



Chapter 4

Informal Fallacies

Some errors in reasoning are so obvious that no one is apt to be taken in by them. For example, probably no one would find the following argument persuasive:

1. Two plus 2 equals 4. Therefore, Santa Claus exists.

But other errors in reasoning tend to be psychologically persuasive; these are called **fallacies**. In this chapter, we will describe some of the more common informal fallacies and classify them by type. Our first question, then, is, What is an *informal* fallacy?

Let's begin with the contrasting concept of a formal fallacy. A **formal fallacy** involves the *explicit* use of an invalid form. We encountered a number of formal fallacies in Chapter 1. For example, the fallacy of affirming the consequent is a formal fallacy:

2. If nepotism is wrong, then it is destructive. And it is destructive. Hence, nepotism is wrong.

The form here is invalid: "If *A*, then *B*; *B*; so, *A*." The fallacy of denying the antecedent is another formal fallacy:

3. If good intentions make good sermons, then Reverend McGuire is a good preacher. Unfortunately, they don't; so he's not.

The form here is invalid as well: "If *A*, then *B*; not *A*; so, not *B*."

We have also seen how to use counterexamples to expose formal fallacies. For instance:

4. All cantaloupes are melons. All watermelons are melons. So, all watermelons are cantaloupes.

The form of argument (4) is “All A are B; all C are B; so all C are A.” And here is a counterexample that shows that the form is invalid: “All dogs are animals; all cats are animals; so all cats are dogs.”

Not all fallacies are formal fallacies. **Informal fallacies** are errors in reasoning that do not involve the *explicit* use of an invalid form. Furthermore, exposing an informal fallacy requires an examination of the argument’s *content*. We took note of one kind of informal fallacy in Chapter 3, namely, equivocation. Here is a blatant example:

5. My wife’s brother is a real pig. You should see him eat! And if he is a pig, then he is not human. So, he is not human.

If we ignore the content, argument (5) appears to be an example of *modus ponens*. But if we examine the content, we notice that the word “pig” is used with two different meanings. In the first premise, “pig” means “person who habitually overeats.” In the second premise, “pig” means “hog” (i.e., a domesticated animal with a long snout and fat body). Once we spot the double meaning, we see that it destroys the logical linkage between the two premises. While the form initially appears to be *modus ponens*, an analysis of the content indicates that the form would be more accurately identified as follows: “A; if B, then C; so, C.” This form is obviously invalid, but it is not *explicitly* employed in argument (5)—it remains hidden due to the double meaning of the word “pig.” Thus, equivocation is an *informal* fallacy.

There are many types of informal fallacies, and logicians do not agree on the best way to classify them. However, the attempt to classify them has benefits, for it enables us to see some commonalities among them. In this text, informal fallacies are divided into three groups: (a) fallacies involving irrelevant premises, (b) fallacies involving ambiguity, and (c) fallacies involving unwarranted assumptions. The reason for studying informal fallacies is simply this: By describing and labeling the more tempting ones, we increase our ability to resist their allure. (Note: Throughout this chapter, we will provide a contemporary name for each fallacy as well as the traditional Latin name when it is still used with some frequency.)

4.1 Fallacies Involving Irrelevant Premises

Some fallacies involve the use of premises that are logically irrelevant to their conclusions, but for psychological reasons, the premises may *seem* relevant. These fallacies are classified as *fallacies involving irrelevant premises*. Six varieties of this general class of fallacy are discussed in this section.

1. Argument Against the Person (Ad Hominem Fallacy)

The *argument against the person* (or *ad hominem* fallacy) involves attacking the

ing a rational critique of the argument (or statement) itself. (*Ad hominem* is a Latin phrase meaning “against the man.”) In its most blatant form, the *abusive ad hominem*, this fallacy involves a direct personal attack, for example, an insult or allegation that the arguer has a moral flaw. For example:

6. Jones argues for vegetarianism. He says it is wrong to kill animals unless you really need to for food, and that, as a matter of fact, nearly everyone can get enough food without eating meat. But Jones is just a nerdy intellectual. So, we can safely conclude that vegetarianism remains what it has always been—nonsense.

Here, Jones’s argument is not given a rational critique; rather, Jones himself is criticized. And even if Jones is a “nerdy intellectual,” this does not show that Jones’s argument is flawed, nor does it show that vegetarianism is nonsense. The personal attack on Jones is simply irrelevant to the soundness of Jones’s argument and irrelevant to the issue of vegetarianism.

Ad hominem arguments need not employ outright verbal abuse. In more subtle forms, they involve the attempt to discredit an opponent by suggesting that the opponent’s judgment is distorted by some factor in his or her circumstances—even though the soundness of the opponent’s argument (or truth of the opponent’s view) is independent of the factor cited. This form of *ad hominem* argument is sometimes called the *circumstantial ad hominem* because it involves an attempt to discredit an argument (or view) by calling attention to the circumstances or situation of those who advance it. For example:

7. Ms. Fitch argues in favor of equal pay for equal work. She says it doesn’t make sense to pay a person more for doing the same job just because he is male or Caucasian. But since Ms. Fitch is a woman, it’s to her personal advantage to favor equal pay for equal work. After all, she would get an immediate raise if her boss accepted her argument! Therefore, her argument is worthless.

Here, an attempt is made to discredit the argument by showing that the arguer has something to gain if her conclusion is accepted. Of course, the activity of arguing can be, in a given case, simply a way of getting something the arguer wants. But this fact, by itself, does not prove that the arguer’s reasoning is flawed. What is needed is a rational critique of the premises or inferences in question.

Another form of the argument against the person involves an attempt to suggest that the opponent is hypocritical—that is, that his views or arguments conflict with his own practice or with what he has said previously. This form of *ad hominem* argument is sometimes called the *tu quoque* (pronounced “too kwo-kway”), meaning “you too.” For instance, suppose a 12-year-old argues as follows:

8. Dad tells me I shouldn’t lie. He says lying is wrong because it makes people

Argument Against the Person (or Ad Hominem Fallacy)

Premises: Instead of providing a rational critique of a statement (or argument), attack the person who advances it.

Conclusion: The statement is false or dubious. (Or the argument is unsound or uncogent.)

The attack can take three forms:

Abusive ad hominem: direct personal attack on the opponent

Circumstantial ad hominem: attempts to discredit by calling attention to the circumstances or situation of the opponent

Tu quoque: charges the opponent with hypocrisy or inconsistency

to work when he isn't really sick. So, lying isn't actually wrong—Dad just doesn't like it when I lie.

The *tu quoque* fallacy may succeed in embarrassing or discrediting the opponent, but the logical error should be clear upon reflection. For example, with regard to argument (8), that some people (including one's parents) lie in no way shows that lying is morally permissible. In general, the fact that some people violate a given moral rule does not show that the rule is incorrect. So, the premise of (8), that "Dad lies," is irrelevant to the conclusion.

Before we move on, let us consider one last example of the argument against the person:

9. During the 1980s, many American journalists passed harsh judgments on South African apartheid. They wrote that it was unjust, cruel, and immoral. But given the disgraceful history of race relations in America, these American journalists were in no position to pass judgment on South Africa. So, their judgments were without insight.

Here again, the premises are irrelevant to the conclusion. The journalists are accused of hypocrisy on the grounds that their own country has a disgraceful history of race relations, but what is needed is evidence contrary to the moral judgments of the journalists, and that has not been offered. Thus, (9) is an *ad hominem* of the *tu quoque* type.

2. Straw Man Fallacy

A *straw man* fallacy occurs when the arguer attacks a misrepresentation of the opponent's view. The idea is to describe something that *sounds like* the opponent's view but is easier to knock down and then to refute. This fallacy can be

the misrepresentation has taken place. However, when put bluntly, it is obvious that the premise is irrelevant to the conclusion:

Premise: A misrepresentation of the view is false.

Conclusion: The view is false.

Notice that the straw man fallacy results from a failure to honor Principle 4 of Chapter 2: *Be fair and charitable in interpreting an argument*. Fairness demands that we represent the original accurately; charity demands that we put an argument in its best light when we are confronted with interpretive choices.

In order to demonstrate that a straw man fallacy has occurred, one obviously must provide a more accurate statement of the view that has been misrepresented. Equally obviously, one does not always have in hand the information needed to do this. But one can often "smoke out" a straw man fallacy by asking such appropriate questions as these: What were the exact words used in the original? Have any key words or phrases been changed or omitted? Does the context suggest that the author was deliberately exaggerating or leaving obvious exception clauses unstated?

Straw man fallacies often appear in political contexts. Some years ago, when the Equal Rights Amendment was being hotly debated, arguments of the following sort were sometimes offered against it:

10. Backers of the ERA believe in the total equality of the sexes. "Equal pay for equal work" is just the tip of the iceberg. Few realize that to ratify the ERA is to insist that 50 percent of the players in the National Football League should be women. Few realize that to ratify the ERA is to insist that there should no longer be separate public bathrooms for men and women. Believe me, it would be a great mistake to ratify the ERA.

The entire text of the proposed Equal Rights Amendment runs as follows: "Equality of rights under the law shall not be denied or abridged by the United States or by any state on account of sex."¹ Now, like many statements in the U.S. Constitution itself, this proposed amendment leaves room for interpretation. But it certainly seems unfair to describe it as requiring that half the players on professional football teams be women or as requiring that men and women use the same public bathrooms. Argument (10) attacks a straw man rather than the ERA itself.

The straw man fallacy is also committed when a view or argument is alleged to involve assumptions that it does not (or need not) involve. For example:

11. Susan advocates the legalization of cocaine. But I cannot agree with any position based on the assumption that cocaine is good for you and that a society of drug addicts can flourish. So, I disagree with Susan.

Of course, one can consistently advocate the legalization of cocaine and yet believe that cocaine is good for you and that a society of drug addicts can flourish.

although drugs are harmful, legalizing them is the best way to eliminate the illegal drug traffic (and hence the violence associated with it). Moreover, one can advocate the legalization of drugs without assuming or presupposing that a society of drug addicts can flourish. One might believe that legalization will not lead to a significant increase in the number of drug-addicted persons, especially if legalization is accompanied by a strong educational campaign on the dangers of using hard drugs.

The Straw Man Fallacy

Premises: A misrepresentation of the view is false.
Conclusion: The view itself is false.

Sometimes a persuasive (i.e., biased) definition is used to set up a straw man:

12. Empiricism is the view that nothing should be believed in unless it can be directly observed. Now, no one can see, hear, taste, smell, or touch protons, electrons, or quarks. So, while empiricists pretend to be advocates of science, their views in fact rule out the most advanced physical science of our times.

Professor Anthony Flew, author of *A Dictionary of Philosophy*, defines “empiricism” as “the thesis that all knowledge or at least all knowledge of matters of fact (as distinct from that of purely logical relations between concepts) is based on experience.”² Now, since the phrase “is based on” is somewhat vague, the concept of empiricism has rather fuzzy borderlines. But Flew’s definition does not have the empiricists insisting that we know only those things we have *directly* observed. We might know about the existence of some entities by extrapolation or because the best theories presuppose their existence. This knowledge would still be “based on” experience because it would be inferred using observation statements. Thus, Flew’s definition is fair to the empiricist tradition in philosophy, while the definition contained in argument (12) is biased. By including the phrase “direct observation,” the arguer makes empiricism a straw man. Incidentally, argument (12) illustrates how the straw man fallacy can become quite subtle when complex issues are involved. If a seemingly minor but actually important aspect of a view is distorted or omitted, the view itself may appear much easier to refute than it really is.

3. Appeal to Force (*Ad Baculum Fallacy*)

The *appeal to force* (or *ad baculum* fallacy) occurs when a conclusion is defended by a threat to the well-being of those who do not accept it. (*Baculum* is Latin for

“staff,” the staff being a symbol of power.) The threat may be either explicit or implicit. Let’s start with a case involving the threat of physical harm, reminiscent of scenes in films about organized crime:

13. Mr. Jones, you helped us import the drugs. For this, the Boss is grateful. But now you say you’re entitled to 50 percent of the profits. The Boss says you’re entitled to 10 percent. Unless you see things the Boss’s way, you’re going to have a very nasty accident. So, you’re entitled to 10 percent. Got it?

Of course, the threatened “nasty accident” has no logical bearing on the conclusion (“Jones is entitled to 10 percent”). The logical error can be generalized as follows: “You can avoid harm by accepting this statement. So, the statement is true.”

An autocratic employer might argue as follows:

14. Lately there has been a lot of negative criticism of our policy on dental benefits. Let me tell you something, people. If you want to keep working here, you need to know that our policy is fair and reasonable. I won’t have anybody working here who doesn’t know this.

Here, the threat of job loss is obviously irrelevant to the truth of the conclusion (that the dental policy is fair and reasonable). Nevertheless, it may be tempting to suppose that if one can avoid harm by believing *X*, then *X* is true.

Appeal to Force (*Ad Baculum* Fallacy)

Premises: You can avoid harm by accepting this statement.
Conclusion: This statement is true.

The *ad baculum* fallacy may involve any sort of threat to one’s well-being, including one’s psychological well-being. For instance:

15. Listen, Valerie, I know you disagree with my view about the building project. You’ve made your disagreement clear to everyone. Well, it’s time for you to see that you are mistaken. Let me get right to the point. I know you’ve been lying to your husband about where you go on Wednesday afternoons. Unless you want him to know where you really go, it’s time for you to realize that I’ve been right about the building project all along. You follow me?

Of course, the threat to expose the lie in no way constitutes evidence for anyone’s view on a building project. But again, it may be tempting to suppose that a statement is true if one can avoid harm by accepting it.

4. Appeal to the People (Ad Populum Fallacy)

The *appeal to the people* (or *ad populum* fallacy) is an attempt to persuade a person (or group) by appealing to the desire to be accepted or valued by others. (*Populum* is Latin for “people” or “nation.”) For instance, a speaker at a political rally may elicit strong emotions from the crowd, making each individual want to believe his conclusion so as to feel a part of the group:

16. I look out at you all, and I tell you, I am proud to be here. Proud to belong to a party that stands for what is good for America. Proud to cast my lot with the kind of people who make this nation great. Proud to stand with men and women who can get our nation back on its feet. Yes, there are those who criticize us, who label our view of trade agreements as “protectionist.” But when I look at you hard-working people, I know we’re right and the critics are wrong.

Of course, the strong feelings of the crowd do not lend logical support to anyone’s view about trade agreements. Premises to the effect that “I am proud to be associated with you” and “you are hard-working people” are irrelevant to the conclusion (that “our view of trade agreements is right”).

Appeal to the People (Ad Populum Fallacy)

Premises: You will be accepted or valued if you believe this statement.
Conclusion: This statement is true.

One doesn’t have to be addressing a large group to commit the *ad populum* fallacy. Any attempt to convince by appealing to the need for acceptance (or approval) from others counts as an *ad populum* fallacy. For instance:

17. Ms. Riley, are you saying that President Bush made a moral error when he decided to go to war with Iraq? I can’t believe my ears. That’s not how Americans feel. Not true Americans, anyway. You are an American, aren’t you, Ms. Riley?

The mere fact that Ms. Riley is an American provides her with no logical support for the conclusion that America’s war with Iraq was just or moral. But like most Americans, Ms. Riley may wish to avoid being regarded as unpatriotic, and so an appeal to the people may influence her thinking.

The appeal to the people is common in advertising:

18. The new Electrojet 3000 cabriolet isn’t for everyone. But then, you’ve always stood apart from the crowd, haven’t you? So, the Electrojet 3000 is the car for you.

Here, the *ad populum* fallacy takes the form of “snob appeal,” that is, an appeal to

5. Appeal to Pity (Ad Misericordiam Fallacy)

The *appeal to pity* (or *ad misericordiam* fallacy) is the attempt to support a conclusion merely by evoking pity in one’s audience *when the statements that evoke the pity are logically unrelated to the conclusion*. (*Misericordiam* is Latin for “pity” or “mercy.”) For example, the chair of a faculty committee made the following speech to her dean:

19. We realize that our proposal concerning the library is flawed. But the merits of the proposal outweigh its flaws. After all, we worked awfully hard on it, and for so many hours! I hate to think we wasted all that time. Also, if you reject it, I might be denied my next promotion.

The premises here are simply irrelevant to the conclusion (that “the merits of the proposal outweigh its flaws”). Even if much time was spent developing the proposal, this in no way guarantees that its merits outweigh its flaws. And even if the dean’s rejection of the proposal would lessen the likelihood of the arguer’s receiving a promotion, this fact in no way supports the conclusion.

The appeal to pity is not, generally speaking, very subtle. But if the arguer succeeds in evoking sufficiently strong feelings of pity, he or she may distract the audience from the logic of the situation and create a desire to accept the conclusion. For this reason, lawyers often use the appeal to pity in an effort to convince judges and juries that their clients are not guilty or not deserving of a harsh sentence.

Appeal to Pity (Ad Misericordiam Fallacy)

Premises: You have reason to pity this person (or group).
Conclusion: You should do X for the benefit of this person (or group), although doing X is not called for logically by the reason given.

The *ad misericordiam* fallacy must be distinguished from arguments that support the need for a compassionate response to persons whose plights call for compassion. For example, the following sort of argument is *not* an example of the *ad misericordiam* fallacy:

20. As a result of war and famine, thousands of children in country X are malnourished. You can help by sending money to Relief Agency Y. So, please send whatever you can spare to Relief Agency Y.

While the information in the premises of this sort of argument is apt to evoke pity, the information is also logically relevant to the conclusion. Hence, there is no *ad misericordiam* fallacy here.

6. Appeal to Ignorance (Ad Ignorantiam Fallacy)

The *appeal to ignorance* (or *ad ignorantiam* fallacy) involves one of the following: either (a) the claim that a statement is true (or may be reasonably believed true) simply because it hasn't been proven false or (b) the claim that a statement is false (or may be reasonably believed false) simply because it hasn't been proven true. Here are two corresponding examples:

21. After centuries of trying, no one has been able to prove that reincarnation occurs. So, at this point, I think we can safely conclude that reincarnation does not occur.
22. After centuries of trying, no one has been able to show that reincarnation does not occur. Therefore, reincarnation occurs.

Put starkly, the claim that a statement is false because it hasn't been proven is manifestly erroneous. By such logic, scientists would have to conclude that their unproven hypotheses are false. And surely it is wiser for scientists to take a "wait-and-see" attitude. After all, we do not have to believe or disbelieve every statement we consider, for we often have the option of suspending judgment—that is, of not believing the statement is true and (simultaneously) not believing it is false. We can remain neutral. Similarly, the claim that a statement is true (or may reasonably be believed true) simply because it hasn't been disproven is illogical. By this principle, every new scientific hypothesis is true (or at least it can reasonably be believed to be true) unless it has been disproven—*no matter how flimsy the evidence for it is*.

The *ad ignorantiam* fallacy is often committed in organizations during periods of change. Those opposing change may argue along the following lines:

23. It has not been proven that the proposed changes will be beneficial. Therefore, they will not be beneficial.

And the counterargument may be this:

24. There is no solid evidence showing that the proposed changes will not be beneficial. Therefore, they will be beneficial.

Both arguments are flawed. As for (23), there may be no way of obtaining the evidence apart from organizational experimentation—that is, trying the proposal. So, demanding the evidence may be unrealistic and unreasonable. As for (24), problems with the proposal may become evident once it is tried, so the current lack of evidence against it is obviously no guarantee that it will

Appeal to Ignorance (Ad Ignorantiam Fallacy)

Premises: This statement has not been proven true.

Conclusion: This statement is false
(or may be reasonably believed false).

Premises: This statement has not been proven false.

Conclusion: This statement is true
(or may be reasonably believed true).

Some confusion regarding the *ad ignorantiam* fallacy may stem from the assumption used in courts of law that a defendant is *innocent until proven guilty*. This important legal principle is not a principle of logic. The legal principle is

Summary of Fallacies Involving Irrelevant Premises

For psychological reasons, the premises in these arguments may *seem* relevant to the conclusion, but in fact they are not.

1. Argument Against the Person (or *ad hominem* fallacy)

Premises: Instead of providing a rational critique of a statement (or argument), attack the person who advances it.

Conclusion: The statement is false or dubious. (Or the argument is unsound or uncogent.)

2. Straw Man Fallacy

Premises: A misrepresentation of the view is false.

Conclusion: The view itself is false.

3. Appeal to Force (or *ad baculum* fallacy)

Premises: You can avoid harm by accepting this statement.

Conclusion: This statement is true.

4. Appeal to the People (or *ad populum* fallacy)

Premises: You will be accepted or valued if you believe this statement.

Conclusion: This statement is true.

5. Appeal to Pity (or *ad misericordiam* fallacy)

Premises: You have reason to pity this person (or group).

Conclusion: You should do X for the benefit of this person (or group), although doing X is not called for logically by the reason given.

6. Appeal to Ignorance (or *ad ignorantiam* fallacy)

Premises: This statement has not been proven true.

Conclusion: This statement is false (or may be reasonably believed false).

Premises: This statement has not been proven false.

Conclusion: This statement is true (or may be reasonably believed true).

designed primarily to prevent the unjust punishment of the innocent, *not* to increase the chances of correctly identifying *all* those who have committed crimes. Undoubtedly, many defendants have committed the crimes they are accused of even though the evidence is not sufficient to prove them guilty according to accepted legal standards. Our legal system is deliberately designed to prevent one kind of unwanted result (namely, the punishment of the innocent) at the risk of allowing another unwanted result (namely, letting persons who have committed crimes go free). But we can recognize the usefulness and wisdom of the legal principle that “one is innocent until proven guilty” *without* supposing that it is a correct principle of logic.

The following exercise gives you an opportunity to identify examples of the fallacies discussed in this section.

◆ Exercise 4.1

Part A: Formal and Informal Fallacies Most of the following passages exemplify either a formal fallacy or an informal fallacy. If a formal fallacy is committed, identify the argument form, using capital letters to stand for terms or statements (e.g., “All A are B; all C are B; so all A are C”). If an informal fallacy is committed, name the type of fallacy and explain why the passage is an example of that type. (In the case of *ad hominem* fallacies, indicate whether they are abusive, circumstantial, or *tu quoque* in type.) If no fallacy is committed, simply write “not a fallacy.”

- * 1. Social Darwinists such as Herbert Spencer hold that the development and structure of human societies can be explained in terms of evolutionary principles such as the survival of the fittest. But I reject Social Darwinism because Spencer was a real bonehead.
- 2. Your Honor, it's true that I killed my parents. I fully admit that I murdered them in cold blood. But I should get a light sentence. After all, I *am* an orphan.
- 3. As I travel around and talk to people, I find that many do not even know what genetic engineering is. Well, genetic engineering is best defined as the most recent in a long line of attempts on the part of human beings to play God. Of course, the proponents of genetic engineering overlook just one little fact: We humans are not God. And that's why genetic engineering is profoundly immoral.
- * 4. All the really hot new thinkers are using principles from sociobiology. It's the new wave in ethics. So, you should accept the principles of sociobiology.
- 5. Any politician who has lied to the nation is a person who has betrayed the public trust. Some U.S. presidents are politicians who have lied to the nation. Accordingly, some U.S. presidents are persons who have betrayed the public trust.

- 6. Although they've certainly tried, scientists have not been able to demonstrate that ESP is a myth. So, ESP is probably real.
- * 7. It is quite clear what the proponents of legalized euthanasia are seeking. Put simply, they are seeking the power to kill anyone who has a serious illness. And that is why I stand opposed to legalized euthanasia.
- 8. All beautiful paintings are colorful objects. No charcoal drawings are beautiful paintings. Therefore, no charcoal drawings are colorful objects.
- 9. So many people these days are against prayer in the public schools! Of course, the assumptions underlying this view include (a) that there is no God, (b) that only matter exists, and (c) that life is essentially meaningless. That is why we must fight against these people who seek to remove prayer from our public schools.
- * 10. Professor Jackson, this paper merits at least a “B.” I stayed up all night working on it. And if I don't get a “B,” I'll be put on academic probation.
- 11. If consuming large quantities of alcohol damages one's liver, then consuming large quantities of alcohol is unhealthy. Consuming large quantities of alcohol damages one's liver. Hence, consuming large quantities of alcohol is unhealthy.
- 12. Of course it is reasonable to believe that we have been visited by extraterrestrial beings. After all, plenty of skeptics have tried, but none has been able to disprove that such visitations have occurred.
- * 13. Since you became a member of this club, you've raised quite a ruckus about women's rights. And I know you sincerely believe in feminism. But if you go on holding these extreme views, I will see to it that you are never voted in as an officer of this club. And you know I can make good on that threat. I hope you follow me: Your feminist views are too radical and need to be toned down.
- 14. The future free actions of humans can be known in advance only if time travel is possible. But you're a fool if you think time travel is possible. So, it is not true that the future free actions of humans can be known in advance.
- 15. If Norway is the world leader in per-capita electrical power generation, then the U.S.A. is not the world leader. And indeed the U.S.A. is not the world leader in per-capita electrical power generation. Therefore, Norway is the world leader in per-capita electrical power generation.
- * 16. Dr. Herzheimer has written essays criticizing self-help books from the standpoint of logic and science. I realize Dr. Herzheimer is a famous philosopher, but I think it's immature and cold-hearted to criticize people who are trying to help others get their lives together. Thus, I myself give no credence to Dr. Herzheimer's work whatsoever.
- 17. Republicans are people who believe that the rich should get richer and the poor poorer. They are against welfare and against taxes for people who can well afford to pay taxes. Republicans also hold that the only good immigrants

are either wealthy or well educated. Thus, I strongly urge you not to be a Republican.

18. Excuse me, Mr. Smith, did I hear you correctly? Did you say that boxing should be banned? Sure, boxing is a little dangerous, but real men love boxing. Therefore, boxing should not be banned.
- * 19. Mr. Johnson argues that we should stop eating meat. But did you know that Mr. Johnson owns the Vegetables Forever Produce Company? Oh yes, he stands to gain a lot, financially speaking, if the rest of us become vegetarians. I think we can safely ignore his line of argument.
20. Nowadays, everybody that's anybody believes in reincarnation. So, you should, too.
21. Given that most commuters are willing to ride trains, light rail is a good solution to gridlock on the highways. But most commuters are not willing to ride trains. Hence, light rail is not a good solution to gridlock on the highways.
- * 22. I do not have very much information about Mr. Reed, but there is nothing in his file to disprove that he's a communist. So, he probably is one.
23. I find it mildly amusing that Mr. and Mrs. Billings are advocating school reforms. But I certainly do not see any reason to take their proposal seriously. Both of them were poor students in high school.
24. Intelligent, refined people insist on the best wines. And our Old World Merlot is the best red wine available. Obviously, Old World Merlot is for you.
- * 25. The school needs a football team. I hope you agree. One thing I can tell you for sure: If you want to fit in around here, you'll see this issue the way the rest of us do. And we all think the school needs a football team.
26. Robert, I've heard you're a communist. So, let me tell you something. Around here, we know communism is evil. And we have ways of making communists see the error of their ways. The last communist who passed through this town suddenly saw the light after some of the boys had a little "talk" with him one night. I hope these facts will clarify things for you. You do understand that communism is evil, don't you?
27. Yes, Jill argues for deconstruction. But her mind is so open, her brains are falling out. You can safely ignore whatever she has to say.
- * 28. In 1742, Christian Goldbach conjectured that every even number greater than 2 is the sum of two primes. Mathematicians have been trying to prove Goldbach's conjecture ever since, but no one has succeeded in doing so. After two and a half centuries, I think we can safely conclude that Goldbach was wrong.
29. It's interesting how the family of David Walker, the African American shot by Seattle police, complains that none of the jurors at the fact-finding hearing are black but has no problem that their attorney suing the city for

\$5 million is not black. [Assume that the implicit conclusion is: The complaint is groundless.]—Letter to *The Seattle Times*, July 19, 2000, B7

30. After centuries of trying, no one has been able to prove that God exists. The attempt seems to be futile. So, at this point, I think we can safely conclude that there is no God.

Part B: Formal and Informal Fallacies Most of the following passages exemplify either a formal fallacy or an informal fallacy. If a formal fallacy is committed, identify the argument form, using capital letters to stand for terms or statements (e.g., "All A are B; all C are B; so all A are C"). If an informal fallacy is committed, name the type of fallacy and explain why the passage is an example of that type. (In the case of *ad hominem* fallacies, indicate whether they are abusive, circumstantial, or *tu quoque* in type.) If no fallacy is committed, simply write "not a fallacy." *Note: In some cases, more than one fallacy is exemplified in a single passage; where this occurs, identify all the fallacies.*

- * 1. What is the prochoice view? This: It is permissible to kill innocent human beings at will as long as they are small and helpless. By implication, then, the prochoice view would permit the slaughter of children on a wide scale. And that is why we should all oppose the prochoice view.
2. Your Honor, my client does not deserve a year in prison. He has small children that need a father and a wife that needs a husband.
3. You really think that drugs should be legalized? Think again. Dad will cut you out of the inheritance if you go on thinking like that. That should make it clear to you just how far off base your views really are.
- * 4. Clairvoyance is the alleged ability to "see" with the mind's eye what cannot literally be seen. For example, some clairvoyants have claimed to "see" the death of a loved one from whom they were separated by many miles. Of course, you can imagine the kind of attention clairvoyants receive from the media, not to mention the money they can squeeze out of weak-minded people who are curious about the paranormal. Thus, I think the alleged reports of clairvoyance are just hype.
5. Joe, I know you think that the new electronics plant should be located in Seattle. Well, you're wrong. It should be located in Spokane. How do I know? Joe, I'm your boss, right? And you're up for a promotion next month, right? You want the promotion, right? Well, then, the conclusion is obvious: The new electronics plant should be located in Spokane.
6. Smoking cigarettes can harm one's health. So, it's best to avoid smoking, assuming one wants to be healthy.
- * 7. No one has ever shown that miracles do not happen. Therefore, miracles do happen.
8. Yates is guilty of murder, assuming that he pleads guilty. But Yates does not plead guilty. Therefore, Yates is not guilty of murder.

9. You have argued that it is wrong for me to hunt deer. Well, you eat hamburger, and that involves the killing of cows. Moreover, it is obvious that there is no moral difference between killing cows and killing deer, so your argument is unsound.
- * 10. The poor people in many Third World countries are malnourished and highly susceptible to disease. These people are in need of help, for their poverty is so great that many of them can do little to help themselves. But many Americans have discretionary income well beyond what they need personally, and these (relatively) wealthy Americans could help the poor in the Third World—at least to some extent. Moreover, from a moral point of view, it is good to help those who really need help. So, from a moral point of view, it would be a good thing for these (relatively) wealthy Americans to help the poor in the Third World.
11. No one has been able to demonstrate that astrology is nonsense. For this reason I have concluded that astrology is not nonsense—rather, it is an insightful way of viewing our lives and the world around us.
12. No nuclear power plants are pollution-free forms of generating electrical power. Some waterwheels are pollution-free forms of generating electrical power. It follows that no nuclear power plants are waterwheels.
- * 13. Christians teach the doctrine of the Triune God, namely, that “One God plus one God plus one God equals one God.” But this doctrine is false, for it is obviously a mathematical impossibility, and only fools believe mathematical impossibilities.
14. Suzanne won the race only if she beat Marilyn. And Suzanne won the race. Therefore, Suzanne beat Marilyn.
15. Ingres’ *Odalisque* is not a sexist painting. Of course, I admit that *Odalisque* is sexist if it treats women as sex objects. But you’d have to be the worst sort of uptight prude to think that *Odalisque* treats women as sex objects. In addition, no one has ever proven that *Odalisque* treats women as sex objects. Therefore, *Odalisque* does not treat women as sex objects, and so it is not sexist.
- * 16. No contracts that contain a deliberate lie are legal contracts. All legal contracts are binding contracts. So, no contracts that contain a deliberate lie are binding contracts.
17. I don’t deserve a speeding ticket, officer. Yes, I admit I was doing 60 in a school zone. But I’ve had a really rough day. I was angry about some stuff that happened at work. Everybody has to let off some steam once in a while, don’t they? Give me a break.
18. Your Honor, the witness has just lied to the court three times. This has been verified by the tape recordings and by the reports of all of the other witnesses. Therefore, I submit that the witness’s testimony is untrustworthy.
- * 19. Real men drink El Belcho beer. Wimps drink the inferior brands. I can see

20. My dear sir, there are two reasons why you should agree that the money in your wallet is rightfully mine. First, I’ve had a lot of bad luck in my life, but you obviously enjoy health, wealth, and prosperity. So, if you are a man of compassion, you’ll see that I deserve the wallet. Second, since I’m pointing a gun at your head, you owe your very life to my generosity and patience.
21. According to mind–body dualism, human beings have both a body and a nonphysical soul. But if mind–body dualism is true, then new energy is introduced from the soul into the brain. But dualists have never been able to show that new energy is introduced from the soul into the brain. Thus, we can safely conclude that new energy is not introduced from the soul into the brain. Furthermore, it’s just crazy to suppose that a nonphysical thing (i.e., the soul) can have causal interactions with a physical thing (i.e., the brain). This, too, supports the claim that new energy is not introduced from the soul into the brain. I must conclude that mind–body dualism is not true.
- * 22. My opponent, the evolutionist, denies that we have our origin in God. Rather, according to the evolutionist, we humans have our origin in lower forms of life. Instead of having the dignity of being made in the image of God, we have the ignominy of being “made” in the image of apes, snakes, and bacteria.
23. You bet I’m in favor of stiff punishments for violent crimes. After all, punishment deters crime—no doubt about that. Yes, I’m aware that many bleeding-heart liberals have tried to prove that punishment doesn’t really deter crime, but their feeble efforts have all failed miserably. It’s just plain common sense that punishment deters crime.
24. If you want to die young, be one of those animals rights advocates. I mean, it’s your business, but around here, folks don’t have much patience with stupidity. Now, I know you really don’t want to die young. So, don’t be an animal rights advocate. And don’t say I didn’t warn you.
25. Wow! Just when you thought every state agency that possibly could had overdosed on dumb pills, here comes yet another. Kudos to Washington State Fish and Wildlife for opening the Lake Washington sockeye season on July 4th. They must have trundled to the very depths of their department to find a mind so brilliant as to make this kind of decision. Why would someone mix 3,000 boatloads of fishermen who are chomping at the bit to finally have a viable fishery in their front yard with several thousand people trying to launch their boats to attend the fireworks display on Lake Union?
—Letter to *The Seattle Times*, July 5, 2000, B7

4.2 Fallacies Involving Ambiguity

Arguments are sometimes flawed because they contain ambiguous words (phrases or statements) or because they involve a subtle confusion between two closely

related concepts. These we will call *fallacies involving ambiguity*, and we will discuss four kinds of them.

7. Equivocation

We first discussed this fallacy in section 3.3. Recall that *equivocation* occurs when two (or more) meanings of a word (or phrase) are used in a context in which validity requires a single meaning of that word (or phrase). Here is an example:

25. Only man is rational. But no woman is a man. Hence, no woman is rational.

Here, of course, the word “man” is used with two different meanings. In the first premise it means “humans,” while in the second premise it means “male humans.” If we rewrite the argument making the two meanings explicit, the invalidity is apparent:

26. Only humans are rational. No woman is a male human. So, no woman is rational.

The use of the single word “man” in argument (25) gives it a superficial appearance of validity. But our rewrite, argument (26), indicates that in reality, the two meanings of the word “man” destroy the logical linkage between premises and conclusion. Etymologically, “equivocate” comes from two Latin words, one meaning “equal” or “same” and one meaning “voice” or “word.” When one equivocates, one makes it sound as if the same word (or phrase) is being used with the same meaning throughout the argument, when, in fact, more than one meaning is present.

Is the following an example of equivocation?

27. One of your answers on the math exam is not right. And if it's not right, it's wrong. Furthermore, what's wrong is immoral. So, one of your answers on the math exam is immoral.

Yes. The word “wrong” is used in two different senses. In its first occurrence, “wrong” simply means “incorrect” or “inaccurate.” In its second occurrence, “wrong” means “morally wrong” or “unethical.” And mathematical errors are not, in general, moral errors (although deliberate errors in math can of course be used to deceive others, and careless mathematical errors in research or business are irresponsible).

Now, let's consider a somewhat more subtle example of equivocation:

28. I agree with Christians in their claim that God is love. But unlike Christians, I'm not afraid to draw the obvious logical consequence: Love is God.

The gist of the argument is this: “God is love; therefore, love is God.” And it

29. X is identical with Y; therefore, Y is identical with X.

Form (29) is valid—for example, “Samuel Clemens is identical with Mark Twain; therefore, Mark Twain is identical with Samuel Clemens.” But argument (28) does not really have form (29), for when Christians say, “God is love,” they don't mean that God is identical with love. Rather, they mean that God has the attribute of being loving. Thus, in the premise of (28), “is” means “has the attribute of,” while in the conclusion, “is” means “is identical with.” Accordingly, argument (28) has the following form:

30. X has attribute Y. So, Y is identical with X (that is, Y is *one and the same thing* as X).

It is not hard to produce a counterexample to show that this form is invalid: “Tom Cruise (the famous actor) is male; that is, he has the attribute of maleness. So, maleness is identical with Tom Cruise.” Here the premise is of course true, but the conclusion is false. Maleness is an attribute shared by many individuals, none of whom are identical with it. In particular, maleness is not *one and the same thing* as Tom Cruise.

Equivocation

Premises: Contain a key word (or phrase) that is ambiguous.
Conclusion: Is reached not by valid logical inference but by trading on the ambiguity of the key word (or phrase).

8. Amphiboly

The fallacy of *amphiboly* is similar to equivocation except that the double meaning is due to a syntactic deficiency, such as a grammatical error or a mistake in punctuation (rather than to an ambiguous word or phrase). In other words, an *amphiboly* is an inference that is invalid because of its dependence on an ambiguity *that is due to sentence structure*. Here is an example:

31. Author Myron Mobbins warns about the negative effects of subtle lies in his book *Liar's Tell Lies*. So, given that Mobbins's book contains subtle lies, perhaps it is best not to read it.

Presumably, Mobbins is not warning people about subtle lies *that occur in his own book*; rather, in his book, he is warning people about the negative effects of subtle lies that originate from other sources. But the conclusion drawn in argument (31) results from a different interpretation of the syntactically

flawed premise. Amphiboly often occurs when someone interprets a syntactically deficient statement in a way that was not intended by the original author (or speaker).

Here is another example of amphiboly:

32. Professor Warren gave a lecture on homicide in Tiffany Hall, room 208.
I gather that a lot of people have been murdered in that room.

The premise may mean simply that room 208 in Tiffany Hall is the location of the lecture, but the arguer takes it to mean that the lecture is about homicides that have occurred in that room. In the absence of additional information, the arguer's interpretation is not justified, so (32) is an example of the fallacy of amphiboly.

Now, consider the following two arguments. Are both examples of amphiboly? How do you know?

33. We were disturbed to read in the *Times* that during the past five years many of the middle school students searched illegally carried firearms. Obviously, they should fire the school administrators for conducting these illegal searches.
34. I'm sure we can agree that mentally abnormal people, such as psychotics, should be hospitalized. They shouldn't be living on the streets, and they shouldn't be put in prison. However, we must be willing to apply this principle consistently. And consider this fact: Geniuses, such as Albert Einstein, are mentally abnormal, for fewer than one in a million people have IQs as high as Einstein's. The conclusion is inescapable: Geniuses should be hospitalized.

Argument (33) is an example of amphiboly. Was it the searches or the carrying of firearms that was illegal? The arguer unjustifiably takes it to be the searches. Argument (34), on the other hand, is not an example of amphiboly; rather, it's an example of equivocation. The key phrase is "mentally abnormal." In its first use, "mentally abnormal" means "mentally ill." In its second use, "mentally abnormal" means simply "departing from the norm (or statistically rare)." Argument (34) is not an amphiboly because the ambiguity involved is not due to a structural flaw but simply due to the double meaning of the phrase "mentally abnormal."

Amphiboly

Premises: Contain a sentence that is ambiguous due to faulty structure (e.g., grammar or punctuation).

Conclusion: Is reached not by valid logical inference but by trading on the structural ambiguity.

9. Composition

The label "fallacy of composition" applies to two similar types of invalid inference. The first type is an *invalid inference from the nature of the parts to the nature of the whole*. For instance:

35. Each of the parts of this airplane is very light. Therefore, the airplane itself is very light.

Of course, if enough light parts are conjoined, the airplane itself may be quite heavy, and so the argument is invalid. Here is another example of the parts-to-whole type of fallacy of composition:

36. Each player on the football team is outstanding. Hence, the team itself is outstanding.

Even if each of the players on a team is outstanding, the team itself may not be outstanding if there is a lack of teamwork or insufficient opportunity to practice together.

It should be noted that not all inferences from part to whole are invalid. For example:

37. Each part of the machine weighs more than one pound, and the machine has five parts. Consequently, the machine itself weighs more than one pound.

Obviously, argument (37) is valid. But (35) and (36) make it clear that the following argument form is not in general valid: "Each part of X has attribute Y; therefore, X itself has attribute Y." However, since composition is an *informal* fallacy, it cannot be detected simply by identifying the argument form. One must also examine the content, especially the attribute in question, before passing judgment on the validity of part-to-whole inferences. And there is no simple formula for determining whether a given attribute will lead to fallacies of composition. One must evaluate part-to-whole inferences on a case-by-case basis.

The second type of fallacy of composition is an *invalid inference from attributes of members of a group to attributes of the group itself*. Here is an example:

38. Elephants eat more than humans. So, elephants taken as a group eat more than humans taken as a group.

This argument illustrates the traditional distinction between *distributive* and *collective* predication. In the premise, "Elephants eat more than humans," the attribute of "eating more than" is predicated distributively; that is, each *individual* elephant is said to eat more than any *individual* human eats. In the conclusion, however, the attribute of "eating more than" is predicated collectively; that is, elephants *taken as a group* are said to eat more than humans *taken as a group*.

Thus, while the premise of (38) is true, its conclusion is false simply because there are so many more humans than elephants.

The two forms of the fallacy of composition are related because the relationship of parts to a whole is analogous to the relationship of members to a group (or collective). However, these relationships are not identical. A whole must have its parts organized or arranged in a particular way. For instance, if we take an automobile apart and ship the parts to hundreds of different locations, the automobile no longer exists, but the collection of parts still exists.

The fallacy of composition is here classified as a fallacy of ambiguity because it often gains its persuasive force from a confusion of concepts. Consider again this example: "The team members are excellent; so the team is excellent." While on reflection there is a clear distinction between the team members and the team, the two concepts are easily confused, since the team is merely its members *organized in a certain way*. So, a less-than-clear grasp of the concepts involved may obscure the error in reasoning.

It should be noted that in some cases it is a matter of controversy whether an argument exemplifies the fallacy of composition. For instance, some philosophers think the following argument is an example of the fallacy of composition while others do not:

39. Each part of the universe is a dependent entity (i.e., depends for its existence on some other entity). So, the universe itself is a dependent entity.

The conclusion of argument (39) has been used by some philosophers to argue for the existence of God. But does the premise of (39) support the conclusion? Some philosophers doubt that the concept of dependence is understood well enough to legitimate a conclusion about the universe as a whole (even if each part of the universe is a dependent entity). This controversy has yet to be settled in a definitive way.

Composition

Premises: The parts (or members) have attribute X.
Conclusion: The whole (or group) has attribute X.

10. Division

The fallacy of *division* is the reverse of the fallacy of composition. That is, the fallacy of division involves *an invalid inference from the nature of the whole to the nature of the parts, or from the nature of a group to the nature of its members*. Here is an example of the whole-to-part type of fallacy:

40. The airplane is heavy. So, each of its parts is heavy.

Of course, some of the parts of a heavy airplane may be very light. Thus, the argument is invalid. Here is another example of the whole-to-part variety of the fallacy of division:

41. The soccer team is excellent. Hence, each member of the team is excellent.

A team may be excellent due to teamwork and a few outstanding players and yet have members who are not themselves excellent players.

The fallacy of division does not always involve an inference from a whole to its parts. It may involve an inference from a group (or collective) to its members. For instance:

42. Grizzly bears are rapidly disappearing. So, Freddy, the grizzly bear at the zoo, must be rapidly disappearing.

This argument moves invalidly from a statement about grizzly bears (taken as a group) to a statement about a member of that group. The fallacy of division (like the fallacy of composition) is classified as a fallacy of ambiguity because it gains its persuasive force from a confusion of meanings or concepts. For instance, "grizzly bears" may mean "grizzly bears taken as group" or "individual grizzly bears." If one fails to distinguish these two meanings, one is readily taken in by the fallacy.

Division

Premises: The whole (or group) has attribute X.
Conclusion: The parts (or members) have attribute X.

The following exercise gives you an opportunity to identify fallacies involving ambiguity.

Exercise 4.2

Part A: Fallacies Involving Ambiguity Most of the following passages exemplify a fallacy introduced in this section, but some of the passages do not exemplify fallacies, and some exemplify a fallacy introduced in section 4.1. Identify all of the fallacies. In the case of equivocation and amphiboly, briefly explain the double meaning involved. Finally, if no fallacy is committed, simply write "not a fallacy."

- * 1. The leader of this new religious group preaches the following message: "We shall wear no clothes to distinguish ourselves from our Christian brethren." Therefore, this religious group should be opposed. For it advocates nudity.

Summary of Fallacies Involving Ambiguity

These fallacies result from double meanings or from a confusion between two closely related concepts.

7. Equivocation

Premises: Contain a key word (or phrase) that is ambiguous.

Conclusion: Is reached not by valid logical inference but by trading on the ambiguity of the key word (or phrase).

8. Amphiboly

Premises: Contain a sentence that is ambiguous due to faulty structure (e.g., grammar or punctuation).

Conclusion: Is reached not by valid logical inference but by trading on the structural ambiguity.

9. Composition

Premises: The parts (or members) have attribute X.

Conclusion: The whole (or group) has attribute X.

10. Division

Premises: The whole (or group) has attribute X.

Conclusion: The parts (or members) have attribute X.

2. No member of the crew can lift over 100 pounds. Therefore, the entire crew cannot lift over 100 pounds.
3. Monty is so much fun at a party! He's a real ham! But if he's a ham, then he is high in cholesterol. So, he is high in cholesterol.
- * 4. Every sentence in my book is well written. Accordingly, my book is well written.
5. The Acme Corporation is very important. So, since Ms. Griggs works for the Acme Corporation, she must be very important.
6. Your Honor, the witness said he saw a photograph of the defendant lying on the coffee table. Therefore, the defendant must have lain on the coffee table at some point.
- * 7. The Germans are mostly Lutheran. Karl Schmidt is a German. Accordingly, Karl is mostly Lutheran.
8. Each brick in the building is larger than my logic textbook, and the building is composed of many bricks. It follows that the building itself is larger than my logic textbook.
9. Nuclear weapons are more destructive than conventional weapons. Therefore, over the course of human history, more destruction has resulted from nuclear weapons (taken as a group) than from conventional weapons (taken as a group).

- * 10. If I have a strong desire to believe in God, then I have a motive for believing in God. And if I have a motive for believing in God, then I have a reason for believing in God. However, if I have a reason for believing in God, then I have evidence for my belief in God. Therefore, if I have a strong desire to believe in God, then I have evidence for my belief in God.
11. You have asked Lolla Lodge to contribute to the Krazykids Preschool fundraiser. I am sorry to inform you that we are unable to honor your request. We realize that you are under the impression that our previous director promised you that we would make a contribution this year. But what the previous director actually said was, "We promise to give \$1000 and our best wishes to St. Mary's Hospital and Krazykids Preschool." So, St. Mary's gets the \$1000, and Krazykids gets our best wishes.
12. Each cell in the human body is invisible. Therefore, the human body itself is invisible.
- * 13. Each square inch of the car's surface is red. It follows that the whole car is red.
14. If Maffeo Barberini was Pope Urban VIII, then if Pope Urban VIII had Galileo placed under house arrest, Maffeo Barberini had Galileo placed under house arrest. Maffeo Barberini was Pope Urban VIII. It follows that if Pope Urban VIII had Galileo placed under house arrest, Maffeo Barberini had Galileo placed under house arrest.
15. America is still a free country, right? You bet it is. That being so, how can you doubt that we are free to choose between good and evil? Every real American is free and knows it. I'm starting to wonder what country you're from.
- * 16. Immigrants come from every country in the world. Ms. Bashir is an immigrant. Consequently, Ms. Bashir comes from every country in the world.
17. Dear Sir: It is the duty of the *Williamsburg Post* to print all the news that's in the public interest. And whether you like it or not, there is tremendous public interest in clairvoyance. Hence, the *Post* would be remiss were it not to print articles on clairvoyance. —The Editors
18. Sparrows are plentiful. Pete, my pet bird, is a sparrow. Therefore, Pete is plentiful.
- * 19. All men are not losers. Therefore, all losers are nonmen.
20. According to the Declaration of Independence, all men are created equal. Well, I disagree. It is obvious that human beings differ in important respects from birth, for example, in intelligence, athletic ability, and physical attractiveness. Therefore, contrary to the Declaration of Independence, it is not the case that human beings are created equal.
21. Gareth Peterson argues that the war in Vietnam was unjust. He claims that American military personnel were largely unable to distinguish friend from foe, and so they engaged in a lot of indiscriminate killing. But Peterson is an

- embittered veteran of the conflict in Vietnam. So, his argument has little value.
- * 22. Piet Mondrian's famous painting, *Composition with Red, Blue, and Yellow*, is made up of a number of distinct rectangles, each of which is brightly colored and beautiful. Hence, the painting itself is beautiful.
23. People do what they want to do. You said you wanted to go to the party, but in fact you stayed home to study for your logic exam. So, you didn't really want to go to the party—what you really wanted to do was to study for the logic exam.
24. We Americans have got to get rid of the Electoral College! Why? Well, this is supposed to be a democracy, but it's not a democracy and never has been. As long as we have an electoral college, a presidential candidate can win the popular vote and lose the election. And that's not democracy. Furthermore, in a democracy, each person's vote counts equally. But again, as long as we have an electoral college, the votes of some people count more than the votes of others. Is that democracy? No way. Now, you do believe in democracy, don't you? Of course you do; all good people do.
- * 25. According to the *Seattle Times*, this year the State of Washington will not issue parking permits to fish. So, I guess the salmon won't be allowed to park anywhere this year.
26. If Edwin Hubble is an astronomer, then he must necessarily be a scientist. Edwin Hubble is an astronomer. So, Hubble must necessarily be a scientist. But if Hubble must necessarily be a scientist, then he has no choice but to be a scientist. Consequently, Hubble has no choice but to be a scientist.
27. Dear Editor: I am writing to voice my opposition to the proposed light rail system, which is supposed to solve the traffic problems in Seattle. First, do the math. The project will cost \$3.5 billion. If you divide by ridership predictions, the cost per ride over the first 10 years of operation will be \$12.13. Apparently, backers of light rail are a bunch of fat cats with no conception of how the other half lives! Second, no one has proved that the proposed light rail system will solve the traffic problem. So, we have a proposal that is (a) outrageously expensive and (b) won't even solve the problem it's supposed to solve. The sooner we get a better plan for dealing with the traffic issue, the better.
- * 28. That which can not-be at some time is not. Therefore, if everything can not-be, then at one time there was nothing in existence. —St. Thomas Aquinas, *Summa Theologica* (I, Q. 2. Art. 3), in Anton C. Pegis, ed., *Introduction to St. Thomas Aquinas* (New York: Random House, 1948), p. 26
29. God is love. Love is a character trait. Therefore, God is a character trait.
30. Sixty percent of the students at Seattle Pacific University are female. Pat is a student at Seattle Pacific. So, Pat is 60 percent female.
- * 31. I read in the *Seattle Times* that most traffic accidents occur within 5 miles

good idea for you to relocate to someplace *more than 5 miles* distant from your home.

32. For Communication 101, I'm required to give a speech on drugs. But I am personally opposed to using drugs for any reason, so I think the professor is being unfair. I mean, sure, like most people, I've wondered what it would be like to be on drugs, but I shouldn't have to violate my personal ethical standards in order to meet the class requirements.
33. I'm sorry to hear that many of the bars tested illegally sell alcohol to people under 21. I infer that the governor should put a stop to such illegal testing.
- * 34. According to the letter we received, your previous employer recommends you with no qualifications. But I'm afraid we here at the Grove Company hire only people that do have qualifications. So, there's really no point in our talking further.
35. In a recent sermon, Pastor Bob said that a good marriage takes more than just two people in love. I found the sermon quite disturbing. Apparently Pastor Bob no longer believes in monogamy.

Part B: Equivocation For more examples of equivocation, see exercise 3.3, part A.

4.3 Fallacies Involving Unwarranted Assumptions

Some errors in reasoning result when the arguer makes an *unwarranted* assumption. An unwarranted assumption is one that, in context, stands in need of support. And because the support has not been provided, the assumption is illegitimate or unjustified, thus undermining the force of the argument. However, the unwary audience may not notice that an unwarranted assumption has been made, in which case the argument may be persuasive, although it *should* not be persuasive, and would not be to an ideally alert and rational audience.

11. Begging the Question (Petitio Principii)

An argument *begs the question* when it *assumes the point to be proved*. Begging the question is also known as arguing in a circle. (The Latin expression *petitio principii* means roughly “begging the first principle.” It is pronounced variously but may be pronounced as “peh-TIT-ee-o prin-KIP-ee-ee.”) Here is an example:

43. The defendant is not guilty of the crime, for she is innocent of having committed it.

The conclusion of this argument is merely a slightly rephrased version of the premise. So, the conclusion cannot be false given that the premise is true. And hence, argument (43) is valid. Therefore, if the premise is, as a matter of fact, true, then the argument is sound (by definition). Still, even if (43) is sound, one can see that it is defective in that it *assumes the point to be proved*.

The phenomenon of begging the question is interesting from the standpoint of logical theory, for it shows us that ultimately we want something more than valid arguments *with true premises*. But what is that something more? Here, we must keep in mind the two basic purposes for arguing: (a) convincing others and (b) discovering truth. From the standpoint of convincing others, we need premises that are somehow more acceptable to them than the conclusion. Of course, it's one of the facts of life that we cannot always convince others. As the old saying goes, "Convince a man against his will, he's of the same opinion still." But insofar as we wish to use an argument to persuade a person or group on a given issue, we need to employ premises that are more plausible to that person or group than the conclusion. And obviously, what's "more plausible" is, at least to some extent, relative to the person or group. We can sum this up by saying that in many cases, we need not only sound arguments but also convincing or persuasive ones.

But we use arguments not only to convince others but also to discover truth. And arguments that beg the question are flawed from this perspective as well because obviously one cannot reasonably claim to discover a truth *by inference* when that truth is itself included in the premises of one's argument. To discover a given truth via argument, each premise must be a different statement from the conclusion. Moreover, we usually want premises that we (rightly) take to be more probable than the conclusion prior to considering the argument.*

In sum, both from the standpoint of convincing others and from the standpoint of discovering truth, an argument that begs the question is deeply flawed. This is not to deny, of course, that question-begging arguments *do* sometimes convince a person or group. But such arguments *should not* be convincing because they illegitimately assume the point to be proved.

Does the following argument beg the question?

44. Everyone must be allowed to speak his or her mind because otherwise freedom of speech would be violated.³

The premise, written out more explicitly, says that if someone were not allowed to speak his or her mind, then freedom of speech would be violated. The word "violated" presumably signals something that *should not* happen, and this being so, the premise of the argument is similar in content to the conclusion. Is the premise better known than the conclusion? It's hard to see any good reason for thinking so. Thus, the argument seems to beg the question.

It is not always immediately obvious whether an argument involves a fallacy of begging the question. Consider the following case:

*I say "usually" because sometimes a conclusion is well known on grounds independent of the premises of the argument, and yet the argument may be helpful from the standpoint of discovering the truth because it shows that the conclusion is supported by *more than one* line of evidence.

45. God exists because the Bible says so. But how do I know that what the Bible says is true? Because it is God's Word.

In well-crafted form, argument (45) would look like this:

1. The Bible is God's Word.
- So, 2. What the Bible says is true. [from 1]
3. The Bible says that God exists.
- So, 4. God exists. [from 2 and 3]

None of the premises here simply *restates* the conclusion that God exists. But the first premise (all by itself) *presupposes* that God exists. Therefore, the argument seems to beg the question.⁴

Begging the Question (*Petitio Principii*):

Assuming the point to be proved

The premises are similar in content to the conclusion
but not better known than the conclusion.

Sometimes, there is reasonable disagreement about whether an argument assumes the point to be proved. For one thing, there can be borderline cases because the extent to which a premise contains the information in the conclusion is a matter of degree. Furthermore, this entire issue is complicated by the fact that the premises of a *valid* argument, taken together, *must contain* the information in the conclusion. Ultimately, to identify a fallacy of begging the question, we need to determine whether each premise, taken by itself, is better known or more reasonably believed than the conclusion of the argument. If a given premise is similar in content to the conclusion but is *not* better known (or more reasonably believed) than the conclusion, then the argument begs the question. But there will sometimes be reasonable disagreement about whether a given premise is better known (or more reasonably believed) than the conclusion of the argument.

12. False Dilemma

The fallacy of *false dilemma* occurs when one uses a premise that unjustifiably reduces the number of alternatives to be considered. For example, the arguer may assume, without justification, that there are only two possible alternatives, when in fact there are three or more. Consider the following argument:

46. I'm tired of all these young people criticizing their own country. What I say is this, "America—love it or leave it!" And since these people obviously don't want to leave the country, they should love it instead of criticizing it.⁵

The argument presupposes that there are only two options: We can love America (uncritically) or we can emigrate. But there seem to be other possibilities. For example, surely one can be critical of one's country insofar as it has fallen short of its own ideals and yet still be devoted to it. And perhaps it is morally permissible for one to respect one's country (i.e., respect its laws and traditions) without loving it (assuming that loving one's country involves being especially fond of it).

Notice that the fallacy of false dilemma does not involve an invalid inference. Given that I have just two options ("love it" or "leave it"), and given that one of these ("leave it") is ruled out, I must take the other. Thus, as in the case of begging the question, the fallacy of false dilemma consists in assuming something without appropriate warrant or justification. In the case of a false dilemma, the arguer assumes that a certain list of alternatives is complete when it isn't. Here is a second example:

47. I do not know whether God's existence can be proven, but I do know that each person must be either a theist or an atheist. And by your own admission, you're no theist. Therefore, you must be an atheist.

This argument ignores or overlooks the possibility of agnosticism. While the theist believes that God exists and the atheist believes that God does not exist, the agnostic suspends judgment or remains neutral as regards the proposition that God exists. That is, the agnostic is not confident that this proposition is true, but he or she is not confident that it is false, either. The agnostic's mental state is a philosophical shrug of the shoulders, generally based on the principle that *one's confidence in a proposition should be proportional to the evidence for it*, and, therefore, when the evidence doesn't settle a matter, belief is inappropriate. In any case, since people often suspend judgment on an issue when they feel they have inadequate evidence, the agnostic's attitude is at least a possible one.

False Dilemma

Using a premise that unjustifiably reduces the number of alternatives to be considered

We can't identify a false dilemma unless we can specify at least one alternative that has been ignored. This is not always easy. Consider the following

48. Either your reasoning in any given case is based on an assumption or you have no place to start in your reasoning. If your reasoning is based on an assumption, then your conclusions are no more certain than a mere assumption. And if your conclusions are no more certain than a mere assumption, you do not gain knowledge by reasoning. Of course, if you have no place to start in your reasoning, then you are unable to make any inferences, and hence (once again) you do not gain knowledge by reasoning. Therefore, you do not gain knowledge by reasoning.

A chain of inferences has to start somewhere. And it seems that one cannot always defend one's premises with further arguments. Apparently, then, some of one's premises will be unsupported by further statements. Let us call these "first premises." Do first premises have the status of mere assumptions? If so, it would appear that all our reasoning is based on mere assumptions, in which case our reasoning never yields knowledge.

Many philosophers think there is a class of statements that do not *need* to be supported by further statements in order to be known or well grounded. But how do such statements differ from mere assumptions? How can a statement be known, warranted, or well grounded without being based on further statements? Here, some philosophers have called attention to allegedly self-evident statements, such as "No circles are squares." These are not *mere assumptions*, they claim, because to understand the statements is to see that they are true. Other philosophers have called attention to observation statements, such as "I see a piece of paper now." These are not mere assumptions, it is claimed, because they are somehow grounded in our sensory experience. But other philosophers have expressed doubts about the attempt to identify a privileged class of first premises. These philosophers are skeptical about the categories of self-evident statements and observation statements. The point here is simply that it takes philosophical creativity to explain how a first premise can be more than a mere assumption. Thus, it sometimes takes both creativity and hard intellectual work to make the case that a false dilemma fallacy has been committed.

13. Appeal to Unreliable Authority (Ad Verecundiam Fallacy)

The *appeal to unreliable authority* (or *ad verecundiam* fallacy) is an appeal to an authority *when the reliability of the authority may be reasonably doubted*. (*Ad verecundiam* is Latin for "appeal to authority.") A reliable authority is one who can be counted on, for the most part, to provide correct information in a given area. When an appeal to unreliable authority is made, the arguer assumes—*without sufficient warrant*—that the authority in question is reliable.

It is important to keep in mind that an appeal to *reliable* authority is generally appropriate. For example, when we cite encyclopedias, dictionaries, textbooks, or maps, we make an appeal to the authority of experts. This makes perfectly good sense as long as we are appealing to authorities whose reliability is

not in doubt. However, when there is legitimate doubt about whether an authority is reliable, then the appeal to authority is fallacious.

Ad verecundiam fallacies are common in advertising when celebrities who lack the relevant expertise endorse products. For example:

49. Mike "Monster" Malone, left tackle for the Seattle Sea Lions, says that Chocolate Zonkers are a nutritional breakfast cereal. So, Chocolate Zonkers are a nutritional breakfast cereal.

Malone may be a fine athlete, but we need to know whether he is an expert in nutrition, and the argument leaves us in doubt on that point. Thus, an *ad verecundiam* fallacy has occurred.

A more subtle appeal to unreliable authority occurs when a well-known expert in one field is cited as an expert in another field even though he or she lacks expertise in it. This form of the fallacy is especially subtle if the two fields are related (at least in the minds of the audience). For example:

50. Professor Bloggs, the well-known astronomer, has done extensive research on distant galaxies. He points out that human bodies are composed of atoms that were once part of distant stars. According to Bloggs, this gives human life a sense of drama and significance equal to that inherent in the world's great mythologies and theologies. Thus, Bloggs corrects the common error of supposing that materialism reduces the drama or significance of human life.

Even if it is an error to suppose that materialism reduces the drama or significance of human life, the reasoning in argument (50) is flawed. An astronomer is an expert in the science of the stars and other heavenly bodies. So, as an astronomer, Professor Bloggs is in a position to tell us that the atoms in our bodies once belonged to the stars. But his authority about these matters does not automatically transfer to such philosophical topics as the comparative merits of mythologies, theologies, or worldviews in general. Expertise in one area doesn't necessarily "rub off" on another.

Argument (50) also reminds us of another point to keep in mind when evaluating an appeal to authority—namely, that the appeal to authorities in matters of controversy is often problematic. After all, in such matters, the authorities themselves often disagree. And when this occurs, if we have no good reason to suppose that one authority is more likely to be correct than another, then the appeal to authority should be unconvincing.

Appeal to Unreliable Authority (*Ad Verecundiam* Fallacy)

Appealing to an authority when the reliability of the authority may reasonably be doubted (The arguer assumes, without sufficient warrant, that the authority in question is reliable.)

14. False Cause Fallacy

The *false cause* fallacy occurs when one possible cause of a phenomenon is assumed to be a (or the) cause *although reasons are lacking for excluding other possible causes*. This fallacy comes in various forms. Perhaps the most common form is called in Latin *post hoc, ergo propter hoc*, which means "after this, therefore because of this." This form of the false cause fallacy occurs whenever an arguer illegitimately assumes that because event X preceded event Y, X caused Y. Here is an example:

51. Since I came into office 2 years ago, the rate of violent crime has decreased significantly. So, it is clear that the longer prison sentences we recommended are working.

The longer prison sentences may be a causal factor, of course, but the mere fact that the longer sentences preceded the decrease in violent crime does not prove this. Many other possible causal factors need to be considered. For example, have economic conditions improved? Are more jobs available? Have the demographics of the area changed so that the population of young men (statistically the group mostly likely to commit violent crimes) is smaller relative to the population as a whole? Has there been an increase in the number of police officers on patrol?

Consider another example of the false cause fallacy:

52. Since sex education has become common, we've had a marked increase in promiscuity. So, sex education causes promiscuity.

Here, the arguer fails in two ways: (a) by ignoring other possible causal factors and (b) by failing to explain the alleged linkage between sex education and promiscuity. Regarding (a), it may be that promiscuity actually results from a third factor, such as the breakdown of the broadly Protestant sexual code that historically typified American attitudes. (This breakdown seems to have occurred gradually during the first half of the 20th century and then to have accelerated rapidly during the 1960s and 1970s.) Regarding (b), the arguer ignores the possibility that the causation may go *from* the phenomenon of promiscuity to sex education rather than vice versa. But surely the reason many people advocate sex education is that they are concerned about the increase in sexual activity among young people and seek to mitigate its negative consequences. So, it may be that promiscuity gives rise to sex education rather than vice versa. Again, the main point is that we cannot rightly assume that sex education causes promiscuity merely on the grounds that it precedes an increase in promiscuity.

Not all false cause fallacies involve the unwarranted assumption that if X precedes Y, then X causes Y. For instance:

53. The best professional athletes receive big salaries. Therefore, in order to guarantee that Smith will become one of the best professional athletes, we should give him a big salary.

Here the arguer assumes—without sufficient warrant—that if big salaries and outstanding athletic performance are correlated, the former causes the latter. But surely the causal relation goes in the reverse direction: It is successful athletic performance (in conjunction with the popular demand for spectator sports) that leads to big salaries for some athletes. Obviously, one cannot turn a mediocre athlete into a star simply by paying him a big salary.

Another version of the false cause fallacy occurs when many causes are (or may well be) operative but one of them is illegitimately assumed to be the sole cause:

54. The scores on standardized tests have been dropping for several decades. What accounts for this? Well, during these same decades, the average time a child spends watching TV (per day) has increased. So, the cause is obvious: Kids are watching too much TV when they need to be reading instead.

The increase in time spent watching TV is a likely contributor to a drop in scores on such standardized tests as the SAT. But insufficient evidence is provided for the conclusion that the time spent watching TV is the *sole* cause. Other factors may be at work, such as a decrease in parental involvement or deficiencies in the public school system.

False Cause Fallacy

Occurs when one possible cause of a phenomenon is assumed to be a (or the) cause *although reasons are lacking for excluding other possible causes*

One special variety of the false cause fallacy is the *slippery slope* fallacy. This fallacy occurs when the arguer assumes that a chain reaction will occur but there is insufficient evidence that one (or more) events in the chain will cause the others. The chain of causes is supposedly like a steep slope—if you take one step on the slope, you'll slide all the way down. And since you don't want to slide all the way down, don't take the first step. Here is an example:

55. Never buy a lottery ticket. People who buy lottery tickets soon find that they want to gamble on horses. Next, they develop a strong urge to go to Las Vegas and bet their life savings in the casinos. The addiction to gambling gradually ruins their family life. Eventually, they die, homeless and lonely.

The links in this alleged causal chain clearly are weak. This is not to say that gambling is a risk-free practice. It is only to say that, logically speaking, when

causal connections are claimed, there needs to be sufficient evidence that the connections are genuine. And to claim that buying a lottery ticket will cause one to die homeless and lonely is plainly to make a claim that is insufficiently supported by the evidence.

Slippery slope fallacies often play on our deepest fears. During the Vietnam War, it was frequently claimed that if Vietnam fell to communism, a chain reaction would occur, with the result that many countries would come under communist rule. From a historical perspective, it seems apparent that there was never any solid evidence that such a chain reaction would have occurred. Nevertheless, many Americans feared that it would. Thus, the slippery slope fallacy was persuasive because it played on people's fears.

Therapists sometimes call the slippery slope fallacy "catastrophizing." For example, a person's fears may lead him to think that a relatively minor incident will lead to utter catastrophe:

56. I told a joke at the party. It flopped. So, everyone there thought I was a loser. So, I'll never be invited again. In fact, if word gets out, I won't be invited anywhere. And I'm sure they're all talking about my stupid joke. So, I've completely ruined my chances for a decent social life. There's nothing left for me now but years of loneliness and misery. How I wish I'd never told that joke!

Although this example is extreme, it is a common human tendency to make rash assumptions about causal chains. The slippery slope fallacy is alive and well in the human heart.

In closing our discussion of the false cause fallacy, it may be helpful to note that in the English language there are many different ways to indicate a causal connection. For example, *depending on the context*, the following words and phrases may express a causal claim:

A produces B	A makes B	A leads to B
A creates B	A accounts for B	A brings about B
A generates B	A determines B	A is the source of B
A results in B	A is the origin of B	A gives birth to B
A gives rise to B	A brings B to pass	B occurs by A's influence

The above list is by no means exhaustive. The key point to bear in mind is this: Since causal-claims can be expressed in many different ways in English, causal fallacies can occur when the word "cause" does not appear.

15. Complex Question

The fallacy of *complex question* consists in this: *asking a question that illegitimately presupposes some conclusion alluded to in the question*. Here's a classic example:

57. Have you stopped beating your wife?

If the respondent answers "Yes," he admits that he has beaten his wife in the past. If he answers "No," he seems to be admitting that he has beaten his wife in the past and that he continues to do so. To expose a fallacy of complex question, one must call into question what it presupposes. For instance, in this case, the response might be along these lines: "To put it mildly, your question is misleading; I have never beaten my wife."

It is important to notice that virtually any question has one or more presuppositions. Consider the following example:

58. Who is the governor of Ohio?

Question (58) presupposes that Ohio has a governor, but there is nothing illegitimate about this presupposition. Presuppositions are illegitimate when they are unwarranted by the evidence (and hence open to reasonable doubt).

In many cases, a fallacy of complex question involves two questions, the presupposition being that a single answer will satisfy both:

59. Will you please be kind and loan me \$100?

Of course, the assumption here is that being kind involves lending the money. Again, an effective response will involve isolating the unwarranted presupposition and challenging it; for instance, "Being kind is one thing, lending the money is another. Let's not confuse the two."

Fallacy of Complex Question

Asking a question that illegitimately presupposes some conclusion alluded to in the question

Note that a complex question is not the same thing as a *leading* question. A leading question strongly suggests an answer the questioner wants to elicit, but a leading question need not involve an unwarranted assumption. For example, consider the following courtroom exchange:

Attorney: Is it true that on the afternoon of February 4 you saw the defendant enter the Starbucks Coffee Shop at the corner of Boston and Queen Anne Streets?

Witness: Yes.

Attorney: And is it true that you saw the defendant reach into his coat pocket and pull out a knife?

Witness: Yes.

Attorney: Did the knife have serrated edge?

Witness: Yes.

Attorney: Did the defendant point the knife at a man standing behind the cash register and say, "Open the cash register or die"?

Witness: Yes.

In asking such questions, the attorney may not be making any unwarranted assumptions. But a more open-ended question, such as, "Would you please describe what you saw on the afternoon of February 4?" would give the witness a chance to describe the events in his or her own words and would thus lessen the likelihood that the witness will simply provide coached answers.

Which of the following are complex questions?

60. Who is the King of France?

61. What time is it now?

62. Why is math so boring? Probably because it's so abstract.

Question (60) is complex because it illegitimately presupposes that France has a King. Question (62) is complex because it involves the unwarranted assumption that mathematics is very boring—an assumption that would certainly be rejected by anyone with a genuine interest in mathematics. Question (61) is not complex; it presupposes that there is some way to tell time and that "now" is a time, but these presuppositions are surely warranted.

Summary of Fallacies Involving Unwarranted Assumptions

When these fallacies are committed, the arguer makes an illegitimate or unjustified assumption.

11. Begging the Question (or *petitio principii*)

Assuming the point to be proved. The premises are similar in content to the conclusion *but not better known* than the conclusion.

12. False Dilemma

Using a premise that unjustifiably reduces the number of alternatives to be considered

13. Appeal to Unreliable Authority (or *ad verecundiam* fallacy)

Appealing to an authority when the reliability of the authority may reasonably be doubted. (The arguer assumes, without sufficient warrant, that the authority in question is reliable.)

14. False Cause Fallacy

Illegitimately assuming that one possible cause of a phenomenon is a (or the) cause *although reasons are lacking for excluding other possible causes*

15. Fallacy of Complex Question

Asking a question that illegitimately presupposes some conclusion alluded to in the question

The following exercises will give you an opportunity to apply the concepts introduced in this section.

◆ Exercise 4.3

Part A: Identifying Fallacies Most of the following passages (but not all) exemplify fallacies. Many of the fallacies are fallacies involving unwarranted assumptions, but some are fallacies introduced in previous sections of this chapter. In some cases, a single passage exemplifies two or more fallacies. Identify all the fallacies that appear. In the case of fallacies involving an unwarranted assumption, identify the unwarranted assumption. If a passage does not contain a fallacy, simply write "not a fallacy."

- * 1. In a recent speech, the president of General Motors asserted that our country has drifted dangerously away from its religious and ethical moorings. In light of this pronouncement, the cheery optimism of the liberals is no longer reasonable.
- 2. Every American is either a Republican or a Democrat. Dr. Porter is an American, but she is not a Republican. So, she must be a Democrat.
- 3. On Monday, Bill drank scotch and soda and noticed that he got drunk. On Tuesday, Bill drank whiskey and soda and noticed that he got drunk. On Wednesday, Bill drank bourbon and soda and noticed that he got drunk. Bill concluded that soda causes drunkenness. —Adapted from Wesley Salmon, *Logic*, 3rd ed. (Englewood Cliffs, NJ: Prentice-Hall, 1984), p. 112
- * 4. If smoking is not harmful, then it is not wrong. And the tobacco companies say that smoking is not harmful. Therefore, smoking is not wrong.
- 5. Sleeping pills work because they cause people to go to sleep.
- 6. Left-turn signals frequently occur just before an automobile turns left. Right-turn signals frequently occur just before an automobile turns right. Consequently, turn signals cause automobiles to turn.
- * 7. Either men are superior to women, or women are superior to men. Men are not superior to women. Hence, women are superior to men.
- 8. Leonardo da Vinci's paintings are immoral if they incite rape. And the Reverend Posner states that da Vinci's paintings incite rape. Hence, da Vinci's paintings are immoral.
- 9. Who's the fairest of them all, Daryl Hannah or Helen Hunt?
- * 10. Obviously, humans have free will, since they have the power to make choices.
- 11. Keegan is a reliable authority on military history. Keegan says that it was morally wrong for the Americans to fight in World War I. Hence, it was morally wrong for the Americans to fight in World War I.
- 12. Day always follows night. The two are perfectly correlated. Therefore, night causes day.
- * 13. Last night we went to see *Hamlet*. The play was excellent since each scene was excellent. Plus, everybody who is anybody is raving about the play. I mean, the play was just excellent because it was really superb!
- 14. Either God created everything (including human beings) in 6 days, or else human life evolved gradually out of lower life forms over a very long period of time apart from any divine activity. But you are not a religious fanatic, so you know about fossils. And hence, you know that human life evolved gradually out of lower life forms over a very long period of time. Thus, God did not create everything in 6 days. I mean, I hate to break the news, but you are just about the last person on Earth who believes that humans were created by God.
- 15. Suicide is wrong for many reasons. First, because it involves killing. And killing is wrong because it is wrong to take a life. Second, suicide is wrong because it deeply wounds one's family and friends. And that is not cool—not cool at all. Third, suicide is the coward's way out. It's for weaklings who collapse the first time they run into a little adversity.
- * 16. Why was Warren G. Harding the best American president of the first half of the 20th century?
- 17. We could get control of the crime problem in the United States if we would just punish criminals harshly. In Saudi Arabia, for example, thieves get their hands chopped off. Murderers are immediately put to death. And the rate of crime in Saudi Arabia is much lower than the rate of crime in the United States. Therefore, harsh punishments would greatly reduce the rate of crime in the United States.
- 18. Time is composed of moments. Moments have no duration. Therefore, time has no duration. This rather surprising thesis is further supported by the following considerations: Time is illusory because time seems real but isn't real. Furthermore, down through the ages, the best and brightest people have always thought time was illusory.
- * 19. Without the discoveries of the great physicist Albert Einstein, the atomic bomb could not have been invented. And Einstein said that it was immoral for America to drop the atomic bomb on Hiroshima. Therefore, it was immoral for America to drop the atomic bomb on Hiroshima.
- 20. The largest slave revolt in U.S. history was one that occurred near New Orleans in 1811. Four or five hundred slaves were involved, lightly armed with cane knives, axes, and clubs. They wounded a plantation owner and killed his son. The revolt was put down by the U.S. Army, which attacked the slaves, killing 66 of them. This is all true, for I read about it in Howard Zinn's *A People's History of the United States* (New York: HarperCollins, 1995). And Dr. Zinn is a well-known historian.
- 21. What is the capital of Oregon?
- * 22. Folk dancing is bad because it leads to ballroom dancing, which in turn leads to modern dancing. And modern dancing leads to promiscuity, which causes a total breakdown in the moral fabric of a country and hence a lapse into primitive savagery.

23. Scientists have shown that a person loses a very small but measurable amount of weight at the time of death. This weight loss is probably due to the soul's leaving the body at that time. What else could account for this phenomenon? Here we have unexpected scientific evidence for the existence of an immaterial soul.
24. Violent crime has been on the increase for the past two decades. The quantity of violent movies has also increased during this time. Therefore, in all likelihood, the cause of the increase in violent crime is the increase in the quantity of violent movies.
- * 25. I have worn these socks to the last five baseball games. Each time, I've gotten a base hit. So, these are my lucky socks. I play better when I wear them.
26. Why is California the best place to live? Well, of course, it's very beautiful. And there are many job opportunities. But most important of all, California is a very progressive state in every way—so many important new trends begin there!
27. I warned those boys not to stand on Prince Valdinsky's grave. He was murdered, you know. And when he was being buried, his mother put a curse on anyone who showed disrespect for his grave. I was there—it was a very eerie thing to watch. Anyway, those boys wouldn't listen, and now look at them, all broken up from that automobile crash. I tell you, that curse worked!
- * 28. Why is murder wrong? Because it takes away everything the victim has and everything he or she will ever have, including all the interesting experiences, fulfilling activities, and rewarding personal relationships.
29. The will states that the painting of a beautiful woman in the storage bin shall be given to the brother of the deceased. But this is not a painting of a beautiful woman in a storage bin. It is a painting of a beautiful woman walking across a field. Therefore, this painting does not belong to the brother of the deceased. Yes, I realize that the brother *thinks* the painting is his by right, but his mind is clouded by greed, and so his arguments are without force.
30. Either you approve of legalizing drugs or you disapprove. You can't have it both ways. Those who want to legalize drugs claim that we are losing the war on drugs. Indeed, they claim that we cannot win that war—the demand for drugs is high, and when demand is high, supply is inevitable. But we must not be taken in by this pseudo-reasoning. If we legalize drugs, they will be cheaper and easier to obtain. If drugs are cheaper and easier to obtain, more and more people will use drugs. As more people use drugs, the rate of absenteeism and work-related injuries will increase, productivity in the workplace will decline, and schools will be less effective in preparing students for the workforce. Thus, the economy will lose momentum and eventually collapse. Goodbye, America!

Part B: Identifying Fallacies Most of the following passages (but not all) exemplify fallacies. Many of the fallacies are fallacies involving unwarranted assumptions, but some are fallacies introduced in previous sections of this chapter. In some cases,

a single passage exemplifies two or more fallacies. Identify all the fallacies that appear. In the case of fallacies involving an unwarranted assumption, identify the unwarranted assumption. If a passage does not contain a fallacy, simply write "not a fallacy."

- * 1. Would you please be a good boy and eat your spinach?
2. Please don't tell me you think that human vegetables should be kept on respirators! After all, brain-dead humans are already dead. We know this because they are not alive.
3. Here's how to win the lottery: Consult an astrologer. How do I know this? Well, I was watching a TV program recently, and there was an interview with this very intelligent man who said that astrology is based on scientific principles. So, astrology is based on science. Furthermore, last week I took the advice of an astrologer who gave me a number based on my astrological sign. Using the number, I won the lottery. So, obviously, astrology works on things like the lottery.
- * 4. When it comes to criminal punishment, one must favor either rehabilitation or deterrence. The rehabilitationists think criminals are sick and need treatment. The deterrence crowd wants harsh punishments that will put a stop to crime. Since it is just silly to suppose that every shoplifter or car thief is mentally ill, the rehabilitationists are mistaken. Hence, the deterrence view is correct. And by the way, here's another way to see the same point: Rehabilitationists hold that even the most hardened criminals can be cured in a few sessions with a psychotherapist. But hardened criminals cannot be cured so easily! Once again, then, we see that rehabilitationists are mistaken.
5. How do we know that there is life in other galaxies? Actually, that's not a difficult question. It's simply a matter of probabilities. With so many millions of planets out there, it's overwhelmingly likely that life has evolved on some of them, just as it has here on Earth.
6. I've heard that St. Andrew's Episcopal Church is very wealthy. You are a member of St. Andrew's, so you must be wealthy. Anyway, I can tell you're wealthy because you have a lot of money.
- * 7. My psychology professor says that religious experience is generated out of the deep human need for a father figure, not by an encounter with an actual deity. So, religious experience is not really an experience of God.
8. Surely Anthony loves me. For he told me he loves me, and he wouldn't lie to someone he loves.
9. That young man was just fine until he read Kierkegaard's *Fear and Trembling*. It wasn't but a week or so later that he began to walk in his sleep and to emit those awful moans. Therefore, *Fear and Trembling* is a dangerous book.
- * 10. How can anyone go on living in a world that contains 10 times as much misery as happiness?
11. You either hate parties or you love them. So, since you say you don't hate parties, you must love them.

12. Some people don't believe the Bible, but I find that puzzling. Why would anyone not believe what God has said? After all, God is all-knowing and perfectly good, so God knows everything, and God would never lie.
- * 13. My sociology professor says that monogamy is an unjust form of social organization. Therefore, monogamy is an unjust form of social organization.
14. According to Lillian Roxon's *Rock Encyclopedia*, it was an English band called the Zombies that came out with the hit record "She's Not There" in 1965. So, while you say "She's Not There" was by the Beatles, it was really by the Zombies.
15. Before television came along, we didn't have much of a problem with illegal drugs. But people learn about drugs on TV, and then they want the drugs. So, TV is ruining this country.
- * 16. I was there, I tell you. I stood within 10 feet of the man. Either I was hallucinating, or he levitated. And I wasn't hallucinating. Therefore, he levitated.
17. According to the *Encyclopedia Britannica*, Mary Cassatt, who is often considered America's greatest woman painter, was born in 1844 and died in 1926. So, Cassatt lived from 1844 till 1926.
18. When it comes to morality, a person is either a cultural relativist or a dogmatist. Since you won't allow that infanticide is right for the Eskimos if they approve of it, you obviously aren't a cultural relativist. So, you must be a dogmatist.
- * 19. We never lost a war prior to Vietnam. What had changed? Well, I'll tell you: The generation that went off to fight in the Vietnam War was the first generation in this country to grow up on rock music. It was rock music that brought about our downfall.
20. Either nonhuman animals are robots, or they have thoughts and feelings just like humans have. Nonhuman animals are not robots. Hence, they have thoughts and feelings just like humans have.
21. Religion is the opiate of the people. Therefore, religion is like a drug that can be used to make people forget or ignore the miserable conditions they live in.
- * 22. Logic varies as languages vary. For logic is based on grammar. My chemistry professor said so. And any intelligent person will agree that different languages have different grammars. But if logic varies as languages vary, then logic is relative to cultures. Consequently, logic is relative to cultures.
23. People are either good or evil. And Doris is not good. Therefore, she is evil.
24. Would you please be a gentleman and refrain from talking politics?
- * 25. Either you believe that the doctrine of reincarnation is true, or you believe that it is false. Clearly, you do not believe that the doctrine of reincarnation is true. Accordingly, you must believe that it is false.
26. Why do all philosophical problems turn out, in the final analysis, just to be a question of how to define terms?
27. You should stop reading your horoscope. Why? First, because reading your horoscope is a waste of time. After all, you could be reading great literature instead. Second, people will think you are superstitious if you read your

- scopes are for idiots. Fourth, you don't want to turn out like that weird guy at work, Bob Crombie. And Bob reads horoscopes! So, obviously, horoscopes produce weirdness. Hence, you've got to stop reading them.
- * 28. When you get down to it, philosophers are just logic choppers who sit around trying to put reality into little boxes made of words. So, the philosophical arguments against time travel prove nothing. Hence, time travel is possible. Anyway, I know it's possible because it can happen. And besides, just about everyone *but* philosophers thinks that time travel is possible, so once again, time travel probably is possible.
29. Most Americans insist that terrorism is always wrong, but they are mistaken. Terrorism, after all, is simply the use of violence to further political ends. And no country on the face of the earth employs more violence to further its political ends than America does. So, Americans are in no position to condemn terrorism. Besides, one person's terrorist is another's freedom fighter. Why can't Americans see that their own revolutionary war heroes were all terrorists?
30. How do I know that mantras work? Consider this: Last week I said a mantra on Tuesday and on Friday. And guess what? Those days really went well for me. Furthermore, mantras work because they are effective. Finally, mantras are recommended by many great movie stars.

Notes

1. *The Guide to American Law: Everyone's Legal Encyclopedia*, Vol. 4 (New York: West, 1984), p. 352.
2. Anthony Flew, *A Dictionary of Philosophy*, rev. 2nd ed. (New York: St. Martin's Press, 1979), p. 104. I have slightly altered the punctuation.
3. This example is borrowed from Robert Baum, *Logic*, 3rd ed. (New York: Holt, Rinehart and Winston, 1989), p. 485.
4. Not everyone agrees. See, for example, John Lamont, "Believing That God Exists Because the Bible Says So," *Faith and Philosophy* (Journal of the Society of Christian Philosophers) 13(1) (1966): 121-124.
5. I owe this example to Anthony Weston, *A Rulebook for Arguments* (Indianapolis, IN: Hackett, 1987), p. 88. I have elaborated the example somewhat.