Chapter 3

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 only do we encounter ideas that may be unfamiliar but also we are forced to examine our own cherished opinions — and perhaps for the first time really 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 useful to distinguish between **persuasion** and **argument**. Persuasion has the broader meaning. To **persuade** is to convince someone else to accept or adopt your position, which can be accomplished in a number of ways, including

- by giving reasons (i.e., by argument, by logic),
- by appealing to the emotions, or
- by using torture.

Argument, we mean to say, represents only one form of persuasion, one that relies on the cognitive or intellectual capacity for reason. Rhetoricians often use the Greek word ***logos***, which means "word" or "reason," to denote this aspect of persuasive writing. An appeal to reason may by conducted by using such things as

- physical evidence,
- the testimony of experts,
- common sense, and
- probability.

We can put it this way: The goal of argument is to convince by demonstrating the truth (or probable truth) of an assertion, whereas the goal of persuasion is simply to convince by one means or another. Logos, the root word of logic, means appealing to the intellect to make rational claims and reasoned judgments.

The appeal to the emotions is known as ***pathos***. Strictly speaking, pathos is Greek for "feeling." It covers all sorts of emotional appeals — for instance, appeals that elicit pity or sympathy (derived from the Greek for "feeling with"), or one's sense of duty or patriotism.

Notice that an argument doesn't require two speakers or writers with opposing positions. In practice, of course, they may, but it is not a requirement that arguments advance claims in opposition to another position. **Dispute** is a special kind of argument in which two or more people express views that are at odds. But the Declaration of Independence is also an argument, setting forth the colonists' reasons for declaring their independence. An essay

showing indecisiveness to be Hamlet's tragic flaw would present an argument. Even when writing only for oneself, trying to clarify one's thinking by setting forth reasons and justifications for an idea, the result is an argument.

Most of this book is about argument in the sense of presenting reasonable support of claims, but reason is not the whole story. If an argument is to be effective, it must be presented persuasively. For instance, the writer's **tone** (presentation of 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– 322 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," a basis of persuasion different from *logos*, which involves persuasion by appealing to reason, and pathos, which persuades by appealing to emotion.)

Writers convey their ***ethos***, their good character or trustworthiness, by doing the following:

- using language appropriate to the setting, avoiding vulgar language, slang, and colloquialism;
- showing an awareness of the issue's complexity (e.g., by offering other points of view in goodwill and by recognizing that contrary points of view may have some merit); and
- showing attention to detail (e.g., 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 reliable, fair-minded, intelligent persons in whom their readers 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're 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's nonsense and argues that some people are obviously brighter than others, or healthier, or better coordinated, and so on. 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 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 must first agree on what Jefferson said or 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 the only way of finding the truth, but it is a way on which we often rely. "The subway ran yesterday at 6: 00 A.M. and the day before at 6: 00 A.M. and the day before that, 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 don't 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 pp. 91 and 95.)

We also know that if we set our minds to a problem, we can often find reasons (not always necessarily sound ones) for almost anything we want to justify. Here's 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 and that this fish "smelt admirably well," so we're 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 reach, consoled himself with the thought that they were probably sour.

Perhaps we can never be certain that we aren't rationalizing, except when being playful like Franklin. But we can seek to think critically about our own beliefs, scrutinizing our assumptions,

looking for counterevidence, and wondering if it's reasonably possible to draw different conclusions.

Some Procedures in Argument

DEFINITION

Definition, we mentioned in Chapter 1, 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're answering the question "What is it?" 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 don't always mean exactly what they seem to mean: There's 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 is not easy to define. 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 then we have to define the synonym; besides, very few words have exact synonyms. (In fact, pornography and obscenity are not exact synonyms.)

DEFINITION BY EXAMPLE - A second way to define a word 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 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. It's possible that 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.")

"It all depends on how you define 'chop.'"

Tom Cheney, The New Yorker Collection / The Cartoon Bank

One of the difficulties of using an example, however, is that the example is richer and more complex than the term it's being used to define, and this richness and complexity get in the way of achieving a clear definition. Thus, if one cites *Lady Chatterley's Lover* as an example of pornography, a reader may erroneously think that pornography has something to do with British novels (because Lawrence was British) or with heterosexual relationships outside of marriage. Yet neither of these ideas relates to the concept of pornography.

We are not trying here to formulate a satisfactory definition of pornography. Our object is to make the following points clear:

- 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.
- 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 - Arguments frequently involve matters of definition. In a discussion of gun control, for instance, you probably will hear one side speak of *assault weapons* and the other side speak instead of *so-called assault weapons*. In arguing, you can hope to get agreement — at least on what the topic of argument is — by offering a **stipulative definition** (from a Latin verb meaning "to bargain"). For instance, you and a representative of the other side can agree on a definition of assault weapon based on the meaning of the term in the ban approved by Congress in 1994, which expired in 2004, and which President Obama in 2013 asked Congress to renew. Although the renewal of the ban was unsuccessful, the definition was this: a semiautomatic firearm (the spent cartridge case is automatically extracted, and a new round is automatically reloaded into the chamber but isn't fired until the trigger is pulled again) with a detachable magazine *and at least two of the following five characteristics:*

- collapsible or folding stock
- pistol grip (thus allowing the weapon to be fired from the hip)
- bayonet mount
- grenade launcher
- flash suppressor (to keep the shooter from being blinded by muzzle flashes)

Again, this was the agreed-upon definition for the purposes of the legislation. Congress put *fully* automatic weapons into an entirely different category, and the legislatures of California and of New York each agreed on a stipulation different from that of Congress: In these two states, an assault weapon is defined as a semiautomatic firearm with a detachable magazine and with any one (not two) of the five bulleted items. The point is that for an argument to proceed rationally, and especially in the legal context, the key terms need to be precisely defined and agreed upon by all parties.

Let's now look at stipulative definitions in other contexts. Who is a *Native American*? In discussing this issue, you might stipulate that *Native American* means any person with any *Native American* blood; or you might say, "For the purpose of the present discussion, I mean that a Native American is any person who has at least one grandparent of pure Native American blood." A stipulative definition is appropriate in the following cases:

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

Not everyone may accept your stipulative definition, and there will likely be defensible alternatives. In any case, when *you* stipulate a definition, your audience knows what you mean by the term. It would *not* be reasonable to stipulate that by *Native American* you mean anyone with a deep interest in North American aborigines. That's too idiosyncratic to be useful. Similarly, an essay on Jews in America will have to rely on a 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. 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 *Jews* means "persons who believe that the area formerly called Palestine rightfully belongs to the Jews" would hopelessly confuse matters. Remember the old riddle: If you call a dog's tail a leg, how many legs does a dog have? The answer is four. Calling a tail a leg doesn't make it a leg.

Later in this chapter you will see, in an essay titled "When 'Identity Politics' Is Rational," that the author, Stanley Fish, begins 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 no independently of a candidates' ideas or policies.

Fish will 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, and one about how it helps the reader:

- A definition is a good way to get started when 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 understand 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's the opening paragraph of a 1975 essay by Richard B. Brandt titled "The Morality and Rationality of Suicide." Notice that the author does two things:

- He first stipulates a definition.
- 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. (61)

Sometimes, a definition that at first seems extremely odd can be made acceptable by offering strong reasons 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 this issue in Derek Bok's essay "Protecting Freedom of Expression on the Campus" in Chapter 2.)

A definition that seems notably eccentric to many readers and thus far has not gained much support is from 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 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 isn't a person; however, an adult chimpanzee isn't 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 broadened 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 considered 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 has been seen as beginning at birth or perhaps at viability (the capacity of a fetus to live independently of the uterine environment). However, others have proposed a *brain birth* definition in the hope of resolving the abortion controversy. Some thinkers want abortion to be prohibited by law at the point where "integrated brain functioning begins to emerge," allegedly about seventy days after conception. Whatever the merits of such a redefinition may be, 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.E, 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 considered to be the essence of every human creature, 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's doubtful whether it is sound to assume that any of these concepts 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 geometric 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 the term being defined helps to make the definition neither too exclusive (too narrow) nor too inclusive (too broad). Of course, for most ordinary purposes we don't require such a formally precise 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 so stated, it is true; that is, if it truly specifies *all and only* the things covered by the word being defined. The Thinking Critically exercise that follows provides examples.

We aren't saying that the four sentences in the table below are incontestable. In fact, they are definitely arguable. We offer them merely to show ways of defining, and the act of defining is one way of helping to get your own thoughts going. Notice, too, that the fourth example, 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, we discussed the assumptions made by the authors of two essays on religious freedoms. But we have more to say about assumptions. We've 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 writer and reader share such a belief, 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, although he felt no need to 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, although 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 completely unaware of an underlying assumption. 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 didn't state this assumption because he thought it was perfectly obvious, but if you think critically about it, you may find reasons to doubt it. Surely one reason we pay our legislators is to ensure that the legislature does not consist only of people whose incomes may give them an inadequate view of the needs of others.

As another example, here are two assumptions in the argument for 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 forbid her from doing 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, there may be instances in which we believe it's 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. 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 that are 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 begins. The joining of two premises — two statements taken to be true — to produce a conclusion, a third statement, is a **syllogism** (from the 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 **deduction**, from the Latin for "lead down from." In this sense, deductive reasoning doesn't give us any new knowledge, although it's 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 fictional detective Sherlock Holmes was credited by his admiring colleague, Dr. Watson, with having 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:

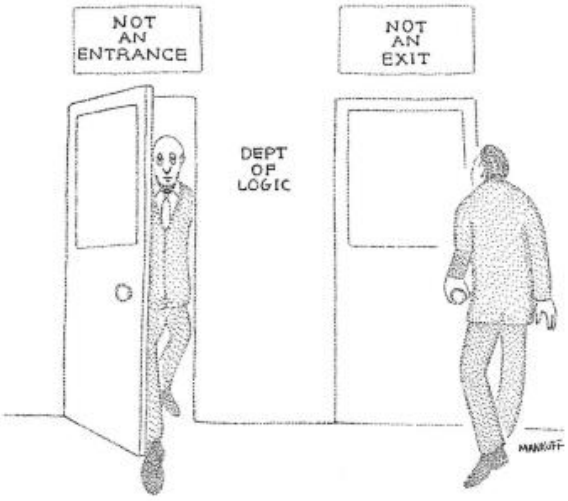
> Society must condemn actions (even if peaceful) that precipitate violence. This action (though peaceful) will precipitate violence. Therefore, society must condemn this action.

An incomplete or abbreviated syllogism in which one of the premises is left unstated, of the sort found in King's original quotation, is an **enthymeme** (from the 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 prohibited in the 1930s because for centuries the sellers, seeking 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.



Robert Mankoff, The New Yorker Collection / The Cartoon Bank

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 — 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 premise's content — what it asserts — and the evidence for it. (In the preceding syllogism, it's possible to test the truth of the premises 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. In other words, 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 contradict 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.

It's possible to see this relationship 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's 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 in determining the argument's validity, the truth of the premises and the conclusion is beside the point. Just a little

reflection assures us that *if* both premises were true, then the conclusion would have to be true as well. That is, anyone who grants the premises of this syllogism yet denies the conclusion contradicts 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 one that passes both the test of true premises and the test of valid inference. To put it another way, a sound argument does the following:

- It passes the test of content (the premises are true, as a matter of fact).
- 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, one that fails to prove its conclusion, suffers from one or both of two defects:

- Not all the premises are true.
- The argument is invalid.

Usually, we have in mind one or both defects when objecting to someone's argument as "illogical." In evaluating a deductive argument, therefore, you must always ask: Is it vulnerable to criticism on the grounds that one (or more) of its premises is false? Or is the inference itself vulnerable because even if all the premises are 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 a syllogism's premises are false but the syllogism itself is valid. What does that indicate about the truth of the conclusion? Consider this example:

> All Americans prefer vanilla ice cream to other flavors.
>
> Jimmy Fallon is an American.
>
> Therefore, Jimmy Fallon 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; 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 argument's conclusion may in fact be true; Jimmy Fallon 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's 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 this syllogism, let's grant that the first (major) premise is true. Let's 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's also possible that the conclusion is false; terrorists aren't the only ones who seek publicity for their violent acts — consider, for example, 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's possible to assert both premises and deny the conclusion without being self-contradictory.

First, the validity of deductive arguments is a matter of their *form* or *structure*. Even syllogisms like the one on the Arctic Wildlife Refuge on page 92 come in a large variety of forms (256 forms, 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's possible to accept the premises but reject the conclusion (without self-contradiction, of course), then the argument is invalid.

How do we tell, in general and in particular cases, whether a syllogism is valid? Chemists use litmus paper to determine 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 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; this is why entire semester-long courses are 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.

Let's 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 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 the basis of this evidence that the bite of 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, then we're tempted to **generalize** that all rattlesnakes are poisonous. By far the most common way to test the adequacy of a generalization is to consider one or more **counterexamples**. If the counterexamples are genuine and reliable, then the generalization must be false. For example, Ronald Takaki's essay on the "myth" of Asian racial superiority (p. 124) is full of examples that contradict the alleged superiority of Asians; they are counterexamples to that thesis, and they help to expose it as a "myth." What is true of Takaki's reasoning is true generally in argumentative writing: We constantly test our generalizations by considering them against actual or possible counterexamples, or by doing research on the issue.

Unlike deduction, induction yields conclusions that go beyond the information contained in the premises used in their support. It's not surprising that the conclusions of inductive reasoning are not always true, even when all the premises are true. On page 83, we gave as an example our observation that on previous days a subway has run at 6: 00 A.M. and that therefore we conclude 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 for an hour without seeing a single 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 might be, we relied on a sample that wasn't large enough (a larger sample might have included some early morning breakdowns) or representative enough (a more representative sample would have included the later starts on Sundays and holidays).

A WORD ABOUT SAMPLES

When we reason inductively, much depends on the size and the quality of the sample (we say "sample" because a writer probably cannot examine every instance). If, for example, we're offering an argument concerning the politics of members of sororities and fraternities, we probably cannot interview *every* member. Rather, we select a sample. But is the sample a fair one? Is it representative of the larger group? 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 doesn't always involve failing to interview an adequately large sample group. For example, 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. Because such a sample leaves out women and minority males, it isn't sufficiently

representative of "college students" as a group. Further, though not all students at the University of Texas are from Texas or even from the Southwest, it's quite likely that the student body is not fully representative (e.g., in race and in income) of American college students. If this conjecture is correct, even a truly representative sample of University of Texas students wouldn't enable us 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 doesn't provide this information, the reader should treat the argument 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 one cannot show it 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. In 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 (e.g., hearsay is not, even if it's 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 — any or all of these may serve as evidence for (or against) some belief, theory, hypothesis, or explanation. Science involves the systematic study of what experience can yield, 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, often complex in their technology, that are 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 are quite different from those obtained in the laboratory. It's no surprise that society attaches much more weight to the

"findings" of scientists than to the corroborative (much less the contrary) experiences of ordinary people. 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 plainly evident.

EXAMPLES

One form of evidence is the **example**. Suppose we argue that a candidate is untrustworthy and shouldn't be elected to public office. We point to episodes in his career — his misuse of funds in 2008 and the false charges he made against an opponent in 2016 — as examples of his untrustworthiness. Or if we're 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, indicate that the Japanese defenders of the main islands would have fought to their deaths without surrendering, even though they knew defeat was certain. 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, "' 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)
- analogies

We will treat each of these briefly.

Real Events In referring to Truman's decision to drop the atom bomb, we've already touched on examples drawn from real events — the battles at Saipan and elsewhere. And we've 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 cannot simply be brushed off.

Yet an example drawn from reality may not be as clear-cut as we would like. 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 certain 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 using 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 wasn't decisive or even highly effective in World War I. Moreover, the invention of gas masks made its use obsolete. In short, any real event is so entangled in historical circumstances that it might not be adequate or relevant evidence in the case being argued. In using a real event as an example (a perfectly valid strategy), the writer must demonstrate that the event can be taken out of its historical context for use 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 we have just given. Recall Thoreau's trout in the milk; that was a colorful hypothetical case that illustrated his point well. 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 Frankel would get bogged down over arguing about whether Jones *really* couldn't swim well enough to help, and so on.

Yet invented examples have drawbacks. First and foremost, they cannot serve 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 that they fail to convince the reader. Thus, the philosopher Judith Jarvis Thomson, in the course of an argument entitled "A Defense of

Abortion," asks the reader to imagine waking up one day and finding that against her will a celebrated violinist whose body is not adequately functioning has been hooked up into her body for life support. Does she have the right to unplug the violinist? As you read the essays we present in this textbook, you'll have to decide for yourself 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. A person may say that she is, in all circumstances, against vivisection — the practice of performing operations on live animals for the purpose of research. But what would she say if she thought that an experiment on one mouse would save the life of someone she loves? Conversely, if she approves of vivisection, would she also approve of sacrificing the last giant panda to save the life of a senile stranger, a person who in any case probably wouldn't live longer than another year? Artificial cases of this sort can help us to see that 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 as well. Here's an example:

> Before the Roman Empire declined as a world power, it exhibited a decline in morals and in physical stamina; our society today shows a decline in both morals (consider the high divorce rate and the crime rate) and physical culture (consider obesity in children). America, like Rome, will decline as a world power.

Strictly speaking, 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 isn't an analogy; it's an inductive inference from one case of the same sort to another such case.)

"Do you mind if I use yet another sports analogy?"

Gahan Wilson, The New Yorker Collection / The Cartoon Bank

Let's consider another analogy. We have already glanced at Judith Thomson's hypothetical case in which the reader wakes up to find herself hooked up to a violinist in need of life support. Thomson uses this situation as an analogy in an argument about abortion. The reader stands for the mother; the violinist, for the unwanted fetus. You may want to think about whether this analogy is close enough to pregnancy to help illuminate your own thinking about abortion.

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 being argued. (That's 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 seem simple. "Don't change horses in midstream" isn't a statement about riding horses across a river but, rather, about choosing new leaders in critical times. Still, in the end, analogies don't necessarily prove anything. What may be true about riding horses across a stream may not be true about choosing new leaders in troubled times. Riding horses across a stream and choosing new leaders are fundamentally different things, and however much they may be said to resemble each other, they remain different. What is true for one need not be true for the other.

Analogies can be helpful in developing our thoughts and in helping listeners or readers to understand a point we're trying to make. It is sometimes argued, for instance — on the analogy

of the doctor– patient, 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? Consider 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. Thus, 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 fetuses are babies and if a fetus is not a baby, why it can or cannot 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 you to decide whether the analogy is compelling — that is, if the points of resemblance are sufficiently significant to allow you to conclude that what's 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 drew 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 was this: decision striking down bans on miscegenation — then it is a fundamental right for gay and lesbian 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 Chapter 2, in talking about medical marijuana legalization, we presented an essay by Sanjay Gupta. To make certain that you were impressed by his ideas, we described him as CNN's chief medical correspondent and a leading public health expert. In our Chapter 2 discussion of Sally Mann, we qualified our description of her controversial photographs by noting that Time magazine called her "America's Best Photographer" and the New Republic called her book "one of the great photograph books 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 war.)
- Be sure that the authority is unbiased. (A chemist employed by the tobacco industry isn't likely to admit that smoking may be harmful, and a producer of violent video games isn't likely to admit that playing those games stimulates violence.)
- Beware of nameless authorities: "a thousand doctors," "leading educators," "researchers at a major medical school." (If possible, offer at least one specific name.)
- Be careful when using authorities who indeed were great authorities in their day but who now may be out of date. (Examples would include 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 readers of the magazines that she cofounded, New York and Ms. magazine, but probably not with most conservative thinkers.) When writing for the general reader — your usual audience — cite authorities whom the general reader is likely to accept.

One other point: You may be an authority. *You* probably aren't nationally known, but on some topics you might have 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 isn't English, you may be such a student who has received tutoring, or 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're usually ready to grant that any claim supported by experience in 90 percent of cases is more likely to be true than an alternative claim supported by experience in only 75 percent of cases. The greater the difference, the greater our confidence. Consider an example. Honors at graduation from college are often computed on the basis of 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 (if not the only) kind of evidence under discussion.

Graphs, Tables, Numbers Statistical information can be 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 pp. 165– 70.) To prepare the graphics, however, one first has to decide how best to organize and interpret the numbers, and for some purposes it may be more appropriate to directly present the numbers themselves.

But is it better to present the numbers in percentages or in fractions? Should a report say that the federal budget (1) underwent a twofold increase over the decade; (2) increased by 100 percent; (3) doubled; or (4) at the beginning of the decade was one-half what it was at the end? These are equivalent ways of saying the same thing. Making a choice among them, therefore, will likely rest on whether one's aim is to dramatize the increase (a 100 percent increase looks larger than a doubling) or to play down its size.

Thinking about Statistical Evidence Statistics often get a bad name because it's so easy to misuse them (unintentionally or not) and so difficult to be sure that they were gathered correctly in the first place. (One old saying goes, "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's important, therefore, to be sensitive to the sources and reliability of the statistics and to develop a healthy skepticism when you confront statistics whose parentage is not fully explained.

Consider statistics that pop up in conversations about wealth distribution in the United States. In 2014, the Census Bureau calculated that the **median** household income in the United States was $ 53,657, meaning that half of households earned less than this amount and half earned above it. However, the **average** — technically, the **mean** — household income in the same year

was $ 72,641, about $ 19,000 (or 39 percent) higher. Which number more accurately represents the typical household income? Both are "correct," but both are calculated with different measures, median and mean. If a politician wanted to argue that the United States has a strong middle class, he might use the average (mean) income as evidence, a number calculated by dividing the total income of all households by the total number of households. If another politician wished to make a rebuttal, she could point out that the average income paints a rosy picture because the wealthiest households skew the average higher. The median income (representing the number above and below which two halves of all households fall) should be the measure we use, the rebutting politician could argue, because it helps reduce the effect of the limitless ceiling of higher incomes and the finite floor of lower incomes at zero.

Consider the following statistics: Suppose in a given city in 2014, 1 percent of the victims in fatal automobile accidents were bicyclists. In the same city in 2015, the percentage 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're comparing (1) bicycle deaths in automobile accidents *with all deaths in automobile accidents* (that's an increase of 1 percent), or (2) 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 2015, increasing from 1 to 2 percent. But here's another point: Although every such death is lamentable, if there was one such death in 2014 and two in 2015, the increase from one death to two (an increase of 100 percent!) hardly suggests a growing problem that needs attention. No one would be surprised to learn that in the next year there were no deaths at all, or only one or two.

If it's sometimes difficult to interpret statistics, it's 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], 18– 19)

Lasn's book includes endnotes as documentation, so, being curious about the statistics, we turn to the appropriate page and 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, the author asserted that about "three thousand marketing messages per day" flood into a person's brain. In the documentation, he cites a source for that statistic from *Business Week* — though we haven't the faintest idea how the authors of the *Business Week* article came up with that figure. Oddly, he goes on to offer a very different figure (16,000 ads) and then, to our confusion, 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 explained 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 and some may read none. Some people may read some ads carefully — but perhaps just 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's evident (by checking the endnote) that even he is confused about the figure he gives.

Unreliable Statistics We'd like to make a final point about the unreliability of some statistical information — data that looks impressive but that is, in fact, insubstantial. For instance, Marilyn Jager Adams studied the number of hours that families read to their children in the five or so years before the children start attending school. In her book *Beginning to Read: Thinking and Learning about Print* (1994), she pointed out that in all those preschool years, poor families read to their children only 25 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. 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 24 children in 20 families, all in Southern California. Ask yourself: Can families from only one geographic area provide an adequate sample for a topic such as this? Moreover, let's think about Adams's sample of middle-class families. How many families constituted that sample? Exactly one — her own. We leave it to you to judge the validity of her findings.

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 (impartial) source? The source's name doesn't always reveal its particular angle (e.g., People for the American Way), but sometimes it lets you know what to expect (e.g., National Rifle Association, American Civil Liberties Union).
- ❒ Is it based on an adequate sample?
- ❒ 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 percentage is cited, is it the average (or *mean*), or is it the median?

We are not suggesting that everyone who uses statistics is trying to deceive or is unconsciously being deceived by them. We suggest only that statistics are open to widely different interpretations and that often those columns of numbers, which appear to be so precise with their decimal points, may actually be imprecise and possibly worthless if they're 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 they are on 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've been talking about means of rational persuasion. However, as mentioned earlier, there are also other means of persuasion.

Force is an example. If X kicks Y, threatens to destroy Y's means of livelihood, or threatens Y's life, X may persuade Y to cooperate. But writers, of course, cannot use such kinds of force on their readers. Instead, 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 (thus ridiculing) her appearance or by presenting a grotesquely distorted (funny, but unfair) picture of the issue she supports.

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

Although ridicule isn't a form of argument (because it isn't a form of reasoning), passages of ridicule, especially verbal irony, sometimes appear in argument essays. These passages, like reasons or like appeals to the emotions, are efforts to persuade the reader to accept the writer's point of view. The key to using humor in an argument is, on the one hand, to avoid wisecracking like a smart aleck, and on the other hand, to avoid mere clownishness. Later in this chapter (p. 110), 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 emotional appeal is illegitimate and 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 distract from the facts of the case; they may blind the audience by, in effect, throwing dust in its eyes or by provoking tears.

LEARNING FROM SHAKESPEARE A classic example is 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 have curtailed the freedom of the Roman 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 this about Antony:

> perceiving that his words moved the common people to compassion, . . . [he] framed his eloquence to make their hearts yearn [i.e., 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 insubstantial evidence that Caesar gave no signs of behaving tyrannically (e.g., "When that the poor have cried, Caesar hath wept"), Antony begins to play directly on his hearers' emotions. 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 accomplishes the following:

- He prepares the audience by suggesting to them how they should respond (" If you have tears, prepare to shed them now").
- He flatters them by implying that they, like Antony, were intimates of Caesar (he credits them with being familiar with Caesar's garment).
- He then evokes a personal memory of a specific time (" a summer's evening") — not just any 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 doesn't 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 dagger made which slit, 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 wounds inflicted by daggers but from the heartbreaking perception of Brutus's ingratitude. Doubtless there wasn't a dry eye in the house. Let's all hope that if we are ever put on trial, we'll have a lawyer as skilled in evoking sympathy as Antony.

ARE EMOTIONAL APPEALS FALLACIOUS? Antony's oration was 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, the evocation of emotion in an audience is **pathos**, from the Greek word for "emotion" or "suffering.") There is nothing inherently wrong in stimulating an audience's emotions when attempting to establish a claim, but when an emotional appeal confuses the issue being argued or shifts attention away from the facts, 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. In talking about legislation that would govern police actions, for example, it's 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 if the subject threatened the officer with a gun or repeatedly resisted an order to surrender. But it can demonstrate that the victim was severely beaten and (like a comparable description in words) evoke emotions that may properly affect the audience's decision about the permissible use of police evidence. Similarly, an animal rights activist who argues that calves are cruelly confined might reasonably talk about the inhumanely small size of their pens, in which they cannot turn around or even lie down. Others may argue that calves don't care about turning around or have no right to turn around, but the evocative verbal description of their pens, which makes an emotional appeal, cannot be called fallacious or irrelevant.

In appealing to emotions, then, important strategies are as follows:

- Do not falsify (especially by oversimplifying) the issue.

- Do not distract attention from the facts of the case.
- Do think ethically about how emotional appeals may affect the audience.

You should focus on the facts and offer reasons (essentially, statements linked with "because"), but you may also legitimately bring the facts home to your readers by seeking to provoke appropriate emotions. Your words will be fallacious only if you stimulate emotions that aren't connected with the facts of the case.

Does All Writing Contain Arguments?

Our answer to the question above is no — however, *most* writing probably does contain an argument of sorts. 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's primarily expository (how to do it) rather than argumentative (how a reasonable person ought to think about this topic) — probably starts out with a hint of an argument, such as "*Because* [a sign that a *reason* will be offered] this pie can be made quickly and with ingredients (canned cherries) that are always available, give it a try. It will surely become one of your favorites." Clearly, such a statement cannot stand as a formal argument — a discussion that addresses counterarguments, relies chiefly on logic and little if any emotional appeal, and draws a conclusion that seems irrefutable. Still, the statement is an argument on behalf of making a pie with canned cherries. In this case, we can identify a claim (the pie will become a favorite) and two reasons in support of the claim:

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

There are two underlying *assumptions*:

- Readers don't have a great deal of time to waste in the kitchen.
- Canned cherries are just as tasty as fresh cherries — and even if they aren't, no one who eats the pie will know the difference.

A CHECKLIST FOR ANALYZING AN ARGUMENT

What is the writer's claim or thesis? Ask yourself:

- ❒ What claim is asserted?
- ❒ What evidence is imagined?
- ❒ 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 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 considered impartial?
- ❒ Is the logic — deductive and inductive — valid?
- ❒ If there is an appeal to emotion (e.g., if satire is used to ridicule the opposing view), is this appeal acceptable?

Does the writer seem 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 readers sense in the essay? What is the writer's tone, and is it appropriate?

When we read a lead-in to a recipe, then, we won't find a formal argument, but we'll probably see a few words that seek to persuade us to keep reading. And most writing does contain such material — sentences that engage our interest and give us a reason to keep reading. If the recipe is 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 recipes that call 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 is that readers have a discriminating palate; once they've tasted a pie made with

fresh cherries, they'll never again enjoy the canned stuff. The writer isn't making a formal argument with abundant evidence and detailed refutation of counterarguments, but we know where he stands and how he wishes us to respond. In short, almost all writers are trying to persuade readers to see things *their* way.

An Example: An Argument and a Look at the Writer's Strategies

This essay concerns President George W. Bush's proposal to allow drilling in part of the Arctic National Wildlife Refuge (ANWR, pronounced "An-war"). The ANWR section where drilling is proposed 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 (in 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. This essay was originally published in 2002, so it is in some respects dated — for instance, in its reference to the price of gasoline — but it still serves as an excellent model of certain ways to argue.

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. 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. 1 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 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 appétit*.

1 chimera Something that is hoped or wished for but is impossible to actually achieve. [Editors' note.]

GEORGE F. WILL'S STRATEGIES

Now let's look at Will's essay to see what techniques he uses to engage readers' interest and perhaps enable him to convince them — or at least make them think — that he is on to something. If you think some or all of his strategies are effective, consider adapting them for use in your own essays.

The *title*, "Being Green at Ben and Jerry's," does not at all prepare readers 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 can guess that in this essay he'll poke some fun at the green folk — the environmentalists. Will can get away with using a title that isn't focused because he has a body of loyal readers who will read his pieces no matter what the topic is, but the rest of us have to give our readers some idea of our topic. In short, let your readers know early, perhaps in the title, where you'll be taking them.

The *subtitle*, “Some Environmental Policies Are Feel-Good Indulgences for an Era of Energy Abundance,” perhaps added by the magazine’s editor, suggests that the piece will concern energy. Moreover, the words “feel-good indulgences” signal to readers that Will believes the environmentalists are indulging themselves.

Paragraph 1 offers a striking comparison. Will wants his readers to believe that the area proposed for drilling is tiny, so he says that if they 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’ll agree that this opening seizes a reader’s attention. Although some opponents to drilling in the ANWR have contested Will’s analogy (saying the area would be much larger, perhaps comparable to the size of a dinner plate, or even a dinner plate broken in pieces, with roads and pipelines crossing between the fragments), the image is still highly effective. A dime is so small! And worth so little!

Another point about paragraph 1: Will’s casual voice sounds like one you might hear in your own living room: “If you have an average-size dinner table,” “The dime is larger,” “at least as much oil.” Your own essays need not adopt a highly formal style. Readers 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” isn’t literal, of course; he means 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 paragraph 1 (where he showed his awareness of Kerry’s view), Will indicates that he’s familiar with views other than his own. In arguing a case, it’s important for a writer to let readers know that indeed there are other views — which the writer then shows are less substantial than the writer’s own. Will is correct in saying that “per capita energy use is unchanged,” but opponents might say, “Yes, per capita consumption hasn’t 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 “full-time environmentalists” (perhaps even implying that such people ought to get respectable jobs), 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). Since readers aren’t likely to recognize the name, Will also identifies him (“ professor emeritus of philosophy at USC”) and

then offers further statistics. The paragraph begins by talking about “crude politics” and ends with this assertion: “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 makes several strategic moves to suggest that at least some environmentalists’ views 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 turns it against those who argue that therefore it’s pointless 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 it’s impossible for the nation to achieve independence; rather, the point is that “domestic supplies can provide important insurance against uncertain foreign supplies.”

Paragraph 7 begins smoothly with a transition, “Besides,” and then offers additional statistics concerning the large amount of oil that the United States has held in proven reserves. For instance, by the end of World War II these reserves were 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 only an estimate — of oil “beneath the U.S. outer continental shelf.” We are not certain of Will’s point here, but in any case the statistics suggest that he has done some homework.

Paragraph 9 summarizes the chief position (as Will sees it) of those on the other side of this issue: They “usually argue for decreased consumption,” but they’re afraid to argue for the sort of gasoline tax 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 also appears in the essay’s subtitle; and now in the paragraph’s third sentence we hear again of Ben and Jerry, whose names we haven’t seen since reading the essay’s title, “Being Green at Ben and Jerry’s.” Perhaps we’ve been wondering all this time why the title mentions Ben and Jerry. Surely most readers know that Ben and Jerry are associated with ice cream and therefore with cows and meadows, and probably many readers know that Ben and Jerry support environmentalism and other liberal causes. Drawing on an article by Karl Zinsmeister, editor of the *American Enterprise*, Will writes 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 essentially supported by fuel that transports fertilizers, herbicides, and insecticides. Further, in the course of producing the four gallons of milk required for one gallon of ice cream, the cows themselves — those darlings of the environmentalists — contribute “eight gallons of manure, and flatulence with another eight gallons of methane, a potent ‘greenhouse’ gas.” As we’ll soon see in Will’s next

paragraph, the present paragraph is largely a lead-in for the quotation he gives in the next paragraph. He knows it isn't enough to give a quotation; a writer has to make use of it — by leading in to it, by commenting on it after inserting it, or 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're invited to see the bowl of ice cream on one side of the table — here Will effectively evokes the table of paragraph 1 — and a pile of manure on the other side, "plus a balloon of methane that would barely fit under the dining room table." This statement is vulgar, no doubt, but it's funny too. Will knows that humor as well as logic (and statistics and other evidence) can be among the key tools a writer uses in getting an audience to consider or accept 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 appétit." None of the sentences mentions oil or the Arctic Refuge or statistics; therefore, this ending might seem irrelevant to the topic, but 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 George Will's essay interesting to you? What, if anything, makes it highly persuasive? How might it be made more persuasive?
2. In paragraph 10, Will clowns 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're 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 this? Some opponents of the proposal 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? Why, or why not? Do we have a moral duty to preserve certain unspoiled areas? Explain your response.
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 on which they depend for food and hides. How is it possible to 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

shouldn't 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 the nation really needs 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? Explain your response.

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 do their voices deserve?
7. Analyze the essay in terms of its use of ethos, pathos, and logos.
8. What sort of audience do you think Will is addressing? What values do his readers probably share? What makes you think so?

Gloria Jiménez

Gloria Jiménez married immediately after she graduated from high school, worked briefly, had two children, and then, after her younger child started school, continued her own formal education. This essay, written for a composition course at Tufts University in 2003, was her first publication.

Against the Odds, and Against the Common Good

(Student Essay)

State-run lotteries are now so common — thirty-nine states and Washington, D.C., operate lotteries — that the states probably will never get out of the lottery business. Still, when all is said and done about lotteries bringing a bit of excitement into the lives of many people and bringing a vast amount of money into the lives of a few, the states should not be in the business of urging people to gamble.

And they *do* urge people. Consider a slogan used in Maryland, "Play Today. Cash Tomorrow." If the statement were, "Get a job today and you will have cash tomorrow," it would be true; it would make sense, however small the earnings might be. But "Play Today. Cash Tomorrow" falsely suggests that the way to have money tomorrow is to buy a ticket today. In fact, buying a ticket is an almost sure-fire way of getting nothing for something.

Maryland is not the only state that uses a clever slogan to get its citizens to part with hard-earned money. New York's ads say, "You Can't Win If You Don't Play," and Oregon's ads say, "There Is No Such Thing as a Losing Ticket." This last slogan — which at first glance seems to say that every ticket will benefit the purchaser — is built on the idea that the state's share of the money goes to a worthy cause, usually education or some social service. But no matter how you look at it, this slogan, like the others, urges people to buy a product — a jackpot — that they have almost no chance of receiving.

The chief arguments *in favor* of state-run lotteries seem to be these: (1) people freely choose to participate; (2) funds are used for education or for other important services; (3) if this source of funding disappears, the states will have to compensate by imposing taxes of one sort or another; (4) operation by the government ensures that the lotteries are run honestly; and (5) lotteries create jobs. We can respond briefly to the last two points, and then concentrate on the first three.

It probably is true that the lotteries are run honestly (though I seem to recall reading in the newspaper about one state in which corruption was found in administering the lottery), but that is not the point. If it is wrong to encourage people to gamble, it is hardly relevant to say that the game is run honestly. The other point that can be dismissed briefly is that lotteries create jobs. This argument is usually advanced in connection with the creation of casinos, which surely do create jobs, not only in the casinos but also in nearby restaurants, parking lots, movie theaters, and so forth. But lottery tickets are sold in places where the clerks are already employed. Presumably the only new jobs created by the lottery are the relatively few jobs of the people who dream up the slogans or who are in charge of collecting and processing the receipts.

The three other claims require more attention. The first, that people freely choose to participate, probably is largely true. Although some buyers are compulsive gamblers, people who are addicted and therefore cannot really be said to choose freely, I grant that most people do have a free choice — although, as I have already said, I think that some of the slogans that states use are deceptive, and if this is the case, purchasers who are misled by the ads are not entirely free. Consider a slogan that Illinois used on billboards, especially in poor neighborhoods: “This Could Be Your Ticket Out.” Yes, a person might hit the jackpot and get out of poverty, but the chances are one in several million, and to imply that the lottery is a reasonable option to get out of present poverty is to be deceptive. Further, the message is essentially unwholesome. It implies that the way out is luck, rather than education and hard work. Of course, luck plays a part in life, but 99.99 percent of the people who rely on the ticket as the “ticket out” of poverty are going to be terribly disappointed. But again, we can grant that except for gambling addicts, people who buy lottery tickets are freely doing so.

Probably the strongest claim is that the funds are used for important purposes, usually education. This claim apparently is true: the legislators are smart enough to package the lottery bills this way. And the revenue gained seems enormous — $ 20 billion in 2002, according to the *New York Times* (May 18, 2003, sec. 4, p. 1). On the other hand, this amount is only about 4 percent of the total revenue of the states. That is, this amount could be raised by other means, specifically by taxation, but legislators understandably do not want to be associated with increasing taxes. And so, again, advocates of state lotteries emphasize the voluntary nature of the lottery: by buying lottery tickets, they say, people are in effect volunteering to give money to the states, in exchange for the chance (however remote) of getting a ticket out. Buying a

ticket, in this view, is paying an optional tax; if you don't want to pay the tax, don't buy the ticket.

I now get to the point in my argument where I may sound condescending, where I may offend decent people. The point is this: studies show that most of the tickets are bought by people who don't have much money, people who are near the bottom of the economic scale. According to one study, adults whose income was under $ 10,000 spent nearly three times as much buying lottery tickets as did adults who earned $ 50,000 or more. 1 I say that this argument is delicate because anyone who advances it is liable to be accused of being snobbish and paternalistic, of saying, in effect, "Poor people don't know how to manage their money, so we ought to remove temptation from their eyes." But such a reply does not get to the central issues: the central issues are (1) that the state should not tempt people, rich or poor, with dreams of an easy buck and (2) that education and social services are immensely important to the whole of society, so they should not be disproportionately financed by the poor and the addicted.

Let me end a bit indirectly. Surely everyone will grant that tobacco is a harmful product. Yes, it is legal, but everyone knows it is harmful. The state puts very heavy taxes on it, presumably not to raise revenue but to discourage the use of tobacco. We agree, surely, that it would be almost criminal if, in an effort to increase its revenues, the state enticed people to smoke — for example, by posting billboards showing attractive people smoking or cartoon characters that appealed to children. Would we say, "Oh, well, we need the revenue (from the taxes) to provide services, so let's make smoking as attractive as we can to get people to buy cigarettes"? No, we would say, "People should not smoke, but if they will, well, let's use the revenue from the taxes for two chief purposes: to dissuade people from smoking and to treat people who have become ill from smoking."

State legislators who genuinely have the interests of their constituents at heart will not pass bills that put the state into the lottery business and that cause the state to engage in an activity that is close to pickpocketing. Rather, they will recognize that, however unpopular taxes are, taxes may have to be raised to support education and social services that the people rightly expect the state to provide. It's against the odds to expect politicians to act this way, but let's hope that some politicians will do the right thing and will vote for the common good.

1 Verna V. Gehring, "The American State Lottery: Sale or Swindle?" *Report from the Institute for Philosophy and Public Policy 20* (Winter/ Spring 2000): 15.

Topics for Critical Thinking and Writing

1. Gloria Jiménez omits at least one important argument that advocates of state-run lotteries sometimes offer: If our state doesn't run a lottery, residents will simply go to nearby states to buy tickets, so we will just be losing revenue that other states pick up; poor people will still be spending money that they can't afford, and our state will in no

way benefit. What do you suppose Jiménez might say in reply? And what is your own view of this argument?

2. A bit of humor appears at the end of paragraph 2. Is it appropriate? Or is the essay too solemn, too preachy? If you think it's too preachy, cite some sentences, and then revise them to make them more acceptable.
3. What are the strengths and weaknesses of this essay? What grade would you give it, and why? If you were the instructor in a first-year composition course, what comment (three or four sentences) would you write at the end of the essay?
4. Jiménez wrote the essay in a composition course. If you were the editor of your college's newspaper, might you run it as an op-ed piece? Why, or why not?

Barnet, Sylvan; Bedau, Hugo; O'Hara, John. Current Issues and Enduring Questions (Kindle Locations 4034-4043). Bedford/St. Martin's. Kindle Edition.

Heather Rogers

Heather Rogers is a writer and filmmaker. We give an excerpt of her recent book, Gone Tomorrow: The Hidden Life of Garbage *(2005).The message of the book is that our capitalistic society is inherently wasteful – businesses need to create objects that don't last, so they can sell more goods – and that if the planet is not to be destroyed we must create a society that does not need much of what we think we need.*

Hiding in Plain Sight

In the dark chill of early morning, heavy steel garbage trucks chug and creep along neighborhood collection routes. A worker empties the contents of each household's waste bin into the truck's rear compaction unit. Hydraulic compressors scoop up and crush the dross, cramming it into the enclosed hull. When the rig is full, the collector heads to a garbage depot called a "transfer station" to unload. From there the rejectamenta is taken to a recycling center, an incinerator or, most often, to what's called a "sanitary landfill."

Land dumping has long been the favored disposal method in the U.S. thanks to the relative low cost of burial, and North America's abundant supply of unused acreage. Although the great majority of our castoffs go to landfills, they are places the public is not meant to see. Today's garbage graveyards are sequestered, guarded, veiled. They are also high-tech, and, increasingly, located in rural areas that receive much of their rubbish from urban centers that no longer bury their own wastes.

There's a reason landfills are tucked away, on the edge of town, in otherwise untraveled terrain, camouflaged by hydroseeded, neatly tiered slopes. If people saw what happened to their waste, lived with the stench, witnessed the scale of destruction, they might start asking

difficult questions. Waste Management Inc., the largest rubbish handling corporation in the world, operates its Geological Reclamation Operations and Waste Systems (GROWS) landfill just outside Morrisville, Pennsylvania--in the docile river valley near where Washington momentously crossed the Delaware leading his troops into Trenton in 1776. Sitting atop the landfill's 300-foot-high butte composed entirely of garbage, the logic of our society's unrestrained consuming and wasting quickly unravels.

Up here is where the dumping takes place; it is referred to as the fill's "working face." Clusters of trailer trucks, yellow earthmovers, compacting machines, steamrollers, and water tankers populate this bizarre, 30-acre nightmare. Churning in slow motion through the surreal landscape, these machines are remaking the earth in the image of garbage. Scores of seagulls hover overhead then suddenly drop into the rotting piles. The ground underfoot is torn from the metal treads of the equipment. Potato chip wrappers, tattered plastic bags, and old shoes poke through the dirt as if floating to the surface. The smell is sickly and sour.

The aptly named GROWS landfill is part of Waste Management Inc.'s (WMI) 6,000-acre garbage treatment complex, which includes a second landfill, an incinerator and a state-mandated leaf composting lot. GROWS is one of a new breed of waste burial sites referred to as "mega-fills." These high-tech, high-capacity dumps are comprised of a series of earth covered "cells" that can be 10 to 100 acres across and up to hundreds of feet deep--or tall, as is the case at GROWS. (One Virginia whopper has disposal capacity equivalent to the length of one thousand football fields and the height of the Washington Monument.) As of 2002, GROWS was the single largest recipient of New York City's garbage in Pennsylvania, a state that is the country's biggest depository for exported waste.

WMI's Delaware-side operation sits on land that has long served the interests of industry. Overlooking a rambling, mostly decommissioned US Steel factory, WMI now occupies the former grounds of the Warner Company. In the previous century, Warner surface mined the area for gravel and sand, much of which was shipped to its cement factory in Philadelphia. The area has since been converted into a reverse mine of sorts; instead of extraction, workers dump, pack and fill the earth with almost 40 million pounds of municipal wastes daily.

Back on top of the GROWS landfill, 20-ton dump trucks gather at the low end of the working face, where they discharge their fetid cargo. Several feet up a dirt bank, a string of large trailers are being detached from semi trucks. In rapid succession each container is tipped almost vertically by a giant hydraulic lift and, within seconds, twenty-four tons of putrescence cascades down into the day's menacing valley of trash. In the middle of the dumping is a "landfill compactor"--which looks like a bulldozer on steroids with mammoth metal spiked wheels--that pitches back and forth, its 50 tons crushing the detritus into the earth. A smaller vehicle called a "track loader" maneuvers on tank treads, channeling the castoffs from kitchens and offices into the compactor's path. The place runs like a well-oiled machine, with only a handful of workers

orchestrating the burial.

Get a few hundred yards from the landfill's working face and it's hard to smell the rot or see the debris. The place is kept tidy with the help of 35-foot tall fencing made of "litter netting" that surrounds the perimeter of the site's two landfills. As a backup measure, teams of "paper pickers" constantly patrol the area retrieving discards carried off by the wind. Small misting machines dot fence tops, roads and hillsides, spraying a fine, invisible chemical-water mixture into the air, which binds with odor molecules and pulls them to the ground.

In new state-of-the-art landfills, the cells that contain the trash are built on top of what is called a "liner." The liner is a giant underground bladder intended to prevent contamination of groundwater by collecting leachate--liquid wastes and the rainwater that seeps through buried trash--and channeling it to nearby water treatment facilities. WMI's two Morrisville landfills leach on average 100,000 gallons daily. If this toxic stew contaminated the site's groundwater it would be devastating.

Once a cell is filled, which might take years, it is closed off or "capped." The capping process entails covering the garbage with several feet of dirt, which gets graded, then packed by steamrollers. After that, layers of clay-embedded fabric, synthetic mesh, and plastic sheeting are draped across the top of the cell and joined with the bottom liner (which is made of the same materials) to encapsulate all those outmoded appliances, dirty diapers and discarded wrappers.

Today's landfill regulations, ranging from liner construction to post-capping oversight, mean that disposal areas like WMI's GROWS are potentially less dangerous than the dumps of previous generations. But the fact remains that these systems are short-term solutions to the garbage problem. While they may not seem toxic now, all those underground cells packed with plastics, solvents, paints, batteries and other hazardous materials will someday have to be treated since the liners won't last forever. Most liners are expected to last somewhere between 30 and 50 years. That time frame just happens to coincide with the post-closure liability private landfill operators are subject to; 30 years after a site is shuttered, its owner is no longer responsible for contamination, the public is.

There is a palpable tension at waste treatment facilities, as though at any minute the visitor will uncover some illegal activity. But what's most striking at these places isn't what they might be hiding; it's what's in plain view. The lavish resources dedicated to destroying used commodities and making that obliteration acceptable, even "green," is what's so astounding. Each landfill (not to mention garbage collection systems, transfer stations, recycling centers and incinerators) is an expensive, complex operation that uses the latest methods developed and perfected at laboratories, universities and corporate campuses across the globe.

The more state-of-the-art, the more "environmentally responsible" the operation, the more the repressed question pushes to the surface: What if we didn't have so much trash to get rid of?