly theoretical, even though they contain no autobiography.
- Artifacts such as tools, clothing, or other objects.
- Original documents such as tax returns, marriage licenses, and transcripts of trials.
- Websites, although many are secondary.
- Buildings.
- Correspondence, including email.
- Records of organizations and government agencies.
- Journal articles that report research for the first time (at least the parts about the new research, plus their data).

Secondary Source – These sources are translated, repackaged, restated, analyzed, or interpreted original information that is a primary source. Thus, the information comes to us secondhand, or through at least one filter. Here are some examples that are often used as secondary sources:

- All nonfiction books and magazine articles except autobiography.
- An article or website that critiques a novel, play, painting, or piece of music.
- An article or web site that synthesizes expert opinion and several eyewitness accounts for a new understanding of an event.
- The literature review portion of a journal article.

Tertiary Source – These sources *further* repackage the original information because they index, condense, or summarize the original.

Typically, by the time tertiary sources are developed, there have been many secondary sources prepared on their subjects, and you can think of tertiary sources as information that comes to us "third-hand." Tertiary sources are usually publications that you are not intended to read from cover to cover but to dip in and out of for the information you need. You can think of them as a good place for background information to start your research but a bad place to end up. Here are some examples that are often used as tertiary sources:

- Almanacs.
- Dictionaries.
- Guide books, including the one you are now reading.
- Survey articles.
- Timelines.
- Bibliographies.
- Encyclopedias, including Wikipedia.
- Most textbooks.

Tertiary sources are usually not acceptable as cited sources in college research projects because they are so far from firsthand information. That's why most professors don't want you to use Wikipedia as a citable source: the information in Wikipedia is far from the original information. Other people have considered it, decided what they think about it, rearranged it, and summarized it–all of which is actually what your professors want *you*, not another author, to do with the information in your research projects.

The Details Are Tricky— A few things about primary or secondary sources might surprise you:

- Sources *become* primary rather than always exist as primary sources.

It's easy to think that it is the *format* of primary sources that makes them primary. But that's not all that matters. So when you see lists like the one above of sources that are often used as primary sources, it's wise to remember that the ones listed are not automatically already primary sources. Firsthand sources get that designation only when researchers actually find their information relevant and use it.

For instance: Records that could be relevant to those studying government are created every day by federal, state, county, and city governments as they operate. But until those raw data are actually used by a researcher, they cannot be considered primary sources.

Another example: A diary about his flying missions kept by an American helicopter pilot in the Viet Nam War is not a primary source until, say, a researcher uses it in her study of how the war was carried out. But it will never be a primary source for a researcher studying the U.S. public's reaction to the war because it does not contain information relevant to that study.

- Primary sources, even eyewitness accounts, are not necessarily accurate. Their accuracy has to be evaluated, just like that of all sources.
- Something that is usually considered a secondary source can be considered a primary source, depending on the research project.

For instance, movie reviews are usually considered secondary sources. But if your research project is about the effect movie reviews have on ticket sales, the movie reviews you study would become primary sources.

- Deciding whether to consider a journal article a primary or a secondary source can be complicated for at least two reasons.

First, journal articles that report new research for the first time are usually based on data. So some disciplines consider the *data* to be the primary source, and the journal article that describes and analyzes them is considered a secondary source.

However, particularly in the sciences, the original researcher might find it difficult or impossible (he or she might not be allowed) to share the data. So sometimes you have nothing more firsthand than the journal article, which argues for calling it the relevant primary source because it's the closest thing that exists to the data.

Second, even journal articles that announce new research for the first time usually contain more than data. They also typically contain secondary source elements, such as a literature review, bibliography, and sections on data analysis and interpretation. So they can actually be a *mix* of primary and secondary elements. Even so, in some disciplines, a journal article that announces new research findings for the first time is considered to be, as a whole, a primary source for the researchers using it.

Under What Circumstances?

Consider the sources below and the potential circumstances under which each could become a primary source for you to use in your research.

Source	Circumstance
Fallingwater, a Pennsylvania home designed and constructed by Frank Lloyd Wright in the 1930s.	You are doing a study of the entrances Wright designed for homes, which were smaller than other architects of the time typically designed entrances.
Poet W.H. Auden's elegy for Y.S. Yeats.	Your research project is about the Auden-Yeats relationship.
An arrowhead made by (Florida) Seminole Native Americans but found at Flint Ridge outside Columbus, Ohio.	Your research project is about trade among 19th century Native Americans east of the Mississippi River.
E-mail between the U.S. ambassador to the United Nations, Nikki Haley, and her staff about North Korea.	Your research project is on how Ambassador Haley conveyed a decision about North Korea to her staff.
A marriage license.	You are writing about the life of a person who claimed to have married several times, and you need more than her statements about when those marriages took place and to whom.

Despite their trickiness, what primary sources usually offer is too good not to consider using because:

- They are original. This unfiltered, firsthand information is not available anywhere else.
- Their creator was a type of person unlike others in your research project, and you want to include that perspective.
- Their creator was present at an event and shares an eyewitness account.
- They are objects that existed at the particular time your project is studying.

Particularly in humanities courses, your professor may require you to use a certain number of primary sources for your project. In other courses, particularly in the sciences, you may be required to use *only* primary sources.

What sources are considered primary and secondary sources can vary from discipline to discipline. If you are required to use primary sources for your research project, before getting too deep into your project check with your professor to make sure he or she agrees with your choices. After all, it's your professor who will be grading your project. A librarian, too, can verify your choices. Just remember to take a copy of your assignment with you when you ask because the librarian will want to see the original assignment. After all, that's a primary source!

Exercise: Primary, Secondary, or Tertiary? – You Decide

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7.5: Popular, Professional, and Scholarly

Popular – Popular newspaper and magazine articles (such as *The Washington Post*, the *New Yorker*, and *Rolling Stone*) are meant for a large general audience, are generally affordable, and are easy to purchase or available for free. They are written by staff writers or reporters for the general public.

Additionally, they are:

- About news, opinions, background information, and entertainment.
- More attractive than scholarly journals, with catchy titles, attractive artwork, and many advertisements.
- References may be hyperlinks rather than formal APA citations.
- Sources cited may be people instead of journal articles.
- Published by commercial publishers.
- Published after approval from an editor.
- For information on using news articles as sources (from newspapers in print and online, broadcast news outlets, news aggregators, news databases, news feeds, social media, blogs, and citizen journalism), see News as a Source.

Professional – Professional magazine articles from sources like *Plastic Surgical Nursing* and *Music Teacher* are meant for people in a particular profession and are often accessible through a professional organization. Staff writers or other professionals in the targeted field write these articles at a level and with the language to be understood by everyone in the profession.

Additionally, they are:

- About trends and news from the targeted field, book reviews, and case studies.
- Often less than 10 pages, some of which may contain footnotes and references.
- Usually published by professional associations and commercial publishers.
- Published after approval from an editor.

Scholarly – Scholarly journal articles from journals like *Plant Science* and *Education and Child Psychology* are meant for scholars, students, and the general public who want a deep understanding of a problem or issue. Researchers and scholars write these articles to present new knowledge and further understanding of their field of study.

Additionally, they are:

- Where findings of research projects, data and analytics, and case studies usually appear first.
- Often long (usually over 10 pages) and always include footnotes and references.
- Usually published by universities, professional associations, and commercial publishers.
- Published after approval by peer review or from the journal's editor.

See Scholarly Articles as Sources for more detail.

Exercise: Popular, Professional, or Scholarly? You Decide

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7.6: Publication Formats and the Information Lifecycle

We can also categorize sources by publication format. That's because of the difference in time and effort sources in each format require for their production.

Sources in particular formats simply cannot exist until there has been enough time for people to create them. The result is that the sources that are created toward the end of the information lifecycle may come to very different conclusions about the event than did those sources created early on. Sometimes the information presented in the later formats is more valid and reliable than what is in those produced earlier.

A very good example is that conclusions about the Columbine High School shooting in 1999 and the causes of that tragedy reached by books—which took years to complete after the event—were likely to be very different than the conclusions reached by news coverage created early on. For instance, many early reports concluded that the two teens responsible for the shooting had been shunned by their classmates and that it was the pain of their exclusion that had moved them to take revenge. Consequently, many K-12 schools nationwide took steps to try to ensure that all students felt included in their student bodies. But more time-consuming reporting concluded that the boys were not shunned (one had had a date for prom activities just days before) and that it was mental illness that made them kill their classmates.

Movie: Information Cycle

This Information Life Cycle video explains what kinds of information sources about an event can exist at any point in time during and after that event.

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A Closer Look at Common Formats

Books – Usually a substantial amount of information, published at one time and requiring great effort on the part of the author and a publisher.

Magazines/Journals – Published frequently, containing lots of articles related to some general or specific professional research interest; edited.

Newspapers – Each is usually a daily publication of events of social, political and lifestyle interest.

Web sites – Digital items, each consisting of multiple pages produced by someone with technical skills or the ability to pay someone with technical skills.

Articles – Distinct, short, written pieces that might contain photos and are generally timely. Timeliness can mean that it's something that is of interest to readers at the point of publication or that is something the writer is thinking about or researching at a given point in time.

Conference Papers – Written form of papers delivered at a professional or research-related conference. Authors are generally practicing professionals or scholars in the field.

Blogs – Frequently updated websites that do not necessarily require extensive technical skills and can be published by virtually anyone for no cost to themselves other than the time they devote to content creation. Usually marked by postings that indicate the date when each was written.

Documentaries – Works, such as a film or television program, presenting political, social, or historical subject matter in a factual and informative manner and often consisting of actual news films or interviews accompanied by narration.

Online Videos – Short videos produced by anybody, with a lot of money or a little money, about anything for the world to see. Common sites for these are YouTube and Vimeo.

Podcasts – Digital audio files, produced by anyone and about anything, that are available for download, often by subscription.

Exercise: The Information Cycle

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7.7: Scholarly Articles as Sources

Peer-Reviewed Sources

The most-respected scholarly journals are peer-reviewed, which means that experts in their field other than the author and editor check out each article before it can be published. It's their responsibility to help guarantee that new material is presented in the context of what is already known, that the methods the researcher used are the right ones, and that the article contributes to the field.

For those reasons, peer-reviewed articles are more likely to be credible. Peer-reviewed journal articles are the official scholarly record, which means that if it's an important development in research, it will probably turn up in a journal article eventually.

In their article, "Peer Review in Scientific Publications: Benefits, Critiques, & A Survival Guide," Kelly, Sadeghieh, and Khosrow (2014) provide a longer explanation of the peer review process, which concludes that it is good but not perfect.

Parts of a Scholarly Article

The articles you use for your assignments must also be **relevant** to your research question—not just credible. Reading specific parts of an article can help save you time as you decide whether an article is relevant.

Video: Guided Tour of a Scholarly Article

This video describes the common parts of scholarly articles.

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Reading a scholarly article usually takes some effort. Read Michael Fosmire's How to Read a Scientific Paper for tips on how to do this.

Finding Scholarly Articles

Most scholarly articles are housed in specialized databases. Libraries (public, school, or company) often provide access to scholarly databases by paying a subscription fee for patrons. For instance, most libraries provide access to databases via Databases Lists or Research Guides. These databases are made available free to people affiliated with the University. For more information, including how to search databases, see the section on Specialized Databases.

Most databases on the web are actually search engines, such as Google Scholar, a free scholarly search tool available to all who have access to the Internet, and it provides some scholarly articles. For more information, see our section on using Google Scholar.

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7.8: News as a Source

When Are News Sources Helpful?

- You need breaking news or historical perspectives on a topic (what people were saying at the time).
- You need to learn more about a culture, place, or time period from its own sources.
- You want to keep up with what is going in the world today.

When Are News Sources of Limited Use?

- You need a very detailed analysis by experts.
- You need sources that must be scholarly or modern views on a historical topic.

Mainstream and Non-Mainstream News Sources

Mainstream American news outlets stick with the tradition of trying to report the news as objectively as possible. That doesn't mean their reports are perfectly objective, but they are more objective than the non-mainstream sources. As a result, mainstream news sources are more credible than non-mainstream sources. Some examples of mainstream American news outlets: The *New York Times*, *The Washington Post*, *The Boston Globe*, *The Chicago Tribune*, *The Los Angeles Times*; ABC News, CBS News, NBC News, PBS News, NPR News.

News from non-mainstream American news outlets is often mixed with opinions. One way they frequently exhibit bias is that they leave out pertinent facts. Some examples of non-mainstream American news outlets: Fox News, MSNBC, Gawker, Reddit.

Types of News Sources

Press Services—News outlets (print, broadcast, and online) get a lot of their news from these services, such as Reuters or Associated Press (AP), which make it unnecessary for individual outlets to send their own reporters everywhere. Services are so broadly used that you may have to look at several news outlets to get a different take on an event or situation.

News aggregators—Aggregators don't have reporters of their own but simply collect and transmit the news reported by others. Some sources pull news from a variety of places and provide a single place to search for and view multiple stories. You can browse stories or search for a topic. Aggregators tend to have current, but not archival news. Google News and Yahoo News are examples.

Newspaper sites – Many print newspapers also have their own websites. They vary as to how much news they provide for free. Take a look at these examples.

- The Boston Globe
- China Daily, global edition
- Pensacola News Journal
- The New York Times
- St. Cloud Times
- Star Tribune
- The Times of London
- USA Today

- RSS feeds
- News Feeds
- News Alerts
- Table of Contents Alerts

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7.9: Data as Sources

- Learn more background information.
- Answer your research question. The evidence that data provides can help you decide on the best answer for your question.
- Convince your audience that your answer is correct. Data often give you evidence that your answer to your research question is correct or at least a reasonable answer.
- Describe the situation surrounding your research question.
- Report what others have said about your research question.

Video: Reinterpreting Little Red Riding Hood

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What is data? The word means many things to many people. (Consider "data" as it relates to your phone contract, for instance!) For our purposes, a definition we like (Erway, 2013) is "units of information observed, collected, or created in the course of research."

Data observed, collected, or created for research purposes can be numbers, text, images, audio clips, and video clips. But in this section on using data as sources, we're going to concentrate on numerical data.

- More women than men voted in the last presidential election in a majority of states.
- A certain drug shows promising results in the treatment of pancreatic cancer.
- Listening to certain genres of music lowers blood pressure.

So using numeric data in those portions of your final product that require evidence can strengthen your argument for your answer to your research question. At other times, even if data is not necessary, numeric data can be particularly persuasive and sharpen the points you want to make in other portions of your final product devoted to, say, describing the situation surrounding your research question. See Making an Argument.

For example, for a project with the research question "How do some birds in Australia use "smart" hunting techniques to flush out prey, including starting fires?," you might find a journal article with data about how many people have observed these techniques and estimates of how frequently the techniques are used and by how many bird species.

Obtaining Data

There are two ways of obtaining data:

- Obtain data that already has been collected and analyzed. That's what this section will cover.
- Collect data yourself. This can include activities such as making observations, conducting surveys or interviews, recordings, or data by computers/machines.

Finding Data in Articles, Books, Web Pages, and More

Numeric data can be found all over the place. It can be found as part of other sources- such as books; articles in journals, newspapers, and magazines; and web pages. In these cases, the data do not stand alone as a distinct element, but instead are part of the larger work.

When searching for data in books and articles and on web pages, terms such as statistics or data may or may not be useful search terms. That's because many writers don't use those terms in their scholarly writing. They tend to use the words findings or results when talking about the data that could be useful to you. Also, statistics is a separate discipline, and using that term will turn up lots of journals in that area, which won't be helpful to you. So use the search terms data and statistics with caution, especially when searching library databases. See Precision Searching for more information on searching.

Even without using those search terms, many scholarly sources you find are likely to contain data. Once you find potential sources, skim them for tables, graphs, or charts. These items are displays or illustrations of data gathered by researchers. You can use this data in your work when and only when you provide a complete citation.

If the data you find in a book, article, or web page is particularly helpful and you want more, you could contact the author to request additional numeric research data. Researchers will often discuss their data and its analysis – and sometimes provide some of it (or occasionally, all). Some may link to a larger numeric research data set. However, if a researcher shares his or her data with

you, it may be in a raw form. This means that you might have to do additional analysis to make it useful in answering your question.

Depending on your research question, you may need to gather data from multiple sources to get everything you need to answer your research question and make your argument. See Making an Argument.

For instance, in our example related to food banks above, we suggested where you could find statistics about the number of people who get food from American food banks. But with that research question ("Why is there a gap in the number of people who qualify for food from food banks and the number of people who use food banks?"), you would also need to find out from another source how many people qualify for food banks based on their income and compare that number with how many people use food banks.

Finding Data, Data Depositories, and Directories

Sometimes the numeric data you need may not be in the articles, books, and websites that you've found. But that doesn't mean that it hasn't been collected and packaged in a usable format. Governments (federal and local) and research institutions along with the United Nations and nearly every country in the world, often publish data they have collected in discipline-specific data depositories that make data available online. Here are some examples:

- United States Census Bureau
- U.S. Bureau of Justice Statistics
- National Center for Education Statistics
- GeoData.gov

Other data are available through vendors who publish the data collected by researchers. Here are some examples:

- International Monetary Fund Statistical Databases
- World Health Organization Data
- Envirofacts

Don't know if a depository could contain data in your discipline? Check out a data directory such as the Registry of Research Data Repositories.

Data Visualization

Modern software can help you display your data in ways that are striking and often even beautiful. But the best criterion for judging whatever display you use is whether it helps you and your audience understand your data better than only text, maybe even noticing points that you would have otherwise missed.

Specific kinds of charts and graphs accomplish different things, which is important to keep in mind as you evaluate data and data sources. For instance:

- Line charts are usually used to show trends, comparing data over time.
- Scatter plots show the distribution of data points.
- Bar graphs usually compare categories of data.
- Pie charts show proportions of a whole.

It's important to decide what you want a display to do before making your final choice. Studying your data first so you know what you have will help you make that decision. Also, it may be conventional in your discipline to display your data in certain ways. Examining the sources you were assigned to read in your course or asking your professor will help you learn what's considered conventional.

Your professors will be examining your visual display to make sure you did not misrepresent the data. For example, the proportions of slices in a pie chart all have to add up to 100%. If yours don't, you've done something wrong.

It's easy to get overwhelmed by all the choices to be made between potential displays and what each can do: Here are two sites to help you sort them out once you know your data:

- Data Viz Project
- The Data Visualisation Catalogue

If you aren't ready yet to use some of the specialized tools for display, make it a point to learn how to use the data display capabilities in Microsoft Word and/or Excel. You can find helpful tutorials on the Web.

Proper Use of Data

Once you have your data, you can examine them and interpret them. Sometimes, you can do so easily. But not always.

What if…

…you had a lot of information? Sometimes data can be very complicated and may include thousands (or millions…or billions…or more!) of data points. You may find yourself using special software, such as Excel, SAS, and SPSS, in such situations.

Many people may tend to look for data to prove their hypothesis or idea, as opposed to answering their research questions. However, you may find that the opposite happens: the data may actually disprove your hypothesis. You should never try to manipulate data so that it gives credence to your desired outcome. While it may not be the answer you wanted to find, it is the answer that exists. You may, of course, look for other sources of data – perhaps there are multiple sources of data for the same topic with differing results. Inconclusive or conflicting findings do happen and can be the answer (even if it's not the one you wanted!).

Conflicting results on the same topic are common. This is the reality of research because, after all, the questions researchers are studying are complicated. When you have conflicting results you can't just ignore the differences—you'll have to do your best to explain why the differences occurred.

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7.10: People as Sources

> *Here's something we're targeting in interviews now—the big thing is they believe the computer is their workspace, so basic interactions between people are lost. They won't get up and walk over and ask someone a question. They are less comfortable and have some lack of willingness to use people as sources and also have a lack of awareness that people are a valid source of information…*

So getting some experience using people as sources is likely to help you not just with a current research assignment but with your work in the future.

Important: Who's an "Expert"?

Experts aren't only researchers with PhDs doing academic work. The question to ask when trying to decide who can be a source is always, who can speak with authority about any part of the subject? And the answer to that question is always contextual, a kind of "it depends."

People can speak with authority for different reasons. According to the Framework for Information Literacy for Higher Education, a person can have subject expertise (say, having done scholarship in the field), societal position (maybe a public office or another relevant work title), or special experience (say, living or working in a particular situation of interest or having participated in a historical event).

For instance, people who have had firsthand experience living or working with a situation (say, a survivor of school shooting if your topic is on that subject) you are studying can have a unique perspective unavailable elsewhere. And it's that up-close, firsthand view of the situation that gives them the authority that you and your audience respond to.

Of course, such sources have to be evaluated just like any other. Could they be biased? Like any source, yes. We just have to keep that possible bias in mind as we use the information from such a source. That's part of exercising the critical thinking that research assignments are famous for producing.

Potentially biased or not, sometimes a source's firsthand experience can't be surpassed. And recognizing what they offer can help us open up to diverse ideas and worldviews that we would otherwise miss. Don't be surprised if this kind of source takes you off in completely new directions with your assignment, ones that turn out to be much more interesting than those you were following before. For many researchers, finding sources that open up a topic like that is one of the most rewarding—and fun—things about doing research.

Some Examples of People as Sources

Research Question	Potential Person as Source	Potential Person as Source
How are tools originally developed for medicine, geology, and manufacturing used to explore paintings and sculptures?	An art conservator who uses those tools that you read about in the newspaper or other source	The person who invented one of the tools on the floor of the factory where he works
Why do most people who qualify for food at food banks not ask for food?	A local food bank director	A person (perhaps a fellow student) who qualifies but does not ask for food at a food bank
How and why do city and county governments brand themselves?	An official in such a city or county who has been involved in branding decisions	The director of a company that designs branding for cities and counties

You can interview a person as a source on the phone, in email, with Zoom, or face-to-face. You'll need to:

- Pay attention when reading other sources so you can identify whom to contact and know what they could have to offer.
- Prepare by learning enough about your topic so you can ask appropriate questions, know what your expert has done about your topic so you don't seem ignorant of their contribution, and know how to contact them. You might also want to do a practice interview with a friend.
- Contact your source to see if they are willing to talk with you and when that would be convenient. Then follow through.

Use good interview techniques, such as trying to put them at ease, using active listening techniques to encourage them to talk, asking follow-up questions, and thanking them at the end of the interview.

Citing People as Sources

Like other sources, people should be cited in your research final product, depending on the citation style you're using. For instance, in APA style, interviews, e-mail, and other personal communication should not appear in the reference list but should be in your main text only like this: (A. Authorslastname, personal communication, July 29, 2018).

See Excelsior Online Writing Lab for information on how to handle interviews and other communication with people in other styles.

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CHAPTER OVERVIEW

8: Precision Searching

8.1: Why Precision Searching?
8.2: Main Concepts
8.3: Related and Alternative Terms
8.4: Search Statements
8.5: Library Catalog
8.6: WorldCat
8.7: Google Scholar
8.8: Library Databases
8.9: Web Search Engines
8.10: Tips for Common Search Tools

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8.1: Why Precision Searching?

Effective searching takes precision. This section shows you how to perform several steps to make your search more precise—you'll turn up more sources that are useful to you and sources that may be crucial to your research question. You've probably been searching more casually for years and may wonder: Is going to the trouble of precision searching actually worth it?

Yes, definitely, for searches that are important to you! You compete with many people who are working to be as skilled as they can be. So you should make use of these steps for course assignments and information tasks you do on the job. With other tasks and searches, precision searching may be less important.

Search Strategy

This information on precision searching is based on how search tools such as subjects and specialized databases operate. If you've been more casual in your searching practices (especially Googling), some of these steps may be new to you. Starting with a research question helps you figure out precisely what you're looking for. Next, you'll need the most effective set of search terms – starting with main concepts and then identifying and using related, broader, and narrower terms. Your search terms need to be arranged as effective search statements, which you then type into a search box.



An important thing to remember is that searching is an iterative process: we try search statements, take a look at what we find and, if the results weren't good enough, edit our search statements and search again—often multiple times. Most of the time, the first statements we try are not the best, even though we get some results. It pays to search further for the sources that will help you the most. Be picky. Here are the steps for an effective search.



Steps for an effective search

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8.2: Main Concepts

✔ ✔ Example: How are birds affected by wind turbines?

The main concepts are birds and wind turbines. Avoid terms like affect (except the noun) and effect as search terms, even when you're looking for studies that report effects or effectiveness.

✔ ✔ Example: What lesson plans are available for teaching fractions?

The main concepts are lesson plans and fractions. Stick to what's necessary. For instance, don't include: children—nothing in the research question suggests the lesson plans are for children; teaching—teaching isn't necessary because lesson plans imply teaching; available—available is not necessary.

Sometimes your research question itself can seem complicated. Make sure you've stated the question as precisely as possible (as you learned in Research Questions). Then apply our advice for identifying the main concepts as usual.

✔ ✔ Example: Does the use of mobile technologies by teachers and students in the classroom distract or enhance the educational experience?

Acceptable main concepts are teaching methods and mobile technology. Another possibility is mobile technologies and education.

Watch out for overly broad terms. For example, don't include:

- Educational experience (it misses mobile technology).
- Classroom distractions (too broad because there are distractions that have nothing to do with technology).
- Technology (too broad because the question is focused on mobile technology).

Exercise: Main Concepts – Select all that apply

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8.3: Related and Alternative Terms

Tip: Try a Thesaurus

Have you considered using a thesaurus, such as thesaurus.com? Or adding a thesaurus to your browser search bar?

Exercises: Select the related terms

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Subject Headings Instead of Keywords

All the searches we have talked about so far have been keyword searches, usually used in search engines. But it really pays to use tools—such as library catalogs and journal article databases—that have subject headings that you can search. Subject headings are standardized terms that are assigned by trained experts. Some such tools also allow keyword searching. See the section on Specialized Databases for more detail about searching subject headings.

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8.4: Search Statements

“common cold“ > common cold

common cold > common cold, cold weather is common, cold war common tactics, etc…

Use Truncation Symbols to Broaden

Consider whether using a truncating symbol would help find variations of a word. For instance, the truncating symbol in mathematic* finds mathematics, mathematically, mathematician, etc.

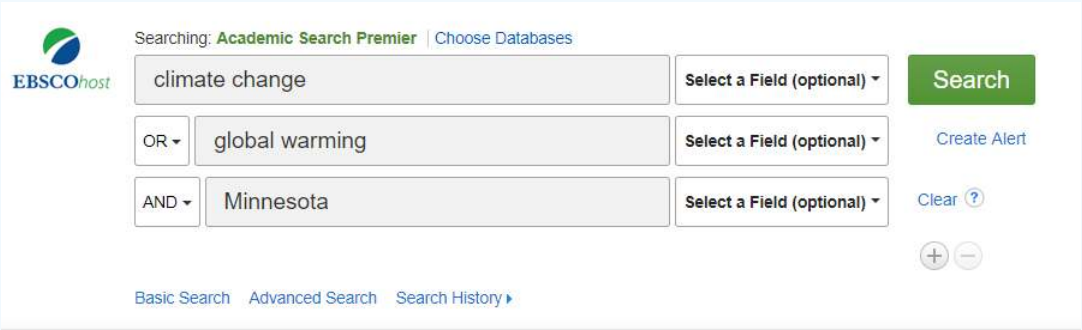
mathemat* > Mathematician, mathematics, etc…

AND – If the main idea contains two or more ideas, you’ll want to use **AND** to combine those terms in your search statement. **AND** is the default in most databases including Google

OR – If the main idea has several synonyms, use OR to combine them. For instance, if you are looking for articles about climate change you should include global warming. Your search would be “climate change” **OR** “global warming”. Use the quotation marks to find each as a phrase.

NOT – If the main idea has a common use you want to exclude, use NOT to exclude that word. For example, if we were looking for information about illegal drug use we would want to exclude prescription drugs from the search results. This is commonly done with NOT or the use of the minus (-) sign (Google). Hence, illegal drug use **NOT** prescription drugs.

Below is a typical example of how you can use boolean operators. The research question is: What are the effects of climate change in Minnesota? To be thorough I have added the term global warming.



Limiting Your Search

Many databases allow you to choose which areas (also called fields) of items to search for your search term(s), based on what you think will turn up documents that are most helpful. For instance, you may think the items most likely to help you are those whose titles contain your search term(s). In that case, your search would not show you any records for items whose titles do not have your term(s). Or maybe you would want to see only records for items whose abstracts contain the term(s).

When this feature is available, directing your search to particular parts of items, you are said to be able to “limit” your search. You are limiting your search to only item parts that you think will have the biggest pay-off for distinguishing helpful items

Records and Fields

The information researchers usually see first after searching a database is the “records” for items contained in the database that also match what was asked for by the search. Each record describes an item that can be retrieved and gives you enough information so that, hopefully, you can decide whether it should meet your information need. The descriptions are in categories that provide different types of information about the item. These categories are called “fields” such as title, author, or abstract. Some fields may be empty of information for some items, and the fields that are available depend on the type of database.

Searching fields such as title, abstracts, and subject classification often gives helpful items. Additional limits may be dates of articles, gender, age, journal titles, full text, and peer-review. Keep in mind limits vary by database and may be referred to with different terms like elderly or aged.

Example: Database Fields

A **bibliographic database** describes items such as articles, books, conference papers, etc. Common fields found in bibliographic database records are:

- Author
- Title (of book, article, etc.)
- Source title (journal title, conference name, etc.)
- Date
- Volume/issue
- Pages
- Abstract
- Descriptive or subject terms

Tip: Full-Text Searches

Some databases allow for full-text searching, but this option includes results where a search term appears only once in dozens or more pages. Searching fields such as title, abstracts, and subject classification will often give a much more precise search.

Exercises: Selecting terms & Search statements

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8.5: Library Catalog

When to Use It

Use the library catalog to search for items that you can use and check out in the library. Some items may require a university/college ID for use.

Note that the library catalog:

- May include a table of contents (especially for print materials) and a link to full-text digital content.
- Does not contain specific journal articles. The catalog can only tell you whether a journal or other periodical title is available.

How to Use It

To access the catalog you should go to the home page of the library and look for the term catalog, books, OneSearch, or a similar term. From there, you can do a search by resource type (books, video, course reserves, etc…) or other options.

Search Types

The catalog allows searching by author, title, subject, and keyword as well as specialty numbers such as the Library of Congress call number and ISBN (International Standard Book Number). There is also an option for an advanced search.

Additional tips:

- Keyword searches are the broadest search, as they search all information in an item record. (The search tips in Precision Searching, are based on using keywords.)
- Subjects are a very specific set of terms that are helpful for precision searches. Often, the easiest way to find subject terms is to do a keyword search first and then look at the results for the subject terms for those that are good matches for your topic. There is more about subject heading searching in Library Databases later in this section.
- The Advanced Search screen allows a few additional search capabilities, such as multiple search fields to narrow the scope of a search term. You can also limit by year range, language, location, or format.

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8.6: WorldCat

How to Use It

To access WorldCat, look carefully on your library's homepage to see if there is an access point.

Look for: Books and more, catalogs, or a database list. Click on the link and commence searching. Keep in mind that you can use a free version and identify where books may be located.



Narrowing Searches

- As discussed in precision searching, use a variety of search term combinations to find books and other materials
- When you find appropriate resources, scan the record for additional terms that may be useful for further searching.

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8.7: Google Scholar

How to Use It

Video: Using Google Scholar

Watch this tutorial on the basics of using Google Scholar .

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8.8: Library Databases

Database Scope

Information about specific subject coverage, formats, or date ranges in a database is called its scope. A database may be narrow or broad in scope, depending on whether it, for instance, contains materials on one or many subject areas.

Most libraries have lists of the databases available and brief descriptions are visible along with the database title and/or by selecting the "I" link for information.

There are several types of databases, including:

- Bibliographic – details about published works
- Full-text – details plus the complete text of the items
- Multimedia – various types of media, such as images, audio clips, or video excerpts
- Directory – brief, factual information
- Numeric – data sources
- Product – model numbers, descriptions, etc.
- Mixed – a combination of other types, such as multimedia and full-text

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When to Use Databases

You may search a variety of databases to uncover scholarly information about a specific subject area, for instance, CINAHL covers nursing and allied health. You can also use these databases for information not available through a comprehensive database (covers all topics/subjects – ex. Academic Search Complete).

In addition to the library's subscription (paid) databases, there may be free databases available where you can find additional resources such as PubMed, the major database for the health sciences (also available by subscription as Medline).

✓✓ Tip: Free vs. Subscription?

In some cases, the data available in free and subscription versions are the same, but the subscription version provides some sort of added details or enhancements for searching or viewing items.

This example shows the scope page for PubMed, a freely available health sciences database



Once you are aware of a database's scope, you'll be able to decide whether the database is likely to have what you want (for instance, journal articles as opposed to conference proceedings). Reading a
contain what you need.

How to Use Them

Searching databases varies depending on the interface being used. Most libraries will have a list of databases available on their web page.

✓✓ Example: PubMed

PubMed is a freely available health sciences database that contains scholarly and research journal articles, and a limited quantity of online books. While this database is free and available to the public, the articles contained within may not be available at all libraries. Unless your library links to PubMed you will need to check a journal list in your library to see if they subscribe to the journal you're interested in.

✓✓ Video: PubMed: Find articles on a topic

PubMed Tutorial video

Keyword Searching

Although keyword search principles apply (as described in Precision Searching), you may want to use fewer search terms since the optimal number of terms is related to database size. Each scholarly database indexes a fraction of that number, so you are less likely to be overwhelmed by results even with one or two keywords.

Subject Heading Searching

One precision searching technique that is especially helpful in subject databases is subject heading searching. Subject heading searching can be much more precise than keyword searching because you are sure to retrieve only your intended concept.

Subject searching is helpful in situations such as:

- There are multiple terms for the same topic you're interested in (example: cats and felines).
- There are multiple meanings for the same word (example: cookie the food and cookie the computer term).
- There are terms used by professionals and terms used by the general public, including slang or shortened terms (example: flu and influenza).

Here's how it works:

Database creators work with a defined list of subject headings, which is sometimes called a controlled vocabulary. That means the creators have defined which subject terms are acceptable and assigned only those words to the items it contains. The resulting list of terms is often referred to as a thesaurus. When done thoroughly, a thesaurus will not only list acceptable subject headings but will also indicate related terms, broader terms, and narrower terms for a concept.

Tip: Finding Useful Subject Headings

Try this strategy to find useful subject headings. Remember it by thinking of the letters KISS:

- **K**eyword-search your topic.
- **I**dentify a relevant item from the results.
- **S**elect subject terms relevant to your topic from that item's subject heading.
- **S**earch using these subject terms. Some resources will allow you to simply click on those subject terms to perform a search. Others may require you to copy/paste a subject term[s] into a search box and choose a subject field.

Exercises: Specialized Databases

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8.9: Web Search Engines

- Specialized web search engines – A tool that has a specialty, usually either a subject or format focus. It ignores the rest of the information on the web. Examples include Science.gov and TinEye Reverse Image Search.
- Metasearch engines – Tools that search multiple web search engines and gives you results from all of them. Some of these return the best results from the search engines they search. Examples include Dogpile and WebCrawler.
- Web directories – Tools created by editors or trained researchers who categorize or classify websites by subject. Directories are more selective than search engines. An example of this is Best of the Web.
- Lastly, there are search engines like DuckDuckGo or Startpage that keep your searches private such that you won't see ads and other types of information that pop up on other web pages, social media, etc…

When to Use Them

Web Search Engines and related web search tools are helpful for locating background information, news especially if it's recent, and public opinion. However, **scholarly information is often not available through a regular web search**. If you do find scholarly information through a web search engine, especially if you are off-campus, you may be asked for payment to access it. Don't buy it! You should be able to request the resource through your library's interlibrary loan (ILL) service.

Remember to follow the advice in Evaluating Sources to determine whether the information you locate online is suitable for your information needs.

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8.10: Tips for Common Search Tools

- **AND:** default (alternatively: term AND term)
- **OR:** term OR term
- **NOT:** term NOT term
- **Exact Phrase:** “exact phrase search”
- **Grouping:** term AND (term OR term)

Bing

- **AND:** default
- **OR:** term OR term
- **NOT:** term NOT term
- **Exact Phrase:** “exact phrase search”
- **Grouping:** Not available

Google

- **AND:** default
- **OR:** term OR term
- **NOT:** term -term (example: animal -cat)
- **Exact Phrase:** “exact phrase search”
- **Grouping:** term AND (term OR term)

WorldCat

- **AND:** term AND term
- **OR:** term OR term
- **NOT:** term NOT term
- **Exact Phrase:** “exact phrase search”
- **Grouping:** term AND (term OR term)

Startpage.com

- **AND:** term AND term
- **OR:** term OR term
- **NOT:** term NOT term
- **Exact Phrase:** “exact phrase search”
- **Grouping:** term AND (term OR term)

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CHAPTER OVERVIEW

9: Evaluating Sources

9.1: Thinking Critically About Sources
9.2: SIFT
9.3: Stop
9.4: Investigate the Source
9.5: Find and Confirm
9.6: Track down the Original Content
9.7: Evaluating Data as Sources

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9.1: Thinking Critically About Sources

This section teaches you how to identify relevant and credible sources that have most likely turned up when searching the Web and on your results pages of the library catalog and specialized databases. Remember you always want to look for relevant, credible sources that will meet the information needs of your research project.

In order to evaluate a source, you have to read and review the information keeping in mind two very important questions:

- Is this source relevant to my research question?
- Is this a credible source– a source my audience and I should be able to believe

Note: As you read an academic paper you will need to determine relevance before credibility because no matter how credible a source is if it's not relevant to your research question it's useless to you for this project. Reading research-centric papers can be challenging. Check out the tips in the video below.

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://minnstate.pressbooks.pub/ctar/?p=165#oembed-1

UBC iSchool. (2013). *How to read an academic paper*. https://youtu.be/SKxm2HF_-k0

> Don't forget that you also have to make sure your sources meet any other criteria that your professor may have given you for this assignment. For instance, professors often stipulate that some of your sources have to be scholarly sources or articles from a particular database. So make sure you have identified enough of the kind of sources your professor has requested.

Happily, you'll also get faster the more you do it.

Making Inferences: Good Enough for Your Purpose?

Sources should always be evaluated relative to your purpose-why you're looking for information. But because there often aren't clear-cut answers when you evaluate sources, **most of the time it is inferences, educated guesses from available clues,** that you have to make about whether to use information from particular sources.

Your information needs will dictate:

- What kind of information will help?
- How serious you consider the consequences of making a mistake by using information that turns out to be inaccurate. When the consequences aren't very serious, it's easier to decide if a source and its information are good enough for your purpose. Of course, there's a lot to be said for always having accurate information, regardless.
- How hard you're willing to work to get the credible, timely information that suits your purpose. (What you're learning here will make it easier.)

Thus, your standards for relevance and credibility may vary, depending on whether you need, say:

- Information about a personal health problem.
- An image you can use on a poster.
- Evidence to win a bet with a rival in the dorm.
- Dates and times a movie is showing locally.
- A game to have fun with.
- Evidence for your argument in a term paper.

For your research assignments or a health problem, the consequences may be great if you use information that is not relevant or not credible.

Evaluating Sources

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There are many approaches to evaluating your web and library resources. One that is quite useful is the SIFT process.

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9.2: SIFT



The process of evaluating your resources may seem overwhelming, but it doesn't have to be. Academic books and journals usually present themselves as scholarly and may be easily assessed for their quality of information. But others, especially websites, social media, newspapers, and magazines are not the same and sorting truth from fiction can be very challenging.

Our solution gives you a list of *things to do* when looking at a source, and hooks each of those things to one or two highly effective evaluation techniques. We call the "things to do" *moves* and there are four of them **S**top,**I**nvestigate, **F**ind, and **T**rack.

Licenses and Attributions: SIFT (The Four Moves) Authored by Mike Caulfield. Located at: https://hapgood.us/2019/06/19/sift-the-four-moves

License: CC BY 4.0 Adaptions: Revised text and one move.

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9.3: Stop



The first move is the simplest. **Stop** reminds you of two things.

First, when you find an article and start to read it — **Stop**. Ask yourself whether you know the journal, website, Facebook page, Twitter account, etc…where the information is posted. What is their reputation? Did you find the article in a library database (which is vetted)? Is the website reputable (e.g. American Heart Association vs. John Smith's Heart Page)? Can you trust the social media site? If you don't have that information, use the other moves to get a sense of what you're looking at. You can read it but don't share it until you know what it is.

Second, after you begin to use the other moves it can be easy to go down a rabbit hole, going off on tangents only distantly related to your original task. If you feel yourself getting overwhelmed in your fact-checking efforts, **Stop** and take a second to remember your purpose. If you just want to repost the article, read an interesting story, or get a high-level explanation of a concept, it's probably good enough to find out whether the publication is reputable. If you are doing deep research of your own, you may want to chase down individual claims on a webpage or in a journal or newspaper article and independently verify them.

Relevant sources are those that pertain to your research question. You'll be able to figure that out fairly quickly by reading or skimming particular parts of sources and maybe jotting down notes in little tables that help you keep track. We'll show you how below, including where to look in specific kinds of sources and what questions to ask yourself as you do.

Please keep in mind that both sorts of investigations are equally useful. Quick and shallow investigations will form most of what we do on the web. We get quicker with the simple stuff in part so we can spend more time on the stuff that matters to us. But in either case, stopping periodically and reevaluating your search strategy is key.

For instance, if your research question is about the life sciences, you probably should consider only the most recent sources relevant because the life sciences change so quickly. Anything but the most recent sources may be out of date. So aim for sources no more than 5 years old. An example discipline that calls for even newer sources is computer security.

But suppose your research question is about the Edo Period in Japan (1603-1868) or about Robert Falcon Scott, who explored the Antarctic from 1901-1913. In these cases, an item from 1918 might be just as useful as an item from 2020, although new information may have been found in the 100+ year gap. But something from 1899 about Antarctica or from 1597 about Japan would NOT be current enough for these research questions.

To be considered relevant to your research question, a source doesn't necessarily have to cover all of your main concepts, but finding sources that do is the ideal. Otherwise, you just have to make do with what you've got. Don't forget that each source will have to pass the currency test, too, if the currency is important to your research question. So it's wise to record your decisions about the sources' currency on your tables, too.

Example

EXAMPLE: Sources' Main Concepts and Currency

Research question: How does having **diverse** members in a **group** increase the **critical thinking** of the group?

	Currency Okay	*Group Diversity*	*Critical Thinking*
Source A title	X	X	
Source B title	X		
Source C title	X	X	X

The table in this hypothetical example indicates that both Sources A and C are relevant because each pertains to at least one main concept from the research question. Currency doesn't seem to matter much to our research question, so all three sources

> were marked current. But since the currency is all that Source B has to offer, it is not relevant for this project.

If you do make little tables for relevance, it's probably a good idea to hang on to them. You might find them helpful later in your research process.

Exercise: Evaluate the Currency of Sources

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9.4: Investigate the Source



The second move is to **Investigate**.

We'll go into this move more in the Find and Confirm section. But the idea here is that you want to know *what* you're reading *before* you read it. Now, you don't have to do a Pulitzer prize-winning investigation into a source before you engage with it. But if you're reading a piece on economics by a Nobel prize-winning economist, you should know that before you read it. Conversely, if you're watching a video on the many benefits of milk consumption that was put out by the dairy industry, you want to know that as well.

This doesn't mean the Nobel economist will always be right and that the dairy industry can't be trusted. But knowing the expertise and agenda of the source is crucial to your interpretation of what they say. Taking sixty seconds to figure out where media is from before reading will help you decide if it is worth your time, and if it is, help you to better understand its significance and trustworthiness.

Look for evidence of bias in your sources.

Clues About Bias

Examples

Review your articles, websites, social media, or other sources and look for evidence of bias. You will then need to determine if the bias interferes with the evidence.

Coverage	
Unbiased: This source's information is not drastically different from the coverage of the topic elsewhere. It doesn't seem as though the information has been shaped to fit.	**Biased:** Compared to what you've found in other sources covering the same topic, this content seems to omit a lot of information about the topic, emphasize vastly different aspects of it, and/or contain stereotypes or overly simplified information. Everything seems to fit the site's theme, even though you know there are various ways to look at the issue(s).
Citing Sources	
Unbiased: The source links to any earlier news or documents it refers to.	**Biased:** The source refers to earlier news or documents, but does not link to the news report or document itself.
Evidence	
Unbiased: Statements are supported by evidence and documentation.	**Biased:** There is little evidence and any documentation presented are just assertions that seem intended to persuade by themselves.
Vested Interest	
Unbiased: There is no overt evidence that the author will benefit from whichever way the topic is decided.	**Biased:** The author seems to have a "vested interest" in the topic. For instance, if the site asks for contributions, the author probably will benefit if contributions are made. Or, perhaps the author may get to continue his or her job if the topic that the website promotes gets decided in a particular way.
Imperative Language	
Unbiased: Statements are made without strong emphasis and without provocative twists. There aren't many exclamation points.	**Biased:** There are many strongly worded assertions. There are a lot of exclamation points.
Multiple Viewpoints	

Unbiased: Both pro and con viewpoints are provided about controversial issues.	**Biased:** Only one version of *the truth* is presented about controversial issues.

Making the Inference

Consider the clues. Then decide the extent that the bias you detected in the source is acceptable for your purpose. It might help to grade the extent that which this factor contributes to the site being suitable on a scale like this one:

- A – Very Acceptable
- B – Good, but could be better
- C – OK in a pinch
- D – Marginal
- F – Unacceptable

You'll want to make a note of the source's grade for author and/or publisher so you can combine it later with the grades you may give the other factors such as images, statistics, charts, tables, etc.

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9.5: Find and Confirm



Sometimes you don't care about the particular article or video that reaches you. You care about the *claim* the article is making. You want to know if it is true or false. You want to know if it represents a consensus viewpoint, or if it is the subject of much disagreement.

In this case, your best strategy may be to ignore the source that reached you and look for trusted reporting or analysis on the claim. If you get an article that says koalas have just been declared extinct from the Save the Koalas Foundation, your best bet might not be to investigate the source but to go out and find the *best* source you can on this topic, or, just as importantly, to scan multiple sources and see what the expert consensus seems to be. In these cases, we encourage you to "find other coverage" that better suits your needs — more trusted, more in-depth, or maybe just more varied. In lesson two we'll show you some techniques to do this sort of thing very quickly.

Do you have to agree with the consensus once you find it? Absolutely not! But understanding the context and history of a claim will help you better evaluate it and form a starting point for future investigation.

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9.6: Track down the Original Content



Much of what we find on the internet has been stripped of context. Maybe there's a video of a fight between two people with Person A as the aggressor. But what happened before that? What was clipped out of the video and what stayed in? Maybe there's a picture that seems real but the caption could be misleading. Maybe a claim is made about a new medical treatment based on a research finding — but you're not certain if the cited research paper really said that.

In these cases we'll have you trace the claim, quote, or media back to the source, so you can see it in its original context and get a sense if the version you saw was accurately presented.

It's about REcontextualizing

There's a theme that runs through all of these moves: they are about reconstructing the necessary context to read, view, or listen to your content effectively.

One piece of context is who the speaker or publisher is. What's their expertise? What's their agenda? What's their record of fairness or accuracy? So, we investigate the source. Just as when you hear a rumor you want to know who the source is before reacting when you encounter something on the web you need the same sort of context.

When it comes to claims, a key piece of context includes whether they are broadly accepted or rejected or something in-between. By scanning for other coverage, you can see what the expert consensus is on a claim, learn the history around it, and ultimately land on a better source.

Finally, when evidence is presented with a certain frame — whether a quote or a video, or a scientific finding — sometimes it helps to reconstruct the original context in which the photo was taken, or a research claim was made. It can look quite different in context!

In some cases, these techniques will show you claims are outright wrong, or that sources are legitimately "bad actors" who are trying to deceive you. But in most cases they do something just as important: they reestablish the context that the web so often strips away, allowing for more fruitful engagement with all digital information.

When Should You Stop?

Head and Eisenberg (2010) found that students often don't know when they should stop trying to find and evaluate sources for a particular project. How many sources are enough? It's hard to say, exactly. But you'll need enough to meet the information needs of your project and to meet the requirements your professor told you about.

Furthermore, you may change your mind as you continue working on your project. There is probably not a researcher alive who hasn't thought they had enough relevant and sources, only to change their mind later when they were actually writing the final product.

The Sources Checklist can help you decide what you have enough of and to keep track of needs yet to be met.

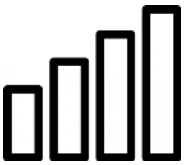
Sources Checklist

Have you found enough sources that are relevant and credible to:

- Meet the number and kind of sources your professor requires?
- Answer your research question?
- Convince your audience your answer is right or at least reasonable?
- Describe the situation surrounding your research question so your audience will know it's important?
- Report what others have said about your research question?

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9.7: Evaluating Data as Sources



Evaluating data for relevance and credibility is just as important as evaluating any other source. As with other information sources with data there is never a 100% perfect source. You'll have to make educated guesses (inferences) about whether the data are good enough for your purpose.

To evaluate data, you'll need to find out how the data were collected. If the data are in another source, such as a book; web page; or newspaper, magazine, or research journal article, evaluate that source in the usual way. If the book or newspaper, magazine, or web page got the data from somewhere else, do the same evaluation of the source from which the book or article got the data. The article, book, or web page should cite where the data came from. If it doesn't, then that is a black mark against using that data. The data in a research journal article are often the work of the authors of the article. But you'll want to be sure they provide information about how they collected the data.

If the data are in a research journal article, read the entire article, including the section called Methodology, which tells how the data were collected. Then determine the data's relevance to your research question by considering such questions as:

- Was the data collected recently enough?
- Is the data cross-sectional (based on information from people at any one time) or longitudinal (based on information from the same people over time)? If one is more appropriate for your research question than the other, is there information that you can still logically infer from this data?
- Were the types of people from whom the data was collected the same type of people your research question addresses? The more representative the study's sample is of the group your research question addresses, the more confident you can be in using the data to make your argument in your final product.
- Was the data analysis done at the right level for your research question? For instance, it may have been done at the individual, family, business, state, or zip code level. But if that doesn't relate to your research question, can you still logically make inferences that will help your argument? Here's an example: Imagine that your research question asks whether participation in high school sports in Minneapolis schools is positively associated with enrolling in college. But the data you are evaluating is analyzed at the state level. So you have data about the whole state of Minnesota's schools and not Minneapolis in particular. In this case, ask yourself whether there is still an inference you can make from the data.

To evaluate the credibility of the data in a research journal article you have already read, take the steps recommended in Evaluating Sources, plus consider these questions:

- Is the article in a peer-reviewed journal? Look at the journal's instructions for authors, which are often located on the journal's website, to see if it talks about peers reviewing the article and asking for changes (revisions) before publishing. If it is a peer-reviewed journal, consider that a plus for the article's credibility. Being peer-reviewed doesn't mean it's perfect; just more likely to be credible.
- Do the authors discuss causation or correlation? Be wary of claims of causation; it is very difficult to determine a causal effect. While research studies often find relationships (correlation) between various variables in the data, this does not equal causation. For instance, let's return to our example above: If the study of Minneapolis high school students' sports participation showed a positive correlation between sports participation and college enrollment, the researcher cannot say that participation caused college enrollment. If it were designed to show cause and effect, the study would not have resulted in a correlation. Instead, it would have had to have been designed as an experiment or quasi-experiment, used different statistical analyses, and would have supported or not supported its hypotheses.

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CHAPTER OVERVIEW

10: Ethical Use and Citing Sources

10.1: Ethical Use and Citing Sources
10.2: Why Cite Sources?
10.3: When to Quote, Paraphrase, or Summarize
10.4: Challenges in Citing Sources
10.5: Citation and Citation Styles
10.6: Steps for Citing
10.7: Citation Management
10.8: When to Cite

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10.1: Ethical Use and Citing Sources

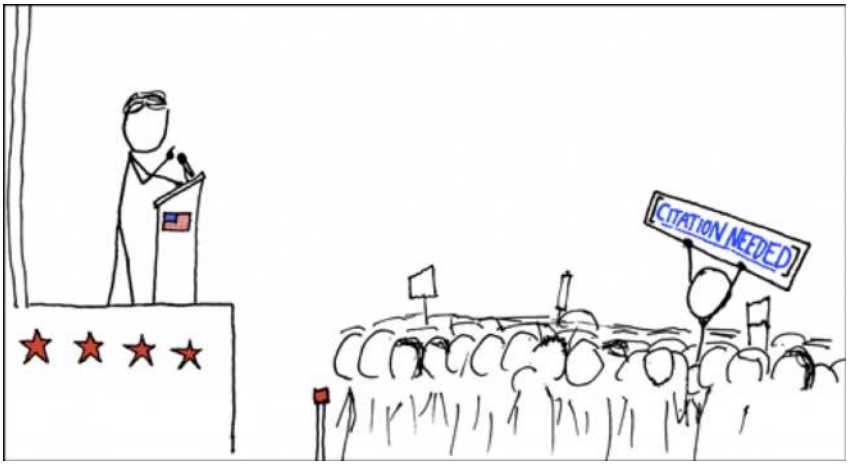
It's helpful to understand why to cite your sources.

You likely know that research projects always need a list of references sometimes called a bibliography. But have you ever wondered why?

There are some big picture reasons that don't often get articulated that might help you get better at meeting the citation needs of research projects. It's helpful to understand both the theory behind citing, as well as the mechanics of it, to really become a pro.

> This section introduces the concept of citing sources, so you can begin your search for sources with it in mind. See Steps for Citing for examples and the steps for citing appropriately.

In everyday life, we often have conversations where we share new insights with each other. Sometimes these are insights we've developed on our own through the course of our own everyday experiences, thinking, and reflection. Sometimes these insights come after talking to other people and learning from additional perspectives. When we relate the new things we have learned to our family, friends, or co-workers, we may or may not fill them in on how these thoughts came to us.



In everyday conversation and political speeches, evidence for arguments is often not provided. (Image source: XKDC)

Academic research leads us to the insight that comes from gaining perspectives and understandings from other people through what we read, watch, and hear. In academic work, we must tell our readers who and what led us to our conclusions. Documenting our research is important because people rely on academic research to be authoritative, so it is essential for academic conversations to be as clear as possible. Documentation for clarity is a shared and respected practice, and it represents a core value of the academy called "academic integrity." It is a way to distinguish academic conversations from everyday conversations.

It is hard to talk about citation practices without considering some related concepts. Here are some definitions of those concepts that are often mentioned in assignments when citing sources is required.

What Is Academic Integrity?

Different universities have different definitions. Ohio State University uses this definition:

Academic integrity is a commitment, even in the face of adversity, to five fundamental values: honesty, trust, fairness, respect, and responsibility. From these values flow principles of behavior that enable academic communities to translate ideals into action.

Please take a few moments to read the St. Cloud State University Academic Integrity Policy.

In other words, you must take full responsibility for your work, acknowledge your own efforts, and acknowledge the contributions of others' efforts. Working with integrity requires accurately representing what you contributed, as well as acknowledging how others have influenced your work. When you are a student, an accurate representation of your knowledge is important because it will allow both you and your professors to know the extent to which you have developed as a scholar. Part of that development is evidenced by how you apply the rules for acknowledging the work of others.

What Is Academic Misconduct?

As you might imagine, academic misconduct is when you do not use integrity in your academic work. Academic misconduct includes many different unacceptable behaviors, but the one most relevant to what we are discussing here is submitting plagiarized work:

Submitting the published or unpublished work of another person as one's own, including paraphrases or direct quotations, without full and clear acknowledgment such as adequate footnotes, quotations, and other reference forms

To see the full definition of plagiarism, refer to the definitions sections of the St. Cloud State University Academic Integrity Policy. The SCSU Student Code of Conduct and the University of West Florida Student Code of Academic Conduct have additional information about academic misconduct.

Plagiarism can be intentional (knowingly using someone else's work and presenting it as your own) or unintentional (inaccurately or inadequately citing ideas and words from a source). It may be impossible for your professor to determine whether plagiarized work was intentional or unintentional. But in either case, plagiarism puts both you and your professor in a compromising position.

While academic integrity calls for work resulting from your own effort, scholarship requires that you learn from others. So in the world of academic scholarship, you are actually expected to learn new things from others AND come to new insights on your own. There is an implicit understanding that as a student you will be both using other's knowledge as well as your own insights to create new

scholarship. To do this in a way that meets academic integrity standards you must acknowledge the part of your work that develops from others' efforts. You do this by citing the work of others. You plagiarize when you fail to acknowledge the work of others and do not follow appropriate citation guidelines.

What Is Citing?

Citing or citation is a practice of documenting specific influences on your academic work. See Steps for Citing for details.

In other words, you must cite all the sources you quote directly, paraphrase, or summarize as you:

- Answer your research question
- Convince your audience
- Describe the situation around your research question and why the question is important
- Report what others have said about your question

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10.2: Why Cite Sources?

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10.3: When to Quote, Paraphrase, or Summarize

If your final product is a research paper, essay, or presentation much of your writing will be devoted to:

- Reporting what others have said about your research question.
- Describing the situation surrounding your research question for your audience and explaining why it's important.
- Convincing your audience that your answer is correct or, at least, the most reasonable answer. Giving them evidence.

To accomplish this you will often paraphrase, summarize, or use direct quotes when appropriate. But how should you choose which technique to use when?

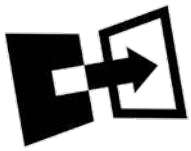
Tip: Citing Sources

Remember to cite your sources when quoting, paraphrasing, and summarizing. See How to Cite Sources for details.



Choose a direct quote

- when what you're quoting is the text you're analyzing
- when a direct quote is more accurate and concise than a summary or paraphrase would be and conciseness matters
- when the author is a particular authority whose exact words would lend credence to your argument
- when the author has used particularly effective language that is just too good to pass up.



Choose to paraphrase or summarize rather than to quote directly when the **meaning** is more important than the particular language the author used and you don't need to use the author's preeminent authority to bolster your argument at the moment.

Choose to paraphrase instead of summarizing when you need **details and specificity**. Paraphrasing lets you emphasize the ideas in source materials that are most relevant to your research project instead of the exact language the author used. It also lets you simplify complex material, sometimes rewording to use language that is more understandable to your reader.



Choose to summarize instead of paraphrasing when you need to provide a brief overview of a larger text. Summaries let you condense the resource material to draw out particular points, omit unrelated or unimportant points, and simplify convey how the author's message.

For more tips on paraphrasing and summarizing, including an example of how to do one of each we suggest visiting the Excelsior Owl Writing Lab. While you're at this site, you'll notice other helpful information available about the writing process.

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10.4: Challenges in Citing Sources

Running Out of Time

When you are a student taking many classes simultaneously and facing many deadlines, it may be hard to devote the time needed to do good scholarship and accurately representing the sources you have used. Research takes time. The sooner you can start and the more time you can devote to it, the better your work will be. From the beginning, be sure to include in your notes where you found the information you could quote, paraphrase, and summarize in your final product.

Having to Use Different Styles

Different disciplines require that your citations be in different styles: which publication information is included and in what order. So your citations for different courses could look different, particularly for courses outside your major.

Not Really Understanding the Material You're Using

If you are working in a new field or subject area, you might have difficulty understanding the information from other scholars, thus making it difficult to know how to paraphrase or summarize that work properly.

Shifting Cultural Expectations of Citation

Because of new technologies that make finding, using, and sharing information easier, many of our cultural expectations around how to do that are changing as well. For example, blog posts often "reference" other articles or works by simply linking to them. It makes it easy for the reader to see where the author's ideas have come from and to view the source very quickly. But in these more informal writings, blog authors do not have a list of citations. The links do the work for them. This is a great strategy for online digital mediums, but this method fails over time when links break and there are no hints (like an author, title, and date) to know how else to find the reference, which might have moved.

This example of cultural change of expectations in the non-academic world might make it seem that there has been a change in academic scholarship as well, or might make people new to academic scholarship even less familiar with citation. But in fact, the expectations around citing sources in academic research remain formal.

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10.5: Citation and Citation Styles

Citing sources is an academic convention for keeping track of which sources influenced your own thinking and research. See Ethical Use and Citing Sources for many good reasons why you should cite others' work.

Most citations require two parts:

- The full bibliographic citation on the Bibliography, References or Works Cited page of your final product.
- An indication within your text that tells your reader where you have used something that needs a citation. In-text citations usually include the author and publication date and maybe the page number from which you are quoting.

With your in-text citation, your reader will be able to tell which full bibliographic citation you are referring to by paying attention to the author's name and publication date.

Let's look at an example.

Example: Citations in Academic Writing

Here's a citation in APA style in the text of an academic paper:

Studies have shown that compared to passive learning, which occurs when students observe a lecture, students will learn more and will retain that learning longer if more active methods of teaching and learning are used (Bonwell & Eison 1991; Fink 2003).

The information in parentheses coordinates with a list of full citations at the end of the paper. At the end of the paper, these bibliographic entries appear in a reference list:

> Bonwell, C.C., & Eison, J. A. (1991). *Active learning: Creating excitement in the classroom* (Report No. 1). ASHE-ERIC Higher Education. https://files.eric.ed.gov/fulltext/ED336049.pdf
>
> Fink, L. D. (2003). *Creating significant learning experiences.* Wiley.

Citation Styles

Style guides set the specific rules for how to create both in-text citations and their full bibliographic citations. There are over a dozen kinds of citation styles. While each style requires much of the same publication information to be included in a citation, the styles differ from each other in formatting details such as capitalization, punctuation, the order of publication information, and whether the author's name is given in full or abbreviated.

Example: Differences in Citation Styles

Below are bibliographic citations for the same article in four common styles. Notice they contain information about who the author is, article title, journal title, publication year, and information about volume, issue, and pages. Notice the small difference in punctuation, order of the elements, and formatting that **do make a difference**.

APA:

> Rosenhan, D. L. (1973). On being sane in insane places. *Science*, *179*(4070), 250-258. doi.org/10.1126/science.179.4070.250

Chicago:

> Rosenhan, D. L. 1973. "On Being Sane in Insane Places." *Science* 179, no. 4070: 250-258. doi.org/10.1126/science.179.4070.250.

MLA:

> Rosenhan, D. L. "On Being Sane in Insane Places." *Science*, vol. 179, no. 4070: 250-258, 1973, doi.org/10.1126/science.179.4070.250.

AMA:

> Rosenhan, DL. On being sane in insane places. *Science*.1973, 179(4070):250-258. doi:10.1126/science.179.4070.250.

Compare citation elements including punctuation and spacing to see how each style handles each element.

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10.6: Steps for Citing

To write a proper citation we recommend following these steps, which will help you maintain accuracy and clarity in acknowledging sources.

Step 1: Determine Your Citation Style

Find out the name of the citation style you must use from your instructor, the directions for an assignment, or what you know your audience or publisher expects. Then search for your style at the Excelsior Online Writing Lab (OWL) or use Google or Bing to find your style's handbook and then purchase it or ask for it at a library.

Step 2: Create In-Text Citations

Find and read your style's rules about in-text citations, which are usually very thorough. Luckily, there are usually examples provided that make it a lot easier to learn the rules.

For instance, your style guide may have different rules for when you are citing:

- Quotations rather than summaries rather than paraphrases
- Long, as opposed to short, quotations.
- Sources with one or multiple authors.
- Books, journal articles, interviews, emails, or electronic sources.

Step 3: Determine the Kind of Source

After creating your in-text citation, now begin creating the full bibliographic citation that will appear on the References or Bibliography page by deciding what kind of source you have to cite (book, film, journal article, webpage, etc.).

Example: Using a Style Guide to Create an In-Text Citation

Imagine that you're using APA style and have the APA style guide rules for in-text citations open in Excelsior OWL. In your geography paper, you want to quote from the book *The Experience of Nature* written by Rachel Kaplan and Stephen Kaplan and published in 1989. You want to quote a passage from page 38.

Here's what you want to quote:

"The way space is organized provides information about what one might want to do in that space. A relatively brief glance at a scene communicates whether there is room to roam, whether one's path is clear or blocked."

1. Skim the headings in the style guide to remind yourself of the topics covered by its rules. Since it has rules about the length of quotations, you count the number of words in what you want to quote and find that your quote has 38, which is within the range for short quotations (less than 40), according to the APA style guide. According to the rule for short quotations, you see that you're supposed to introduce the quote by attributing the quote to the author or authors (last name only) and adding the publication date in parentheses. You write:

   According to the Kaplans (1989), "The way space is organized provides information about what one might want to do in that space. A relatively brief glance at a scene communicates whether there is room to roam, whether one's path is clear or blocked."

2. Then you notice that the example in the style guide includes the page number on which you found the quotation. It appears at the end of the quote (in parentheses and outside the quote marks but before the period ending the quotation). So you add that:

   According to the Kaplans (1989), "The way space is organized provides information about what one might want to do in that space. A relatively brief glance at a scene communicates whether there is room to roam, whether one's path is clear or blocked" **(p. 38)**.

3. You're feeling pretty good, but then you realize that you have overlooked the rule about having multiple authors. You have two and their last names are both Kaplan. So you change your sentence to:

   According to **Kaplan and Kaplan** (1989), "The way space is organized provides information about what one might want to do in that space. A relatively brief glance at a scene communicates whether there is room to roam, whether one's path is clear or

blocked" (p.38).

So you have your first in-text citation for your final product:

According to Kaplan and Kaplan (1989), "The way space is organized provides information about what one might want to do in that space. A relatively brief glance at a scene communicates whether there is room to roam, whether one's path is clear or blocked" (p.38).

Step 4: Study Your Style's Rules for Bibliographic Citations

Next, you'll need a full bibliographic citation for the same source. This citation will appear on the References page or Bibliography page or Works Cited page. APA style, which we're using here, requires a page called References. Bibliographic citations usually contain more publication facts than you used for your in-text citation, and the formatting for all of them is very specific.

- Rules vary for sources, depending, for instance, on whether they are books, journal articles, or online sources.
- Sometimes lines of the citation must be indented.
- Authors' names usually appear with the last name first.
- Authors' first names of authors may be initials instead.
- Names of sources may or may not have to be in full.
- Names of some kinds of sources may have to be italicized.
- Names of some sources may have to be in quotes.
- Dates of publication appear in different places, depending on the style.
- Some styles require Digital Object Identifiers (DOIs) in the citations for online sources.

Step 5: Identify Citation Elements

Figure out which bibliographic citation rules apply to the source you've just created an in-text citation for. Then apply them to create your first bibliographic citation.

Example:Using a Style Guide to Create a Bibliographic Citation

Imagine that you're using APA style and have the APA style guide rules for bibliographic citations open in Excelsior OWL.

Your citation will be for the book called The Experience of Nature, written by Rachel Kaplan and Stephen Kaplan and published in 1989.

1. You start by trying to apply OWL's basic rules of APA style, which tell you your citation will start with the last name of your author followed by their first initial, and that the second line of the citation will be indented. So you write: **Kaplan, R. and Kaplan, S**. and remind yourself to indent the second line when you get there.
2. Since you have two authors, you look for a rule regarding that situation, which requires a comma between the authors and an ampersand between the names. So you write: Kaplan, R., **&** Kaplan, S.
3. Because you know your source is a book, you look for style guide rules and examples about books. For instance, the rules for APA style say that the publication date goes in parentheses, followed by a period after the last author's name. And that the title of the book is italicized. You apply the rules and examples and write the publication information you know about your source: Kaplan, R., & Kaplan, S. **(1989).** ***The Experience of Nature*****.**
4. You look at the examples and learn in APA, the first word of a book title and any proper nouns are capitalized. You write: Kaplan, R., & Kaplan, S. (1989). ***The experience of nature*****.**
5. Next, you look at the rules and examples of book citations and notice that they show the publisher of the book. So you find that information about your source (in a book, usually on the title page or its back) and write: Kaplan, R., & Kaplan, S. (1989). The Experience of Nature. **Cambridge University Press.**

Congratulations, especially about remembering to indent that line! You have created the first bibliographic citation for your final product.

Kaplan, R., & Kaplan, S. (1989). The Experience of Nature. **Cambridge University Press.**

Exercise: APA citations

Review these APA citations and identify the type of resource in the citation.

An interactive H5P element has been excluded from this version of the text. You can view it online here: https://minnstate.pressbooks.pub/ctar/?p=196#h5p-27

Step 6: Repeat the steps for creating an in-text citation and a bibliographic citation for each of your sources.

Create your bibliographic citation by arranging publication information to match the example you chose in Step 4. Pay particular attention to what is and is not capitalized and to what punctuation and spaces separate each part that the example illustrates.

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10.7: Citation Management

- To save time: it takes citation generation software only a few seconds to create a citation.
- To easily convert citations from one style to another.
- To have a centralized source list that is not attached to a specific project, which allows you to reuse references and their citations in various projects.

Things to **watch out** for with citation generators:

- Citation generation software is only as good as the information entered into it. In other words, if you provide incorrect information or do not include some information, then your citation will be incorrect.
- Most citation generation software can create citations by searching for the information online. Sometimes software can pull the information from the wrong edition of a source, for example, or specific formatting (such as italics) might be lost. Or perhaps the generator didn't use the latest version of the style guide.
- **Always review the citations you create with this software.**

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10.8: When to Cite

Cite when you are citing something that is highly debatable. For example, if you want to claim that the PATRIOT Act has been an important tool for national security, you should be prepared to give examples of how it has helped and how experts have claimed that it has helped. Many U.S. citizens concerned that it violates privacy rights won't agree with you, and they will be able to find commentary that the Patriot Act has been more harmful to the nation than helpful. You need to be prepared to show such skeptics that you have experts on your side, too.

When Not to Cite?

Don't cite when what you are saying is your own insight. As you learned in The Purpose of Academic Argument, research involves forming opinions and insights around what you learn. You may be citing several sources that have helped you learn, but at some point, you must integrate your own opinion, conclusion, or insight into the work. The fact that you are *not* citing it helps the reader understand that this portion of the work is your unique contribution developed through your own research efforts.

Don't cite when you are stating common knowledge. What is common knowledge is sometimes difficult to discern. In general, quick facts like historical dates or events are not cited because they are common knowledge.

Examples of information that would not need to be cited include:

- The Declaration of Independence was signed in 1776.
- Barack Obama became the 44th president of the United States in January, 2009.

Some quick facts, such as statistics, are trickier. For example, the number of gun-related deaths per year probably should be cited, because there are a lot of ways this number could be determined (does the number include murder only, or suicides and accidents, as well?) and there might be different numbers provided by different organizations, each with an agenda about gun laws.

A guideline that can help with deciding whether or not to cite facts is to determine whether the same data is repeated in multiple sources. If it is not, it is best to cite.

The other thing that makes this determination difficult might be that what seems new and insightful to you might be common knowledge to an expert in the field. You have to use your best judgment, and probably err on the side of over-citing, as you are learning to do academic research. You can seek the advice of your instructor, a writing tutor, or a librarian. Knowing what is and is not common knowledge is a practiced skill that gets easier with time and with your own increased knowledge.



Wikipedia, while good for early research and background information, shouldn't be cited as a source because it's already a summary.

Tip: Why You Can't Cite Wikipedia

You've likely been told at some point that you can't cite Wikipedia, or any encyclopedia for that matter, in your scholarly work.

The reason is that such entries are meant to *prepare* you to do research, not be evidence of your having done it. Wikipedia entries, which are tertiary sources, are already a summary of what is known about the topic. Someone else has already done the labor of synthesizing lots of information into a concise and quick way of learning about the topic.

So while Wikipedia is a great shortcut for getting context, background, and a quick lesson on topics that might not be familiar to you, don't quote, paraphrase, or summarize from it. Just use it to educate yourself.

Exercise: To Cite or Not to Cite

Review the following statements and determine if you need a citation for the statement or not.

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CHAPTER OVERVIEW

11: Copyright Basics

11.1: What Is Copyright?
11.2: What Copyright Covers
11.3: Copyright Rights and Exceptions
11.4: Respecting Copyright
11.5: Creative Commons
11.6: Public Domain and Term of Copyright
11.7: What Is Fair Use?

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11.1: What Is Copyright?

Copyright is the law. While digital technology has made some aspects of copyright more complex, knowing the basics can help you to use material legally and protect your own creative works.

You create copyrighted works regularly. When you write an original email or paper, record a song or video, or take a photograph you have created a work that is protected by copyright. It is important to know how to manage your rights as a creator.

Every day you work with copyrighted materials created by other people. Whenever you read a book, download a song, stream a video, or play a video game, you are potentially dealing with copyrighted materials. It is important to understand what is and is not covered by copyright law and the ways you may use these works under the law.

Copyright Law

U.S. Copyright Law has its origin in the U.S. Constitution:

The Congress shall have the power … to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.

– U.S. Constitution Article 1, Section 8



The U.S. Congress has the power to create laws that govern copyright. (Image Source: National Archives and Records Administration. Public Domain.)

The purpose of copyright is to encourage the creation and sharing of creative works. Copyright gives creators an incentive to produce and share new works by granting them exclusive rights to their work for a limited time. This provides an opportunity for a creator to benefit from his or her work.

In the United States, Congress determines the limits of this monopoly, including the length of time that copyright coverage lasts. These limits can (and have) changed over time. Copyright laws differ from country to country.

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11.2: What Copyright Covers

Copyright covers original work that is fixed in a tangible medium of expression.

Several types of works can be protected including:

- Literary works
- Musical works, including any accompanying words
- Dramatic works, including any accompanying music
- Pantomimes and choreography
- Pictorial, graphic, and sculptural works
- Motion pictures and other audiovisual works
- Sound recordings
- Architectural works

What Isn't Covered by Copyright?

Not all works are covered by copyright. Those not covered include:

Works already in the public domain

- *Moby Dick*
- Shakespeare's plays
- Beethoven's works

Works not fixed in a tangible medium

- A song in your head, but not recorded or written down

Ideas

- Boy meets girl, they fall in love and live happily ever after
- Hero protagonist saves the world with the help of wacky sidekick

Facts

- 1+1=2
- King George IV died in 1830
- Copenhagen is the capital of Denmark

Works of the U.S. government produced by government employees

- Federal government reports
- Acts/Bills of Congress
- The White House website

Copyright in Cases of a Work Made for Hire

If you create something as part of your job duties, it is likely a work made for hire. In these cases, your employer is considered the author and rights holder of a work made for hire rather than the employee. Read the United States Copyright Office's Works Made for Hire circular for a more nuanced discussion.

Exercises: Copyrightable?

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11.3: Copyright Rights and Exceptions

✔ ✔ Author's Bundle of Rights

To Reproduce

- Example: Making physical and digital copies.

To Prepare Derivative Works

- Example: Creating foreign language translations, movie adaptation of a book, etc.

To Distribute

- Example: Sharing over Peer-to-Peer networks or posting online, as well as distributing physical copies.

To Perform Publicly

- Example: Performing a play, showing a movie, or reading aloud from a book to an audience outside of your normal circle of family or friends.
- Example: Playing recorded music in clubs, restaurants, stores, on the radio, etc.

To Display Publicly

- Example: Displaying in a gallery, putting posters on a noticeboard, etc.

To Perform Publicly a sound recording by means of a digital audio transmission

- Example: Streaming recording music online.

When Does Copyright Apply?

Under current U.S. law, copyright applies as soon as an original work is fixed in a tangible medium of expression. This means that when you save a file, take a photograph, record a song, or paint a picture your work has copyright protection.

As the creator, provided that the work is not a work made for hire, you are the owner of the copyright on your work. You do not have to register the work with the U.S. Copyright Office, publish it, or put a copyright notice on it.

If you wish to give away, sell, or license any or all of the copyright on your work, you have the right to do so.

If you give away or sell your exclusive copyright to someone else, you no longer have the rights mentioned above and need to treat the work the same as any other copyrighted work created by someone else.

See Public Domain and Term of Copyright later in this section for details about the duration of copyright.

Exceptions to Copyright

U.S. Copyright Law includes exceptions that limit the rights of the copyright holder. These exceptions allow for certain uses of copyrighted material without seeking permission. Congress created these exceptions in order to balance the rights of creators and users and to enable some socially beneficial uses of copyrighted works.

Some of these exceptions are explained below.

Fair Use

Fair Use (Sec. 107) allows for various uses of copyrighted works. This is the most flexible of the exceptions in the copyright law and can apply in a wide variety of situations.

To learn more check out our section on Fair Use.

Reproduction for Libraries

Section 108 of the Copyright Act allows libraries and archives to make copies of copyrighted works under very specific conditions. For example, a patron can ask the library to make a copy of a journal article or portion of a book in the library's collection as long as it is for the patron's personal study.

First Sale Doctrine

The first sale doctrine (Sec. 109) allows you to distribute a legally acquired physical copy of a copyrighted work. This allows libraries to lend books and individuals to lend or sell used books, movies, or CDs.

Classroom Display or Performance

Under Section 110(1) it is okay to display or perform copyrighted works in a face-to-face classroom setting at a non-profit educational institution. This allows a teacher to show a video or students to create and display multimedia projects in class. Section 110(2) allows for the display or performance of copyrighted works for distance learning (e.g. on a course management system), but you must fulfill many specific requirements in order to qualify for this exception.

Exercises: Rights & Exceptions

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11.4: Respecting Copyright

Risks of Infringing Copyright

If you violate one or more of the exclusive rights of a copyright owner, the copyright owner can bring a claim against you for copyright infringement. There are a few different penalties that are possible if you are accused of copyright infringement:

- Under specific circumstances, U.S. copyright law allows criminal prosecution in cases of willful infringement.
- If the infringing work is online, such as a video posted to YouTube, the copyright owner can request the material be taken down. This may be done through a Cease-and-Desist Letter or DMCA Takedown Notice. The material will be taken down and you will be notified of the accusation of infringement. If you believe that your use of the material is legal, you can respond with your explanation of why. Some Internet Service Providers will cut off your access if you receive too many takedown notices.
- The copyright owner can sue you. They could ask for an injunction to stop your use of their work. They can also ask for either actual damages or statutory damages. Actual damages are the actual amount of money the copyright owner lost due to your activity plus any profit you made from using the work. These can be hard to determine, so the law alternatively allows for statutory damages under certain conditions. These are a set range, from $750 to $30,000 per infringed work, that the judge or jury awards to the rights holder if you are found guilty. These damages can increase to $150,000 per infringed work if your use is determined to be a “willful” infringement.
- Some rights holders may offer the option of settling out of court. This agreed settlement may be cheaper than the cost of a trial for the rights holder and you.

The accusation of infringement is not the same as a conviction. You always have the right to defend your use.

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11.5: Creative Commons



Creative Commons allows a creator to grant licenses to their work without requiring they grant individual permission.

Movie: What is Creative Commons?

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What is Creative Commons?

Finding Creative Commons Works

Many websites include CC-licensed works. You can search them to find materials that you can freely use in creating your own work provided that you comply with the terms of the license. You can also upload your own CC-licensed works to share with others.

Explore:

- Flickr
- YouTube
- The Noun Project
- Wikipedia's Wikimedia Commons

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11.6: Public Domain and Term of Copyright

The public domain includes works where copyright has expired and works that were never protected by copyright.

Finding Works in the Public Domain

The public domain provides a great source of materials that you can use for any purpose, without requesting permission or paying a fee. The internet is full of useful sites that can help you find Public Domain materials, including:

- HathiTrust
- Internet Archive
- Project Gutenberg

When Does a Work Enter The Public Domain?

Due to U.S. participation in international treaties and changes to U.S. copyright law, Congress has placed a limitation on the length of copyright so that works can eventually become part of the public domain and be re-used and built upon by others. Over the years the term of copyright has changed significantly.

The current term is:

- 70 years after the death of the author. If there are multiple authors, then it is 70 years after the death of the last author.
- If corporate, or anonymous, authorship the term is either 95 years from the date of first publication, or 120 years from the date of creation, whichever comes first.

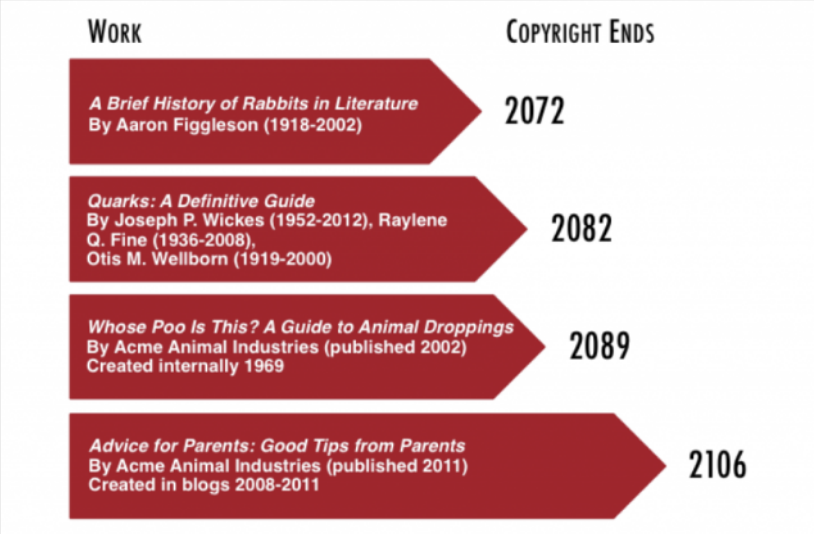
Term of Copyright

Since the duration of copyright has changed throughout the years, it can be difficult to determine when copyright expires for a particular work. Below are links to a couple of online sources to help you determine when a particular work enters the public domain.

- Copyright Term and the Public Domain in the United States
- ALA Copyright Genie

✔ ✔ **Examples:** Copyright Duration

The duration of copyright depends on when the work was created and whether it was the work of a single author, multiple authors, or an anonymous or corporate author.



Copyright terms are based on factors such as the date of death of the author and on what laws were in effect when a work was created.

- *A Brief History of Rabbits in Literature* by Aaron Figgleson (1918-2002): Copyright ends 2072 – 70 years after the author's death
- *Quarks: A Definitive Guide* by Joseph P. Wickes (1952-2012, Raylene O. Fine (1936-2008), and Otis M. Wellborn (1919-2000): Copyright ends 2082 – 70 years after the death of the last author to die
- *Whose Poo Is This? A Guide to Animal Droppings* by Acme Animal Industries (published 2002) – Created internally 1969: Copyright ends 2089 – 120 years from the date of creation

- *Advice for Parents: Good Tips from Parents by* Acme Animal Industries (published 2011) – Created in blogs 2008-2011: Copyright ends 2106 – 95 years from the date of first publication

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11.7: What Is Fair Use?

Are you incorporating any materials in your research final product that were created by someone else, such as images or text from other works? These materials could be protected by copyright. For example, content you find online, text, books, movies, songs, email, images, and videos are most likely copyrighted. Fortunately, U.S. copyright law includes an exception that allows you to use copyrighted work in your assignments for class.

However, if you would like to share your research product outside of the classroom such as on a webpage or blog or in your portfolio, you will need permission from the copyright owner(s) unless your use is covered under another statutory exception. Fair use is one such exception, and it can apply to a wide variety of uses.

Note: Fair Use and Educational Use

Fair Use plays an important role in education. Although educational use receives several protections in copyright law, not all educational use is automatically fair use. It's important to know that there are limits to how you can use others' creative works even as a student or teacher in the classroom.

In this section, you will learn about fair use and strategies to help determine whether or not a proposed use of someone else's copyrighted works falls under the fair use exception. Understanding how to properly perform a fair use analysis and assert your fair use rights can help you to build upon others' works with confidence.

Fair Use and Copyright – A Balance

Copyright in the U.S. is intended to promote the creation of new works by providing an incentive for creators. However, recognizing that new works often build on or incorporate existing works, the law strikes a balance between the rights of creators and the rights of users via exceptions to the exclusive rights of the creator.

The fair use exception is detailed in Section 107 of the U.S. Copyright Act. Unlike other copyright exceptions, fair use is flexible and can apply to a broad array of uses. It is designed to be adaptable to new uses and technologies so that Congress doesn't have to create new exceptions before a new technology can be utilized.

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