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Critical Reading: Getting Deeper into Arguments

He that wrestles with us strengthens our nerves, and sharpens our skill. Our antagonist is our helper.

— EDMUND BURKE

PERSUASION, ARGUMENT, DISPUTE

When we think seriously about an argument (not name calling or mere rationalization), not only do we hear ideas that may be unfamiliar, but we are also forced to examine closely our own cherished opinions, and perhaps for the first time really come to see the strengths and weaknesses of what we believe. As John Stuart Mill put it, "He who knows only his own side of the case knows little."

It is customary, and useful, to distinguish between persuasion and argument. Persuasion has the broader meaning. To **persuade** is to win over — whether

- by giving reasons (that is, by argument),
- by appealing to the emotions, or, for that matter,
- by using torture.

Argument, one form of persuasion, relies on reason; *it offers statements as reasons for other statements*. Rhetoricians often use the Greek word *logos*, which merely means "word" or "reason," to denote this aspect of persuasive writing — the appeal to reason. An appeal to reason may include such things as an appeal to

- Physical evidence;
- The testimony of experts;
- Common sense; and
- Probability.

The appeal to the emotions is known as **pathos.** Strictly speaking, *pathos* is Greek for "feeling," and especially for "suffering," but it now covers all sorts of emotional appeal—for instance, to one's sense of pity or sympathy (Greek for "feeling with") or one's sense of patriotism.

Notice that an argument, in the sense of statements that are offered as reasons for other statements, does not require two speakers or writers who represent opposed positions. The Declaration of Independence is an argument, setting forth the colonists' reasons for declaring their independence. In practice, of course, someone's argument usually advances reasons for a claim in opposition to someone else's position or belief. But even if one is writing only for oneself, trying to clarify one's thinking by setting forth reasons, the result is an argument. **Dispute,** however, is a special kind of argument in which two or more people express views that are at odds.

Most of this book is about argument in the sense of the presentation of reasons in support of claims, but of course, reason is not the whole story. If an argument is to be effective, it must be presented persuasively. For instance, the writer's **tone** (attitude toward self, topic, and audience) must be appropriate if the discourse is to persuade the reader. The careful presentation of the self is not something disreputable, nor is it something that publicity agents or advertising agencies invented. Aristotle (384–22 B.C.E.) emphasized the importance of impressing on the audience that the speaker is a person of good sense and high moral character. (He called this aspect of persuasion **ethos,** the Greek word for "character," as opposed to *logos,* which we have noted is the word for persuasion by appealing to reason.)

Writers convey their trustworthiness by

- Avoiding vulgar language;
- Showing an awareness of the complexity of the issue (for instance, by granting the goodwill of those offering other points of view and by recognizing that there may be some merit to contrary points of view); and

- Showing attention to detail (for instance, by citing relevant statistics).

In short, writers who are concerned with *ethos* —and all writers should be—employ devices that persuade readers that the writers are trustworthy, are persons in whom the reader can have confidence.

We talk at length about tone, along with other matters such as the organization of an argument, in Chapter 5, Writing an Analysis of an Argument, but here we deal with some of the chief devices used in reasoning, and we glance at emotional appeals.

We should note at once, however, that an argument presupposes a fixed **topic.** Suppose we are arguing about Thomas Jefferson's assertion, in the Declaration of Independence, that "all men are created equal." Jones subscribes to this statement, but Smith says it is nonsense and argues that one has only to look around to see that some people are brighter than others, or healthier, or better coordinated, or whatever. Jones and Smith, if they intend to argue the point, will do well to examine what Jefferson actually wrote:

> We hold these truths to be self-evident, that all men are created equal: that they are endowed by their Creator with certain unalienable rights; and that among these are life, liberty, and the pursuit of happiness.

There is room for debate over what Jefferson really meant and about whether he is right, but clearly he was talking about *equality of rights.* If Smith and Jones wish to argue about Jefferson's view of equality—that is, if they wish to offer their reasons for accepting, rejecting, or modifying it—they will do well first to agree on what Jefferson said or what he probably meant to say. Jones and Smith may still hold different views; they may continue to disagree on whether Jefferson was right and proceed to offer arguments and counterarguments to settle the point. But only if they can agree on *what* they disagree about will their dispute get somewhere.

REASON VERSUS RATIONALIZATION

Reason may not be our only way of finding the truth, but it is a way we often rely on. The subway ran yesterday at 6:00 A.M. and the day before at 6:00 A.M. and the day before, and so I infer from this evidence that it will also run today at 6:00 A.M. (a form of reasoning known as **induction**). Bus drivers require would-be passengers

to present the exact change; I do not have the exact change; therefore, I infer I cannot ride on the bus (**deduction**). (The terms *deduction* and *induction* are discussed in more detail on pages 62–63 and 67–69.)

We also know that, if we set our minds to a problem, we can often find reasons (not necessarily sound ones but reasons nevertheless) for almost anything we want to justify. Here is an entertaining example from Benjamin Franklin's *Autobiography:*

> I believe I have omitted mentioning that in my first voyage from Boston, being becalmed off Block Island, our people set about catching cod and hauled up a great many. Hitherto I had stuck to my resolution of not eating animal food, and on this occasion, I considered with my master Tryon the taking of every fish as a kind of unprovoked murder, since none of them had or ever could do us any injury that might justify the slaughter. All this seemed very reasonable. But I had formerly been a great lover of fish, and when this came hot out of the frying pan, it smelt admirably well. I balanced some time between principle and inclination, till I recollected that when the fish were opened I saw smaller fish taken out of their stomachs. Then thought I, if you eat one another, I don't see why we mayn't eat you. So I dined upon cod very heartily and continued to eat with other people, returning only now and then occasionally to a vegetable diet. So convenient a thing it is to be a *reasonable creature,* since it enables one to find or make a reason for everything one has a mind to do.

Franklin is being playful; he is *not* engaging in critical thinking. He tells us that he loved fish, that this fish "smelt admirably well," and so we are prepared for him to find a reason (here one as weak as "Fish eat fish, therefore people may eat fish") to abandon his vegetarianism. (But think: Fish also eat their own young. May we therefore eat ours?)

Still, Franklin touches on a truth: If necessary, we can find reasons to justify whatever we want. That is, instead of reasoning we may *rationalize* (devise a self-serving but dishonest reason), like the fox in Aesop's fables who, finding the grapes he desired were out of his reach, consoled himself with the thought they were probably sour.

Perhaps we can never be certain that we are not rationalizing, except when, like Franklin, we are being playful—but we can seek to think critically about our own beliefs, scrutinizing our assumptions, looking for counterevidence, and wondering if different conclusions can reasonably be drawn.

SOME PROCEDURES IN ARGUMENT

Definition

Definition, we mentioned in our first chapter, is one of the classical topics, a "place" to which one goes with questions; in answering the questions, one finds ideas. When we define, we are answering the question "What is it?" and in answering this question as precisely as we can, we will find, clarify, and develop ideas.

We have already glanced at an argument over the proposition that "all men are created equal," and we saw that the words needed clarification. *Equal* meant, in the context, not physically or mentally equal but something like "equal in rights," equal politically and legally. (And of course, "men" meant "white men and women.") Words do not always mean exactly what they seem to: There is no lead in a lead pencil, and a standard 2-by-4 is currently $1^{5}/_{8}$ inches in thickness and $3^{3}/_{8}$ inches in width.

Definition by Synonym Let's return, for a moment, to *pornography,* a word that, we saw, is not easily defined. One way to define a word is to offer a **synonym.** Thus, pornography can be defined, at least roughly, as "obscenity" (something indecent). But definition by synonym is usually only a start because we find that we will have to define the synonym and, besides, that very few words have exact synonyms. (In fact, *pornography* and *obscenity* are not exact synonyms.)

Definition by Example A second way to define something is to point to an example (this is often called **ostensive definition,** from the Latin *ostendere,* "to show"). This method can be very helpful, ensuring that both writer and reader are talking about the same thing, but it also has its limitations. A few decades ago many people pointed to James Joyce's *Ulysses* and D. H. Lawrence's *Lady Chatterley's Lover* as examples of obscene novels, but today these books are regarded as literary masterpieces. Possibly they can be obscene and also be literary masterpieces. (Joyce's wife is reported to have said of her husband, "He may have been a great writer, but . . . he had a very dirty mind.")

One of the difficulties of using an example, however, is that the example is richer and more complex than the term it is being used to define, and this richness and complexity get in the way of achieving a clear definition. Thus, if one cites Lawrence's *Lady*

Chatterley's Lover as an example of pornography, a listener may erroneously think that pornography has something to do with British novels or with heterosexual relationships outside of marriage. Yet neither of these ideas is part of the concept of pornography.

We are not trying here to formulate a satisfactory definition of *pornography.* Our object is to show that

- An argument will be most fruitful if the participants first agree on what they are talking about;
- One way to secure such agreement is to define the topic ostensively; and
- Choosing the right example, one that has all the central or typical characteristics, can make a topic not only clear but also vivid.

Definition by Stipulation In arguing, you can legitimately offer a **stipulative definition,** saying, perhaps, that by *Native American* you mean any person with any Native American blood; or you might say, "For the purpose of the present discussion, I mean by a *Native American* any person who has at least one grandparent of pure Native American blood." A stipulative definition is appropriate where

- No fixed or standard definition is available, and
- Some arbitrary specification is necessary to fix the meaning of a key term in the argument.

Not everyone may be willing to accept your stipulative definition, and alternatives can probably be defended. In any case, when you stipulate a definition, your audience knows what *you* mean by the term thus defined.

It would *not* be reasonable, of course, to stipulate that by *Native American* you mean anyone with a deep interest in North American aborigines. That's just too idiosyncratic to be useful. Similarly, an essay on Jews in America will have to rely on some definition of the key idea. Perhaps the writer will stipulate the definition used in Israel: A Jew is a person who has a Jewish mother or, if not born of a Jewish mother, a person who has formally adopted the Jewish faith. Or perhaps the writer will stipulate another meaning: Jews are people who consider themselves to be Jews. Some sort of reasonable definition must be offered.

To stipulate, however, that by *Jews* you mean "persons who believe that the area formerly called Palestine rightfully belongs to

the Jews" would hopelessly confuse matters. Remember the old riddle and the answer: If you call a dog's tail a leg, how many legs does a dog have? Answer: Four. Calling a tail a leg doesn't make it a leg.

Later in this chapter you will see, in an essay called "When 'Identity' Politics Is Rational," Stanley Fish begin by stipulating a definition. His first paragraph begins thus:

> If there's anything everyone is against in these election times, it's "identity politics,"a phrase that covers a multitude of sins. Let me start with a definition. (It may not be yours, but it will at least allow the discussion to be framed.) You're practicing identity politics when you vote for or against someone because of his or her skin color, ethnicity, religion, gender, sexual orientation, or any other marker that leads you to say yes or not independently of a candidate's ideas or policies.

Fish will go on to argue, in later paragraphs, that sometimes identity politics makes very good sense, that it is *not* irrational, is *not* logically indefensible, but here we simply want to make two points—one about how a definition helps the writer, the second about how it helps the reader:

- A definition is a good way to get yourself started when you are drafting an essay, a useful stimulus (idea prompt, pattern, template, heuristic) that will help *you* to think about the issue, a device that will stimulate your further thinking.
- A definition lets readers be certain that they are clear about what the author means by a crucial word.

Readers may disagree with Fish, but at least they know what he means when he speaks of identity politics.

A stipulation may be helpful and legitimate. Here is the opening paragraph of an essay by Richard B. Brandt titled "The Morality and Rationality of Suicide" (from *A Handbook for the Study of Suicide*, edited by Seymour Perlin). Notice that

- The author first stipulates a definition, and
- Then, aware that the definition may strike some readers as too broad and therefore unreasonable or odd, he offers a reason on behalf of his definition:

> "Suicide" is conveniently defined, for our purposes, as doing something which results in one's death, either from the intention

> of ending one's life or the intention to bring about some other state of affairs (such as relief from pain) which one thinks it certain or highly probable can be achieved only by means of death or will produce death. It may seem odd to classify an act of heroic self-sacrifice on the part of a soldier as suicide. It is simpler, however, not to try to define "suicide" so that an act of suicide is always irrational or immoral in some way; if we adopt a neutral definition like the above we can still proceed to ask when an act of suicide in that sense is rational, morally justifiable, and so on, so that all evaluations anyone might wish to make can still be made.

Sometimes a definition that at first seems extremely odd can be made acceptable, if strong reasons are offered in its support. Sometimes, in fact, an odd definition marks a great intellectual step forward. For instance, in 1990 the U.S. Supreme Court recognized that *speech* includes symbolic nonverbal expression such as protesting against a war by wearing armbands or by flying the American flag upside down. Such actions, because they express ideas or emotions, are now protected by the First Amendment. Few people today would disagree that *speech* should include symbolic gestures. (We include an example of controversy over precisely this issue, in Derek Bok's "Protecting Freedom of Expression on the Campus," in Chapter 2, Critical Reading: Getting Started.)

A definition that seems notably eccentric to many readers and thus far has not gained much support is from page 94 of Peter Singer's *Practical Ethics,* in which the author suggests that a nonhuman being can be a *person.* He admits that "it sounds odd to call an animal a person" but says that it seems so only because of our bad habit of sharply separating ourselves from other species. For Singer, *persons* are "rational and self-conscious beings, aware of themselves as distinct entities with a past and a future." Thus, although a newborn infant is a human being, it is not a person; on the other hand, an adult chimpanzee is not a human being but probably is a person. You don't have to agree with Singer to know exactly what he means and where he stands. Moreover, if you read his essay, you may even find that his reasons are plausible and that by means of his unusual definition he has enlarged your thinking.

The Importance of Definitions Trying to decide on the best way to define a key idea or a central concept is often difficult as well as controversial. *Death,* for example, has been redefined in recent years. Traditionally, a person was dead when there was no longer

any heartbeat. But with advancing medical technology, the medical profession has persuaded legislatures to redefine *death* as cessation of cerebral and cortical functions—so-called brain death.

Some scholars have hoped to bring clarity into the abortion debate by redefining *life.* Traditionally, human life begins at birth or perhaps at viability (the capacity of a fetus to live independently of the uterine environment). However, some have proposed a "brain birth" definition, in the hope of resolving the abortion controversy. A *New York Times* story of November 8, 1990, reported that these thinkers want abortion to be prohibited by law at the point where "integrated brain functioning begins to emerge—about seventy days after conception." Whatever the merits of such a redefinition, the debate is convincing evidence of just how important the definition of certain terms can be.

Last Words about Definition Since Plato's time, in the fourth century B.C., it has often been argued that the best way to give a definition is to state the *essence* of the thing being defined. Thus, the classic example defines *man* as "a rational animal." (Today, to avoid sexist implications, instead of *man* we would say *human being* or *person.*) That is, the property of *rational animality* is taken to be the essence of every human creature, and so it must be mentioned in the definition of *man.* This statement guarantees that the definition is neither too broad nor too narrow. But philosophers have long criticized this alleged ideal type of definition, on several grounds, one of which is that no one can propose such definitions without assuming that the thing being defined has an essence in the first place—an assumption that is not necessary. Thus, we may want to define *causality,* or *explanation,* or even *definition* itself, but it is doubtful whether it is sound to assume that any of these things has an essence.

A much better way to provide a definition is to offer a set of **sufficient and necessary conditions.** Suppose we want to define the word *circle* and are conscious of the need to keep circles distinct from other geometrical figures such as rectangles and spheres. We might express our definition by citing sufficient and necessary conditions as follows: "Anything is a circle *if and only if* it is a closed plane figure and all points on the circumference are equidistant from the center." Using the connective "if and only if" (called the *biconditional*) between the definition and what is being defined helps to force into our consciousness the need to make the definition neither too exclusive (too narrow) nor too inclusive (too

IDEA PROMPT 3.1 WAYS TO GIVE DEFINITIONS

Synonym	"Pornography, simply stated, is obscenity."
Example	"Pornography is easily seen in D.H. Lawrence's *Lady Chatterly's Lover* in the scene where . . ."
Stipulation	"For the purposes of this essay, *pornography* refers to . . ."
Statement of necessary and sufficient conditions	"Something can be called *pornography* if and only if it presents sexually stimulating material without offering anything of redeeming social value."

broad). Of course, for most ordinary purposes we don't require such a formally precise and explicit definition. Nevertheless, perhaps the best criterion to keep in mind when assessing a proposed definition is whether it can be stated in the "if and only if " form, and whether, if it is so stated, it is true; that is, if it truly specifies *all and only* the things covered by the word being defined. Idea Prompt 3.1 provides examples.

We are not saying that the four sentences in the table are incontestable. They are arguable. We offer them merely to show ways of defining, and the act of defining is one way of helping you to get your own thoughts going. Notice, too, that the fourth of these examples, a "statement of necessary and sufficient conditions" (indicated by "if and only if") is a bit stiff for ordinary writing. An informal prompt along this line might begin, "Essentially, something can be called *pornography* if it presents. . . ."

Assumptions

In Chapter 1, Critical Thinking, we discussed the **assumptions** made by the authors of two essays on campus discipline. But we have more to say about assumptions. We have already said that in the form of discourse known as argument certain statements are offered as reasons for other statements. But even the longest and most complex chain of reasoning or proof is fastened to assumptions—one or more *unexamined beliefs.* (Even if such a belief is shared by writer and reader, it is no less an assumption.) Benjamin Franklin argued against paying salaries to the holders of executive

offices in the federal government on the grounds that men are moved by ambition (love of power) and by avarice (love of money) and that powerful positions conferring wealth incite men to do their worst. These assumptions he stated, though he felt no need to argue them at length because he assumed that his readers shared them.

An assumption may be unstated. A writer, painstakingly arguing specific points, may choose to keep one or more of the argument's assumptions tacit. Or the writer may be as unaware of some underlying assumption as of the surrounding air. For example, Franklin didn't even bother to state another assumption. He must have assumed that persons of wealth who accept an unpaying job (after all, only persons of wealth could afford to hold unpaid government jobs) will have at heart the interests of all classes of people, not only the interests of their own class. Probably Franklin did not state this assumption because he thought it was perfectly obvious, but if you think critically about the assumption, you may find reasons to doubt it. Surely one reason we pay our legislators is to make certain that the legislature does not consist only of people whose incomes may give them an inadequate view of the needs of others.

An Example: Assumptions in the Argument Permitting Abortion

1. Ours is a pluralistic society, in which we believe that the religious beliefs of one group should not be imposed on others.
2. Personal privacy is a right, and a woman's body is hers, not to be violated by laws that tell her she may not do certain things to her body.

But these (and other) arguments *assume* that a fetus is not—or not yet—a person and therefore is not entitled to the same protection against assaults that we are. Virtually all of us assume that it is usually wrong to kill a human being. Granted, we may find instances in which we believe it is acceptable to take a human life, such as self-defense against a would-be murderer. But even here we find a shared assumption that persons are ordinarily entitled not to be killed.

The argument about abortion, then, usually depends on opposed assumptions: For one group, the fetus is a human being and a potential person—and this potentiality is decisive. But for the other group it is not. Persons arguing one side or the other of the abortion issue ought to be aware that opponents may not share their assumptions.

Premises and Syllogisms

Premises are stated assumptions used as reasons in an argument. (The word comes from a Latin word meaning "to send before" or "to set in front.") A premise thus is a statement set down—assumed—before the argument is begun. The joining of two premises—two statements taken to be true—to produce a conclusion, a third statement, is called a **syllogism** (Greek for "a reckoning together"). The classic example is this:

Major premise:	All human beings are mortal.
Minor premise:	Socrates is a human being.
Conclusion:	Socrates is mortal.

Deduction

The mental process of moving from one statement ("All human beings are mortal") through another ("Socrates is a human being") to yet a further statement ("Socrates is mortal") is called **deduction,** from Latin for "lead down from." In this sense, deductive reasoning does not give us any new knowledge, although it is easy to construct examples that have so many premises, or premises that are so complex, that the conclusion really does come as news to most who examine the argument. Thus, the great detective Sherlock Holmes was credited by his admiring colleague, Dr. Watson, with unusual powers of deduction. Watson meant in part that Holmes could see the logical consequences of apparently disconnected reasons, the number and complexity of which left others at a loss. What is common in all cases of deduction is that the reasons or premises offered are supposed to contain within themselves, so to speak, the conclusion extracted from them.

Often a syllogism is abbreviated. Martin Luther King Jr., defending a protest march, wrote in "Letter from Birmingham Jail":

> You assert that our actions, even though peaceful, must be condemned because they precipitate violence.

Fully expressed, the argument that King attributes to his critics would be stated thus:

> Society must condemn actions (even if peaceful) that precipitate violence.
>
> This action (though peaceful) will precipitate violence.
>
> Therefore, society must condemn this action.

An incomplete or abbreviated syllogism in which one of the premises is left unstated, of the sort found in King's original quotation, is called an **enthymeme** (Greek for "in the mind").

Here is another, more whimsical example of an enthymeme, in which both a premise and the conclusion are left implicit. Henry David Thoreau remarked that "circumstantial evidence can be very strong, as when you find a trout in the milk." The joke, perhaps intelligible only to people born before 1930 or so, depends on the fact that milk used to be sold "in bulk"—that is, ladled out of a big can directly to the customer by the farmer or grocer. This practice was finally prohibited in the 1930s because for centuries the sellers, in order to increase their profit, were diluting the milk with water. Thoreau's enthymeme can be fully expressed thus:

Trout live only in water.

This milk has a trout in it.

Therefore, this milk has water in it.

These enthymemes have three important properties: Their premises are *true,* the form of their argument is *valid,* and they leave *implicit* either the conclusion or one of the premises.

Sound Arguments

The purpose of a syllogism is to present reasons that establish its conclusion. This is done by making sure that the argument satisfies both of two independent criteria:

- First, all of the premises must be *true.*
- Second, the syllogism must be *valid.*

Once these criteria are satisfied, the conclusion of the syllogism is guaranteed. Any such argument is said to establish or to prove its conclusion, or to use another term, it is said to be **sound.** Here's an example of a sound argument, a syllogism that proves its conclusion:

> Extracting oil from the Arctic Wildlife Refuge would adversely affect the local ecology.
>
> Adversely affecting the local ecology is undesirable, unless there is no better alternative fuel source.
>
> Therefore, extracting oil from the Arctic Wildlife Refuge is undesirable, unless there is no better alternative fuel source.

Each premise is **true,** and the syllogism is **valid,** so it establishes its conclusion.

But how do we tell in any given case that an argument is sound? We perform two different tests, one for the truth of each of the premises and another for the validity of the argument.

The basic test for the **truth** of a premise is to determine whether what it asserts corresponds with reality; if it does, then it is true, and if it doesn't, then it is false. Everything depends on the content of the premise—what it asserts—and the evidence for it. (In the preceding syllogism, the truth of the premises can be tested by checking the views of experts and interested parties, such as policymakers, environmental groups, and experts on energy.)

The test for **validity** is quite different. We define a valid argument as one in which the conclusion follows from the premises, so that if all the premises are true then the conclusion *must* be true, too. The general test for validity, then, is this: If one grants the premises, one must also grant the conclusion. Or to put it another way, if one grants the premises but denies the conclusion, is one caught in a self-contradiction? If so, the argument is valid; if not, the argument is invalid.

The preceding syllogism passes this test. If you grant the information given in the premises but deny the conclusion, you have contradicted yourself. Even if the information were in error,

the conclusion in this syllogism would still follow from the premises—the hallmark of a valid argument! The conclusion follows because the validity of an argument is a purely formal matter concerning the *relation* between premises and conclusion based on what they mean.

This relationship can be seen more clearly by examining an argument that is valid but that, because one or both of the premises are false, does *not* establish its conclusion. Here is an example of such a syllogism:

The whale is a large fish.

All large fish have scales.

Therefore, whales have scales.

We know that the premises and the conclusion are false: Whales are mammals, not fish, and not all large fish have scales (sharks have no scales, for instance). But when the validity of the argument is being determined, the truth of the premises and the conclusion is beside the point. Just a little reflection assures us that *if* both of these premises were true, then the conclusion would have to be true as well. That is, anyone who grants the premises of this syllogism and yet denies the conclusion has contradicted herself. So the validity of an argument does not in any way depend on the truth of the premises or the conclusion.

A sound argument, as we said, is an argument that passes both the test of true premises and the test of valid inference. To put it another way, a sound argument

- Passes the test of content (the premises are true, as a matter of fact) and it
- Passes the test of form (its premises and conclusion, by virtue of their very meanings, are so related that it is impossible for the premises to be true and the conclusion false).

Accordingly, an unsound argument, an argument that fails to prove its conclusion, suffers from one or both of two defects.

- First, not all of the premises are true.
- Second, the argument is invalid.

Usually, we have in mind one or both of these defects when we object to someone's argument as "illogical." In evaluating someone's deductive argument, therefore, you must always ask: Is it vulnerable to criticism on the ground that one (or more) of its

premises is false? Or is the inference itself vulnerable because even if all the premises are all true, the conclusion still wouldn't follow?

A deductive argument *proves* its conclusion if and only if *two conditions* are satisfied: (1) All the premises are *true,* and (2) it would be *inconsistent to assert the premises and deny the conclusions.*

A Word about False Premises Suppose that one or more of the premises of a syllogism is false but the syllogism itself is valid. What does that tell us about the truth of the conclusion? Consider this example:

All Americans prefer vanilla ice cream to other flavors.

Tiger Woods is an American.

Therefore, Tiger Woods prefers vanilla ice cream to other flavors.

The first (or major) premise in this syllogism is false. Yet the argument passes our formal test for validity; it is clear that if one grants both premises, then one must accept the conclusion. So we can say that the conclusion *follows from* its premises, even though the premises *do not prove* the conclusion. This is not as paradoxical as it may sound. For all we know, the conclusion of this argument may in fact be true; Tiger Woods may indeed prefer vanilla ice cream, and the odds are that he does because consumption statistics show that a majority of Americans prefer vanilla. Nevertheless, if the conclusion in this syllogism is true, it is not because this argument proved it.

A Word about Invalid Syllogisms Usually, one can detect a false premise in an argument, especially when the suspect premise appears in someone else's argument. A trickier business is the invalid syllogism. Consider this argument:

All terrorists seek publicity for their violent acts.

John Doe seeks publicity for his violent acts.

Therefore, John Doe is a terrorist.

In the preceding syllogism, let us grant that the first (major) premise is true. Let us also grant that the conclusion may well be true. Finally, the person mentioned in the second (minor) premise could indeed be a terrorist. But it is also possible that the conclusion is false; terrorists are not the only ones who seek publicity for their violent acts; think, for example, of the violence committed against doctors, clinic workers, and patients at clinics where abortions are

performed. In short, the truth of the two premises is no guarantee that the conclusion is also true. It is possible to assert both premises and deny the conclusion without self-contradiction.

How do we tell, in general and in particular cases, whether a syllogism is valid? Chemists use litmus paper to enable them to tell instantly whether the liquid in a test tube is an acid or a base. Unfortunately, logic has no litmus test to tell us instantly whether an argument is valid or invalid. Logicians beginning with Aristotle have developed techniques that enable them to test any given argument, no matter how complex or subtle, to determine its validity. But the results of their labors cannot be expressed in a paragraph or even a few pages; not for nothing are semester-long courses devoted to teaching formal deductive logic. Apart from advising you to consult Chapter 9, A Logician's View: Deduction, Induction, Fallacies, all we can do here is repeat two basic points.

First, validity of deductive arguments is a matter of their *form* or *structure.* Even syllogisms like the one on the Arctic Wildlife Refuge on page 64 come in a large variety of forms (256 different ones, to be precise), and only some of these forms are valid. Second, all valid deductive arguments (and only such arguments) pass this test: If one accepts all the premises, then one must accept the conclusion as well. Hence, if it is possible to accept the premises but reject the conclusion (without self-contradiction, of course), then the argument is invalid.

Let us exit from further discussion of this important but difficult subject on a lighter note. Many illogical arguments masquerade as logical. Consider this example: If it takes a horse and carriage four hours to go from Pinsk to Chelm, does it follow that a carriage with two horses will get there in two hours?

Note: In Chapter 9, we discuss at some length other kinds of deductive arguments, as well as **fallacies,** which are kinds of invalid reasoning.

Induction

Whereas deduction takes our beliefs and assumptions and extracts their hidden consequences, **induction** uses information about observed cases to reach a conclusion about unobserved cases. (The word comes from the Latin *in ducere,* "to lead into" or "to lead up to.") If we observe that the bite of a certain snake is poisonous, we may conclude on this evidence that another snake of the same general type is also poisonous. Our inference might be even broader. If

we observe that snake after snake of a certain type has a poisonous bite and that these snakes are all rattlesnakes, we are tempted to **generalize** that all rattlesnakes are poisonous.

By far the most common way to test the adequacy of a generalization is to confront it with one or more **counterexamples.** If the counterexamples are genuine and reliable, then the generalization must be false. We are constantly testing our generalizations against actual or possible counterexamples.

Unlike deduction, induction gives us conclusions that go beyond the information contained in the premises used in their support. Not surprisingly, the conclusions of inductive reasoning are not always true, even when all the premises are true. On page 53, we gave as an example our observation that on previous days a subway has run at 6:00 A.M. and that therefore we believe that it runs at 6:00 A.M. every day. Suppose, following this reasoning, we arrive at the subway platform just before 6:00 A.M. on a given day and wait an hour without a train. What inference should we draw to explain this? Possibly today is Sunday, and the subway doesn't run before 7:00 A.M. Or possibly there was a breakdown earlier this morning. Whatever the explanation, we relied on a sample that was not large enough (a larger sample might have included some early morning breakdowns) or not representative enough (a more representative sample would have included the later starts on holidays).

A Word about Samples When we reason inductively, much depends on the size and the quality of the sample. We may interview five members of Alpha Tau Omega and find that all five are Republicans, yet we cannot legitimately conclude that all members of ATO are Republicans. The problem is not always one of failing to interview large numbers. A poll of ten thousand college students tells us very little about "college students" if all ten thousand are white males at the University of Texas. Such a sample, because it leaves out women and minority males, obviously is not sufficiently *representative* of "college students" as a group. Further, though not all of the students at the University of Texas are from Texas or even from the Southwest, it is quite likely that the student body is not fully representative (for instance, in race and in income) of American college students. If this conjecture is correct, even a truly representative sample of University of Texas students would not allow one to draw firm conclusions about American college students.

In short: An argument that uses samples ought to tell the reader how the samples were chosen. If it does not provide this information, the argument may rightly be treated with suspicion.

Evidence: Experimentation, Examples, Authoritative Testimony, Statistics

Different disciplines use different kinds of evidence:

- In literary studies, the texts are usually the chief evidence.
- In the social sciences, field research (interviews, surveys) usually provides evidence.

In the sciences, reports of experiments are the usual evidence; if an assertion cannot be tested—if an assertion is not capable of being shown to be false—it is a *belief*, an *opinion*, not a scientific hypothesis.

Experimentation Induction is obviously useful in arguing. If, for example, one is arguing that handguns should be controlled, one will point to specific cases in which handguns caused accidents or were used to commit crimes. If one is arguing that abortion has a traumatic effect on women, one will point to women who testify to that effect. Each instance constitutes **evidence** for the relevant generalization.

In a courtroom, evidence bearing on the guilt of the accused is introduced by the prosecution, and evidence to the contrary is introduced by the defense. Not all evidence is admissible (hearsay, for example, is not, even if it is true), and the law of evidence is a highly developed subject in jurisprudence. In the forum of daily life, the sources of evidence are less disciplined. Daily experience, a particularly memorable observation, an unusual event we witnessed—any or all of these may be used as evidence for (or against) some belief, theory, hypothesis, or explanation. The systematic study of what experience can yield is what science does, and one of the most distinctive features of the evidence that scientists can marshal on behalf of their claims is that it is the result of **experimentation.** Experiments are deliberately contrived situations that are often complex in their technology and designed to yield particular observations. What the ordinary person does with unaided eye and ear, the scientist does, much more carefully and thoroughly, with the help of laboratory instruments.

The variety, extent, and reliability of the evidence obtained in daily life and in the laboratory are quite different. It is hardly a

surprise that in our civilization much more weight is attached to the "findings" of scientists than to the corroborative (much less the contrary) experiences of the ordinary person. No one today would seriously argue that the sun really does go around the earth just because it looks that way; nor would we argue that because viruses are invisible to the naked eye they cannot cause symptoms such as swellings and fevers, which are quite plainly visible.

Examples One form of evidence is the **example.** Suppose that we argue that a candidate is untrustworthy and should not be elected to public office. We point to episodes in his career—his misuse of funds in 1998 and the false charges he made against an opponent in 2002—as examples of his untrustworthiness. Or if we are arguing that President Truman ordered the atom bomb dropped to save American (and, for that matter, Japanese) lives that otherwise would have been lost in a hard-fought invasion of Japan, we point to the stubbornness of the Japanese defenders in battles on the islands of Saipan, Iwo Jima, and Okinawa, where Japanese soldiers fought to the death rather than surrender.

These examples, we say, show us that the Japanese defenders of the main islands would have fought to their deaths without surrendering, even though they knew they would be defeated. Or if we argue that the war was nearly won when Truman dropped the bomb, we can cite secret peace feelers as examples of the Japanese willingness to end the war.

An example is a sample; these two words come from the same Old French word, *essample,* from the Latin *exemplum,* which means "something taken out"—that is, a selection from the group. A Yiddish proverb shrewdly says that "'For example' is no proof," but the evidence of well-chosen examples can go a long way toward helping a writer to convince an audience.

In arguments, three sorts of examples are especially common:

- Real events,
- Invented instances (artificial or hypothetical cases), and
- Analogies.

We will treat each of these briefly.

REAL EVENTS In referring to Truman's decision to drop the atom bomb, we have already touched on examples drawn from real events—the battles at Saipan and elsewhere. And we have also seen Ben Franklin pointing to an allegedly real happening, a

fish that had consumed a smaller fish. The advantage of an example drawn from real life, whether a great historical event or a local incident, is that its reality gives it weight. It can't simply be brushed off.

On the other hand, an example drawn from reality may not provide as clear-cut an instance as could be wished for. Suppose, for instance, that someone cites the Japanese army's behavior on Saipan and on Iwo Jima as evidence that the Japanese later would have fought to the death in an American invasion of Japan and would therefore have inflicted terrible losses on themselves and on the Americans. This example is open to the response that in June and July 1945, Japanese diplomats sent out secret peace feelers, so that in August 1945, when Truman authorized dropping the bomb, the situation was very different.

Similarly, in support of the argument that nations will no longer resort to atomic weapons, some people have offered as evidence the fact that since World War I the great powers have not used poison gas. But the argument needs more support than this fact provides. Poison gas was not decisive or even highly effective in World War I. Moreover, the invention of gas masks made it obsolete.

In short, any *real* event is so entangled in its historical circumstances that it might not be adequate or even relevant evidence in the case being argued. In using a real event as an example (and real events certainly can be used), the writer ordinarily must demonstrate that the event can be taken out of its historical context and be used in the new context of argument. Thus, in an argument against using atomic weapons in warfare, the many deaths and horrible injuries inflicted on the Japanese at Hiroshima and Nagasaki can be cited as effects of nuclear weapons that would invariably occur and did not depend on any special circumstances of their use in Japan in 1945.

INVENTED INSTANCES **Artificial** or **hypothetical cases—invented instances**—have the great advantage of being protected from objections of the sort just given. Recall Thoreau's trout in the milk; that was a colorful hypothetical case that nicely illustrated his point. An invented instance ("Let's assume that a burglar promises not to shoot a householder if the householder swears not to identify him. Is the householder bound by the oath?") is something like a drawing of a flower in a botany textbook or a diagram of the folds of a mountain in a geology textbook. It is admittedly

false, but by virtue of its simplifications it sets forth the relevant details very clearly. Thus, in a discussion of rights, the philosopher Charles Frankel says,

> Strictly speaking, when we assert a right for *X*, we assert that *Y* has a duty. Strictly speaking, that *Y* has such a duty presupposes that *Y* has the capacity to perform this duty. It would be nonsense to say, for example, that a nonswimmer has a moral duty to swim to the help of a drowning man.

This invented example is admirably clear, and it is immune to charges that might muddy the issue if Frankel, instead of referring to a wholly abstract person, *Y,* talked about some real person, Jones, who did not rescue a drowning man. For then he would get bogged down over arguing about whether Jones *really* couldn't swim well enough to help, and so on.

Yet invented cases have their drawbacks. First and foremost, they cannot be used as evidence. A purely hypothetical example can illustrate a point or provoke reconsideration of a generalization, but it cannot substitute for actual events as evidence supporting an inductive inference. Sometimes such examples are so fanciful, so remote from life that they fail to carry conviction with the reader. Thus the philosopher Judith Jarvis Thomson, in the course of her argument entitled "A Defense of Abortion," asks you to imagine that you wake up one day and find that against your will a celebrated violinist whose body is not adequately functioning has been hooked up into your body, for life support. Do you have the right to unplug the violinist? Readers of the essays in this book will have to decide for themselves whether the invented cases proposed by various authors are helpful or whether they are so remote that they hinder thought. Readers will have to decide, too, about when they can use invented cases to advance their own arguments.

But we add one point: Even a highly fanciful invented case can have the valuable effect of forcing us to see where we stand. We may say that we are, in all circumstances, against vivisection. But what would we say if we thought that an experiment on one mouse would save the life of someone we love? Or conversely, if one approves of vivisection, would one also approve of sacrificing the last giant panda to save the life of a senile stranger, a person who in any case probably would not live longer than another year? Artificial cases of this sort can help us to see that, well, no, we didn't really mean to say such-and-such when we said so-and-so.

ANALOGIES The third sort of example, **analogy,** is a kind of comparison. An analogy asserts that things that are alike in some ways are alike in yet another way. Example: "Before the Roman Empire declined as a world power, it exhibited a decline in morals and in physical stamina; our culture today shows a decline in morals (look at the high divorce rate, and look at the crime rate) and we also show a decline in physical culture (just read about obesity in children). America, like Rome, will decline as a world power."

Strictly, an analogy is an extended comparison in which different things are shown to be similar in several ways. Thus, if one wants to argue that a head of state should have extraordinary power during wartime, one can argue that the state at such a time is like a ship in a storm: The crew is needed to lend its help, but the decisions are best left to the captain. (Notice that an analogy compares things that are relatively *un*like. Comparing the plight of one ship to another or of one government to another is not an analogy; it is an inductive inference from one case of the same sort to another such case.)

Or take another analogy: We have already glanced at Judith Thomson's hypothetical case in which the reader wakes up to find himself or herself hooked up to a violinist. Thomson uses this situation as an analogy in an argument about abortion. The reader stands for the mother, the violinist for the unwanted fetus. Whether this analogy is close enough to pregnancy to help illuminate our thinking about abortion is something that you may want to think about.

The problem with argument by analogy is this: Two admittedly different things are agreed to be similar in several ways, and the arguer goes on to assert or imply that they are also similar in another way—the point that is being argued. (That is why Thomson argues that if something is true of the reader-hooked-up-to-a-violinist, it is also true of the pregnant mother-hooked-up-to-a-fetus.) But the two things that are said to be analogous and that are indeed similar in characteristics *A, B,* and *C* are also different—let's say in characteristics *D* and *E.* As Bishop Butler is said to have remarked in the early eighteenth century, "Everything is what it is, and not another thing."

Analogies can be convincing, especially because they can make complex issues simple. "Don't change horses in midstream," of course, is not a statement about riding horses across a river but about choosing leaders in critical times. Still, in the end, analogies do not necessarily prove anything. What may be true about riding horses across a stream may not be true about choosing leaders in

troubled times or about deciding on a given change of leadership. Riding horses across a stream and choosing leaders are, at bottom, different things, and however much these activities may be said to resemble one another, they remain different, and what is true for one need not be true for the other.

Analogies can be helpful in developing our thoughts. It is sometimes argued, for instance—on the analogy of the doctor-patient or the lawyer-client, or the priest-penitent relationship—that newspaper and television reporters should not be required to reveal their confidential sources. That is worth thinking about: Do the similarities run deep enough, or are there fundamental differences? Or take another example: Some writers who support abortion argue that the fetus is not a person any more than the acorn is an oak. That is also worth thinking about. But one should also think about this response: A fetus is not a person, just as an acorn is not an oak, but an acorn is a potential oak, and a fetus is a potential person, a potential adult human being. Children, even newborn infants, have rights, and one way to explain this claim is to call attention to their potentiality to become mature adults. And so some people argue that the fetus, by analogy, has the rights of an infant, for the fetus, like the infant, is a potential adult.

Three analogies for consideration: First, let's examine a brief comparison made by Jill Knight, a member of the British Parliament, speaking about abortion:

> Babies are not like bad teeth, to be jerked out because they cause suffering.

Her point is effectively put; it remains for the reader to decide whether or not fetuses are *babies* and if a fetus is not a baby, *why* it can or can't be treated like a bad tooth.

Now, a second bit of analogical reasoning, again about abortion: Thomas Sowell, an economist at the Hoover Institute, grants that women have a legal right to abortion, but he objects to a requirement that the government pay for abortions:

> Because the courts have ruled that women have a legal right to an abortion, some people have jumped to the conclusion that the government has to pay for it. You have a constitutional right to privacy, but the government has no obligation to pay for your window shades. (*Pink and Brown People*, 1981, p. 57)

We leave it to the reader to decide whether the analogy is compelling—that is, if the points of resemblance are sufficiently

significant to allow one to conclude that what is true of people wanting window shades should be true of people wanting abortions.

And one more: A common argument on behalf of legalizing gay marriage draws an analogy between gay marriage and interracial marriage, a practice that was banned in sixteen states until 1967, when the Supreme Court declared miscegenation statutes unconstitutional. The gist of the analogy is this: Racism and discrimination against gay and lesbian people are the same. If marriage is a fundamental right—as the Supreme Court held in its 1967 decision when it struck down bans on miscegenation—then it is a fundamental right for gay people as well as heterosexual people.

Authoritative Testimony Another form of evidence is **testimony,** the citation or quotation of authorities. In daily life we rely heavily on authorities of all sorts: We get a doctor's opinion about our health, we read a book because an intelligent friend recommends it, we see a movie because a critic gave it a good review, and we pay at least a little attention to the weather forecaster.

In setting forth an argument, one often tries to show that one's view is supported by notable figures, perhaps Jefferson, Lincoln, Martin Luther King Jr., or scientists who won the Nobel Prize. You may recall that in the second chapter, in talking about definitions of pornography, we referred to Kenneth Clark. To make certain that you were impressed by his testimony even if you had never heard of him, we described him as "probably the most influential English-speaking art critic of our time." But heed some words of caution:

- Be sure that the authority, however notable, is an authority on the topic in question (a well-known biologist might be an authority on vitamins but not on the justice of a war).
- Be sure that the authority is not biased. A chemist employed by the tobacco industry isn't likely to admit that smoking may be harmful, and a "director of publications" (that means a press agent) for a hockey team isn't likely to admit that watching or even playing ice hockey stimulates violence.
- Beware of nameless authorities: "a thousand doctors," "leading educators," "researchers at a major medical school."
- Be careful when using authorities who indeed were great authorities in their day but who now may be out of date (Adam Smith on economics, Julius Caesar on the art of war, Louis Pasteur on medicine).

- Cite authorities whose opinions your readers will value. William F. Buckley Jr.'s conservative/libertarian opinions mean a good deal to readers of the magazine that he founded, the *National Review*, but probably not to most liberal thinkers. Gloria Steinem's liberal/feminist opinions carry weight with the readers of the magazines that she cofounded, *New York* and *Ms.* magazine, but probably not to most conservative thinkers. If you are writing for the general reader, your usual audience, cite authorities who are likely to be accepted by the general reader.

One other point: *You* may be an authority. You probably aren't nationally known, but on some topics you perhaps can speak with the authority of personal experience. You may have been injured on a motorcycle while riding without wearing a helmet, or you may have escaped injury because you wore a helmet; you may have dropped out of school and then returned; you may have tutored a student whose native language is not English, or you may be such a student and you may have received tutoring. You may have attended a school with a bilingual education program. In short, your personal testimony on topics relating to these issues may be invaluable, and a reader will probably consider it seriously.

Statistics The last sort of evidence we discuss here is quantitative or statistical. The maxim "More is better" captures a basic idea of quantitative evidence. Because we know that 90 percent is greater than 75 percent, we are usually ready to grant that any claim supported by experience in 90 percent of the cases is more likely to be true than an alternative claim supported by experience only 75 percent of the time. The greater the difference, the greater our confidence. Consider an example. Honors at graduation from college are often computed on a student's cumulative grade-point average (GPA). The undisputed assumption is that the nearer a student's GPA is to a perfect record (4.0), the better scholar he or she is and therefore the more deserving of highest honors. Consequently, a student with a GPA of 3.9 at the end of her senior year is a stronger candidate for graduating summa cum laude than another student with a GPA of 3.6. When faculty members on the honors committee argue over the relative academic merits of graduating seniors, we know that these quantitative, statistical differences in student GPAs will be the basic (even if not the only) kind of evidence under discussion.

GRAPHS, TABLES, NUMBERS Statistical information can be marshaled and presented in many forms, but it tends to fall into two main types: the graphic and the numerical. Graphs, tables, and pie charts are familiar ways of presenting quantitative data in an eye-catching manner. (See page 122.) To prepare the graphics, however, one first has to get the numbers themselves under control, and for some purposes it may be acceptable simply to stick with the numbers themselves.

But should the numbers be presented in percentages or in fractions? Should one report, say, that the federal budget underwent a twofold increase over the decade, that it increased by 100 percent, that it doubled, or that the budget at the beginning of the decade was one-half what it was at the end? Taken strictly, these are equivalent ways of saying the same thing. Choice among them, therefore, in an example like this perhaps will rest on whether one's aim is to dramatize the increase (a 100 percent increase looks larger than a doubling) or to play down the size of the increase.

THINKING ABOUT STATISTICAL EVIDENCE Statistics often get a bad name because it is so easy to misuse them, unintentionally or not, and so difficult to be sure that they have been correctly gathered in the first place. (We remind you of the old saw "There are lies, damned lies, and statistics.") Every branch of social science and natural science needs statistical information, and countless decisions in public and private life are based on quantitative data in statistical form. It is important, therefore, to be sensitive to the sources and reliability of the statistics and to develop a healthy skepticism when confronted with statistics whose parentage is not fully explained.

Consider, for instance, statistics that kept popping up during the baseball strike of 1994. The owners of the clubs said that the average salary of a major-league player was $1.2 million. (The **average** in this case—technically the **mean**—is the result of dividing the total number of salary dollars by the number of players.) The players' union, however, did not talk about the average; rather, the union talked about the **median,** which was less than half of the average, a mere $500,000. (The *median* is the middle value in a distribution. Thus, of the 746 players, 363 earned less than $500,000, 361 earned more, and 22 earned exactly $500,000.) The union said, correctly, that *most* players earned a good deal less than the $1.2 million figure that the owners kept citing; but the $1.2 million average sounded more impressive to the general public,

and that is the figure that the guy in the street mentioned when asked for an opinion about the strike.

Consider this statistic: In Smithville in 2005, 1 percent of the victims in fatal automobile accidents were bicyclists. In 2006 the percent of bicyclists killed in automobile accidents was 2 percent. Was the increase 1 percent (not an alarming figure), or was it 100 percent (a staggering figure)? The answer is both, depending on whether we are comparing (a) bicycle deaths in automobile accidents with *all* deaths in automobile accidents (that's an increase of 1 percent), or (b) bicycle deaths in automobile accidents *only with other bicycle deaths* in automobile accidents (an increase of 100 percent). An honest statement would say that bicycle deaths due to automobile accidents doubled in 2006, increasing from 1 to 2 percent. But here's another point: Although every such death is lamentable, if there was one such death in 2006 and two in 2010, the increase from one death to two (an increase of 100 percent!) hardly suggests that there is a growing problem that needs attention. No one would be surprised to learn that in the next year there were no deaths, or only one or even two.

One other example may help to indicate the difficulties of interpreting statistics. According to the San Francisco police department, in 1990 the city received 1,074 citizen complaints against the police. Los Angeles received only half as many complaints in the same period, and Los Angeles has five times the population of San Francisco. Does this mean that the police of San Francisco are much rougher than the police of Los Angeles? Possibly. But some specialists who have studied the statistics not only for these two cities but also for many other cities have concluded that a department with proportionately more complaints against it is not necessarily more abusive than a department with fewer complaints. According to these experts, the more confidence that the citizens have in their police force, the more the citizens will complain about police misconduct. The relatively small number of complaints against the Los Angeles police department thus may indicate that the citizens of Los Angeles are so intimidated and have so little confidence in the system that they are afraid to complain or they do not bother to complain.

If it is sometimes difficult to interpret statistics, it is often at least equally difficult to establish accurate statistics. Consider this example:

> Advertisements are the most prevalent and toxic of the mental pollutants. From the moment your radio alarm sounds in the

> morning to the wee hours of late-night TV, microjolts of commercial pollution flood into your brain at the rate of about three thousand marketing messages per day. (Kalle Lasn, *Culture Jam,* 1999, pp. 18–19)

Lasn's book includes endnotes as documentation, so, curious about the statistics, we turn to the appropriate page and we find this information concerning the source of his data:

> "three thousand marketing messages per day." Mark Landler, Walecia Konrad, Zachary Schiller, and Lois Therrien, "What Happened to Advertising?" *BusinessWeek,* September 23, 1991, page 66. Leslie Savan in *The Sponsored Life* (Temple University Press, 1994), page 1, estimated that "16,000 ads flicker across an individual's consciousness daily." I did an informal survey in March 1995 and found the number to be closer to 1,500 (this included all marketing messages, corporate images, logos, ads, brand names, on TV, radio, billboards, buildings, signs, clothing, appliances, in cyberspace, etc., over a typical twenty-four hour period in my life). (219)

Well, this endnote is odd. In the earlier passage, you will recall, the author asserted that "about three thousand marketing messages per day" flood into a person's brain. Now, in the documentation, he helpfully cites a source for that statistic, from *BusinessWeek*—though we have not the faintest idea of how the authors of the article in *BusinessWeek* came up with that figure. Oddly, he goes on to offer a very different figure (16,000 ads), and then, to our utter confusion, he offers yet a third figure, 1,500, based on his own "informal survey."

Probably the one thing we can safely say about all three figures is that none of them means very much. Even if the compilers of the statistics told us exactly how they counted—let's say that among countless other criteria they assumed that the average person reads one magazine per day and that the average magazine contains 124 advertisements—it would be hard to take them seriously. After all, in leafing through a magazine, some people may read many ads, some may read none. Some people may read some ads carefully—but perhaps to enjoy their absurdity. Our point: Although the author in his text said, without implying any uncertainty, that "about three thousand marketing messages per day" reach an individual, it is evident (if one checks the endnote) that even he is confused about the figure he gives.

✓ A CHECKLIST FOR EVALUATING STATISTICAL EVIDENCE

Regard statistical evidence (like all other evidence) cautiously, and don't accept it until you have thought about these questions:

- ☐ Was it compiled by a disinterested source? Of course, the name of the source does not always reveal its particular angle (for example, People for the American Way), but sometimes the name lets you know what to expect (National Rifle Association, American Civil Liberties Union).
- ☐ Is it based on an adequate sample? (A study pointed out that criminals have an average IQ of 91 to 93, whereas the general population has an IQ of 100. The conclusion drawn was that criminals have a lower IQ than the general population. This reading may be accurate, but some doubts have been expressed. For instance, because the entire sample of criminals consisted only of *convicted* criminals, this sample may be biased; possibly the criminals with higher IQs have enough intelligence not to get caught. Or if they are caught, perhaps they are smart enough to hire better lawyers.)
- ☐ Is the statistical evidence recent enough to be relevant?
- ☐ How many of the factors likely to be relevant were identified and measured?
- ☐ Are the figures open to a different and equally plausible interpretation?
- ☐ If a percent is cited, is it the *average* (or *mean*), or is it the *median*?

Some last words about the unreliability of some statistical information, stuff that looks impressive but that is, in fact, insubstantial. Marilyn Jager Adams studied the number of hours that families read to their children in the five or so years before the children go to school. In her book on the topic, *Beginning to Read: Thinking and Learning about Print* (Massachusetts Institute of Technology Press, 1990), she pointed out that in all those preschool years, poor families read to their children only twenty-five hours, whereas in the same period middle-income families read 1,000 to 1,700 hours. The figures were much quoted in newspapers and by children's advocacy groups. Dr. Adams could not, of course, interview every family in these two

groups; she had to rely on samples. What were her samples? For poor families, she selected twenty-four children in twenty families, all in Southern California. One might wonder if families from only one geographic area can provide an adequate sample, but let's think about Dr. Adams's sample of middle-class families. How many families constituted the sample? Exactly one, her own. We leave it to you to decide how much value her findings—again, they were much cited—have.

We are not suggesting that everyone who uses statistics is trying to deceive or even that many who use statistics are unconsciously deceived by them. We mean to suggest only that statistics are open to widely different interpretations and that often those columns of numbers, so precise with their decimal points, are in fact imprecise and possibly even worthless because they may be based on insufficient or biased samples.

QUIZ

What is wrong with the following statistical proof that children do not have time for school?

One-third of the time they are sleeping (about 122 days);

One-eighth of the time they are eating (three hours a day, totaling 45 days);

One-fourth of the time is taken up by summer and other vacations (91 days);

Two-sevenths of the year is weekends (104 days).

Total: 362 days—so how can a kid have time for school?

NONRATIONAL APPEALS

Satire, Irony, Sarcasm, Humor

In talking about definition, deduction, and evidence, we have been talking about means of rational persuasion. But as mentioned earlier, there are also other means of persuasion. Take force, for example. If *X* kicks *Y,* threatens to destroy *Y*'s means of livelihood, or threatens *Y*'s life, *X* may persuade *Y* to cooperate. One form of irrational but sometimes highly effective persuasion is **satire**—that is, witty ridicule. A cartoonist may persuade viewers that a politician's views are unsound by caricaturing (and thus ridiculing) the

politician's appearance or by presenting a grotesquely distorted (funny, but unfair) picture of the issue.

Satiric artists often use caricature; satiric writers, also seeking to persuade by means of ridicule, often use **verbal irony.** Irony of this sort contrasts what is said and what is meant. For instance, words of praise may be meant to imply blame (when Shakespeare's Cassius says, "Brutus is an honorable man," he means his hearers to think that Brutus is dishonorable), and words of modesty may be meant to imply superiority ("Of course, I'm too dumb to understand this problem"). Such language, when heavy-handed, is called **sarcasm** ("You're a great guy," said to someone who will not lend the speaker ten dollars). If it is witty—if the jeering is in some degree clever—it is called irony rather than sarcasm.

Although ridicule is not a form of argument (because it is not a form of reasoning), passages of ridicule, especially verbal irony, sometimes appear in essays that are arguments. These passages, like reasons, or for that matter like appeals to the emotions, are efforts to persuade the hearer to accept the speaker's point of view. The great trick in using humor in an argument is, on the one hand, to avoid mere wisecracking, which makes the writer seem like a smart aleck, and, on the other hand, to avoid mere clownishness, which makes the writer seem like a fool. Later in this chapter (p. 88), we print an essay by George F. Will, that is (or seeks to be?) humorous in places. You be the judge.

Emotional Appeals

It is sometimes said that good argumentative writing appeals only to reason, never to emotion, and that any sort of emotional appeal is illegitimate, irrelevant. "Tears are not arguments," the Brazilian writer Machado de Assis said. Logic textbooks may even stigmatize with Latin labels the various sorts of emotional appeal—for instance, *argumentum ad populam* (appeal to the prejudices of the mob, as in "Come on, we all know that schools don't teach anything anymore") and *argumentum ad misericordiam* (appeal to pity, as in "No one ought to blame this poor kid for stabbing a classmate because his mother was often institutionalized for alcoholism and his father beat him").

True, appeals to emotion may get in the way of the facts of the case; they may blind the audience by, in effect, throwing dust in its eyes or by stimulating tears.

Learning from Shakespeare A classic example is found in Shakespeare's *Julius Caesar,* when Marc Antony addresses the Roman populace after Brutus, Cassius, and others have assassinated Caesar. The real issue is whether Caesar was becoming tyrannical (as the assassins claim) and would therefore curtail the freedom of the people. Antony turns from the evidence and stirs the mob against the assassins by appealing to its emotions. In the ancient Roman biographical writing that Shakespeare drew on, Sir Thomas North's translation of Plutarch's *Lives of the Noble Grecians and Romans,* Plutarch says that Antony,

> perceiving that his words moved the common people to compassion, . . . framed his eloquence to make their hearts yearn [that is, grieve] the more, and, taking Caesar's gown all bloody in his hand, he laid it open to the sight of them all, showing what a number of cuts and holes it had upon it. Therewithal the people fell presently into such a rage and mutiny that there was no more order kept.

Here are a few extracts from Antony's speeches in Shakespeare's play. Antony begins by asserting that he will speak only briefly:

> Friends, Romans, countrymen, lend me your ears;
> I come to bury Caesar, not to praise him.

After briefly offering some rather insubstantial evidence that Caesar gave no signs of behaving tyrannically (for example, "When that the poor have cried, Caesar hath wept"), Antony begins to play directly on the emotions of his hearers. Descending from the platform so that he may be in closer contact with his audience (like a modern politician, he wants to work the crowd), he calls attention to Caesar's bloody toga:

> If you have tears, prepare to shed them now.
> You all do know this mantle; I remember
> The first time ever Caesar put it on:
> 'Twas on a summer's evening, in his tent,
> That day he overcame the Nervii.
> Look, in this place ran Cassius' dagger through;
> See what a rent the envious Casca made;
> Through this, the well-belovèd Brutus stabbed. . . .

In these few lines Antony

- First prepares the audience by suggesting to them how they should respond ("If you have tears, prepare to shed them now"),

- Then flatters them by implying that they, like Antony, were intimates of Caesar (he credits them with being familiar with Caesar's garment),
- Then evokes a personal memory of a specific time ("a summer's evening")—not just any old specific time but a very important one, the day that Caesar won a battle against the Nervii (a particularly fierce tribe in what is now France).

In fact, Antony was not at the battle, and he did not join Caesar until three years later.

Antony does not mind being free with the facts; his point here is not to set the record straight but to stir the mob against the assassins. He goes on, daringly but successfully, to identify one particular slit in the garment with Cassius's dagger, another with Casca's, and a third with Brutus's. Antony cannot know which slit was made by which dagger, but his rhetorical trick works.

Notice, too, that Antony arranges the three assassins in climactic order, since Brutus (Antony claims) was especially beloved by Caesar:

> Judge, O you gods, how dearly Caesar loved him!
> This was the most unkindest cut of all;
> For when the noble Caesar saw him stab,
> Ingratitude, more strong than traitor's arms,
> Quite vanquished him. Then burst his mighty heart. . . .

Nice. According to Antony, the noble-minded Caesar—Antony's words have erased all thought of the tyrannical Caesar—died not from the wounds inflicted by daggers but from the heartbreaking perception of Brutus's ingratitude. Doubtless there was not a dry eye in the house. We can all hope that if we are ever put on trial, we have a lawyer as skilled in evoking sympathy as Antony.

Are Emotional Appeals Fallacious? The oration is obviously successful in the play and apparently was successful in real life, but it is the sort of speech that prompts logicians to write disapprovingly of attempts to stir feeling in an audience. (As mentioned earlier in this chapter, the evocation of emotion in an audience is called **pathos,** from the Greek word for "emotion" or "suffering.") There is nothing inherently wrong in stimulating our audience's emotions, but when an emotional appeal confuses the issue that is being argued about or shifts the attention away from the facts of the issue, we can reasonably speak of the fallacy of emotional appeal.

No fallacy is involved, however, when an emotional appeal heightens the facts, bringing them home to the audience rather than masking them. If we are talking about legislation that would govern police actions, it is legitimate to show a photograph of the battered, bloodied face of an alleged victim of police brutality. True, such a photograph cannot tell the whole truth; it cannot tell us if the subject threatened the officer with a gun or repeatedly resisted an order to surrender. But it can tell us that the victim was severely beaten and (like a comparable description in words) evoke in us emotions that may properly enter into our decision about the permissible use of police evidence. Similarly, an animal rights activist who is arguing that calves are cruelly confined might reasonably tell us about the size of the pen in which the beast—unable to turn around or even to lie down—is kept. Others may argue that calves don't much care about turning around or have no right to turn around, but the verbal description, which unquestionably makes an emotional appeal, can hardly be called fallacious or irrelevant.

In appealing to emotions then, the important things are

- Not to falsify (especially by oversimplifying) the issue and
- Not to distract attention from the facts of the case.

Focus on the facts and concentrate on offering reasons (essentially, statements linked with "because"), but you may also legitimately bring the facts home to your readers by seeking to induce in them the appropriate emotions. Your words will be fallacious only if you stimulate emotions that are not rightly connected with the facts of the case.

DOES ALL WRITING CONTAIN ARGUMENTS?

Our answer to the question we have just posed is no—but probably *most* writing *does* contain an argument of sorts. Or put it this way: The writer wants to persuade the reader to see things the way the writer sees them—at least until the end of the essay. After all, even a recipe for a cherry pie in a food magazine—a piece of writing that is primarily expository (how to do it) rather than argumentative (how a reasonable person ought to think about this topic)—probably includes, near the beginning, a sentence with a hint of an argument in it, such as "*Because* [a sign that a *reason* will be offered] this pie can be made quickly and with ingredients (canned cherries) that

✓ A CHECKLIST FOR ANALYZING AN ARGUMENT

- ☐ What is the writer's claim or thesis? Ask yourself:
  - ☐ What claim is being asserted?
  - ☐ What assumptions are being made—and are they acceptable?
  - ☐ Are important terms satisfactorily defined?
- ☐ What support (evidence) is offered on behalf of the claim? Ask yourself:
  - ☐ Are the examples relevant, and are they convincing?
  - ☐ Are the statistics (if any) relevant, accurate, and complete? Do they allow only the interpretation that is offered in the argument?
  - ☐ If authorities are cited, are they indeed authorities on this topic, and can they be regarded as impartial?
  - ☐ Is the logic—deductive and inductive—valid?
  - ☐ If there is an appeal to emotion—for instance, if satire is used to ridicule the opposing view—is this appeal acceptable?
- ☐ Does the writer seem to you to be fair? Ask yourself:
  - ☐ Are counterarguments adequately considered?
  - ☐ Is there any evidence of dishonesty or of a discreditable attempt to manipulate the reader?
  - ☐ How does the writer establish the image of himself or herself that we sense in the essay? What is the writer's tone, and is it appropriate?

are always available, give it a try, and it will surely become one of your favorites." Clearly, such a statement cannot stand as a formal argument—a discussion that takes account of possible counterarguments, that relies chiefly on logic and little if at all on emotional appeal, and that draws a conclusion that seems irrefutable.

Still, the statement is something of an argument on behalf of making a pie with canned cherries. In this case, a claim is made (the pie will become a favorite), and two *reasons* are offered in support of this claim:

- It can be made quickly, and
- The chief ingredient—because it is canned—can always be at hand.

The underlying *assumptions* are

- You don't have a great deal of time to waste in the kitchen, and
- Canned cherries are just as tasty as fresh cherries—and even if they aren't, well, you wouldn't know the difference.

When we read a lead-in to a recipe, then, we won't find a formal argument, but we probably will get a few words that seek to persuade us to keep reading. And most writing does contain such material—sentences that give us a reason to keep reading, that engage our interests, and that make us want to stay with the writer for at least a little longer. If the recipe happens to be difficult and time-consuming, the lead-in may say, "Although this recipe for a cherry pie, using fresh cherries that you will have to pit, is a bit more time-consuming than the usual recipe that calls for canned cherries, once you have tasted it you will never go back to canned cherries." Again, although the logic is scarcely compelling, the persuasive element is evident. The assumption here is that you have a discriminating palate; once you have tasted a pie made with fresh cherries, you will never again enjoy the canned stuff. The writer is not giving us a formal argument, with abundant evidence and with a detailed refutation of counterarguments, but we do know where the writer stands and how the writer wishes us to respond.

AN EXAMPLE: AN ARGUMENT AND A LOOK AT THE WRITER'S STRATEGIES

This essay concerns President George W. Bush's proposal that drilling be allowed in part of the Arctic National Wildlife Refuge (ANWR, pronounced "An-war"). The section of the ANWR that is proposed for drilling is called the "1002 area," as defined by Section 1002 of the Alaska National Interest Lands Conservation Act of 1980. In March 2003, the Senate rejected the Bush proposal, but the issue remains alive.

We follow George F. Will's essay with some comments about the ways in which he constructs his argument.

George F. Will

George F. Will (b. 1941), a syndicated columnist whose writing appears in 460 newspapers, was born in Champaign, Illinois, and educated at Trinity

College (Hartford), Oxford University, and Princeton University. Will has served as the Washington, D.C., editor of the National Review *and now writes a regular column for* Newsweek. *His essays have been collected in several books.*

Being Green at Ben and Jerry's

Some Environmental Policies Are Feel-Good Indulgences for an Era of Energy Abundance

If you have an average-size dinner table, four feet by six feet, put a dime on the edge of it. Think of the surface of the table as the Arctic National Wildlife Refuge in Alaska. The dime is larger than the piece of the coastal plain that would have been opened to drilling for oil and natural gas. The House of Representatives voted for drilling, but the Senate voted against access to what Sen. John Kerry, Massachusetts Democrat and presidential aspirant, calls "a few drops of oil." ANWR could produce, for twenty-five years, at least as much oil as America currently imports from Saudi Arabia.

Six weeks of desultory Senate debate about the energy bill reached an almost comic culmination in . . . yet another agriculture subsidy. The subsidy is a requirement that will triple the amount of ethanol, which is made from corn, that must be put in gasoline, ostensibly to clean America's air, actually to buy farmers' votes.

Over the last three decades, energy use has risen about 30 percent. But so has population, which means per capita energy use is unchanged. And per capita GDP has risen substantially, so we are using 40 percent less energy per dollar output. Which is one reason there is no energy crisis, at least none as most Americans understand such things—a shortage of, and therefore high prices of, gasoline for cars, heating oil for furnaces and electricity for air conditioners.

In the absence of a crisis to concentrate the attention of the inattentive American majority, an intense faction—full-time environmentalists—goes to work. Spencer Abraham, the secretary of Energy, says "the previous administration . . . simply drew up a list of fuels it *didn't* like—nuclear energy, coal, hydropower, and oil—which together account for 73 percent of America's energy supply." Well, there are always windmills.

Sometimes lofty environmentalism is a cover for crude politics. 5
The United States has the world's largest proven reserves of coal. But Mike Oliver, a retired physicist and engineer, and John Hospers,

professor emeritus of philosophy at USC, note that in 1996 President Clinton put 68 billion tons of America's cleanest-burning coal, located in Utah, off-limits for mining, ostensibly for environmental reasons. If every existing U.S. electric power plant burned coal, the 68 billion tons could fuel them for forty-five years at the current rate of consumption. Now power companies must import clean-burning coal, some from mines owned by Indonesia's Lippo Group, the heavy contributor to Clinton, whose decision about Utah's coal vastly increased the value of Lippo's coal.

The United States has just 2.14 percent of the world's proven reserves of oil, so some people say it is pointless to drill in places like ANWR because "energy independence" is a chimera. Indeed it is. But domestic supplies can provide important insurance against uncertain foreign supplies. And domestic supplies can mean exporting hundreds of billions of dollars less to oil-producing nations, such as Iraq.

Besides, when considering proven reserves, note the adjective. In 1930 the United States had proven reserves of 13 billion barrels. We then fought the Second World War and fueled the most fabulous economic expansion in human history, including the electricity-driven "New Economy." (Manufacturing and running computers consume 15 percent of U.S. electricity. Internet use alone accounts for half of the growth in demand for electricity.) So by 1990 proven reserves were . . . 17 billion barrels, not counting any in Alaska or Hawaii.

In 1975 proven reserves in the Persian Gulf were 74 billion barrels. In 1993 they were 663 billion, a ninefold increase. At the current rate of consumption, today's proven reserves would last 150 years. New discoveries will be made, some by vastly improved techniques of deep-water drilling. But environmental policies will define opportunities. The government estimates that beneath the U.S. outer continental shelf, which the government owns, there are at least 46 billion barrels of oil. But only 2 percent of the shelf has been leased for energy development.

Opponents of increased energy production usually argue for decreased consumption. But they flinch from conservation measures. A new $1 gasoline tax would dampen demand for gasoline, but it would stimulate demands for the heads of the tax increasers. After all, Americans get irritable when impersonal market forces add 25 cents to the cost of a gallon. Tougher fuel-efficiency requirements for vehicles would save a lot of energy. But who would save the legislators who passed those requirements? Beware the wrath

of Americans who like to drive, and autoworkers who like to make cars that are large, heavy, and safer than the gasoline-sippers that environmentalists prefer.

Some environmentalism is a feel-good indulgence for an era 10
of energy abundance, which means an era of avoided choices. Or ignored choices—ignored because if acknowledged, they would not make the choosers feel good. Karl Zinsmeister, editor in chief of the *American Enterprise* magazine, imagines an oh-so-green environmentalist enjoying the most politically correct product on the planet—Ben & Jerry's ice cream. Made in a factory that depends on electricity-guzzling refrigeration, a gallon of ice cream requires four gallons of milk. While making that much milk, a cow produces eight gallons of manure, and flatulence with another eight gallons of methane, a potent "greenhouse" gas. And the cow consumes lots of water plus three pounds of grain and hay, which is produced with tractor fuel, chemical fertilizers, herbicides and insecticides, and is transported with truck or train fuel:

"So every time he digs into his Cherry Garcia, the conscientious environmentalist should visualize (in addition to world peace) a pile of grain, water, farm chemicals, and energy inputs much bigger than his ice cream bowl on one side of the table, and, on the other side of the table, a mound of manure eight times the size of his bowl, plus a balloon of methane that would barely fit under the dining room table."

Cherry Garcia. It's a choice. *Bon appêtit*.

George F. Will's Strategies

Now let's look at Will's essay, to see some of the techniques that he uses, techniques that enable him to engage a reader's interest and perhaps enable him to convince the reader, or at least make the reader think, that Will probably is on to something.

We need hardly add that if you think some or all of his techniques—his methods, his strategies—are effective, you will consider adapting them for use in your own essays.

The title, "Being Green at Ben and Jerry's," does not at all prepare the reader for an argument about drilling in the National Arctic Wildlife Refuge, but if you have read any of Will's other columns in *Newsweek*, you probably know that he is conservative and that he will be poking some fun at the green folk—the environmentalists. Will can get away with using a title that is not focused because he

has a body of loyal readers—people who will read him because they want to read him, whatever the topic is—but the rest of us writers have to give our readers some idea of what we will be talking about. In short, let your readers know early, perhaps in the title, where you will be taking them.

The subtitle, "Some Environmental Policies Are Feel-Good Indulgences for an Era of Energy Abundance," perhaps added by an editor of the magazine, does suggest that the piece will concern energy, and the words "feel-good indulgence" pretty clearly tell readers that Will believes the environmentalists are indulging themselves.

Paragraph 1 offers a striking comparison. Will wants us to believe that the area proposed for drilling is tiny, so he says that if we imagine the entire Arctic National Wildlife Refuge as a dinner table, the area proposed for drilling is the size of a dime. We think you will agree that this opening seizes a reader's attention. Assuming the truth of the figure—but there seems to be some dispute, since opponents have said that the area would be more like the size of a dinner plate—the image is highly effective. A dime is so small! And is worth so little! Still, one might ask (but probably one doesn't, because Will's figure is so striking) if the tininess of the area really is decisive. One might easily, and apparently with reason, dismiss as absurd the idea that a minuscule tsetse fly could kill a human being, or that the plague is spread by fleas that have bitten rats, because these proposals sound ridiculous—but they are true.

One other point about the first paragraph: Will's voice sounds like a voice you might hear in your living room: "If you have an average-size dinner table," "the dime is larger," "at least as much oil." Don't think that in your own essays you need to adopt a highly formal style. Your reader should think of you as serious but not solemn.

Will goes on to say that Senator John Kerry, an opponent of drilling and therefore on the side that Will opposes, dismisses the oil in the refuge as "a few drops." Will replies that it "could produce, for twenty-five years, at least as much oil as America currently imports from Saudi Arabia." Kerry's "a few drops" is, of course, not to be taken literally; he means, in effect, that the oil is a drop in the bucket. But when one looks into the issue, one finds that estimates by responsible sources vary considerably, from 3.2 billion barrels to 11. 5 billion barrels.

Paragraph 2 dismisses the Senate's debate ("almost comic, actually to buy farmers' votes").

Paragraph 3 offers statistics to make the point that "there is no energy crisis." Here, as in the first paragraph (where he showed his awareness of Kerry's view), Will indicates that he is familiar with views other than his own. In arguing a case, it is important for the writer to let readers know that indeed there are other views—which the writer then goes on to show are less substantial than the writer's. Will is correct in saying that "per capita energy use is unchanged," but those on the other side might say, "Yes, per capita consumption has not increased, but given the population increase, the annual amount has vastly increased, which means that resources are being depleted and that pollution is increasing."

Paragraph 4 asserts again that there is no energy crisis, pokes fun at "fulltime environmentalists" (perhaps there is a suggestion that such people really ought to get a respectable job), and ends with a bit of whimsy: These folks probably think we should go back to using windmills.

Paragraph 5, in support of the assertion that "Sometimes lofty environmentalism is a cover for crude politics," cites an authority (often an effective technique), and, since readers are not likely to recognize the name, it also identifies him ("professor emeritus of philosophy at USC"), and it then offers further statistics (again effective). The paragraph begins by talking about "crude politics" and ends with the assertion that "Now power companies must import clean-burning coal, some from mines owned by Indonesia's Lippo Group, the heavy contributor to Clinton." In short, Will does what he can to suggest that the views of at least some environmentalists are rooted in money and politics.

Paragraph 6 offers another statistic ("The United States has just 2.14 percent of the world's proven reserves of oil"), and he turns it against those who argue that therefore it is pointless for us to drill in Alaska. In effect, Will is replying to people like Senator Kerry who say that the Arctic refuge provides only "a few drops of oil." The point, Will suggests, is not that we can't achieve independence; the point is that "domestic supplies can provide important insurance against uncertain foreign supplies."

Paragraph 7 begins nicely with a transition, "Besides," and then offers additional statistics concerning the large amount of oil that we have. It was, for instance, enough to fuel "the most fabulous economic expansion in human history."

Paragraph 8 offers additional statistics, first about "proven reserves" in the Persian Gulf and then about an estimate—but it is only an estimate—of oil "beneath the U.S. outer continental shelf."

We are not certain of Will's point, but in any case the statistics suggest to a reader that the author has done his homework.

Paragraph 9 summarizes the chief position (as Will sees it) of those on the other side: They usually argue for decreased consumption, but they are afraid to argue for the sort of tax on gasoline that might indeed decrease consumption because they know that many Americans want to drive large, heavy cars. Further, the larger, heavier cars that the environmentalists object to are in fact "safer than the gasoline-sippers that environmentalists prefer."

Paragraph 10 uses the term "feel-good indulgence," which is also found in the subtitle of the essay, and now, in the third sentence of the paragraph, we hear again of Ben and Jerry, who have not been in our minds since the title of the essay, "Being Green at Ben and Jerry's." Perhaps we have been wondering all this while why Ben and Jerry are in the title. Almost surely the reader knows that Ben and Jerry are associated with ice cream and therefore with cows and meadows, and probably many readers know, at least vaguely, that Ben and Jerry are somehow associated with environmentalism and with other causes often thought to be on the left. Will (drawing on an article by Karl Zinsmeister, editor of the *American Enterprise*), writes what we consider an extremely amusing paragraph in which he points out that the process of making ice cream "depends on electricity-guzzling refrigeration" and that the cows are, so to speak, supported by fuel that transports fertilizers, herbicides, and insecticides. Further, in the course of producing the four gallons of milk that are required for one gallon of ice cream, the cows themselves—those darlings of environmentalists—contribute "eight gallons of manure, and flatulence with another eight gallons of methane, a potent 'greenhouse' gas." As we see when we read Will's next paragraph, the present paragraph is in large measure a lead-in for the following quotation. Will knows it is is not enough to give a quotation; a writer has to make use of the quotation—has to lead in to it or, after quoting, has to comment on it, or do both.

Paragraph 11 is entirely devoted to quoting Zinsmeister, who imagines an environmentalist digging into a dish of one of Ben and Jerry's most popular flavors, Cherry Garcia. We are invited to see the bowl of ice cream on one side of the table—here Will effectively evokes the table of his first paragraph—and a pile of manure on the other side, "plus a balloon of methane that would barely fit under the dining room table." Vulgar, no doubt, but funny too. George Will knows that humor as well as logic (and statistics and

other kinds of evidence) can be among the tools a writer uses in getting an audience to accept or at least to consider an argument.

Paragraph 12 consists of three short sentences, adding up to less than a single line of type: "Cherry Garcia. It's a choice. *Bon appêtit*." None of the sentences mentions oil or the Arctic Refuge or statistics, and therefore this ending might seem utterly irrelevant to the topic, but we think Will is very effectively saying, "Sure, you have a choice about drilling in the Arctic Refuge; any sensible person will choose the ice cream (drilling) rather than the manure and the gas (not drilling).

Topics for Critical Thinking and Writing

1. What, if anything, makes Will's essay interesting? What, if anything, makes it highly persuasive? How might it be made more persuasive?
2. In paragraph 10, Will clowns a bit about the gas that cows emit, but apparently this gas, which contributes to global warming, is no laughing matter. The government of New Zealand, in an effort to reduce livestock emissions of methane and nitrous oxide, proposed a tax that would subsidize future research on the emissions. The tax would cost the average farmer $300 a year. Imagine that you are a New Zealand farmer. Write a letter to your representative, arguing for or against the tax.
3. Senator Barbara Boxer, campaigning against the proposal to drill in ANWR, spoke of the refuge as "God's gift to us" (*New York Times,* March 20, 2002). How strong an argument is she offering? Some opponents of drilling have said that drilling in ANWR is as unthinkable as drilling in Yosemite or the Grand Canyon. Again, how strong is this argument? Can you imagine circumstances in which you would support drilling in these places? Do we have a moral duty to preserve certain unspoiled areas?
4. The Inupiat (Eskimo) who live in and near ANWR by a large majority favor drilling, seeing it as a source of jobs and a source of funding for schools, hospitals, and police. But the Ketchikan Indians, who speak of themselves as the "Caribou People," see drilling as a threat to the herds that they depend on for food and hides. How does one balance the conflicting needs of these two groups?
5. Opponents of drilling in ANWR argue that over its lifetime of fifty years, the area would produce less than 1 percent of the fuel we need during the period and that therefore we should not risk

disturbing the area. Further, they argue that drilling in ANWR is an attempt at a quick fix to U.S. energy needs, whereas what is needed are sustainable solutions, such as the development of renewable energy sources (e.g., wind and sun) and fuel-efficient automobiles. How convincing do you find these arguments?

6. Proponents of drilling include a large majority—something like 75 percent of the people of Alaska, including its governor and its two senators. How much attention should be paid to their voices?