In this section we will explore the processes of thinking logically and analyzing issues to reach informed judgments. Remember: Mature people do not need to agree on all issues to respect one another’s good sense, but they do have little patience with uninformed or illogical statements masquerading as argument.

CHARACTERISTICS OF ARGUMENT

Argument Is Conversation with a Goal

When you enter into an argument (as speaker, writer, or reader), you become a participant in an ongoing debate about an issue. Since you are probably not the first to address the issue, you need to be aware of the ways that the issue has been debated by others and then seek to advance the conversation, just as you would if you were having a more casual conversation with friends. If the time of the movie is set, the discussion now turns to whose car to take or where to meet. If you were to just repeat the time of the movie, you would add nothing useful to the conversation. Also, if you were to change the subject to a movie you saw last week, you would annoy your friends by not offering useful information or showing that you valued the current conversation. Just as with your conversation about the movie, you want your argument to stay focused on the issue, to respect what others have already contributed, and to make a useful addition to our understanding of the topic.

Argument Takes a Stand on an Arguable Issue

A meaningful argument focuses on a debatable issue. We usually do not argue about facts. “Professor Jones’s American literature class meets at 10:00 on Mondays” is not arguable. It is either true or false. We can check the schedule of classes to find out. (Sometimes the facts change; new facts replace old ones.) We also do not debate personal preferences for the simple reason that they are just that—personal. If the debate is about the appropriateness of boxing as a sport, for you to declare that you would rather play tennis is to fail to advance the conversation. You have expressed a personal preference, interesting perhaps, but not relevant to the debate.

Argument Uses Reasons and Evidence

Some arguments merely “look right.” That is, conclusions are drawn from facts, but the facts are not those that actually support the assertion, or the conclusion is not the only or the best explanation of those facts. To shape convincing arguments, we need more than an array of facts. We need to think critically, to analyze the issue, to see relationships, to weigh evidence. We need to avoid the temptation to “argue” from emotion only, or to believe that just stating our opinion is the same thing as building a sound argument.
Argument Incorporates Values

Arguments are based not just on reason and evidence but also on the beliefs and values we hold and think that our audience may hold as well. In a reasoned debate, you want to make clear the values that you consider relevant to the argument. In an editorial defending the sport of boxing, one editor wrote that boxing “is a sport because the world has not yet become a place in which the qualities that go into excellence in boxing [endurance, agility, courage] have no value” (Washington Post, February 5, 1983). But James J. Kilpatrick also appeals to values when he argues, in an editorial critical of boxing, that we should not want to live in a society “in which deliberate brutality is legally authorized and publicly applauded” (Washington Post, December 7, 1982). Observe, however, the high level of seriousness in the appeal to values. Neither writer settles for a simplistic personal preference: “Boxing is exciting,” or “Boxing is too violent.”

Argument Recognizes the Topic’s Complexity

Much false reasoning (the logical fallacies discussed in Chapter 6) results from a writer’s oversimplifying an issue. A sound argument begins with an understanding that most issues are terribly complicated. The wise person approaches such ethical concerns as abortion or euthanasia or such public policy issues as tax cuts or trade agreements with the understanding that there are many philosophical, moral, and political issues that complicate discussions of these topics. Recognizing an argument’s complexity may also lead us to an understanding that there can be more than one “right” position. The thoughtful arguer respects the views of others, seeks common ground when possible, and often chooses a conciliatory approach.

THE SHAPE OF ARGUMENT: WHAT WE CAN LEARN FROM ARISTOTLE

Still one of the best ways to understand the basics of argument is to reflect on what the Greek philosopher Aristotle describes as the three “players” in any argument: the writer (or speaker), the argument itself, and the reader (or audience). Aristotle also reminds us that the occasion or “situation” (karios) is important in understanding and evaluating an argument. Let’s examine each part of this model of argument.

Ethos (about the Writer/Speaker)

It seems logical to begin with ethos because without this player we have no argument. We could, though, end with the writer because Aristotle asserts that this player in any argument is the most important. No argument, no matter how logical, no matter how appealing to one’s audience, can succeed if the audience rejects the arguer’s credibility, his or her ethical qualities.
Think how often in political contests those running attack their opponent’s character rather than the candidate’s programs. Remember the smear campaign against Obama—he is (or was) a Muslim and therefore unfit to be president, the first point an error of fact, the second point an emotional appeal to voters’ fears. Candidates try these smear tactics, even without evidence, because they understand that every voter they can convince of an opponent’s failure of ethos is a citizen who will vote for them. Many American voters want to be assured that a candidate is patriotic, religious (but of course not fanatic!), a loyal spouse, and a loving parent. At times, unfortunately, we even lose sight of important differences in positions as we focus on the person instead. But, this tells us how much an audience values their sense of the arguer’s credibility. During his campaign for reelection, after the Watergate break-in, Nixon was attacked with the line “Would you buy a used car from this guy?” (In defense of used-car salespeople, not all are untrustworthy!)

**Logos (about the Logic of the Argument)**

*Logos* refers to the argument itself—to the assertion and the support for it. Aristotle maintains that part of an arguer’s appeal to his or her audience lies in the logic of the argument and the quality of the support provided. Even the most credible of writers will not move thoughtful audiences with inadequate evidence or sloppy reasoning. Yes, “arguments” that appeal to emotions, to our needs and fantasies, will work for some audiences—look at the success of advertising, for example. But, if you want to present a serious claim to critical readers, then you must pay attention to your argument. Paying attention means not only having good reasons but also organizing them clearly. Your audience needs to see *how* your evidence supports your point. Consider the following argument in opposition to the war on Iraq.

War can be justified only as a form of self-defense. To initiate a war, we need to be able to show that our first strike was necessary as a form of self-defense. The Bush administration argued that Iraq had weapons of mass destruction and intended to use them against us. Responding to someone’s “intent” to do harm is always a difficult judgment call. But, in this case, there were no weapons of mass destruction so there could not have been any intent to harm the United States, or at least none that was obvious and immediate. Thus we must conclude that this war was not the right course of action for the United States.

You may disagree (many will) with this argument’s assertion, but you can respect the writer’s logic, the clear connecting of one reason to the next. One good way to strengthen your credibility is to get respect for clear reasoning.

**Pathos (about Appeals to the Audience)**

Argument implies an audience, those whose views we want to influence in some way. Aristotle labels this player *pathos*, the Greek word for both passion and suffering (hence *pathology*, the study of disease). Arguers need to be aware
of their audience’s feelings on the issue, the attitudes and values that will affect their response to the argument. There are really two questions arguers must answer: “How can I engage my audience’s interest?” and “How can I engage their sympathy for my position?”

Some educators and health experts believe that childhood obesity is a major problem in the United States. Other Americans are much more focused on the economy—or their own careers. Al Gore is passionately concerned about the harmful effects of global warming; others, though increasingly fewer, think he lacks sufficient evidence of environmental degradation. How does a physician raise reader interest in childhood obesity? How does Gore convince doubters that we need to reduce carbon emissions? To prepare an effective argument, we need always to plan our approach with a clear vision of how best to connect to a specific audience—one which may or may not agree with our interests or our position.

\textbf{Karios (about the Occasion or Situation)}

While \textit{ethos}, \textit{logos}, and \textit{pathos} create the traditional three-part communication model, Aristotle adds another term to enhance our understanding of any argument “moment.” The term \textit{karios} refers to the occasion for the argument, the situation that we are in. What does this moment call for from us? Is the lunch table the appropriate time and place for an argument with your coworker over her failure to meet a deadline that is part of a joint project? You have just received a 65 on your history test; is this the best time to e-mail your professor to protest

Personal confrontation at a business meeting: Not cool.
the grade? Would the professor's office be the better place for your discussion than an e-mail sent from your BlackBerry minutes after you have left class?

The concept of *karios* asks us to consider what is most appropriate for the occasion, to think through the best time, place, and genre (type of argument) to make a successful argument. This concept has special meaning for students in a writing class who sometimes have difficulty thinking about audience at all. When practicing writing for the academic community, you may need to modify the language or tone that you more typically use in other situations.

We argue in a specific context of three interrelated parts, as illustrated in Figure 3.1.

We present support for an assertion to a specific audience whose expectations and character we have given thought to when shaping our argument. And we present ourselves as informed, competent, and reliable so that our audience will give us their attention.

**THE LANGUAGE OF ARGUMENT**

We could title this section the *languages* of argument because arguments come in visual language as well as in words. But visual arguments—cartoons, photos, ads—are almost always accompanied by some words: figures speaking in bubbles, a caption, a slogan (Nike's "Just Do It"). So we need to think about the kinds of statements that make up arguments, whether those arguments are legal briefs or cartoons, casual conversations or scholarly essays. To build an argument we need some statements that support other statements that present the main idea or claim of the argument.

- **Claims:** usually either inferences or judgments, for these are debatable assertions.
- **Support:** facts, opinions based on facts (inferences), or opinions based on values, beliefs, or ideas (judgments) or some combination of the three.

Let's consider what kinds of statements each of these terms describes.

![Aristotelian Structure of Argument](image)
Facts

Facts are statements that are verifiable. Factual statements refer to what can be counted or measured or confirmed by reasonable observers or trusted experts.

There are twenty-six desks in Room 110.

In the United States about 400,000 people die each year as a result of smoking.

These are factual statements. We can verify the first by observation—by counting. The second fact comes from medical records. We rely on trusted record-keeping sources and medical experts for verification. By definition, we do not argue about the facts. Usually. Sometimes “facts” change, as we learn more about our world. For example, only in the last thirty years has convincing evidence been gathered to demonstrate the relationship between smoking and various illnesses of the heart and lungs. And sometimes “facts” are false facts. These are statements that sound like facts but are incorrect. For example: Nadel has won more Wimbledon titles than Federer. Not so.

Inferences

Inferences are opinions based on facts. Inferences are the conclusions we draw from an analysis of facts.

There will not be enough desks in Room 110 for upcoming fall-semester classes.

Smoking is a serious health hazard.

Predictions of an increase in student enrollment for the coming fall semester lead to the inference that most English classes scheduled in Room 110 will run with several more students per class than last year. The dean should order new desks. Similarly, we infer from the number of deaths that smoking is a health problem; statistics show more people dying from tobacco than from AIDS, or murder, or car accidents, causes of death that get media coverage but do not produce nearly as many deaths.

Inferences vary in their closeness to the facts supporting them. That the sun will “rise” tomorrow is an inference, but we count on its happening, acting as if it is a fact. However, the first inference stated above is based not just on the fact of twenty-six desks but on another inference—a projected increase in student enrollment—and two assumptions. The argument looks like this:

**FACT:** There are twenty-six desks in Room 110.

**INFERENCGE:** There will be more first-year students next year.

**ASSUMPTIONS:**
1. English will remain a required course.
2. No additional classrooms are available for English classes.

**CLAIM:** There will not be enough desks in Room 110 for upcoming fall-semester classes.
This inference could be challenged by a different analysis of the facts supporting enrollment projections. Or, if additional rooms can be found, the dean will not need to order new desks. Inferences can be part of the support of an argument, or they can be the claim of an argument.

Judgments

Judgments are opinions based on values, beliefs, or philosophical concepts. (Judgments also include opinions based on personal preferences, but we have already excluded these from argument.) Judgments concern right and wrong, good and bad, better or worse, should and should not:

No more than twenty-six students should be enrolled in any English class.
Cigarette advertising should be eliminated, and the federal government should develop an antismoking campaign.

NOTE: Placing such qualifiers as "I believe," "I think," or "I feel" in an assertion does not free you from the need to support that claim. The statement "I believe that President Bush was a great president" calls for an argument based on evidence and reasons.

To support the first judgment, we need to explain what constitutes overcrowding, or what constitutes the best class size for effective teaching. If we can support our views on effective teaching, we may be able to convince the college president that ordering more desks for Room 110 is not the best solution to an increasing enrollment in English classes. The second judgment also offers a solution to a problem, in this case a national health problem. To reduce the number of deaths, we need to reduce the number of smokers, either by encouraging smokers to quit or nonsmokers not to start. The underlying assumption: Advertising does affect behavior.

EXERCISE: Facts, Inferences, and Judgments

Compile a list of three statements of fact, three inferences, and three judgments. Try to organize them into three related sets, as illustrated here:

- Smoking is prohibited in some restaurants.
- Secondhand smoke is a health hazard.
- Smoking should be prohibited in all restaurants.

We can classify judgments to see better what kind of assertion we are making and, therefore, what kind of support we need to argue effectively.
You can build on your knowledge of the basics of argument, examined in Chapter 3, by understanding some traditional forms of argument: induction, deduction, and analogy. It is also important to recognize arguments that do not meet the standards of good logic.

INDUCTION

Induction is the process by which we reach inferences—opinions based on facts, or on a combination of facts and less debatable inferences. The inductive process moves from particular to general, from support to assertion. We base our inferences on the facts we have gathered and studied. In general, the more evidence, the more convincing the argument. No one wants to debate tomorrow's sunrise; the evidence for counting on it is too convincing. Most inferences, though, are drawn from less evidence, so we need to examine these arguments closely to judge their reasonableness.

The pattern of induction looks like this:

**EVIDENCE:**

There is the dead body of Smith. Smith was shot in his bedroom between the hours of 11:00 P.M. and 2:00 A.M., according to the coroner. Smith was shot by a .32-caliber pistol. The pistol left in the bedroom contains Jones's fingerprints. Jones was seen, by a neighbor, entering the Smith home at around 11:00 the night of Smith's death. A coworker heard Smith and Jones arguing in Smith's office the morning of the day Smith died.

**CLAIM:**

Jones killed Smith.

The facts are presented. The jury infers that Jones is a murderer. Unless there is a confession or a trustworthy eyewitness, the conclusion is an inference, not a fact. This is the most logical explanation; that is, the conclusion meets the standards of simplicity and frequency while accounting for all of the known evidence.

The following paragraph illustrates the process of induction. In their book Discovering Dinosaurs, authors Mark Norell, Eugene Gaffney, and Lowell Dingus answer the question "Did dinosaurs really rule the world?"

For almost 170 million years, from the Late Triassic to the end of the Cretaceous, there existed dinosaurs of almost every body form imaginable: small carnivores, such as Compsognathus and Ornitholestes, ecologically equivalent to today's foxes and coyotes; medium-sized carnivores, such as Velociraptor and the troodontids, analogous to lions and tigers; and the monstrous carnivores with no living analogs, such as Tyrannosaurus and Allosaurus. Included among the ornithischians and the elephantine sauropods are terrestrial herbivores of diverse body form. By the end of the Jurassic, dinosaurs had even taken to the skies. The only habitats that dinosaurs did not dominate during the Mesozoic were aquatic. Yet, there were marine representatives, such as the primitive toothed bird Hesperornis. Like penguins, these birds were flightless, specialized for diving, and probably had to return to land to reproduce. In light of this broad morphologic diversity [number of
body forms], dinosaurs did “rule the planet” as the dominant life form on Earth during most of the Mesozoic [era that includes the Triassic, Jurassic, and Cretaceous periods, 248 to 65 million years ago].

Observe that the writers organize evidence by type of dinosaur to demonstrate the range and diversity of these animals. A good inductive argument is based on a sufficient volume of relevant evidence. The basic shape of this inductive argument is illustrated in Figure 6.1.

| CLAIM: | Dinosaurs were the dominant life form during the Mesozoic era. |
| GROUNDS: | The facts presented in the paragraph. |
| ASSUMPTION (WARRANT): | The facts are representative, revealing dinosaur diversity. |

**FIGURE 6.1** The Shape of an Inductive Argument

**COLLABORATIVE EXERCISE: Induction**

With your class partner or in small groups, make a list of facts that could be used to support each of the following inferences:

1. Whole-wheat bread is nutritious.
2. Fido must have escaped under the fence during the night.
3. Sue must be planning to go away for the weekend.
4. Students who do not hand in all essay assignments fail Dr. Bradshaw’s English class.
5. The price of Florida oranges will go up in grocery stores next year.

**DEDUCTION**

Although induction can be described as an argument that moves from particular to general, from facts to inference, deduction cannot accurately be described as the reverse. Deductive arguments are more complex. **Deduction is the reasoning process that draws a conclusion from the logical relationship of two assertions, usually one broad judgment or definition and one more specific assertion, often an inference.** Suppose, on the way out of American history class, you say, “Abraham Lincoln certainly was a great leader.” Someone responds with the expected question “Why do you think so?” You explain: “He was great because he performed with courage and a clear purpose in a time of crisis.” Your explanation contains a conclusion and an assertion about Lincoln (an inference) in support. But behind your explanation rests an idea about leadership, in the terms of deduction, a premise. The argument’s basic shape is illustrated in Figure 6.2.
CHAPTER 6  Learning More about Argument: Induction, Deduction, Analogy, and Logical Fallacies

CLAIM:  Lincoln was a great leader.
GROUNDs:  1. People who perform with courage and clear purpose in a crisis are great leaders.
         2. Lincoln was a person who performed with courage and a clear purpose in a crisis.
ASSUMPTION (WARRANT):  The relationship of the two reasons leads, logically, to the conclusion.

FIGURE 6.2 The Shape of a Deductive Argument

Traditionally, the deductive argument is arranged somewhat differently from these sentences about Lincoln. The two reasons are called premises; the broader one, called the major premise, is written first and the more specific one, the minor premise, comes next. The premises and conclusion are expressed to make clear that assertions are being made about categories or classes. To illustrate:

**MAJOR PREMISE:** All people who perform with courage and a clear purpose in a crisis are great leaders.

**MINOR PREMISE:** Lincoln was a person who performed with courage and a clear purpose in a crisis.

**CONCLUSION:** Lincoln was a great leader.

If these two premises are correctly, that is, logically, constructed, then the conclusion follows logically, and the deductive argument is valid. This does not mean that the conclusion is necessarily true. It does mean that if you accept the truth of the premises, then you must accept the truth of the conclusion, because in a valid argument the conclusion follows logically, necessarily. How do we know that the conclusion must follow if the argument is logically constructed? Let's think about what each premise is saying and then diagram each one to represent each assertion visually. The first premise says that all people who act a particular way are people who fit into the category called "great leaders":

![Diagram of categories]