UNIT 1A

RECOGNIZING FALLACIES

We often try to persuade other people of our views. These discussions take many different forms, some of which are more useful than others. Consider the following "argument" between two classmates.

People generally quarrel because they cannot argue.

—G. K. CHESTERTON (1874–1936), English author

BOB: The death penalty is immoral.
SUSAN: No it isn't.
BOB: Yes it is! Judges who give the death penalty should be impeached.
SUSAN: You don't even know how the death penalty is decided.
BOB: I know a lot more than you know!
SUSAN: I can't talk to you; you're an idiot!

This type of heated conversation is fairly common, but it accomplishes little. Rather than helping Bob or Susan to sway the other, it is likely to leave both of them upset and angry. Fortunately, there is a better way to argue—with skills of **logic,** the study of the methods and principles of reasoning. Arguing logically may not change Bob's or Susan's position, but it can help them understand each other.

In this book, the term **argument** refers to reasoned or thoughtful processes. Specifically, an argument is a set of facts or assumptions, called **premises,** that are used to support a **conclusion.** Some arguments provide strong support for their conclusions; others do not. An argument that fails to make a compelling case for its conclusion may contain some error in reasoning, or **fallacy** (from the Latin for "deceit" or "trick"). In other words, a fallacious argument tries to persuade in a way that doesn't really make sense when analyzed carefully.

by the way . . .

More than $100 billion per year is spent on advertising in the United States, and the best advertising firms do extensive research before embarking on new campaigns. It is estimated that the average American has seen over 1 million advertisements by age 18.

DEFINITIONS

Logic is the study of the methods and principles of reasoning.

An **argument** is a set of facts or assumptions, called **premises,** used to support a **conclusion.**

A **fallacy** is a deceptive argument; its conclusion is not well supported by its premises.

You might expect fallacies to be rare, but they are not. If you study advertisements, political campaigns, or editorial commentaries, you'll find that many of them are filled with fallacies. Moreover, fallacies are not always easy to recognize, in part because public relations specialists have spent billions of dollars researching how subtle fallacies can be used to persuade us to buy products, vote for candidates, or support particular policies.

Because fallacies are so common, it is important to be able to recognize them. Thus, we begin our study of critical thinking with examples of a few of the most common fallacies. The fallacy in each example has a fancy name, but learning the names

is far less important than learning to recognize the faulty reasoning. The experience you gain by analyzing fallacies will provide a foundation upon which to build additional critical thinking skills.

historical note

The Greek philosopher Aristotle (384–322 B.C.) made the first known attempt to put logic on a rigorous foundation. He believed that truth could be established from three basic laws: (1) A thing is itself. (2) A statement is either true or false. (3) No statement is both true and false. Aristotle's laws were used by Euclid (c. 325–270 B.C.) to establish the foundations of geometry and still lie at the heart of much of modern science, industry, and business.

EXAMPLE 1 *Appeal to Popularity*

"Ford makes the best automobile in America; after all, more people drive Fords than any other American car."

Analysis The first step in dealing with any argument is recognizing which statements are premises and which are conclusions. This argument tries to make the case that *Ford makes the best automobiles in America,* so this statement is its conclusion. The only evidence it offers to support this conclusion is the statement *more people drive Fords than any other American car;* this is the argument's one and only premise. Overall, this argument has the form

Premise: More people drive Fords than any other American car.
Conclusion: Ford makes the best automobiles in America.

Note that the original written argument states the conclusion before the premise; such "backwards" structures are common in everyday speech and are perfectly legitimate as long as the argument is well reasoned. In this case, however, the reasoning is faulty: The fact that more people drive Fords does not, in itself, mean that they are the best cars. This argument suffers from the fallacy of *appeal to popularity* (or *appeal to majority*), in which the fact that large numbers of people believe or act some way is used inappropriately as evidence that the belief or action is correct.

We can represent the general form of this fallacy with a diagram in which the letter p stands for a particular statement (Figure 1.1). In this case, p stands for the statement *Ford makes the best automobiles in America.* ■

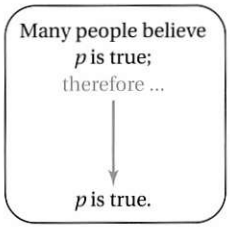

FIGURE 1.1
The fallacy of appeal to popularity. The letters p and q (used in later diagrams) represent statements.

EXAMPLE 2 *False Cause*

"I placed the quartz crystal on my forehead, and in five minutes my headache was gone. The crystal made my headache go away."

Analysis We identify the premises and conclusion of this argument as follows:

Premise: I placed the quartz crystal on my forehead.
Premise: Five minutes later my headache was gone.
Conclusion: The crystal made my headache go away.

The premises tell us that one thing (crystal on forehead) happened before another (headache went away), but they don't prove any connection between them. That is, we cannot conclude that the crystal *caused* the headache to go away. This argument suffers from the fallacy of *false cause,* in which the fact that one event came before another is incorrectly taken as evidence that the first event *caused* the second event. We can represent this fallacy with a diagram in which A and B represent two different events (Figure 1.2); in this case, A is the event of putting the crystal on the forehead and B is the event of the headache going away. (We'll discuss how cause *can* be established in Chapter 5.) ■

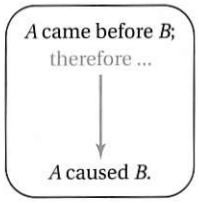

FIGURE 1.2
The fallacy of false cause. The letters A and B represent events.

EXAMPLE 3 *Appeal to Ignorance*

"Scientists have not proved that global warming will have any dire consequences for the human race. Therefore, the global warming catastrophes that environmentalists shout about are bunk."

Analysis If we strip the argument to its core, it says this:

Premise: There's no proof that global warming will have any dire consequences.

Conclusion: Global warming will not have any dire consequences.

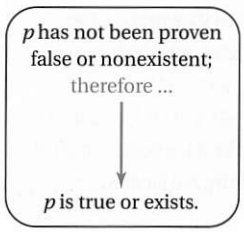

FIGURE 1.3
The fallacy of appeal to ignorance.

The fallacy should be clear: A *lack* of proof for dire consequences does not mean that they won't occur. This fallacy is called *appeal to ignorance* because it uses ignorance (lack of knowledge) about the truth of a proposition to conclude the opposite (Figure 1.3). Another form of this fallacy arises when something (such as UFOs) has not been proved *non*existent; appeal to ignorance would lead one to conclude wrongly that it *does* exist. ■

Time out to think

Suppose a person is tried for a crime and found *not* guilty. Can you conclude that the person is innocent? Why or why not? Why do you think our legal system demands that prosecutors prove guilt, rather than demanding that defendants (suspects) prove innocence? How is this idea related to the fallacy of appeal to ignorance?

EXAMPLE 4 *Hasty Generalization*

"Two cases of childhood leukemia have occurred along the street where the high-voltage power lines run. The power lines must be the cause of these illnesses."

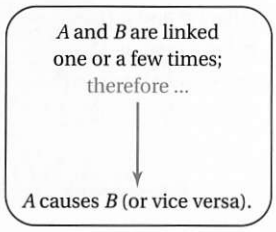

FIGURE 1.4
The fallacy of hasty generalization.

Analysis The premise of this argument cites two cases in which leukemia occurred on the street with the power lines. But two cases are not enough to establish a pattern, let alone to conclude that the power lines are the cause of the illnesses. This argument illustrates the fallacy of *hasty generalization,* in which a conclusion is drawn from an inadequate number of cases or cases that have not been sufficiently analyzed. If any connection between power lines and leukemia exists, it will have to be established with far more evidence than is provided in this argument (see Unit 5E). We can represent this fallacy with a diagram in which *A* and *B* represent two linked events (Figure 1.4). ■

EXAMPLE 5 *Limited Choice*

"You don't support the President, so you are not a patriotic American."

Analysis This argument has the form

Premise: You don't support the President.

Conclusion: You are not a patriotic American.

The argument suggests that there are only two types of Americans: patriotic ones who support the President and unpatriotic ones who don't. But there are many other possibilities, such as being patriotic while disliking a particular president. The fallacy is called *limited choice* (or *false dilemma*) because it artificially precludes choices that ought to be considered; Figure 1.5 shows one common form of this fallacy. Limited choice also arises with questions such as "Have you stopped smoking?" Both *yes* and *no* answers imply that you smoked in the past. Thus, the question precludes the possibility that you never smoked. (In legal proceedings, questions of this type are disallowed because they attempt to "lead the witness.") Another simple and common form of this fallacy is "You're wrong, so I must be right." ■

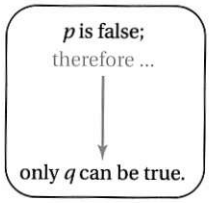

FIGURE 1.5
The fallacy of limited choice.

EXAMPLE 6 *Appeal to Emotion*

In a commercial for Michelin tires, a picture of a baby is shown with the words "because so much is riding on your tires."

Analysis If we can consider this an argument at all, it has the form

Premise: You love your baby.
Conclusion: You should buy Michelin tires.

The argument makes no appeal to logic; the advertisers just hope that the positive emotions you feel for a baby will make you want to buy their tires. This attempt to evoke an emotional response as a tool of persuasion represents the fallacy of *appeal to emotion;* Figure 1.6 shows its form when the emotional response is positive. Sometimes the appeal is to negative emotions. For example, the statement *if my opponent is elected, your tax burden will rise* tries to convince you that electing the opponent will lead to consequences you won't like. (In this negative form, the fallacy is sometimes called *appeal to force.*) ■

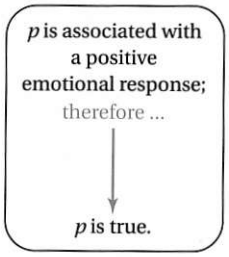

FIGURE 1.6
The fallacy of appeal to emotion.

EXAMPLE 7 *Personal Attack*

GWEN: You should stop drinking because it is hurting your grades, endangering people when you drink and drive, and destroying your relationship with your family.

MERLE: I've seen you drink a few too many on occasion yourself!

Analysis Gwen's argument is well reasoned, with premises offering strong support for her conclusion that Merle should stop drinking. Merle rejects this argument by noting that Gwen sometimes drinks too much herself. Even if Merle's claim is true, it is irrelevant to Gwen's point. Merle has resorted to attacking Gwen personally rather than arguing logically, so we call this fallacy *personal attack* (Figure 1.7). (It is also called *ad hominem,* Latin for "to the person.")

The fallacy of personal attack can also apply to groups. For example, you might hear someone say, "This new bill will be an environmental disaster because its sponsors received large campaign contributions from heavy industrial polluters." This argument is fallacious because it doesn't challenge the bill; instead, it questions the motives of the sponsors. ■

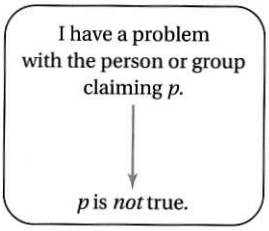

FIGURE 1.7
The fallacy of personal attack.

Time out to think

A person's (or group's) character, circumstances, and motives occasionally *are* logically relevant to an argument. That is why, for example, witnesses in criminal cases often are asked questions about their personal lives. If you were a judge, how would you decide when to allow such questions?

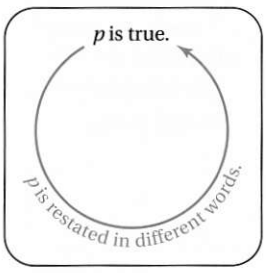

FIGURE 1.8
The fallacy of circular reasoning.

EXAMPLE 8 *Circular Reasoning*

"Society has an obligation to shelter the homeless because the needy have a right to the resources of the community."

Analysis This argument states the conclusion (*society has an obligation to shelter the homeless*) before the premise (*the needy have a right to the resources of the community*). But if you read them carefully, you'll see that the premise and the conclusion both say essentially the same thing; after all, society has an obligation to provide shelter only if the needy have a right to societal resources. Thus, this argument suffers from *circular reasoning* (Figure 1.8). ■

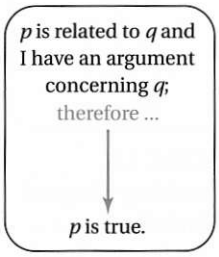

FIGURE 1.9
The fallacy of diversion.

EXAMPLE 9 *Diversion (Red Herring)*

"We should not continue to fund genetic research because there are so many ethical issues involved. Ethics is at the heart of our society, and we cannot afford to have too many ethical loose ends."

Analysis The argument begins with its conclusion—*we should not continue to fund genetic research.* However, the discussion is all about ethics. This argument represents the fallacy of *diversion* (Figure 1.9) because it attempts to divert attention from the real issue (funding for genetics) by focusing on another issue (ethics). The issue to which attention is diverted is sometimes called a *red herring.* (A herring is a fish that turns red when rotten. Use of the term *red herring* to mean a diversion can be traced back to the 19th century, when British fugitives discovered that they could divert bloodhounds from their pursuit by rubbing a red herring across their trail.) Note that personal attacks (see Example 7) are often used as diversions. ■

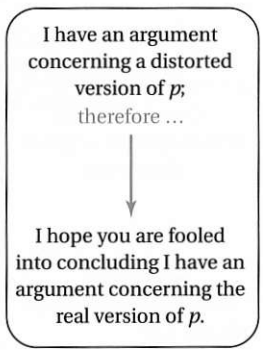

FIGURE 1.10
The straw man fallacy.

EXAMPLE 10 *Straw Man*

Columnist William F. Buckley has written many articles arguing in favor of legalizing drugs. A speaker who opposes legalization begins by stating, "Mr. Buckley doesn't think there's anything wrong with drug use, but I do."

Analysis William F. Buckley has never said that drug use is acceptable; his arguments for legalization are based on considerations such as effects on the crime rate, cost to society, and difficulties of overcoming addiction. Thus, the speaker has distorted Buckley's views. Any argument based on a distortion of someone's ideas or beliefs is called a *straw man* (Figure 1.10); the term comes from the idea that the speaker has used a poor representation of a person's beliefs in the same way that a straw man is a poor representation of a real man. A straw man is similar to a diversion; the primary difference is that a diversion argues against an unrelated issue, while the straw man argues against a distorted version of the real issue. ■

Review Questions

1. What is logic? Briefly explain how logic can be useful.
2. How do we define *argument*? What is the basic structure of an argument?
3. What is a fallacy? Why is it important to be able to recognize fallacies?
4. In your own words, describe how each argument in the examples is deceptive. Make up your own similar examples for each type of fallacy.

In the News

1. **Editorial Fallacies.** Examine editorials and letters to the editor in your local newspaper. Find at least three examples of fallacies. In each case, describe how the argument is deceptive. If the fallacy represents one or more of the common types described in this unit, describe the types.
2. **Fallacies in Advertising.** Pick a single night and a single commercial television channel and analyze the advertisements shown over a 1-hour period. Describe how each advertisement tries to persuade the viewer, and discuss whether the argument is logical or fallacious. What fraction of the advertisements involve fallacies? Are any fallacy types more common than others?
3. **Fallacies in Politics.** Discuss the tactics used by both sides in a current or recent political campaign. How much of the campaign is/was based on logic and how much on fallacies? Describe some of the fallacies used in the campaign. Overall, do you believe that fallacies influenced (or will influence) the outcome of the vote?
4. **Personal Fallacies.** Describe an instance in which you were persuaded of something that you later decided was untrue. Explain how you were persuaded and why you later changed your mind. Did you fall victim to any fallacies? If so, how might you prevent the same thing from happening in the future?

Exercises

Recognizing Fallacies. Each of the arguments given or described in Exercises 1–16 involves some kind of fallacy. Identify the premises and the conclusion of the argument, and then explain why the argument is deceptive. If the fallacy happens to fit one or more of the types described in the examples of this unit, name the types and explain how they apply.

1. Following President Reagan's defense buildup, the Soviet Union began the process of democratization that ultimately led to its breakup. Therefore, Reagan is responsible for the changes that led to the demise of the Soviet Union.
2. The Golden Rule is a sound ethical principle because it is basic to every system of ethics in every culture.
3. At a hearing to decide a child custody case, a lawyer asks the mother: "Have you stopped using drugs?"
4. Everyone I know is voting for the Governor, so you should vote for her too.
5. My mom says that I should never smoke, but I'm not going to pay any attention because she smoked when she was my age.
6. Most of the great mathematicians in history have been men, so men must be better at mathematics than women.
7. I believe in telepathy, because no one has ever proven that it doesn't exist.
8. My two best teachers were both women, proving that women make better teachers than men.
9. There's no way that Senator Smith's bill can help the cause of gun control because he is one of the biggest recipients of campaign contributions from the National Rifle Association.
10. Violent crime by youth has risen in virtual lockstep with increased violence on television, thus proving that television violence leads to real violence.
11. Since 1960, the percentage of the population over 18 who smoke has decreased from 40% to about 20%. During the same period, the percentage of overweight people has increased from 25% to 35%. Clearly, quitting smoking leads to overeating.

12. On average, boys score higher than girls on standardized mathematics tests (such as the SAT), which proves that boys have a greater aptitude for mathematics than girls. Similarly, girls score higher on verbal tests, proving that girls are better at verbal skills.
13. My little boy loves dolls and my little girl loves trucks, so there's no truth to the claim that boys are more interested in mechanical toys while girls prefer maternal toys.

14. In the 1964 presidential campaign, President Johnson ran a television ad against Barry Goldwater (the Republican candidate who ultimately lost the election) that showed a little girl picking daisy petals and counting them, "One, two, three . . . . " In the background, a gruff male voice began a countdown, "Ten, nine, eight . . . ," slowly drowning out the little girl's voice. As the countdown ended, the screen lit up with an atomic explosion. President Johnson's voice then said, "These are the stakes: to make a world in which all of God's children can live or go into the dark."
15. During the 2000 presidential campaign, George W. Bush favored an end to the estate tax. Because estate taxes fall most heavily on the wealthy, the wealthy would realize the greatest benefits from this change. The Gore campaign often argued against Bush's position with statements that began, "George Bush thinks that rich people aren't rich enough . . . . "
16. During the 2000 presidential campaign, Al Gore proposed regulatory changes that he claimed would reduce the danger of global warming. The Bush campaign countered with statements that began, "Al Gore believes that government is the solution to all our problems . . . . "

Web Projects

Find useful links for Web Projects on the text Web site: www.aw.com/bennett-briggs

1. **Campaign Site.** Find the Web site for a candidate or in tiative (for or against) in an upcoming or recent electio Study the arguments given on the site, looking for exam ples of fallacies. Write a brief summary of the fallacies. Overall, does the site make a strong or weak case for its candidate or position? Explain.
2. **Gun Control Debate.** One of the most contentious debates in American politics concerns the question of whether the United States should enact stricter gun con trol laws. Visit one or more of the many Web sites for eac side in the gun control debate. Identify at least two falla cies given by each side. Without stating which side you support, give your opinion of the logical quality of the arguments on the Web sites for the two sides; that is, do the arguments on one involve more fallacies than those on the other side? Explain.
3. **Death Penalty Debate.** The death penalty is another contentious issue in American politics. Visit one or mor of the many Web sites for each side in the death penalty debate. Identify at least two fallacies given by each side. Without stating which side you support, give your opinion of the logical quality of the arguments on the Web sites for the two sides; that is, do the arguments on one involve more fallacies than those on the other side? Explain.
4. **Health Care Debate.** Choose some aspect of the healt care debate in the United States, such as whether there should be coverage for prescription drugs or national insurance for all citizens. Find a Web site for each side o the debate. Without stating which side you support, giv your opinion of the logical quality of the arguments on the Web sites for the two sides; that is, do the argument on one involve more fallacies than those on the other side? Explain.
5. **Fallacy Web Sites.** There are many Web sites devoted t the study of fallacies. Visit one, and choose a fallacy of a type not covered in this unit. Explain the fallacy, and giv an example of it.