11.3: Persuasive Reasoning and Fallacies

Learning Objectives

1. Define inductive, deductive, and causal reasoning.
2. Evaluate the quality of inductive, deductive, and causal reasoning.
3. Identify common fallacies of reasoning.

Persuasive speakers should be concerned with what strengthens and weakens an argument. Earlier we discussed the process of building an argument with claims and evidence and how warrants are the underlying justifications that connect the two. We also discussed the importance of evaluating the strength of a warrant, because strong warrants are usually more persuasive. Knowing different types of reasoning can help you put claims and evidence together in persuasive ways and help you evaluate the quality of arguments that you encounter. Further, being able to identify common fallacies of reasoning can help you be a more critical consumer of persuasive messages.

Reasoning

Reasoning refers to the process of making sense of things around us. In order to understand our experiences, draw conclusions from information, and present new ideas, we must use reasoning. We often reason without being aware of it, but becoming more aware of how we think can empower us to be better producers and consumers of communicative messages. The three types of reasoning we will explore are inductive, deductive, and causal.

Inductive Reasoning

Inductive reasoning reaches conclusions through the citation of examples and is the most frequently used form of logical
reasoning (Walter, 1966). While introductory speakers are initially attracted to inductive reasoning because it seems easy, it can be difficult to employ well. Inductive reasoning, unlike deductive reasoning, doesn’t result in true or false conclusions. Instead, since conclusions are generalized based on observations or examples, conclusions are “more likely” or “less likely.” Despite the fact that this type of reasoning isn’t definitive, it can still be valid and persuasive.

Some arguments based on inductive reasoning will be more cogent, or convincing and relevant, than others. For example, inductive reasoning can be weak when claims are made too generally. An argument that fraternities should be abolished from campus because they contribute to underage drinking and do not uphold high academic standards could be countered by providing examples of fraternities that sponsor alcohol education programming for the campus and have members that have excelled academically (Walter, 1966). In this case, one overly general claim is countered by another general claim, and both of them have some merit. It would be more effective to present a series of facts and reasons and then share the conclusion or generalization that you have reached from them.

You can see inductive reasoning used in the following speech excerpt from President George W. Bush’s address to the nation on the evening of September 11, 2001. Notice how he lists a series of events from the day, which builds to his conclusion that the terrorist attacks failed in their attempt to shake the foundation of America.

Today, our fellow citizens, our way of life, our very freedom came under attack in a series of deliberate and deadly terrorist acts. The victims were in airplanes or in their offices: secretaries, business men and women, military and federal workers, moms and dads, friends and neighbors. Thousands of lives were suddenly ended by evil, despicable acts of terror. The pictures of airplanes flying into buildings, fires burning, huge—huge structures collapsing have filled us with disbelief, terrible sadness, and a quiet, unyielding anger. These acts of mass murder were intended to frighten our nation into chaos and retreat. But they have failed. Our country is strong. A great people has been moved to defend a great nation. Terrorist attacks can shake the foundations of our biggest buildings, but they cannot touch the foundation of America.
Using inductive reasoning, speakers reach conclusions through the citation of examples.

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If a speaker is able to provide examples that are concrete, proxemic, and relevant to the audience, as Bush did in this example, audience members are prompted to think of additional examples that connect to their own lives. Inductive reasoning can be useful when an audience disagrees with your proposition. As you present logically connected examples as evidence that build to a conclusion, the audience may be persuaded by your evidence before they realize that the coming conclusion will counter what they previously thought. This also sets up cognitive dissonance, which is a persuasive strategy we will discuss later.

Reasoning by analogy is a type of inductive reasoning that argues that what is true in one set of circumstances will be true in another (Walter, 1966). Reasoning by analogy has been criticized and questioned by logicians, since two sets of circumstances are never exactly the same. While this is true, our goal when using reasoning by analogy in persuasive speaking is not to create absolutely certain conclusions but to cite cases and supporting evidence that can influence an audience. For example, let's say you are trying to persuade a university to adopt an alcohol education program by citing...
the program’s success at other institutions. Since two universities are never exactly the same, the argument can’t be airtight. To better support this argument, you could first show that the program was actually successful using various types of supporting material such as statistics from campus offices and testimony from students and staff. Second, you could show how the cases relate by highlighting similarities in the campus setting, culture, demographics, and previous mission. Since you can’t argue that the schools are similar in all ways, choose to highlight significant similarities. Also, it’s better to acknowledge significant limitations of the analogy and provide additional supporting material to address them than it is to ignore or hide such limitations.

So how do we evaluate inductive reasoning? When inductive reasoning is used to test scientific arguments, there is rigorous testing and high standards that must be met for a conclusion to be considered valid. Inductive reasoning in persuasive speaking is employed differently. A speaker cannot cite every example that exists to build to a conclusion, so to evaluate inductive reasoning you must examine the examples that are cited in ways other than quantity. First, the examples should be sufficient, meaning that enough are cited to support the conclusion. If not, you risk committing the hasty generalization fallacy. A speaker can expect that the audience will be able to think of some examples as well, so there is no set number on how many examples is sufficient. If the audience is familiar with the topic, then fewer examples are probably sufficient, while more may be needed for unfamiliar topics. A speaker can make his or her use of reasoning by example more powerful by showing that the examples correspond to the average case, which may require additional supporting evidence in the form of statistics. Arguing that teacher salaries should be increased by providing an example of a teacher who works side jobs and pays for his or her own school supplies could be effectively supported by showing that this teacher’s salary corresponds to the national average (Walter, 1966).

Second, the examples should be typical, meaning they weren’t cherry-picked to match the point being argued. A speaker who argues to defund the National Endowment for the Arts (NEA) because the organization supports art that is “pornographic and offensive” may cite five examples of grants given for projects that caused such controversy. Failing to mention that these examples were pulled from the more than 128,000 grants issued by the NEA would be an inappropriate use of inductive reasoning since the examples aren’t sufficient or typical enough to warrant the argument. Another way to support inductive arguments is to show that the examples are a fair sample, meaning they are representative of the larger whole. Arguing that college athletes shouldn’t receive scholarships because they do not have the scholastic merit of other students and have less academic achievement could be supported by sharing several examples. But if those examples were not representative, then they are biased, and the reasoning faulty. A speaker would need to show that the athletes used in the example are representative, in terms of their race, gender, sport, and background, of the population of athletes at the university.

Deductive Reasoning

Deductive reasoning derives specifics from what is already known. It was the preferred form of reasoning used by ancient rhetoricians like Aristotle to make logical arguments (Cooper & Nothstine, 1996). A syllogism is an example of deductive reasoning in which a conclusion is supported by major and minor premises. The conclusion of a valid argument can be deduced from the major and minor premises. A commonly used example of a syllogism is “All humans are mortal. Socrates is a human. Socrates is mortal.” In this case, the conclusion, “Socrates is mortal,” is derived from the major premise, “All humans are mortal,” and the minor premise, “Socrates is a human.” In some cases, the major and minor premises of a syllogism may be taken for granted as true. In the previous example, the major premise is presumed true because we
have no knowledge of an immortal person to disprove the statement. The minor premise is presumed true because Socrates looks and acts like other individuals we know to be human. Detectives or scientists using such logic would want to test their conclusion. We could test our conclusion by stabbing Socrates to see if he dies, but since the logic of the syllogism is sound, it may be better to cut Socrates a break and deem the argument valid. Since most arguments are more sophisticated than the previous example, speakers need to support their premises with research and evidence to establish their validity before deducing their conclusion.

A syllogism can lead to incorrect conclusions if one of the premises isn’t true, as in the following example:

- All presidents have lived in the White House. (Major premise)
- George Washington was president. (Minor premise)
- George Washington lived in the White House. (Conclusion)

In the previous example, the major premise was untrue, since John Adams, our second president, was the first president to live in the White House. This causes the conclusion to be false. A syllogism can also exhibit faulty logic even if the premises are both true but are unrelated, as in the following example:

- Penguins are black and white. (Major premise)
- Some old television shows are black and white. (Minor premise)
- Some penguins are old television shows. (Conclusion)
Like in the game of Clue, real-life detectives use deductive reasoning to draw a conclusion about who committed a crime based on the known evidence.

Sleepmyf – Lego detective – CC BY-NC-ND 2.0.

Causal Reasoning

Causal reasoning argues to establish a relationship between a cause and an effect. When speakers attempt to argue for a particular course of action based on potential positive or negative consequences that may result, they are using causal reasoning. Such reasoning is evident in the following example: Eating more local foods will boost the local economy and make you healthier. The “if/then” relationship that is set up in causal reasoning can be persuasive, but the reasoning isn’t always sound. Rather than establishing a true cause-effect relationship, speakers more often set up a correlation, which means there is a relationship between two things but there are other contextual influences.
To use causal reasoning effectively and ethically, speakers should avoid claiming a direct relationship between a cause and an effect when such a connection cannot be proven. Instead of arguing that “x caused y,” it is more accurate for a speaker to say “x influenced y.” Causal thinking is often used when looking to blame something or someone, as can be seen in the following example: It's the president's fault that the economy hasn't recovered more. While such a statement may garner a speaker some political capital, it is not based on solid reasoning. Economic and political processes are too complex to distill to such a simple cause-effect relationship. A speaker would need to use more solid reasoning, perhaps inductive reasoning through examples, to build up enough evidence to support that a correlation exists and a causal relationship is likely. When using causal reasoning, present evidence that shows the following: (1) the cause occurred before the effect, (2) the cause led to the effect, and (3) it is unlikely that other causes produced the effect.

Review of Types of Reasoning

- **Inductive.** Arguing from examples to support a conclusion; includes reasoning by analogy. Examples should be sufficient, typical, and representative to warrant a strong argument.
- **Deductive.** Deriving specifics from what is already known; includes syllogisms. Premises that lead to a conclusion must be true, relevant, and related for the argument to be valid.
- **Causal.** Argues to establish a relationship between a cause and an effect. Usually involves a correlation rather than a true causal relationship.

Fallacies of Reasoning

Fallacies are flaws within the logic or reasoning of an argument. Although we will discuss 10 common fallacies, more than 125 have been identified and named. It's important to note that the presence of a fallacy in an argument doesn't mean that it can't be persuasive. In fact, many people are persuaded by fallacious arguments because they do not identify the fallacy within the argument. Fallacies are often the last effort of uninformed or ill-prepared speakers who find that they have nothing better to say. Being aware of the forms of reasoning and fallacies makes us more critical consumers of persuasive messages, which is a substantial benefit of studying persuasive speaking that affects personal, political, and professional aspects of our lives.

Hasty Generalization

The hasty generalization fallacy relates to inductive reasoning and is the result of too few examples being cited to warrant the generalization. Jumping to conclusions is tempting, especially when pressed for time, but making well-researched and supported arguments is key to being an effective and ethical speaker. Making a claim that train travel is not safe and citing two recent derailments that resulted in injury doesn't produce a strong warrant when viewed in relation to the number of train passengers who travel safely every day.

False Analogy

The false analogy fallacy also relates to inductive reasoning and results when the situations or circumstances being compared are not similar enough. A common false analogy that people make is comparing something to putting a person on the moon: "If we can put a person on the moon, why can’t we figure out a way to make the tax code easier to
understand?” This question doesn’t acknowledge the different skill sets and motivations involved in the two examples being compared.

**False Cause**

The false cause fallacy relates to causal reasoning and occurs when a speaker argues, with insufficient evidence, that one thing caused or causes another. When I was in high school, teachers used to say that wearing baseball caps would make us go bald when we got older. In an attempt to persuade us to not wear hats in the classroom, they were arguing, fallaciously, that wearing baseball caps is what causes baldness. When a false cause argument is made after the “effect,” it is referred to in Latin as *post hoc ergo propter hoc*, which means “after this, therefore because of this.”

Blaming bad fortune on superstitions is a good example of faulty reasoning that tries to argue for a connection between an “effect” that has already occurred and its preceding “cause.” My bad luck is more likely attributable to poor decisions I have made or random interference than the mirror I broke while moving two years ago.

Figure: Superstitious beliefs often exemplify the false cause fallacy. Is the broken mirror really the cause of your bad luck?. Tim Sheerman-Chase – Seven Years Bad Luck – CC BY 2.0.

**False Authority**

The false authority fallacy results when the person making an argument doesn’t actually have the qualifications to be credible but is perceived as credible because they are respected or admired. Despite the fact that this form of argument is fallacious, it is obviously quite effective. Advertisers spend millions of dollars to get celebrities and athletes to sell us their products because of the persuasive potential these stars carry in their persona, not in their ability to argue a point. Voters might be persuaded to support a candidate because of a famous musician’s endorsement without questioning the political beliefs of either the musician or the politician to see if they match up with their own.

**Bandwagon**

Parents and other sources of guidance in our lives have tried to keep us from falling for the bandwagon fallacy. When
your mom responds to your argument that you should get to go to the party because everyone else is by asking, “If everyone else jumped off a bridge, would you?” she is rightfully pointing out the fallacy in your argument. In a public-speaking-related example, I have had students try to persuade their audience to buy and eat more organic foods based on their increasing popularity. In short, popular appeal and frequency of use are not strong warrants to support an argument. Just because something is popular, doesn’t mean it’s good.

**False Dilemma**

The false dilemma fallacy occurs when a speaker rhetorically backs his or her audience into a corner, presenting them with only two options and arguing that they must choose either one or the other. This is also known as the “either/or” fallacy. Critical thinkers know that the world can’t be simplified to black and white, good and bad, or right and wrong. Yet many people rely on such oversimplifications when making arguments. A speaker who argues that immigrants to the United States should learn English or go back to their own country doesn’t acknowledge that there are many successful immigrants who have successful lives and contribute to society without speaking English fluently. The speaker also ignores the fact that many immigrants do not have access to English language instruction or the time to take such classes because they are busy with their own jobs and families. Granted, such a rhetorical strategy does make it easier to discuss complex issues and try to force people into a decision, but it also removes gray area in the form of context that can be really important for making a decision. Be critical of speakers and messages that claim there are only two options from which to choose.

**Ad Hominem**

Ad hominem means “to the person” in Latin and refers to a common fallacy of attacking a person rather than an argument. Elementary school playgrounds and middle school hallways are often sites of ad hominem attacks. When one person runs out of good reasons to support their argument and retorts to the other, “Well you’re ugly!” they have resorted to a fallacious ad hominem argument. You probably aren’t surprised to know that politicians frequently rely on personal attacks, especially when they are sponsored by political action committees (PACs). The proliferation of these organizations resulted in an increase in “attack ads” during the 2012 presidential race. While all fallacious arguments detract from the quality of public communication, ad hominem arguments in particular diminish the civility of our society.

**Slippery Slope**

The slippery slope fallacy occurs when a person argues that one action will inevitably lead to a series of other actions. If we take one step down an icy hill it becomes difficult to get back up and you slide all the way down even though you only wanted to take one step. A slippery slope fallacy in a speech about US foreign policy might take the form of the following argument: If the United States goes to help this country in need, then we will be expected to intervene any time there’s a conflict in the world.

**Red Herring**

The red herring fallacy is my favorite because it has an interesting origin—and it was used in *Scooby Doo!* The origin of
the name of this fallacy comes from old foxhunting practices in England. When the hunters were training their dogs to stay on the trail of a fox, they would mark a trail with fox scent so the dog could practice following the scent. As a further test, they would take the smell of fish (like a red herring) and create a second trail leading in another direction. If a dog left the scent of the fox trail to follow the stronger and more noticeable scent trail left by the red herring, then the dog failed the test. The smartest and best-trained dogs weren’t distracted by the fishy trail and stayed on the path. Basically every episode of Scooby Doo involves a red herring trick—for example, when the ghost at the amusement park turns out to be a distraction created by the owner to cover up his financial problems and shady business practices. A speaker who uses the red herring fallacy makes an argument that distracts from the discussion at hand. Bringing up socialism during an argument about nationalized health care is an example of a red herring fallacy.

Appeal to Tradition

The appeal to tradition fallacy argues that something should continue because “it’s the way things have been done before.” Someone may use this type of argument when they feel threatened by a potential change. People who oppose marriage rights for gay and lesbian people often argue that the definition of marriage shouldn’t change because of its traditional meaning of a “union between one man and one woman.” Such appeals often overstate the history and prevalence of the “tradition.” Within the United States, many departures from traditional views of marriage have led to changes that we accept as normal today. Within the past one hundred years we have seen law changes that took away men’s rights to beat their wives and make decisions for them. And it wasn’t until 1993 that every state made marital rape a crime, which changed the millennia-old “tradition” that women were obligated to have sex with their husbandsf (Coontz, 2006). Many people are resistant to or anxious about change, which is understandable, but this doesn’t form the basis of a good argument.

Review of Fallacies

- **Hasty generalization.** Inductive reasoning fallacy that occurs when too few examples are cited to warrant a conclusion.
- **False analogy.** Inductive reasoning fallacy that occurs when situations or circumstances being compared are not similar enough.
- **False cause.** Causal reasoning fallacy that occurs when a speaker argues with insufficient evidence that one thing caused/causes another.
- **False authority.** Fallacy that occurs when a person making an argument doesn’t have the knowledge or qualifications to be credible but is perceived as credible because they are respected or admired.
- **Bandwagon.** Fallacy that relies on arguing for a course of action or belief because it is commonly done or held.
- **False dilemma.** Fallacy that occurs when a speaker presents an audience only two options and argues they must choose one or the other.
- **Ad hominem.** Fallacy that occurs when a speaker attacks another person rather than his or her argument.
- **Slippery slope.** Fallacy that occurs when a person argues that one action will inevitably lead to a series of other actions.
- **Red herring.** Fallacy that occurs when a speaker poses an argument that is meant to distract from the argument at hand.
- **Appeal to tradition.** Fallacy that results when a speaker argues that something should continue because “it’s the way things have been done before.”
Key Takeaways

- We use reasoning to make sense of the world around us and draw conclusions. Three types of reasoning are inductive, deductive, and causal.
  - Inductive reasoning refers to arguments that persuade by citing examples that build to a conclusion. Examples should be sufficient, typical, and representative to warrant a strong argument. Reasoning by analogy argues that what is true in one set of circumstances will be true in another, and is an example of inductive reasoning.
  - Deductive reasoning refers to arguments that derive specifics from what is already known and includes syllogisms. Premises that lead to the conclusion must be true and relevant for the argument to be valid.
  - Causal reasoning refers to arguments that establish a relationship between a cause and an effect and usually involves a correlation rather than a true causal relationship.

- Fallacies refer to flaws within the logic or reasoning of an argument. Ten fallacies of reasoning discussed in this chapter are hasty generalization, false analogy, false cause, false authority, false dilemma, ad hominem, slippery slope, red herring, and appeal to tradition.

Exercises

1. Identify examples of inductive, deductive, and causal reasoning in the sample persuasive speech on education in prisons included in Section 4.3 “Nonverbal Communication Competence”.
2. People often use fallacies in arguments, usually without knowing it. Being able to identify fallacies is an important critical thinking skill. Find a letter to the editor in a paper or online and see if you can identify any of the ten fallacies discussed in this chapter.
3. Of the ten fallacies discussed in the chapter, which do you think is the most unethical and why?

References


Cooper, M. D., and William L. Nothstine, Power Persuasion: Moving an Ancient Art into the Media Age (Greenwood, IN: Educational Video Group, 1996), 27.