Chapter 9

Analyzing Arguments

THIS CHAPTER addresses different schools of thought on the nature and purpose of argument along with a brief introduction to the rules of argument through which the linking of evidence and claims has traditionally been tested. The chapter ends with a glossary of the most common logical fallacies.

THREE VIEWPOINTS ON ARGUMENT

- Formal Argument Analysis: The Syllogism and the Toulmin Model
- Rogerian Argument and Practical Reasoning
- Figurative Logic: Reasoning with Metaphors

Argument analysis and the definition of argument depend on what a person wants to know, and by what means. In some academic disciplines, the means are primarily quantitative. In most disciplines, the means are empirical in one way or another—based on observation.

As this chapter and later ones (*especially Chapter 15, Forms and Formats Across the Curriculum*) demonstrate, each division and discipline of the academic world has its own way of knowing. This way of knowing—called an *epistemology*—carries with it a particular way of assessing the value of evidence and of determining the relative validity of claims. No one discipline has the last word on thinking.

Psychology departments, for example, concentrate much less on the soundness of an argument than they do on factors that influence the way people think. We offer one example of thinking about thinking in psychology in the Voice from Across the Curriculum appearing at the end of Chapter 2. There psychologist Mark Sciutto speaks about cognitive behavior therapy and the problem of various kinds of automatic thoughts, such as globalizing and fortune-telling, that distort the way people think. In Chapter 2, we argue that the deeply ingrained habits of overgeneralizing, judging, and leaping prematurely to conclusions are the most fundamental causes of poor thinking.

Neuroscience departments study thinking in a more materially empirical way, by trying to isolate the various biochemical and other mechanisms in the brain that determine how we process experience. History, religion, English, and art history departments, among others, study the various traditions of thought, including traditions in language that shape and condition thinking in individuals and cultures.

We now turn to the long tradition of analyzing arguments that has evolved from the thinking of Aristotle and other early Greek philosophers. This necessarily brief discussion cannot do justice to the methods of argument analysis employed by philosophers, especially logicians. But it is possible to provide a skeletal version of how these methods operate and also to locate them in the context of other ways of thinking about argument.

THE RULES OF ARGUMENT: SYLLOGISM AND ENTHYMEME

Philosophers have long quested for forms that might lend to human argument some greater clarity and certainty, more like what is possible with formulas in math. As you will see and as most philosophers readily admit, the reality of evaluating arguments in day-to-day life is necessarily a less tidy process than the rules of argument might make it seem. The kinds of certainty that are sometimes possible with formulas in math are not so easily available when using words to make claims about human experience. Nevertheless, the rules of argument described here offer a set of specific guidelines for discovering things that go right—and wrong—in the construction of an argument.

Probably the most common way of talking about logical argumentation goes back to Aristotle. This approach doesn't always have direct applications in the kinds of analytical writing described in this book, but knowing the ways that philosophers have devised for evaluating arguments can expand your ability to assess your own and others' reasoning about claims and evidence.

There are a number of rules for evaluating the validity of a syllogism's conclusion. In this short section, we cannot offer enough of the details about argument analysis to equip you with the necessary skills. But we will give you enough detail so that you can understand the basic principles and methods of this way of thinking about argument.

At the heart of the Aristotelian model is the syllogism, which consists of three parts:

1. Major premise: a general proposition presumed to be true;
2. Minor premise: a subordinate proposition also presumed to be true; and
3. Conclusion: a claim that follows logically from the two premises, if the argument has been properly framed.

Here is a frequently cited example of a syllogism:

All men are mortal (major premise).

Socrates is a man (minor premise).

Therefore, Socrates is mortal (conclusion).

A premise is a proposition (assumption) upon which an argument is based and from which a conclusion is drawn. In the syllogism, if both of the premises have been stated in the proper form (both containing a shared term), then the conclusion must be valid.

An important thing to know about syllogisms is that they are only as true as the premises they are made of. It is not, however, the business of the syllogism to test the truth of the premises. Syllogisms can only demonstrate that the form of the argument is valid. As you will see, this word "valid" is a key term in argument evaluation, a term that does not mean the same thing as right or true.

If a writer follows the prescribed steps of the syllogism without violating any of the rules on proper wording and on the way the steps may be put together, then the conclusion arrived at in step 3 is valid. An argument evaluated in this way can be valid and still be false. For example:

All politicians are corrupt.

The mayor of Chicago is a politician.

Therefore, the mayor of Chicago is corrupt.

The problem here is not with the form of the syllogism but with the fact that the major premise is untrue.

To make good use of syllogistic reasoning, you need to get into the habit of recasting arguments that you write or read or hear into the proper syllogistic form. The way most people articulate claims—often without even recognizing that they are making claims—is rarely if ever syllogistic. Claims, for example, if they are to be most easily assessed for validity, usually need to be recast using forms of "to be" rather than other kinds of verbs (as in the Chicago example above).

While arguments as formulated in formal logic are grounded in abstract, universal terms, most arguments as we encounter them in daily life involve statements about values and beliefs. These real-life arguments typically appear in a form that philosophers call the "enthymeme." An enthymeme is an incomplete syllogism. One of its premises has been left unstated, usually because the person offering the argument takes the unstated assumption to be a given, something so obviously true that it doesn't even need to be made explicit.

Sample Enthymeme: Cats make better pets than dogs because cats are more independent.

Unstated Assumption: Independent animals make better pets.

Sample Enthymeme: Charter schools will improve the quality of education because they encourage competition.

Unstated Assumption: Competition improves the quality of education.

TOULMIN'S ALTERNATIVE MODEL OF THE SYLLOGISM

British philosopher Steven Toulmin offered a competing model of argument in his influential book, *The Uses of Argument* (1958). Toulmin's model was motivated by his belief that the philosophical tradition of formal logic, with its many rules for describing and evaluating the conduct of arguments, conflicts with the practice and idiom (ways of phrasing) of arguers. To radically simplify Toulmin's case, it is that the

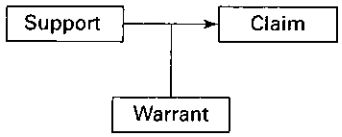

FIGURE 9.1
The Toulmin Model.

syllogism does not adequately account for what really happens when thinkers try to frame and defend various claims. Toulmin tried to describe the structure of argument in a way that he thought came closer to what actually happens in practice when we try to take a position.

The Toulmin model of argument renames and reorders the process of reasoning described in the Aristotelian syllogism as follows:

1. Data: the evidence appealed to in support of a claim; data respond to the question "What have you got to go on?"
2. Warrant: a general principle or reason used to connect the data with the claim; the warrant responds to the question "How did you get there?" (from the data to the claim).
3. Claim: a conclusion about the data (see Figure 9.1).

Consider this model in terms of the chapter's opening discussion of linking evidence and claims. In the Toulmin model, the warrant is the link. It supplies the reasoning that explains why the evidence (support) leads to the conclusion (claim).

Let's look briefly at how this reasoning structure works in practice by looking at one of Toulmin's examples.

data: Harry was born in Bermuda.

warrant: The relevant statutes provide that people born in the colonies of British parents are entitled to British citizenship (reason for connecting data to claim);

claim: So, presumably, Harry is a British citizen. (conclusion)

We can now follow Toulmin a little further in his critique and revision of syllogistic ways of describing thinking. A syllogism, as you saw above, is designed to reveal its soundness through the careful framing and arrangement of its terms:

All men are mortal. (All x's are y.)

Socrates is a man. (Socrates is an x.)

Therefore, Socrates is mortal. (Socrates is a y.)

At what price, asks Toulmin, do we simplify our phrasing of complex situations in the world in order to gain this appearance of truth? In how many situations, he asks, can we say that "all x's are y"?

The strictness of the rules necessary for guaranteeing formal validity, Toulmin argues, leaves out the greater amount of uncertainty that is a part of reasoning about

most questions, issues, and problems. Toulmin observes, using his own argument structure as a case in point, that as soon as an argument begins to add information in support of its premises, the complexity and inevitable tentativeness of the argument become apparent, rather than its evident truth.

Here is Toulmin's explanation of what must happen to the form of an argument when a person begins to add more supporting information, which Toulmin calls *backing*. The backing for the warrant in the example above about the British citizenship of people born in Bermuda would inevitably involve mentioning "the relevant statutes"—acts of Parliament, statistical reports, and so forth—to prove its accuracy. The addition of such information, says Toulmin, would "prevent us from writing the argument so that its validity shall be manifest from its formal properties alone" (*The Uses of Argument*, 123).

Not everyone agrees with Toulmin's revision or his reasoning. The rhetorician Edward Corbett, for example, argues that the Toulmin system lacks rules and guidelines for assessing the "logicality of the argument" (*The Elements of Reasoning*, Macmillan, 1991, p. 44). Corbett also argues that Toulmin's system is less easy to use than it appears, noting that recognizing claims, data, warrants, and backing in an argument may not be any easier than finding conclusions, minor premises, and major premises in a syllogism.

The rules of argument are important for clarifying and testing our thinking. And, of course, many more forms and structures are available in logic than this brief account could begin to suggest. There are, for example, a number of rules for arriving at claims about evidence inductively. Syllogistic reasoning is deductive; it works by bringing premises into accord with some larger governing premise.

To use an analogy, if the Aristotelian syllogism appears to offer us the promise of never mistaking the forest for the trees, Toulmin's revision of that model is to never let us forget that the forest is in fact made up of trees.

As a writer, you will naturally want some guidelines and workable methods for selecting evidence and linking it to claims. But what you can't expect to find is a set of predetermined slots into which you can drop any piece of evidence and find the truth. Rather, analyses and arguments operate within the complex set of details and circumstances that are part of life as we live it. An argument depends not only on whether or not its premises follow logically but on the quality of the thinking that produces those premises in the first place and painstakingly tests their accuracy. This is the job of analysis.

ROGERIAN ARGUMENT AND PRACTICAL REASONING

Most people want to be reasonable and have others think of them as reasonable. It has long been hoped by some people that we might devise a foolproof system for demonstrating that one person's argument is clearly right and another's is clearly wrong. Certainty is an attractive goal for many people.

The kind of formal argument analysis we have been considering is a piece of this hope. The rules of argument—whichever model you try to apply—do have

a significant capacity for discriminating sound arguments from less sound ones. Moreover, the challenge of translating real world propositions into the forms required by this or that argumentative system is not insurmountable. A number of books out there can teach you to do it.

Our discussion, however, has disclosed the problems that logical analysis of the forms of argument faces. It is difficult to incorporate into the prescribed forms much of the detail that is actually significant in making the argument sound. Even these problems can be negotiated, though, if you don't expect too much and if you take a practical approach, such as focusing on enthymemes (the form that everyday arguments most often take) and learning to supply the missing assumptions.

There are, however, other objections to prioritizing the rules of argument. These objections come from contemporary rhetoricians who are less concerned about testing the adequacy of arguments than they are with making argument better serve the needs of people in everyday life and in the larger arena of public discourse. The view of argument offered throughout this book—for example, in the discussion of counterproductive habits of mind in the latter half of Chapter 2—is aligned with the thinking of two such rhetoricians, Carl Rogers and Wayne Booth. For these rhetoricians, the aim is not primarily to defeat opponents but to locate common ground. (Many have noticed the presence of militaristic rhetoric in argument analysis.)

Both Rogers and Booth place their emphasis on listening. They stress the need to be able to understand and accurately represent the positions of "opponents" in an argument. This goal is very much the norm in academic writing, where people try to put different points of view into conversation rather than set out to have one view defeat another. As Zachary Dobbins has argued, "For Booth, reasoning equates not just with rational thought but instead with inquiry, a term that more expansively describes the process all of us are daily engaged in to shape and make sense of the world—a process the ends of which are seldom certain or empirically measurable" ("Wayne Booth, Narrative, and the Rhetoric of Empathy"—an unpublished talk delivered at the 2010 Conference on College Composition and Communication). Dobbins quotes Booth to the effect that "The supreme purpose of persuasion [...] should not be to talk someone else into a preconceived view; rather it must be to engage in mutual inquiry or exploration [...]" (*Modern Dogma and the Rhetoric of Dissent*).

TWO WAYS TO IMPROVE AN ARGUMENT: CHECK FOR UNSTATED ASSUMPTIONS AND QUALIFY CLAIMS

Many of the arguments we encounter in daily life succumb to overly rigid and unqualified categorical thinking. Of course, putting things into categories is not unto itself a bad practice. In order to generalize from particular experiences, we try to put those experiences into meaningful categories. Analytical thought is quite unthinkable without categories. But these can mislead us into oversimplification when the categories are too broad or too simply connected.

This is especially the case with the either/or choices to which categorical thinking is prone: approve/disapprove, real/unreal, accurate/inaccurate, believable/unbelievable. The writer who evaluates leadership in terms of its selflessness/selfishness, for example, needs to pause to consider why we should evaluate leadership in these terms in the first place.

We will refer to the following two examples to illustrate how (1) qualifying your claims and (2) checking for the unstated assumptions upon which your claims depend can remedy the two primary problems created by categorical thinking: unqualified claims and overstated positions. *(For more on methods of uncovering unstated assumptions and reformulating binaries, see Chapter 4, Toolkit of Analytical Methods II.)*

> **Example I:** I think that there are many things shown on TV that are damaging for people to see. But there is no need for censorship. No network is going to show violence without the approval of the public, obviously for financial reasons. What must be remembered is that the public majority will see what it wants to see in our mass society.

> **Example II:** Some members of our society feel that [the televised cartoon series] *The Simpsons* promotes wrong morals and values for our society. Other members find it funny and entertaining. I feel that *The Simpsons* has a more positive effect than a negative one. In relation to a real-life marriage, Marge and Homer's marriage is pretty accurate. The problems they deal with are not very large or intense. As for the family relationships, the Simpsons are very close and love each other.

The main problem with Example I is the writer's failure to qualify his ideas, a problem that causes him to generalize to the point of oversimplification. Note the writer's habit of stating his claims absolutely (we have italicized the words that make these claims unqualified):

"there is *no* need for censorship"

"*no* network is going to show violence without"

"*obviously* for financial reasons"

"what *must* be remembered"

"the majority *will* see"

Such broad, pronouncement-like claims cannot be supported. The solution is to more carefully limit the claims, especially the key premise about public approval. The assertion that a commercial television industry will, for financial reasons, give the public "what it wants" is true *to an extent* (our key phrase for reformulating either/ors)—but it is not true as globally as the writer wishes us to believe.

Couldn't it also be argued, for example, that given the power of television to shape people's tastes and opinions, the public sees not just what it wants but what it has been taught to want? This complication of the writer's argument about public approval undermines the credibility of his global assertion that "there is no need for censorship."

Example II would appear to be more qualified than Example I because it acknowledges the existence of more than one point of view. Rather than broadly asserting that the show is positive and accurate, she tempers these claims (as italics show): "I *feel*

that *The Simpsons* has a *more* positive effect *than* a negative one"; "Marge and Homer's marriage is *pretty* accurate." These qualifications, however, are superficial.

Before she could convince us to approve of *The Simpsons* for its accuracy in depicting marriage, she would have to convince us that accuracy is a reasonable criterion for evaluating TV shows (especially cartoons) rather than assuming the unquestioned value of accuracy. Would an accurate depiction of the life of a serial killer, for example, necessarily make for a "positive" show? Similarly, if a fantasy show has no interest in accuracy, is it necessarily "negative" and without moral value?

When writers present a debatable premise as if it were self-evidently true, the conclusions built upon it cannot stand. At the least, the writer of Example II needs to recognize her debatable premise, articulate it, and make an argument in support of it. She might also precede her judgment about the show with more analysis. Before deciding that the show is "more positive than negative" and thus does not promote "wrong morals and values for our society," she could analyze what the show says about marriage and how it goes about saying it.

Likewise, if the writer of Example I had further examined his own claims before rushing to argue an absolute position on censorship, he would have noticed how much of the thinking that underlies them remains unarticulated and thus unexamined. It would also allow him to sort out the logical contradiction with his opening claim that "there are many things shown on TV that are damaging for people to see." If television networks will only broadcast what the public approves of, then apparently the public must approve of being damaged or fail to notice that it is being damaged. If the public either fails to notice it is being damaged or approves of it, aren't these credible arguments for rather than against censorship?

FIGURATIVE LOGIC: REASONING WITH METAPHORS

To understand reasoning only in terms of propositional logic is to ignore how much of our day-to-day thinking is conducted indirectly, not in the form of explicit claims but in metaphors. Many people assume that figurative thinking—the kind conducted in metaphors and similes—is confined only to poems and that it is not really thinking but is instead primarily emotional and irrational.

There are some problems with these charges against figurative thinking that lie beyond the scope of this discussion—for example, that emotions are the enemy of rationality, an assumption that neuroscience researchers like Antonio Damasio have challenged. What is important for present purposes is to consider challenges that can reasonably be made to the assumption that one of our most common ways of thinking is not, in fact, a way of reasoning about evidence.

THE LOGIC OF METAPHOR

- Metaphors pervade our ways of thinking
- Metaphor is a way of thinking by analogy
- The logic of metaphors is implicit
- The implicit logic of metaphors can be made explicit by scrutinizing the language
- We can recast figurative language to see and evaluate its arguments just as we recast language to examine its logic in syllogistic form

Everyday Thinking

Metaphors are deeply engrained in the language we use everyday; they are far from being solely the concern of poets. George Lakoff, professor of linguistics and cognitive science, and English professor Mark Turner, among others, have demonstrated that metaphors are built into the way we think. (See Lakoff and Turner's book, *More than Cool Reason, a Field Guide to Poetic Metaphor*, University of Chicago Press, 1989.) As such, metaphors routinely constitute our assumptions about the world and our place in it. Life, for example, is a journey. To become successful, you climb a ladder. Being up is a good thing. To be down is to be unhappy and blue. These are all metaphors. If we accept their implicit arguments in an unexamined way, they call the shots in our lives more than we should allow them to.

Although figurative logic does not operate in the same way as claims-based (propositional) logic, it nevertheless produces arguments, the reasoning of which can be analyzed and evaluated. Let's start with a definition. A metaphor works by **analogy**—a type of comparison that often finds similarities between things that are otherwise unlike. Consider the simile "My love is like a red red rose." A simile, identifiable by its use of the words "like" or "as," operates like a metaphor except that both sides of the analogy are explicitly stated. The subject of the simile, love, is called the tenor; the comparative term brought in to think about love, rose, is called the vehicle.

In metaphors, the thought connection between the vehicle (rose) and the tenor (my love) is left unstated. But for our purposes, the clearer and more explicit simile will do. It is the nature of the resemblance between the speaker's "love" and roses that we are invited to infer.

What are the characteristics of red roses—especially red red (very red) roses—that might be relevant in this piece of thinking by analogy? Well, most people find roses to be beautiful. Most people associate red with passion. In fact, science can now measure the body's response to different colors. Red produces excitement. Red can even make the pulse rate go up. Roses are also complicated flowers. Their shape is convoluted. Roses are thought of as female. Rose petals are fragile. Many roses have thorns. So, the simile is actually a piece of thinking about love and about women.

It is not a very deep piece of thinking, and probably many women would prefer that the thorn part not be made too prominent. In fact, a reader would have to decide in the context of other language in the poem whether thorniness, as a characteristic of some roses, is significant and ought to be considered. The point is that the simile does make an argument about women that could be stated overtly, analyzed, and evaluated. The implication that women, like roses, might have thorns—and thus be hard to "pick," defending them from male intruders, and so forth is part of the argument.

Here is the procedure for exploring and decoding the logic of metaphor—what we have to do, more or less automatically, to understand the thinking that the metaphor suggests.

Step 1: Isolate the vehicle—the language in the metaphor that states one side of the analogy.

Step 2: Articulate the characteristics of the vehicle, its defining traits.

Step 3: Select the characteristics of the vehicle that seem most significant in context.

Step 4: Use these significant characteristics of the vehicle to prompt interpretive leaps to what the metaphor communicates. Make the implicit explicit.

Notice how, in the rose example, our recasting of the original simile has made explicit the implicit meanings inside the figurative language. This recasting is a useful act of thinking, one that makes evident the thought process that a metaphor sets in motion.

What such recasting reveals is not only that metaphors do, in fact, make claims, but that they are remarkably efficient at doing so. A metaphor can say a lot in a little by compressing a complex amalgam of thought and feeling into a single image.

What objections might remain to thinking that figurative language has an implicit logic and is a way of thinking and making arguments? People who pride themselves on being logical thinkers and place great value on rationality are inclined to think of metaphorical language as imprecise and too little available to any systematic way of arriving at meaning that all who encounter the metaphor might share. This is a reasonable objection, but one that can be answered in the terms that we introduced in our discussion of Practical Reasoning above.

As we argue at some length in Chapter 6, Making Interpretations Plausible, certainty and single right answers are very rarely available, especially when our evidence consists of words. Even in areas, however, where it is not possible to prove beyond a doubt that one statement of meaning is truer and more accurate than another, people will usually accept some reasoning from evidence as better—truer to the meaning of the words in context—than others. The meaning-making process is social and consensual. To put a Rogerian slant on this point, understanding figurative logic involves careful listening to language, an openness to multiple possibilities, and it also requires empathy—much like what is required of us in understanding people's arguments in everyday life.

Skepticism about the logic and usefulness of metaphorical language is especially common among people who like to think of themselves as completely out-front (a metaphor!) and practical—always saying what they mean, as though it were possible for everything that mattered to be made entirely overt and equally understandable by all, regardless of background and experience.

The fact that metaphors require interpretation—as do most uses of language—does not take away from the fact that metaphors are a way of thinking. Being able to articulate the implicit arguments embodied in metaphors, making their meanings explicit so that they can be opened to discussion with others—is an important thinking and language skill to acquire.

A BRIEF GLOSSARY OF COMMON LOGICAL FALLACIES

This last section of the chapter offers a brief discussion of common fallacies—false moves—that can subvert argument and interpretation. If you can recognize these fallacies, you can more easily avoid them both in constructing arguments and in analyzing the arguments of others.

The logical fallacies share certain characteristics. First of all, they are forms of cheating in an argument, which is to say that, however false and misleading they may be, and however intentional or unintentional, these tactics are often quite successful. They offer cheap and unethical ways of "winning" an argument—usually at the cost of shutting down the possibility of negotiation among competing views and discovery of common ground that are the goals of Rogerian argument.

The most noticeable feature of arguments based on the logical fallacies is sloganizing—or slogan-slinging, which is a suitably graphic way of putting it. In sloganizing, each side tries to lay claim to various of a culture's honorific words, which then are repeated so often and so much out of context that they evoke little more than a warm glow that each side hopes to attach to its cause. Words and phrases often used in this way are "liberty," "freedom," "the individual," and "the American people," to name a few.

Words like these are sometimes referred to as "weasel" words, along with words like "natural" and "real." The analogy with weasels goes to the notion that weasels suck out the contents of eggs, leaving empty shells behind.

The sloganizing move gets made when each side tries to attach to the other side various labels that evoke fear, even though the words have been repeated so often, in reference to so many different things, that they have become virtually meaningless. This type of sloganizing almost always takes complex circumstances and reduces them to clear-cut goods and evils. Prominent examples in the current contentious political environment are "socialist," "big government," and "capitalist."

It is usual to organize the fallacies into the categories Pathos, Ethos, and Logos from classical rhetoric *(see Chapter 3, the section on Analysis and Argument)*. Appeals to the audience's emotions, for example, such as the fallacy called "bandwagon," fall under pathos. Attacks on the character of one's opponent, such as the fallacy called *ad hominem*, are located under ethos. Various kinds of deceptive and erroneous thinking, such as *post hoc ergo propter hoc*, come under Logos.

Here is another useful way to think about the fallacies. The categories overlap somewhat, but it is helpful to differentiate diversionary tactics from moves that misrepresent the issues.

- Fallacies that derail an argument by distracting audience attention to a mostly irrelevant topic (e.g., red herring, *ad hominem*)
- Fallacies that oversimplify and polarize positions, often through the use of slogans or scare words (e.g., slippery slope, equivocation, false dichotomies, false analogies, straw man).

Some of the fallacies in this second category appear to make a show of substantiality and logicality, while actively misrepresenting things (e.g., simple cause/complex effect, confusing a correlation with a cause—especially when statistics are involved).

Recognizing fallacies in other people's arguments all too often leads to games of "gotcha." Pointing out others' dubious moves can help you "win;" A better alternative is the Rogerian one, to restate what another person is saying in a manner that he or she is willing to accept. This difficult but rewarding tactic can bring both sides in the argument out from behind the barriers, so to speak, where real discussion might be possible. As you will see, many of these errors involve the root problem of oversimplification.

1. ***Ad hominem***. Literally, the Latin phrase means "to the person." When an argument is aimed at the character of another person rather than at the quality of his or her reasoning or performance, we are engaging in an *ad hominem* argument. If a political candidate is attacked because he or she is rich, rather than on the basis of his or her platform, he or she is the victim of an ad hominem attack. In some cases, an *ad hominem* argument is somewhat pertinent—e.g., if a political candidate is discovered to have mob connections.
2. **Bandwagon (*ad populum*)**. Bandwagon arguments appeal to the emotions of a crowd, as in "everyone's doing it." A bandwagon argument is a bad argument from authority, because no reasons are offered to demonstrate that "everybody" is an informed and reliable source.
3. **Begging the question (circular reasoning)**. When you beg the question, you attempt to prove a claim by offering an alternative wording of the claim itself. To beg the question is to argue in a circle by asking readers to accept without argument a point that is actually at stake. This kind of fallacious argument hides its conclusion among its assumptions. For example, "*Huckleberry Finn* should be banned from school libraries as obscene because it uses dirty language" begs the question by presenting as obviously true issues that are actually in question: the definition of obscenity and the assumption that the obscene should be banned because it is obscene.
4. **Equivocation**. Equivocation confuses an argument by using a single word or phrase in more than one sense. For example: "Only man is capable of religious faith. No woman is a man. Therefore, no woman is capable of religious faith." Here the first use of "man" is generic, intended to be gender neutral, while the second use is decidedly masculine.
5. **False analogy**. A false analogy misrepresents matters by making a comparison between two things that are more unlike than alike. The danger that arguing analogically can pose is that an inaccurate comparison, usually one that oversimplifies, prevents you from looking at the evidence. Flying to the moon is like flying a kite? Well, it's a little bit like that, but . . . in most ways that matter, sending a rocket to the moon does not resemble sending a kite into the air.

   An analogy can also become false when it becomes overextended: there is a point of resemblance at one juncture, but the writer then goes on to assume that the two items compared will necessarily resemble each other in most other respects. To what extent is balancing your checkbook really like juggling? On the other hand, an analogy that first appears overextended may not be: how far, for example, could you reasonably go in comparing a presidential election to a sales campaign, or an enclosed shopping mall to a village main street?

When you find yourself reasoning by analogy, ask yourself two questions: (1) are the basic similarities greater and more significant than the obvious differences? and (2) am I over-relying on surface similarities and ignoring more essential differences?

6. **False cause**. This is a generic term for questionable conclusions about causes and effects. Here are three versions of this fallacy:
   a. **Simple cause/complex effect**. This fallacy occurs when you assign a single cause to a complex phenomenon that cannot be so easily explained. A widespread version of this fallacy is seen in arguments that blame individual figures for broad historical events, for example, "Eisenhower caused America to be involved in the Vietnam War." Such a claim ignores the cold war ethos, the long history of colonialism in Southeast Asia, and a multitude of other factors. When you reduce a complex sequence of events to a simple and single cause—or assign a simple effect to a complex cause—you will virtually always be wrong.
   b. ***Post hoc, ergo proctor hoc***. This term is the Latin for **after this, therefore because of this**. The fallacy rests in assuming that because *A* precedes *B* in time, *A* causes *B*. For example, it was once thought that the sun shining on a pile of garbage caused the garbage to conceive flies.

      This error is the stuff that superstition is made of. "I walked under a ladder, and then I got hit by a car" becomes "Because I walked under a ladder, I got hit by a car." A more dangerous form of this error goes like this:

      Evidence: A new neighbor moved in downstairs on Saturday. My television disappeared on Sunday.

      Conclusion: The new neighbor stole my TV.

      As this example also illustrates, typically in false cause some significant alternative has not been considered, such as the presence of flies' eggs in the garbage. Similarly, it does not follow that if a person watches television and then commits a crime, television watching necessarily causes crime; there are other causes to be considered.
   c. **Mistaking correlation for cause**. This fallacy occurs when a person assumes that a correlation between two things—some kind of connection—is necessarily causal. Philosopher David Hume called this problem "the constant conjunction of observed events." If you speed in a car and then have a minor accident, it does not follow that speeding caused the accident. If an exit poll reveals that a large number of voters under the age of 25 voted for candidate X, and X loses, it does not follow that X lost because he failed to appeal to older voters. There is a correlation, but the candidate may have lost for a number of reasons.
7. **False dilemma**. When the options are reduced to only two often sharply opposed alternatives, you have committed a false dilemma. An obvious example appears

in the case often made for Intelligent Design: because the universe is very complexly organized, it had to have been created by an intelligent life force. Are there no alternative explanations?

8. **Hasty generalization**. A conclusion derived from only one or two examples produces the fallacy known as hasty generalization. It is also known as an unwarranted inductive leap because the conclusion lacks sufficient evidence. When a child concludes that all orange food tastes bad because he dislikes carrots, he has run afoul of this fallacy. Give him an orange popsicle.
9. ***Non sequitur***. Latin for "it does not follow," *non sequiturs* skip logical steps in arriving at a conclusion. For example: "If we mandate a new tax on people who work downtown but do not live there, businesses will all leave the city." Really?
10. **Oversimplification/overgeneralization** is an inadequately qualified claim. It may be true that some heavy drinkers are alcoholics, but it would not be fair to claim that all heavy drinking is or leads to alcoholism. As a rule, be wary of "totalizing" or global pronouncements; the bigger the generalization, the more likely it will admit of exceptions.
11. **Poisoning the well**. This fallacy occurs when a person uses loaded language to trivialize or dismiss an argument before even mentioning it. For example: "No reasonable person would swallow that left-wing, tax-and-spend position."
12. **Red herring**. The name comes from the practice of using herring, a smelly fish, to distract dogs from the scent they are supposed to be tracking. A red herring diverts the attention of the audience from the matter at hand, often by provoking them with some loaded or controversial topic not really related to the matter at hand. For example, if you are talking about the quality of different kinds of computers, the issue of whether or not they were made in America would be a red herring.
13. **Slippery slope**. This error is based on the fear that once a move is made in one direction, we will necessarily continue to "slide" in that direction. So, for example, if the U.S. approves medicinal uses of marijuana, soon there will be no control of what is now illicit drug use across the nation. A classic case is offered by the Vietnam War: if a single country was allowed to fall under communist rule, soon all the other countries in the region would follow.
14. **Straw man**. This move involves oversimplifying and even caricaturing another person's argument or position in order to make it easier to refute. For example, opponents of health care reform treat it as a straw man when they claim that such reform would deny benefits to the elderly and perhaps even result in so-called "death panels"—groups who would choose which people will live and which will die.
15. **Weasel word**. A specialized form of equivocation results in what are sometimes called weasel words. As we note earlier, a weasel word is one that has been used so much and so loosely that it ceases to have much meaning (the term derives from the weasel's reputed practice of sucking the contents from an egg without destroying the shell). The word "natural," for example, can mean good, pure, and unsullied, but it can also refer to the ways of nature (flora and fauna). Such terms ("love," "reality," and "experience" are others) invite equivocation because they mean so many different things to different people.

GUIDELINES FOR ANALYZING ARGUMENTS

1. Make unstated premises (assumptions) explicit.
2. Look for the general principle or reason (warrant) that connects your data ("what have I got to go on?") with your claim.
3. Remember that argument need not be mortal combat: "mutual inquiry or exploration" (as Wayne Booth puts it) is a constructive goal.
4. Be able to state another's position to his or her satisfaction before you agree or disagree with it, as Carl Rogers counsels.
5. Beware of excessively categorical thinking, which produces overstated claims. To remedy, make sure to qualify your claims and check for unstated assumptions.

Assignments: Analyzing Arguments

1. **Find Examples of Any Two of the Logical Fallacies**. You might look in newspapers, online web pages, blogs, and so forth. Copy out the language that contains the fallacy and explain why it is what you say it is.
2. **Find Examples of Figurative Thinking**. Look at prose rather than poetry so that you can locate figurative thinking as it operates in everyday writing. You can choose a piece of academic writing to see how figurative thinking operates there. Or you might look at a magazine feature article or other essay or even in your college catalog. Copy out the relevant language and explain how the figurative thinking works. Use the four-step procedure for exploring the logic of metaphor.
3. **Apply Toulmin's Scheme to an Editorial**. Choose any editorial from your local newspaper and run it through Toulmin's scheme, which we have repeated below:

   - Data: what evidence does the editorial offer in support of its position? (Data respond to the question "What have you got to go on?")
   - Warrant: what general principle or reason is used to connect the data with the claim? (The warrant responds to the question "How did you get there?")
   - Claim: what conclusion does the writer draw?

   After you have anatomized the editorial in these terms, assess its strength more carefully. What do you find most and least convincing about it, and why? Do you detect any logical lapses—into categorical thinking, say, if not actual logical fallacies? Write up your assessment in a few paragraphs.