
3

INFORMAL FALLACIES

3.1 FALLACIES IN GENERAL

A **fallacy** is a certain kind of defect in an argument. One way that an argument can be defective is by having one or more false premises. Another way is by containing a fallacy. Both deductive and inductive arguments may be affected by fallacies; if either kind contains a fallacy, it is either unsound or uncogent, depending on the kind of argument.

Fallacies are usually divided into two groups: formal and informal. A **formal fallacy** is one that may be identified through mere inspection of the form or structure of an argument. Fallacies of this kind are usually found only in deductive arguments that have clearly recognizable forms. Chapter 1 presented some of these forms: categorical syllogisms, disjunctive syllogisms, and hypothetical syllogisms. The following categorical syllogism contains a formal fallacy:

All tigers are animals.
All mammals are animals.
Therefore, all tigers are mammals.

This argument has the following form:

All A are B .
All C are B .
Therefore, all A are C .

Through mere inspection of this form, one can see that the argument is invalid. The fact that A , B , and C stand respectively for "tigers,"

"animals," and "mammals" is irrelevant in detecting the fallacy. The problem may be traced to the second premise. If the letters C and B are interchanged, the form becomes valid, and the original argument, with the same change introduced, also becomes valid (but unsound). This particular fallacy, together with certain others, will be discussed in later chapters.

Informal fallacies are those that can be detected only through analysis of the content of the argument. Consider the following example:

All factories are plants.
All plants are things that contain chlorophyll.
Therefore, all factories are things that contain chlorophyll.

A cursory inspection of this argument might lead one to think that it has the following form:

All A are B.
All B are C.
All A are C.

Since this form is valid, one might conclude that the argument itself is valid. Yet the argument is clearly invalid because it has true premises and a false conclusion. An analysis of the content, that is, the meaning of the words, reveals the source of the trouble. The word "plants" is used in two different senses. In the first premise it means a building where something is manufactured, and in the second it means a life form. Thus, the argument really has the following invalid form:

All A are B.
All C are D
All A are D

Precisely how the informal fallacies accomplish their purpose varies from case to case. Sometimes, as in the example above, they obscure the form of the argument so that the reader or listener is deluded into thinking that the argument is valid when in fact it is not. In other cases they tend to prevent the reader or listener from acknowledging a missing premise that, if acknowledged, would be clearly seen to be false (or at least questionable). And then, in some cases (such as begging the question), they delude the reader or listener into thinking that an acknowledged premise is true when it is either false or questionable. In any event, the effect of an informal fallacy is to make a bad argument *appear* good. In fact, some fallacious arguments may appear to be even better than some arguments that commit no fallacies.

Informal fallacies are frequently backed by some motive on the part of the arguer to deceive the reader or listener. The arguer may not have

sufficient evidence to support a certain conclusion and as a result may attempt to win its acceptance by resorting to a trick. Sometimes the trick fools even the arguer. The arguer may delude himself into thinking that he is presenting genuine evidence when in fact he is not. By studying some of the typical ways in which arguers deceive both themselves and others, one is less likely to be fooled by the fallacious arguments posed by others and is less likely to stumble blindly into fallacies when constructing arguments for one's own use.

Since the time of Aristotle, logicians have attempted to classify the various informal fallacies. Aristotle himself identified thirteen and separated them into two groups. The work of subsequent logicians has produced dozens more, which has rendered the task of classifying them even more difficult. The presentation that follows divides twenty-two informal fallacies into five groups: fallacies of relevance, fallacies of weak induction, fallacies of presumption, fallacies of ambiguity, and fallacies of grammatical analogy. The final section of the chapter considers some of the problems that arise when fallacies are encountered in the context of ordinary language.

EXERCISE 3.1

Determine whether the fallacies committed by the following arguments are formal fallacies or informal fallacies. In identifying formal fallacies, keep an eye out for categorical, hypothetical, and disjunctive syllogisms.

- F • 1. If Laetril is as good as it's supposed to be, then it will cure cancer. Laetril is not as good as it's supposed to be. Therefore, Laetril will not cure cancer.
- r- 2. Everything that runs has feet. The Columbia River runs very swiftly.
J- Therefore, the Columbia River has feet.
- ___ 3. All persons who believe we create our own reality are persons who lack
I- social responsibility. All persons governed by selfish motives are persons who lack social responsibility. Therefore, all persons who believe we create our own reality are persons governed by selfish motives.
- I- *4. The ship of state is like a ship at sea. No sailor is ever allowed to protest orders from the captain. For the same reason, no citizen should ever be allowed to protest presidential policies.
- I- 5. Renowned violinist Pinchas Zukerman has said, "When it comes to vodka, Smimoff plays second fiddle to none." We must therefore conclude that Smimoff is the best vodka available.
- F 6. If the Golan Heights properly belong to Syria, then the Israelis are trespassers. The Israelis are indeed trespassers. Therefore, the Golan Heights properly belong to Syria.

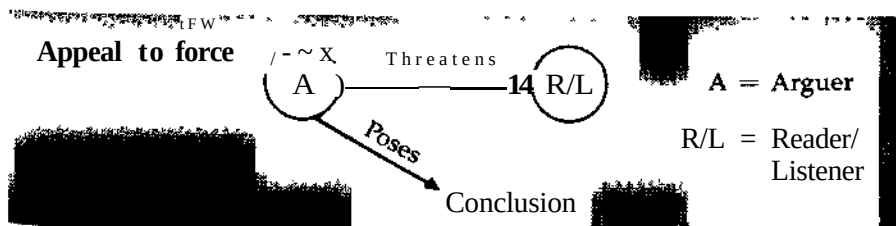
- I *7. Ed Asner, Gregory Peck, and Jane Fonda are Democrats. Therefore, it must be the case that all Hollywood stars are Democrats.
- I 8. Real estate magnate Donald Trump has argued that America spends too much money protecting the economic interests of other countries. But Trump is a materialistic, power-hungry egomaniac who has never studied the complexities of international relations. Trump's argument is therefore nonsense and should be ignored.
- F 9. If plastic guns are sold to the public, then terrorists will carry them aboard airliners undetected. If plastic guns are sold to the public, then airline hijackings will increase. Therefore, if terrorists carry plastic guns aboard airliners undetected, then airline hijackings will increase.
- y- •10. Some prenuptial agreements are contracts that allow one partner full freedom when the other partner is out of town. Some contracts that allow one partner full freedom when the other partner is out of town are arrangements detrimental to a successful marriage. Therefore, some prenuptial agreements are arrangements detrimental to a successful marriage.

3.2 FALLACIES OF RELEVANCE

The **fallacies of relevance** share the common characteristic that the arguments in which they occur have premises that are *logically* irrelevant to the conclusion. Yet the premises are relevant *psychologically*, so the conclusion may *seem* to follow from the premises, even though it does not follow logically. In a good argument the premises provide genuine evidence in support of the conclusion. In an argument that commits a fallacy of relevance, on the other hand, the connection between premises and conclusion is emotional. To identify a fallacy of relevance, therefore, one must be able to distinguish genuine evidence from various forms of emotional appeal.

1. Appeal to Force (*Argumentum ad Baculum*: Appeal to the "Stick")

The fallacy of **appeal to force** occurs whenever an arguer poses a conclusion to another person and tells that person either implicitly or explicitly that some harm will come to him or her if he or she does not



accept the conclusion. The fallacy always involves a threat by the arguer to the physical or psychological well-being of the listener or reader, who may be either a single person or a group of persons. Obviously, such a threat is logically irrelevant to the subject matter of the conclusion, so any argument based on such a procedure is fallacious. The *ad baculum* fallacy often occurs when children argue with one another:

Child to playmate: "Mister Rogers" is the best show on TV; and if you don't believe it, I'm going to call my big brother over here and he's going to beat you up.

But it occurs among adults as well:

Secretary to boss: I deserve a raise in salary for the coming year. After all, you know how friendly I am with your wife, and I'm sure you wouldn't want her to find out what's been going on between you and that sexpot client of yours.

The first example involves a physical threat, the second a psychological threat. While neither threat provides any genuine evidence that the conclusion is true, both provide evidence that someone might be injured. If the two types of evidence are confused with each other, both arguer and listener may be deluded into thinking that the conclusion is supported by evidence, when in fact it is not.

The appeal to force fallacy usually accomplishes its purpose by psychologically impeding the reader or listener from acknowledging a missing premise that, if acknowledged, would be seen to be false or at least questionable. The two examples just given can be interpreted as concealing the following premises, both of which are most likely false:

If my brother forces you to admit that Mister Rogers is the best show on TV, then Mister Rogers is in fact the best show.

If I succeed in threatening you, then I deserve a raise in salary.

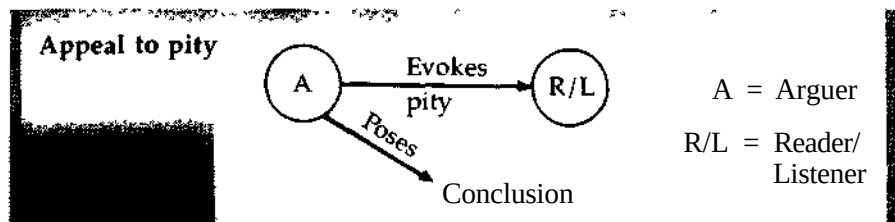
The conclusion of the first argument is that Mister Rogers is the best show on TV. But just because someone is forced into saying that it is does not mean that such is the case. Similarly, the conclusion of the second argument is that the secretary deserves a raise in salary. But if the boss is threatened into raising the secretary's salary, this does not mean that the secretary deserves a raise. Many of the other informal fallacies can be interpreted as accomplishing their purpose in this way.

2. Appeal to Pity (*Argumentum ad Misericordiam*)

The fallacy of **appeal to pity** occurs whenever an arguer poses a conclusion and then attempts to evoke pity from the reader or listener in an effort to get him or her to accept the conclusion. Example:

Taxpayer to judge: Your Honor, I admit that I declared thirteen children as dependents on my tax return, even though I have only two, and I realize that this was wrong. But if you find me guilty of tax evasion, my reputation will be ruined. I'll probably lose my job, my poor wife will not be able to have the operation that she desperately needs, and my kids will starve. Surely I am not guilty.

The conclusion of this argument is "Surely I am not guilty." Obviously, the conclusion is not *logically* relevant to the arguer's set of pathetic circumstances, although it is *psychologically* relevant. If the arguer succeeds in evoking pity from the listener or reader, the latter is liable to exercise his or her desire to help the arguer by accepting the argument. In this way the reader or listener may be fooled into accepting a conclusion that is not supported by any evidence. The appeal to pity is quite common and is frequently used by students on their instructors at exam time and by lawyers on behalf of their clients before judges and juries.



3. Appeal to the People (*Argumentum ad Populum*)

Nearly everyone wants to be loved, esteemed, admired, valued, recognized, and accepted by others. The **appeal to the people** uses these desires to get the reader or listener to accept a conclusion. Two approaches are involved, one of them direct, the other indirect.

The *direct approach* occurs when an arguer, addressing a large group of people, excites the emotions and enthusiasm of the crowd to win acceptance for his conclusion. The objective is to arouse a kind of mob mentality. This is the strategy used by nearly every propagandist and demagogue. Adolf Hitler was a master of the technique, but it is also used with some measure of success by speechmakers at Democratic and Republican national conventions. Waving flags and blaring music add to the overall effect. Because the individuals in the audience want to share in the camaraderie, the euphoria and the excitement, they find themselves accepting any number of conclusions with ever-increasing fervor.

The direct approach is not limited to oral argumentation, of course; a similar effect can be accomplished in writing. By employing such

emotionally charged phraseology as "fighter of communism" "champion of the free enterprise system," and "defender of the working man," a polemicist can awaken the same kind of mob mentality as he would if he were speaking.

In the *indirect approach* the arguer directs his or her appeal not to the crowd as a whole but to one or more individuals separately, focusing upon some aspect of their relationship to the crowd. The indirect approach includes such specific forms as the bandwagon argument, the appeal to vanity, and the appeal to snobbery. All are standard techniques of the advertising industry. Here is an example of the bandwagon argument:

Of course you want to buy Zest toothpaste. Why, 90 percent of America brushes with Zest.

The idea is that you will be left behind or left out of the group if you do not use the product.

The **appeal to vanity** often associates the product with a certain celebrity who is admired and pursued, the idea being that you, too, will be admired and pursued if you use it. Example:

Only the ultimate in fashion could complement the face of Christie Brinkley. Spectrum sunglasses—for the beautiful people in the jet set.

And here is an example of the **appeal to snobbery**:

A Rolls Royce is not for everyone. If you qualify as one of the select few, this distinguished classic may be seen and driven at British Motor Cars, Ltd. (By appointment only, please).

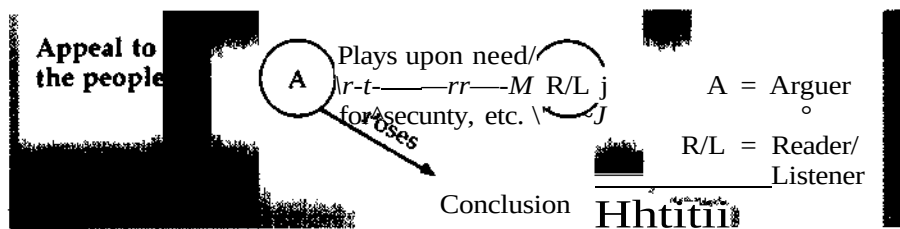
Needless to say, the indirect approach is used by others besides advertisers:

Mother to child: You want to grow up and be just like Wonder Woman, don't you? Then eat your liver and carrots.

Both the direct and indirect approaches of the *ad populum* fallacy have the same basic structure:

You want to be accepted/included in the group/loved/esteemed. ... Therefore, you should accept XYZ as true.

In the direct approach the arousal of a mob mentality produces an immediate feeling of belonging for each person in the crowd. Each person feels united with the crowd, which evokes a sense of strength and security. When the crowd roars its approval of the conclusions that



are then offered, anyone who does not accept them automatically cuts himself or herself off from the crowd and risks the loss of his or her security, strength, and acceptance. The same thing happens in the indirect approach, but the context and technique are somewhat subtler.

4. Argument Against the Person (*Argumentum ad Hominem*)

This fallacy always involves two arguers. One of them advances (either directly or implicitly) a certain argument, and the other then responds by directing his or her attention not to the first person's argument but to the first person *himself*. When this occurs, the second person is said to commit an **argument against the person**.

The argument against the person occurs in three forms: the *ad hominem* abusive, *ad hominem* circumstantial, and the *tu quoque*. In the **ad hominem abusive**, the second person responds to the first person's argument by verbally abusing the first person. Example:

Poet Allen Ginsberg has argued in favor of abolishing censorship of pornographic literature. But Ginsberg's arguments are nothing but trash. Ginsberg, you know, is a marijuana-smoking homosexual and a thoroughgoing advocate of the drug culture.

Because Ginsberg's being a marijuana-smoking homosexual and advocate of the drug culture does not determine whether the premises of his argument support the conclusion, this argument is fallacious.

Not all cases of the *ad hominem* abusive are as blunt as the one above, but they are just as fallacious. Example:

William Buckley has argued in favor of legalizing drugs such as cocaine and heroin. But Buckley is just another one of those upper-crust intellectuals who is out of touch with real America. No sensible person should listen to his pseudo-solutions.

Again, whether Buckley is an upper-crust intellectual has nothing to do with whether his premises support his conclusion.

The **ad hominem circumstantial** begins the same way as the *ad hominem* abusive, but instead of heaping verbal abuse on his or her oppo-

nent, the respondent attempts to discredit the opponent's argument by alluding to certain circumstances that affect the opponent. By doing so the respondent hopes to show that the opponent is predisposed to argue the way he or she does and should therefore not be taken seriously. Here is an example:

Lee Iacocca has argued that cars manufactured by Chrysler are of higher quality than equally priced Japanese cars. But given that Iacocca is chairman of the Chrysler Corporation, he would naturally be expected to argue this way. Therefore, Iacocca's argument should be ignored.

The author of this passage ignores the substance of Iacocca's argument and attempts instead to discredit it by calling attention to certain circumstances that affect Iacocca—namely, the fact that he is chairman of the Chrysler Corporation. The fact that Iacocca happens to be affected by these circumstances, however, is irrelevant to whether his premises support a conclusion. The *ad hominem* circumstantial is easy to recognize because it always takes this form: "Of course Mr. X argues this way; just look at the circumstances that affect him."

The **tu quoque** ("you too") fallacy begins the same way as the other two varieties of the *ad hominem* argument, except that the second arguer attempts to make the first appear to be hypocritical or arguing in bad faith. The second arguer usually accomplishes this by citing features in the life or behavior of the first arguer that conflict with the latter's conclusion. In effect, the second arguer says, "How dare you argue that I should stop doing X; why, you do (or have done) X yourself." Example:

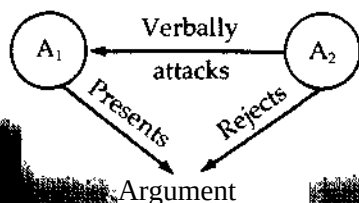
Child to parent: Your argument that I should stop stealing candy from the corner store is no good. You told me yourself just a week ago that you, too, stole candy when you were a kid.

Obviously, whether the parent stole candy is irrelevant to whether the parent's premises support the conclusion that the child should not steal candy.

It is important to keep in mind that the purpose of an *ad hominem* argument is to discredit another person's argument by placing its author in a bad light. Thus, for the fallacy to be committed, there must always be two arguers (at least implicitly). If it should turn out that the person being attacked is not an arguer, then the personal comments made by the attacker may well be relevant to the conclusion that is drawn. In general, personal observations are relevant to conclusions about what kind of person someone is (good, bad, stingy, trustworthy, and so forth) and whether a person has done something. Example:

Ousted Panamanian dictator Manuel Noriega has supported terrorist groups, engaged in drug trafficking, committed cold-

Argument against
the person



A₁ = Arguer 1
A₂ = Arguer 2
(A₂ commits the fallacy)

blooded murder, and, during his years as a "public servant," amassed a fortune of \$300 million. Noriega is therefore a corrupt, rotten human being.

The conclusion is not that Noriega's argument is rotten but that Noriega himself is rotten. Because the premises are quite relevant to this conclusion, the argument commits no fallacy. Another example:

Shakespeare cannot possibly have written the thirty-six plays attributed to him, because the real Shakespeare was a two-bit country businessman who barely finished the fourth grade in school and who never left the confines of his native England.

The conclusion is not that some argument of Shakespeare's is bad but that Shakespeare did not write certain plays. Again, since the premises are relevant to this conclusion, the argument commits no *ad hominem* fallacy.

Determining what kind of person someone is includes determining whether a person is trustworthy. Thus personal comments are often relevant in evaluating whether a person's proclamations or statements, unsupported by evidence, warrant our belief. Examples of such statements include promises to do something, testimony given by a witness, and testimonials in support of a product or service. Here is an example of an argument that discredits a witness:

Mickey has testified that he saw Freddy set fire to the building. But Mickey was recently convicted on ten counts of perjury, and he hates Freddy with a passion and would love to see him sent to jail. Therefore, you should not believe Mickey's testimony.

This argument commits no fallacy. The conclusion is not that you should reject Mickey's argument but rather that you should reject his testimony. Testimony is not argument, and the fact that the witness is a known liar and has a motive to lie now is relevant to whether we should believe him. Furthermore, note that the conclusion is not that Mickey's statement is literally false but rather that we should not *believe* the statement. It is quite possible that Mickey really did see Freddy set fire to the building and that Mickey's statement to that effect is true. But if our only reason for believing this statement is the mere fact that Mickey has made

it, then given the circumstances, we are not justified in that belief. Personal factors are never relevant to truth and falsity as such, but they are relevant to believability.

Yet there is often a close connection between truth and believability, and this provides one of the reasons why *ad hominem* arguments are often effective. In evaluating any argument there are always two issues to be considered: the quality of the reasoning and the truth of the premises. As we have noted, both are irrelevant to the personal characteristics of the arguer. But whether we *accept* the premises as true may depend on the credibility of the arguer. Knowing that the arguer is biased or has a motive to lie may provide good grounds for distrusting the premises. Another reason why *ad hominem* arguments are effective is because they engage the emotions of readers and listeners and thereby motivate them to transfer their negative feelings about the arguer onto the argument.

5. Accident

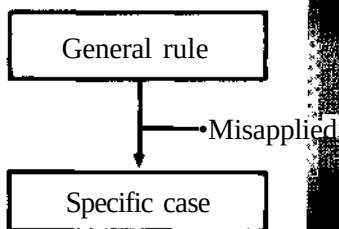
The fallacy of accident is committed when a general rule is applied to a specific case it was not intended to cover. Typically, the general rule is cited (either directly or implicitly) in the premises and then wrongly applied to the specific case mentioned in the conclusion. Because of the "accidental" features of the specific case, the general rule does not fit. Two examples:

Freedom of speech is a constitutionally guaranteed right. Therefore, John Q. Radical should not be arrested for his speech that incited the riot last week.

Property should be returned to its rightful owner. That drunken sailor who is starting a fight with his opponents at the pool table lent you his .45-caliber pistol, and now he wants it back. Therefore, you should return it to him now.

The right of freedom of speech has its limits, as does the rule that property be returned to its rightful owner. These rules are obviously misapplied in the above circumstances. The arguments therefore commit the fallacy of accident.

Accident



6. Straw Man

The **straw man** fallacy is committed when an arguer distorts an opponent's argument for the purpose of more easily attacking it, demolishes the distorted argument, and then concludes that the opponent's real argument has been demolished. By so doing, the arguer is said to have set up a straw man and knocked it down, only to conclude that the real man (opposing argument) has been knocked down as well. Example:

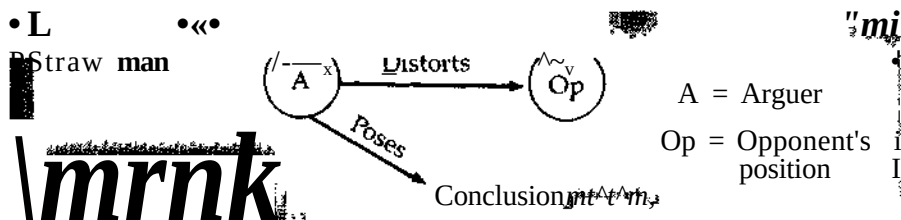
Mr. Goldberg has argued against prayer in the public schools. Obviously Mr. Goldberg advocates atheism. But atheism is what they have in Russia. Atheism leads to the suppression of all religions and the replacement of God by an omnipotent state. Is that what we want for this country? I hardly think so. Clearly Mr. Goldberg's argument is nonsense.

Like the argument against the person fallacy, the straw man fallacy involves two arguers. Mr. Goldberg, who is the first arguer, has presented an argument against prayer in the public schools. The second arguer then attacks Goldberg's argument by equating it with an argument for atheism. He then attacks atheism and concludes that Goldberg's argument is nonsense. Since Goldberg's argument had nothing to do with atheism, the second argument commits the straw man fallacy.

As this example illustrates, the kind of distortion the second arguer resorts to is often an attempt to exaggerate the first person's argument or make it look more extreme than it really is. Here are two more examples:

The garment workers have signed a petition arguing for better ventilation on the work premises. Unfortunately, air conditioning is expensive. Air ducts would have to be run throughout the factory, and a massive heat exchange unit installed on the roof. Also, the cost of operating such a system during the summer would be astronomical. In view of these considerations the petition must be rejected.

The student status committee has presented us with an argument favoring alcohol privileges on campus. What do the students want? Is it their intention to stay boozed up from the day they enter as freshmen till the day they graduate? Do they



expect us to open a bar for them? Or maybe a chain of bars all over campus? Such a proposal is ridiculous!

In the first argument, the petition is merely for better ventilation in the factory—maybe a fan in the window during the summer. The arguer exaggerates this request to mean an elaborate air conditioning system installed throughout the building. He then points out that this is too expensive and concludes by rejecting the petition. A similar strategy is used in the second argument. The arguer distorts the request for alcohol privileges to mean a chain of bars all over campus. Such an idea is so patently outlandish that no further argument is necessary.

7. Missing the Point (*Ignoratio Elenchi*)

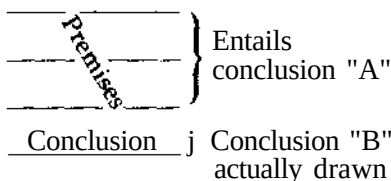
All the fallacies we have discussed thus far have been instances of cases where the conclusion of an argument is irrelevant to the premises. **Missing the point** illustrates a special form of irrelevance. This fallacy occurs when the premises of an argument support one particular conclusion, but then a different conclusion, often vaguely related to the correct conclusion, is drawn. Whenever one suspects that such a fallacy is being committed, he or she should be able to identify the *correct* conclusion, the conclusion that the premises *logically* imply. This conclusion must be significantly different from the conclusion that is actually drawn. Examples:

Crimes of theft and robbery have been increasing at an alarming rate lately. The conclusion is obvious: we must reinstate the death penalty immediately.

Abuse of the welfare system is rampant nowadays. Our only alternative is to abolish the system altogether.

At least two correct conclusions are implied by the premise of the first argument: either "We should provide increased police protection in vulnerable neighborhoods" or "We should initiate programs to eliminate the causes of the crimes." Reinstating the death penalty is not a

Missing the point



logical conclusion at all. Among other things, theft and robbery are not capital crimes. In the second argument the premises logically suggest some systematic effort to eliminate the cheaters rather than eliminating the system altogether.

Ignoratio elenchi means "ignorance of the proof." The arguer is ignorant of the logical implications of his or her own premises and, as a result, draws a conclusion that misses the point entirely. The fallacy has a distinct structure all its own, but in some ways it serves as a catchall for arguments that are not clear instances of one or more of the other fallacies. An argument should not be identified as a case of missing the point, however, if one of the other fallacies fits.

8. Red Herring

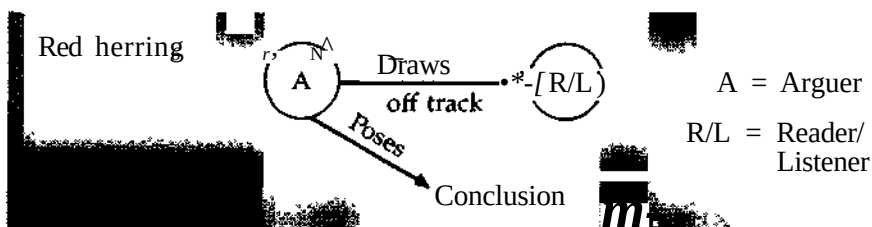
This fallacy is closely associated with missing the point (*ignoratio elenchi*). The **red herring** fallacy is committed when the arguer diverts the attention of the reader or listener by changing the subject to some totally different issue. He or she then finishes by either drawing a conclusion about this different issue or by merely presuming that some conclusion has been established. By so doing, the arguer purports to have won the argument. The fallacy gets its name from a procedure used to train hunting dogs to follow a scent. A red herring (or bag of them) is dragged across the trail with the aim of leading the animal astray. Since red herrings have an especially potent scent (caused in part by the smoking process used to preserve them), only the best dogs will follow the original scent. Here is an example of the fallacy:

Environmentalists are continually harping about the dangers of nuclear power. Unfortunately, electricity is dangerous no matter where it comes from. Every year hundreds of people are electrocuted by accident. Since most of these accidents are caused by carelessness, they could be avoided if people would just exercise greater caution.

The original issue is whether nuclear power is dangerous. The arguer changes the subject to the danger of electrocution and concludes by stating that electrocution can be avoided by exercising caution. Obviously the danger of electrocution is totally different from the danger of a nuclear power plant blowing up or melting down. But the fact that both issues deal with electricity facilitates the arguer's intention to lead the reader or listener off the track. The structure of the fallacy is, "I have succeeded in drawing you off the track; therefore, I have won the argument."

Here are two more examples of the fallacy:

People accuse the Alpha General Corporation of contributing to acid rain. But Alpha General is the lifeblood of this commu-



nity. Alpha employs thousands of people and pays millions of dollars in property taxes. These taxes support our schools and pay the salaries of our police. Apparently the critics ignore these facts.

There's a good deal of talk these days about the need to eliminate pesticides from our fruits and vegetables. But many of these foods are essential to our health. Carrots are an excellent source of vitamin A, broccoli is rich in iron, and oranges and grapefruit have lots of vitamin C.

Both arguments commit the red herring fallacy. In the first, the original issue is whether Alpha General contributes to acid rain. The arguer changes the subject to the contributions Alpha General makes to the community and concludes that the critics should pay more attention to the facts. The original issue in the second argument is whether there is a need to eliminate pesticides from our fruits and vegetables. The arguer changes the subject to the kind of vitamins and minerals found in fruits and vegetables. No conclusion is drawn about the new subject, but by simply leading the listener or reader off the track, the arguer purports to have won the argument. In both cases the slight connection between the original issue and the new one assists the arguer in accomplishing his or her purpose.

The red herring fallacy can be confused with the straw man fallacy because both have the effect of drawing the reader/listener off the track. This confusion can usually be avoided by remembering the unique ways in which they accomplish this purpose. In the straw man, the arguer begins by distorting an opponent's argument and concludes by knocking down the distorted argument. In the red herring, on the other hand, the arguer ignores the opponent's argument (if there is one) and subtly changes the subject. Thus, to distinguish the two fallacies, one should attempt to determine whether the arguer has knocked down a distorted argument or simply changed the subject.

Both red herring and straw man fallacies are susceptible of being confused with missing the point, because all three involve a similar kind of irrelevancy. To avoid this confusion, one should realize that both red herring and straw man fallacies proceed by generating a new set of premises, whereas missing the point does not. Straw man draws a conclusion from new premises that are obtained by distorting an earlier

argument, and red herring, if it draws any conclusion at all, draws one from new premises obtained by changing the subject. Missing the point, however, draws a conclusion from original premises. Also, in the red herring and straw man, the conclusion, if there is one, is *relevant* to the premises from which it is drawn; but in missing the point, the conclusion is *irrelevant* to the premises from which it is drawn.

EXERCISE 3.2

I. Identify the fallacies of relevance committed by the following arguments. If no fallacy is committed, write "no fallacy."

- 1. The position open in the accounting department should be given to Frank Thompson. Frank has six hungry children to feed, and his wife desperately needs an operation to save her eyesight.
2. Drug czar William Bennett has argued at length that it would be catastrophic to legalize drugs such as heroin and cocaine. We should hardly take these arguments seriously, however, because Bennett was hired for no other reason than to conduct a war on drugs. If these drugs were ever legalized, Bennett would be out of a job.
3. We hear a lot these days about the growing problem of alcoholism in the workplace. But most alcoholics did not choose their affliction. Many are genetically predisposed to it; and then many others are simply trying to escape the-psychological trauma of having been abused as children. Alcoholics deserve our sympathy and understanding rather than our vilification and condemnation.
- 4. Whoever thrusts a knife into another person should be arrested. But surgeons do precisely this when operating. Therefore, surgeons should be arrested.
5. You should read Irving Stone's latest novel right away. It's sold over a million copies, and practically everyone in the Manhattan cocktail circuit is talking about it.
6. Friedrich Nietzsche's philosophy is not worth the paper it's printed on. Nietzsche was an immoral reprobate who went completely insane from syphilis before he died.
- * 7. It is financially advisable for you to join our protective organization. Think of all the money you will lose in broken windows, overturned trucks, and damaged merchandise in the event of your not joining.
8. Senator Barrow advocates increased Social Security benefits for the poor. It is regrettable that the senator finds it necessary to advocate socialism. Socialism defeats initiative, takes away promised rewards, and leads directly to inefficiency and big government. It was tried for years in Eastern Europe, and it failed miserably. Clearly, socialism is no good.
9. Something is seriously wrong with high school education these days. After ten years of decline, SAT scores are still extremely low, and high

school graduates are practically incapable of reading and writing. The obvious conclusion is that we should close the schools.

- 10. The editors of the *Daily Register* have accused our company of being one of the city's worst water polluters. But the *Daily Register* is responsible for much more pollution than we are. After all, they own the Western Paper Company, and that company discharges tons of chemical residue into the city's river every day.
11. If 20 percent of adult Americans are functionally illiterate, then it's no wonder that morons get elected to public office. In fact, 20 percent of adult Americans *are* functionally illiterate. Therefore, it's no wonder that morons get elected to public office.
12. Ladies and gentlemen, today the lines of battle have been drawn. When the din of clashing armor has finally died away, the Republican party will emerge victorious! We are the true party of the American people! We embody the values that all real Americans hold sacred! We cherish and protect our founding fathers' vision that gave birth to the Constitution! We stand for decency and righteousness; for self-determination and the liberty to conduct our affairs as each of us freely chooses! In the face of our standard bearing the American eagle of freedom, our muddle-headed, weak-kneed opponents with their collectivist mentalities and their deluded programs for social reform will buckle and collapse! Victory will be ours, so help us God!
- 13. We've all heard the argument that too much television is the reason our students can't read and write. Yet, many of today's TV shows are excellent. "L.A. Law" provides a genuine insight into the workings of the big city law firm, "Cheers" is an inspired human interest program, and "The Bill Cosby Show" engages the whole family. Today's TV is just great!
14. Surely architect Norris is not responsible for the collapse of the Central Bank Tower. Norris has had nothing but trouble lately. His daughter eloped with a child molester, his son committed suicide, and his alcoholic wife recently left for Las Vegas with his retirement savings.
15. The First Amendment to the Constitution prevents the government from interfering with the free exercise of religion. The liturgical practice of the Religion of Internal Enlightenment involves human sacrifice. Therefore, it would be wrong for the government to interfere with this religious practice.
- *16. Senator Proxmire has argued persuasively in favor of price supports for dairy products. However, since Proxmire represents a state with a huge dairy industry, he would be expected to advocate price supports. Therefore, we should discount Proxmire's argument.
17. Professor Pearson's arguments in favor of the theory of evolution should be discounted. Pearson is a cocaine-snorting sex pervert and, according to some reports, a member of the Communist party.
18. Rudolf Höss, commandant of the Auschwitz concentration camp, con-

fessed to having exterminated one million people, most of whom were Jews, in the Auschwitz gas chamber. We can only conclude that Höss was either insane or an extremely evil person.

- *19. Brewing magnate Joseph Coors has argued that government should get off the back of the American businessman. Obviously, Coors wants to abolish government altogether. Yet without government there would be no defense, no judicial system, no Social Security, and no health and safety regulations. None of us wants to forgo these benefits. Thus we can see that Coors's argument is absurd.
- 20. I know that some of you oppose the appointment of David Cole as the new sales manager. Upon further consideration, however, I am confident you will change your minds. If Cole is not appointed, it may become necessary to make severe personnel cutbacks in your department.
- 21. The social reformers are always arguing for an increase in the minimum wage. But many Third World nations don't even have a minimum wage. Instead of giving these countries aid in the form of guns and planes, we should be concerned about the plight of their faceless populations. Medicine, food, and clothing are what these people need so desperately. We certainly have the means to respond to that need. We should lose no time in doing so.
- *22. Of course you want to buy a pair of Slinky fashion jeans. Slinky jeans really show off your figure, and all the Hollywood starlets down on the Strip can be seen wearing them these days.
- 23. Joe Montana, quarterback for the San Francisco 49ers, says on television that Diet Pepsi has the taste that beats Diet Coke. But Montana is paid thousands of dollars to make these ads. Therefore, we should not take his testimonials seriously.
- 24. Dr. Morrison has argued that smoking is responsible for the majority of health problems in this country and that every smoker who has even the slightest concern for his or her health should quit. Unfortunately, however, we must consign Dr. Morrison's argument to the trash bin. Only yesterday I saw none other than Dr. Morrison himself smoking a cigar.
- *25. Mr. Rhodes is suffering from amnesia and has no recollection whatever of the events of the past two weeks. We can only conclude that he did not commit the crime of murdering his wife a week ago, as he has been accused of doing.

H. Answer "true" or "false" to the following statements:

- P 1. In the appeal to force, the arguer physically attacks the listener.
- *| 2. In the direct variety of the appeal to the people, the arguer attempts to create a kind of mob mentality.
- ┌ 3. In the indirect variety of the appeal to the people, the arguer need not address more than a single individual.

- p 4. The argument against the person (*argumentum ad hominem*) always involves two arguers.
- tj 5. In the *argumentum ad hominem* circumstantial, the circumstances cited by the second arguer are intended precisely to malign the character of the first arguer.
- €, 6. In the *tu quoque* fallacy, the arguer threatens the reader or listener.
- T 7. In the fallacy of accident, a general rule is applied to a specific case where it does not fit.
- „- 8. In the straw man fallacy, an arguer often distorts another person's argument by making it look more extreme than it really is.
- p 9. Whenever one suspects that a missing the point fallacy is being committed, one should be able to state the conclusion that is logically implied by the premises.
- 10. In the red herring fallacy, the arguer attempts to lead the reader or listener off the track.

3.3 FALLACIES OF WEAK INDUCTION

The **fallacies of weak induction** occur not because the premises are logically irrelevant to the conclusion, as is the case with the eight fallacies of relevance, but because the connection between premises and conclusion is not strong enough to support the conclusion. In each of the following fallacies, the premises provide at least a shred of evidence in support of the conclusion, but the evidence is not nearly good enough to cause a reasonable person to believe the conclusion. Like the fallacies of relevance, however, the fallacies of weak induction often involve emotional grounds for believing the conclusion.

9. Appeal to Authority (*Argumentum ad Verecundiam*)

We saw in Chapter 1 that an argument from authority is an inductive argument in which an arguer cites the authority or testimony of another person in support of some conclusion. The **appeal to authority** fallacy is a variety of the argument from authority and occurs when the cited authority or witness is not trustworthy. There are several reasons why an authority or witness might not be trustworthy. The person might lack the requisite expertise, might be biased or prejudiced, might have a motive to lie or disseminate "misinformation," or might lack the requisite ability to perceive or recall. The following examples illustrate these reasons:

Dr. Bradshaw, our family physician, has stated that the creation of muonic atoms of deuterium and tritium hold the key to producing a sustained nuclear fusion reaction at room temperature. In view of Dr. Bradshaw's expertise as a physician, we must conclude that this is indeed true.

This conclusion deals with nuclear physics, and the authority is a family physician. Because it is unlikely that a physician would be an expert in nuclear physics, the argument commits an appeal to authority.

David Duke, former Grand Wizard of the Ku Klux Klan, has stated "Jews are not good Americans. They have no understanding of what America is." On the basis of Duke's authority, we must therefore conclude that the Jews in this country are un-American.

As an authority, David Duke is clearly unqualified, so his statements cannot be trusted.

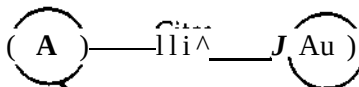
George Bush has stated that while he was vice-president he had no knowledge whatsoever of the illegal scheme to sell arms to Iran and use the profits to support the Nicaraguan contras. Therefore, our only alternative is to conclude that Bush played no role in this affair.

The authority in this argument (George Bush) has an obvious motive to misrepresent the facts. His political career would probably have been ruined had he admitted complicity in the Iran-Contra affair. Hence, his statements about his lack of involvement should be regarded as suspect.

Old Mrs. Furguson (who is practically blind) has testified that she saw the defendant stab the victim with a bayonet while she was standing in the twilight shadows 100 yards from the incident. Therefore, members of the jury, you must find the defendant guilty.

Here the witness lacks the ability to perceive what she has testified to, so her testimony is untrustworthy.

**Appeal to
authority**



A = Arguer

Au = Unqualified
authority

Conclusion

In deciding whether someone is a qualified authority, there are three important points to keep in mind. First, someone might be an authority in more than one field, and second, someone who is an authority in relation to one group of people might not be so in relation to another group. For example, a woman might be an authority in both chemistry and medicine, but this same woman, while she might be an authority in relation to any number of nonphysicians, might not be an authority in relation to her colleagues within the medical profession.

The third point to keep in mind is that there are some areas of argumentation where it often happens that practically no one can be considered an authority. Such areas include politics, morals, and religion. For example, if someone were to argue that abortion is immoral because a certain philosopher or religious leader has said so, the argument would be weak regardless of the authority's qualifications. Many questions in these areas are so hotly contested that there is no conventional wisdom an authority can depend on.

10. Appeal to Ignorance (*Argumentum ad Ignorantiam*)

When the premises of an argument state that nothing has been proved one way or the other about something, and the conclusion then makes a definite assertion about that thing, the argument commits an **appeal to ignorance**. The issue usually involves something that is incapable of being proved or something that has not yet been proved. Example:

People have been trying for centuries to provide conclusive evidence for the claims of astrology, and no one has ever succeeded. Therefore, we must conclude that astrology is a lot of nonsense.

Conversely, the following argument commits the same fallacy.

People have been trying for centuries to disprove the claims of astrology, and no one has ever succeeded. Therefore, we must conclude that the claims of astrology are true.

The premises of an argument are supposed to provide positive evidence for the conclusion. The premises of these arguments, however, tell us nothing about astrology; rather, they tell us about what certain unnamed and unidentified people have tried unsuccessfully to do. This evidence may provide some slight reason for believing the conclusion, but certainly not sufficient reason.

These examples do, however, lead us to the first of two important exceptions to the appeal to ignorance. The first stems from the fact that if qualified researchers investigate a certain phenomenon within their

K

Appeal to ignorance

Premises

Nothing is known with
certainty about X

Conclusion

We know something
definite about X

range of expertise and fail to turn up any evidence that the phenomenon exists, this fruitless search by itself constitutes positive evidence about the question. Consider, for example, the following argument:

Teams of scientists attempted over a number of decades to detect the existence of the luminiferous aether, and all failed to do so. Therefore, the luminiferous aether does not exist.

The premises of this argument are true. Given the circumstances, it is likely that the scientists in question would have detected the aether if in fact it did exist. Since they did not detect it, it probably does not exist. Thus, we can say that the above argument is inductively strong (but not deductively valid).

As for the two arguments about astrology, if the attempts to prove or disprove the astrological claims had been done in a systematic way by qualified experts, it is more likely that the arguments would be good. Exactly what is required to qualify someone to investigate astrological claims is, of course, difficult to say. But as these arguments stand, the premises state nothing about the qualifications of the investigators, and so the arguments remain fallacious.

It is not *always* necessary, however, that the investigators have *special* qualifications. The kinds of qualifications needed depend on the situation. Sometimes the mere ability to see and report what one sees is sufficient. Example:

No one has ever seen Mr. Andrews drink a glass of wine, beer, or any other alcoholic beverage. Probably Mr. Andrews is a nondrinker.

Because it is highly probable that if Mr. Andrews were a drinker, somebody would have seen him drinking, this argument is inductively strong. No special qualifications are needed to be able to see someone take a drink.

The second exception to the appeal to ignorance relates to courtroom procedure. In the United States and Canada, among other countries, a

person is presumed innocent until proven guilty. If the prosecutor in a criminal trial fails to prove the guilt of the defendant beyond reasonable doubt, counsel for the defense may justifiably argue that his or her client is not guilty. Example:

Members of the jury, you have heard the prosecution present its case against the defendant. Nothing, however, has been proved beyond a reasonable doubt. Therefore, under the law, the defendant is not guilty.

This argument commits no fallacy because "not guilty" means, in the legal sense, that guilt beyond a reasonable doubt has not been proved. The defendant may indeed have committed the crime of which he or she is accused, but if the prosecutor fails to prove guilt beyond a reasonable doubt, the defendant is considered "not guilty."

11. Hasty Generalization (Converse Accident)

Hasty generalization is a fallacy that affects inductive generalizations. In Chapter 1 we saw that an inductive generalization is an argument that draws a conclusion about all members of a group from evidence that pertains to a selected sample. The fallacy occurs when there is a reasonable likelihood that the sample is not representative of the group. Such a likelihood may arise if the sample is either too small or not randomly selected. Here are two examples:

After only one year the alternator went out in Mr. O'Grady's new Chevrolet. Mrs. Dodson's Oldsmobile developed a transmission problem after six months. The conclusion is obvious that cars made by General Motors are just a pile of junk these days.

Two weeks ago the Ajax Pharmacy was robbed and the suspect is a black man. Yesterday a black teenager snatched an old lady's purse while she was waiting at the corner bus stop. Clearly, blacks are nothing but a pack of criminals.

In these arguments a conclusion about a whole group is drawn from premises that mention only two instances. Because such small, atypical samples are not sufficient to support a general conclusion, each argument commits a hasty generalization. The second example indicates how hasty generalization plays a role in racial (and religious) prejudice.

The mere fact that a sample may be small, however, does not necessarily entail that it is atypical. Sometimes other factors intervene that cause the argument to be strong in spite of the fact that the sample may be small. Examples:

Hasty
generalization

Specific case(s)
(not representative)

Generalization

General rule

Ten milligrams of substance Z was fed to four mice, and within two minutes all four went into shock and died. Probably substance Z, in this amount, is fatal to the average mouse.

On three separate occasions I drank a bottle of Figowitz beer and found it flat and bitter. Probably I would find every bottle of Figowitz beer flat and bitter.

Neither of these arguments commits the fallacy of hasty generalization because in neither case is there any likelihood that the sample is atypical of the group. In the first argument the fact that the mice died in only two minutes suggests the existence of a causal connection between eating substance Z and death. If there is such a connection, it would hold for other mice as well. In the second example the fact that the taste of beer typically remains constant from bottle to bottle causes the argument to be strong, even though only three bottles were sampled.

Hasty generalization is otherwise called "converse accident" because it proceeds in a direction opposite to that of accident. Whereas accident proceeds from the general to the particular, converse accident moves from the particular to the general. The premises cite some characteristic affecting one or more atypical instances of a certain class, and the conclusion then applies that characteristic to all members of the class.

12. False Cause

The fallacy of **false cause** occurs whenever the link between premises and conclusion depends on some imagined causal connection that probably does not exist. Whenever an argument is suspected of committing the false cause fallacy, the reader or listener should be able to say that the conclusion depends on the supposition that X causes Y, whereas X probably does not cause Y at all. Examples:

During the past two months, every time that the cheerleaders have worn blue ribbons in their hair, the basketball team has

been defeated. Therefore, to prevent defeats in the future, the cheerleaders should get rid of those blue ribbons.

Successful business executives are paid salaries in excess of \$50,000. Therefore, the best way to ensure that Ferguson will become a successful executive is to raise his salary to at least \$50,000.

There are more laws on the books today than ever before, and more crimes are being committed than ever before. Therefore, to reduce crime we must eliminate the laws.

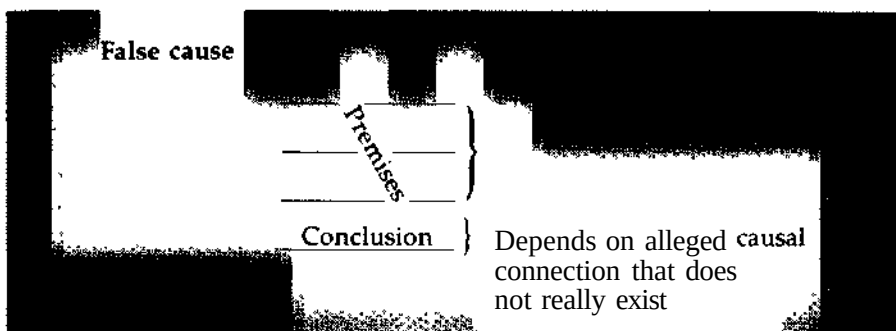
The first argument depends on the supposition that the blue ribbons caused the defeats, the second on the supposition that a high salary causes success, and the third on the supposition that laws cause crime. In no case is it likely that any causal connection exists.

The first argument illustrates a variety of the false cause fallacy called post hoc ergo propter hoc ("after this, therefore on account of this"). This variety of the fallacy presupposes that just because one event precedes another event the first event causes the second. Obviously, mere temporal succession is not sufficient to establish a causal connection. Nevertheless, this kind of reasoning is quite common and lies behind most forms of superstition. (Example: "A black cat crossed my path and later I tripped and sprained my ankle. It must be that black cats really are bad luck.")

The second and third arguments illustrate a variety of the false cause fallacy called non causa pro causa ("not the cause for the cause"). This variety is committed when what is taken to be the cause of something is not really the cause at all and the mistake is based on something other than mere temporal succession. In reference to the second argument, success as an pxpmfivp causes increases in salary—not the other way around—so the argument mistakes the cause for the effect. In reference to the third argument, the increase in crime is, for the most part, only coincidental with the increase in the number of laws. Obviously, the mere fact that one event is coincidental with another is not sufficient reason to think that one caused the other.

A third variety of the false cause fallacy, and one that is probably committed more often than either of the others in their pure form, is oversimplified cause. This variety occurs when a multitude of causes is responsible for a certain effect but the arguer selects just one of these causes and represents it as if it were the sole cause. Here are some examples:

The quality of education in our grade schools and high schools has been declining for years. Clearly, our teachers just aren't doing their job these days.



Today, all of us can look forward to a longer life span than our parents and grandparents. Obviously, we owe our thanks to the millions of dedicated doctors who expend every effort to ensure our health.

In the first argument, the decline in the quality of education is caused by many factors, including lack of discipline in the home, parental un-involvement, too much television, and drug use by students. Poor teacher performance is only one of these factors and probably a minor one at that. In the second argument, the efforts of doctors are only one among many factors responsible for our longer life span. Other, more important factors include a better diet, more exercise, reduced smoking, safer highways, and more stringent occupational safety standards.

The oversimplified cause fallacy is usually motivated by self-serving interests. Sometimes the arguer wants to take undeserved credit for himself or give undeserved credit to some movement with which he is affiliated. At other times, the arguer wants to heap blame on some person to whom he is opposed or shift blame from himself onto some convenient occurrence. Instances of the fallacy can resemble either the post hoc or the non causa pro causa varieties in that the alleged cause can occur either prior to or concurrently with the effect. It differs from the other varieties of false cause fallacy in that the single factor selected for credit or blame is often partly responsible for the effect, but responsible to only a minor degree.

The false cause fallacy is often convincing because it is sometimes difficult to determine whether two phenomena are causally related. Also, when they are related, it may be difficult to determine the degree of relatedness and even to tell which is the cause and which the effect. One point that should be kept in mind when attempting to settle these issues is that statistical correlations by themselves often reveal little about what is actually going on. For example, if all that we knew about smoking and lung cancer was that the two frequently occur together, we might conclude any number of things. We might conclude that both have a

common cause, such as a genetic predisposition, or we might conclude that lung cancer is a disease contracted early in life and that it manifests itself in its early stages by a strong desire for tobacco. Fortunately, in the case of smoking and lung cancer there is more evidence than a mere statistical correlation. This additional evidence inclines us to believe that the smoking is a cause of the cancer.

13. Slippery Slope

The fallacy of **slippery slope** is a variety of the false cause fallacy. It occurs when the conclusion of an argument rests upon an alleged chain reaction and there is not sufficient reason to think that the chain reaction will actually take place. Here is an example:

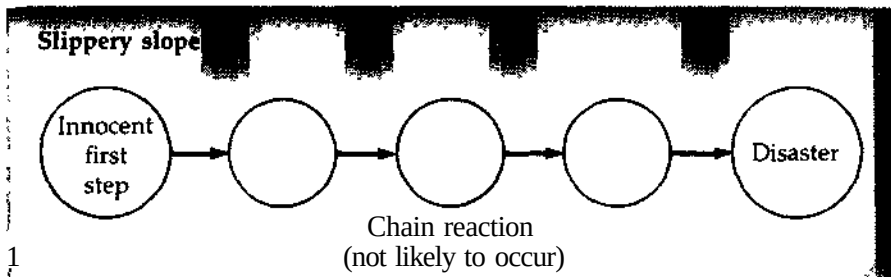
Immediate steps should be taken to outlaw pornography once and for all. The continued manufacture and sale of pornographic material will almost certainly lead to an increase in sex-related crimes such as rape and incest. This in turn will gradually erode the moral fabric of society and result in an increase in crimes of all sorts. Eventually a complete disintegration of law and order will occur, leading in the end to the total collapse of civilization.

Because there is no good reason to think that the mere failure to outlaw pornography will result in all these dire consequences, this argument is fallacious. An equally fallacious counterargument is as follows:

Attempts to outlaw pornography threaten basic civil rights and should be summarily abandoned. If pornography is outlawed, censorship of newspapers and news magazines is only a short step away. After that there will be censorship of textbooks, political speeches, and the content of lectures delivered by university professors. Complete mind control by the central government will be the inevitable result.

Both arguements attempt to persuade the reader or listener that the welfare of society rests on a "slippery slope" and that a single step in the wrong direction will result in an inevitable slide all the way to the bottom.

Deciding whether a slippery slope fallacy is or is not committed can be difficult when there is uncertainty whether the alleged chain reaction will or will not occur. This question is discussed in Section 3.5. But many slippery slopes rest on a mere emotional conviction on the part of the arguer that a certain action or policy is bad, and the arguer attempts to trump up support for his or her position by citing all sorts



of dire consequences that will result if the action is taken or the policy followed. In such cases there is usually little problem in identifying the argument as a slippery slope.

14. Weak Analogy

This fallacy affects inductive arguments from analogy. As we saw in Chapter 1, an argument from analogy is an argument in which the conclusion depends on the existence of an analogy, or similarity, between two things or situations. The fallacy of **weak analogy** is committed when the analogy is not strong enough to support the conclusion that is drawn. Example:

Harper's new car is bright blue, has leather upholstery, and gets excellent gas mileage. Crowley's new car is also bright blue and has leather upholstery. Therefore, it probably gets excellent gas mileage, too.

Because the color of a car and the choice of upholstery have nothing to do with gasoline consumption, this argument is fallacious.

The basic structure of an argument from analogy is as follows:

Entity A has attributes a, b, c , and z .

Entity B has attributes a, b, c .

Therefore, entity B probably has attribute z also.

Evaluating an argument having this form requires a two-step procedure: (1) Identify the attributes $a, b, c, \dots$ that the two entities A and B share in common, and (2) determine how the attribute z , mentioned in the conclusion, relates to the attributes $a, b, c, \dots$. If some causal or systematic relation exists between z and a, b , or c , the argument is strong; otherwise it is weak. In the argument above, the two entities share the attributes of being cars; the attributes entailed by being a car, such as having four wheels; and the attributes of color and upholstery material. Because none of these attributes is systematically or causally related to good gas mileage, the argument is fallacious.

Weak analogy

Premises

Conclusion J Depends on insufficiently strong analogy

As an illustration of when the requisite systematic or causal relation does and does not exist, consider the following arguments:

The flow of electricity through a wire is similar to the flow of water through a pipe. Obviously a large-diameter pipe will carry a greater flow of water than a pipe of small diameter. Therefore, a large-diameter wire should carry a greater flow of electricity than a small-diameter wire.

The flow of electricity through a wire is similar to the flow of water through a pipe. When water runs downhill through a pipe, the pressure at the bottom of the hill is greater than it is at the top. Thus, when electricity flows downhill through a wire, the voltage should be greater at the bottom of the hill than at the top.

The first argument is good and the second is fallacious. Both arguments depend on the similarity between water molecules flowing through a pipe and electrons flowing through a wire. In both cases there is a systematic relation between the diameter of the pipe/wire and the amount of flow. In the first argument this systematic relation provides a strong link between premises and conclusion, and so the argument is a good one. But in the second argument a causal connection exists between difference in elevation and increase in pressure that holds for water but not for electricity. Water molecules flowing through a pipe are affected by gravity, but electrons flowing through a wire are not. Thus, the second argument is fallacious.

The theory and evaluation of arguments from analogy is one of the most complex and elusive subjects in all of logic. Additional material on arguments from analogy appears in Sections 3.5 and 9.1 of this text.

EXERCISE 3.3

I. Identify the fallacies of weak induction committed by the following arguments. If no fallacy is committed, write "no fallacy."

1. The *Daily News* carried an article this morning about three local teenag-

ers who were arrested on charges of drug possession. Teenagers these days are nothing but a bunch of junkies.

2. If an automobile breaks down on the highway, no one expects a passing mechanic to be obligated to render emergency road service. For similar reasons, physicians should never be expected to render emergency medical assistance.
3. There must be something to psychical research. Three famous physicists, Oliver Lodge, James Jeans, and Arthur Stanley Eddington, took it seriously.
- 4. The secretaries have asked us to provide lounge areas where they can spend their coffee breaks. This request will have to be refused. If we give them lounge areas, next they'll be asking for spas and swimming pools. Then it will be racquetball courts, tennis courts, and fitness centers. Expenditures for these facilities will drive us into bankruptcy.
5. The accumulation of pressure in a society is similar to the build-up of pressure in a boiler. If the pressure in a boiler increases beyond a critical point, the boiler will explode. Accordingly, if a government represses its people beyond a certain point, the people will rise up in revolt.
6. A few minutes after Governor Harrison finished his speech on television, a devastating earthquake struck southern Alaska. For the safety of the people up there, it is imperative that Governor Harrison make no more speeches.
- ! *7. No one has ever been able to prove the existence of extrasensory perception. We must therefore conclude that extrasensory perception is a myth.
- « 8. Lester Brown, universally respected author of the yearly *State of the World* report, has said that cutting down tropical rain forests is one of the ten most serious worldwide problems. Thus, it must be the case that this is indeed a very serious problem.
9. Governor Turner is prejudiced against Catholics. During his first week in office, he appointed three people to important offices, and all three were Protestants.
- 10. Pianist Ray Charles says that Sinclair paints are groovy. We can only conclude that Sinclair paints are very groovy indeed.
- ✓ 11. Probably no life exists on Venus. Teams of scientists have conducted exhaustive studies of the planet's surface and atmosphere, and no living organisms have been found.
12. We don't dare let the animal rights activists get their foot in the door. If they sell us on the idea that dogs, cats, and dolphins have rights, next it will be chickens and cows. That means no more chicken Kiev or prime rib. Next it will be worms and insects. This will lead to the decimation of our agricultural industry. The starvation of the human race will follow close behind.

- 13. No one would buy a pair of shoes without trying them on. Why should anyone be expected to get married without premarital sex?
- 14. No one has proved conclusively that America's nuclear power plants constitute a danger to people living in their immediate vicinity. Therefore, it is perfectly safe to continue to build nuclear power plants near large metropolitan centers.
- 15. There are more churches in New York City than in any other city in the nation, and more crimes are committed in New York City than anywhere else. So, if we are to eliminate crime, we must abolish the churches.

II. Answer "true" or "false" to the following statements:

- ☒ 1. If an arguer cites a statement by a qualified expert in support of a conclusion, the arguer commits the appeal to authority fallacy.
- ☒ 2. If an arguer cites someone's statement in support of a conclusion and the statement reflects the strong bias of its author, then the arguer commits an appeal to authority.
- ☒ 3. In the appeal to ignorance, the arguer accuses the reader or listener of being ignorant.
- ☒ 4. If an attorney for the defense in an American or Canadian criminal trial argues that the prosecution has proved nothing beyond a reasonable doubt about the guilt of the defendant, then the attorney commits an appeal to ignorance.
- ☒ 5. Hasty generalization always proceeds from the particular to the general.
- ☒ 6. The *post hoc ergo propter hoc* variety of the false cause fallacy presumes that X causes Y merely because X happens before Y.
- ☒ 7. If an argument presumes that X causes Y when in fact Y causes X, the argument commits the *non causa pro causa* variety of the false cause fallacy.
- ☒ 8. If the conclusion of an argument depends on the occurrence of a chain reaction of events, and there is good reason to believe that the chain reaction will actually occur, the argument commits a slippery slope fallacy.
- ☒ 9. The fallacy of weak analogy always depends on an alleged similarity between two things or situations.
- ☒ 10. If an argument from analogy depends on a causal or systematic relationship between certain attributes, and there is good reason to believe that this relationship exists, then the argument commits no fallacy.

III. Identify the fallacies of relevance and weak induction committed by the following arguments. If no fallacy is committed, write "no fallacy."

- *1. On our first date, George had his hands all over me, and I found it ^{near} impossible to keep him in his place. A week ago Tom gave me

that stupid line about how, in order to prove my love, I had to spend the night with him. Men are all alike. All any of them want is sex.

- WZ& 2. When a machine breaks down, mechanics dismantle it and replace the broken parts. Similarly, when the human body breaks down, it makes good sense to replace diseased organs with new ones—either from a donor or artificially manufactured.
- AP 3. PLO leader Yasser Arafat has promised to stop killing Israelis. But no sensible person should trust this promise. Arafat kills his own fellow Palestinians when they fraternize too closely with the Israelis; and if he kills his own people, he would certainly have no qualms about killing others.
- ii 4. Senator Lloyd Bentsen has argued persuasively for increases in the NASA budget. Bentsen's argument should be cast aside, however, because most of the money will go to Bentsen's home state of Texas. After all, Mission Control Center is in Houston.
- cin
5. What the farmer sows in the spring he reaps in the fall. In the spring he sows \$8-per-bushel soybeans. Therefore, in the fall he will reap \$8-per-bushel soybeans.
 6. World-famous paleontologist Stephen Jay Gould says that the dinosaurs were killed by a large asteroid that collided with the earth. Furthermore, many scientists agree with Gould. Therefore, we conclude that the dinosaurs were probably killed by an asteroid.
 - *7. Animals and humans are similar in many ways. Both experience sensations, desires, fears, pleasures, and pains. Humans have a right not to be subjected to needless pain. Does it not follow that animals have a right not to be subjected to needless pain?
 8. Johnny, I know you'll lend me your bicycle for the afternoon. After all, I'm sure you wouldn't want your mother to find out that you played hooky today.
 9. As a businessperson you certainly want to subscribe to *Forbes* magazine. Virtually all the successful business executives in the country subscribe to it.
 - 10. Ellen Quinn has argued that logic is not the most important thing in life. Apparently Ellen advocates irrationality. It has taken two million years for the human race to achieve the position that it has, and Ellen would throw the whole thing into the garbage. What utter nonsense!
 11. When water is poured on the top of a pile of rocks, it always trickles down to the rocks on the bottom. Similarly, when rich people make lots of money, we can expect this money to trickle down to the poor.
 12. Extensive laboratory tests have failed to prove any deleterious side effects of the new pain killer lexaprane. We conclude that lexaprane is safe for human consumption.
 - *13. Environmentalists accuse us of blocking the plan to convert Antarctica into a world park. In fact, nothing could be further from the truth.

Antarctica is a huge continent teeming with life. It is the home of millions of penguins, seals, sea birds, and sea lions. Also, great schools of finfish and whales inhabit its coastal waters.

14. Mr. Scott's arguments in favor of increasing teacher salaries are totally worthless. Scott, as you all know, has a criminal record as long as my arm, and only a week ago he was released from the state prison after having served a two-year term for car theft.
15. The operation of a camera is similar in many ways to the operation of an eye. If you are to see anything in a darkened room, the pupils of your eyes must first dilate. Accordingly, if you are to take a photograph (without flash) in a darkened room, the aperture of the camera lens must first be opened.
- 16. Certainly Miss Malone will be a capable and efficient manager. She has a great figure, a gorgeous face, and tremendous poise, and she dresses very fashionably.
17. Actor Martin Sheen has said that we should stop nuclear testing immediately. Therefore, it certainly follows that we should do this.
18. The widely respected organization Amnesty International stated in its annual report that the systematic torture of political prisoners by right-wing paramilitary squads is widespread in Chile. Therefore, it is probably true that such torture is widespread in Chile.
- 19. To prevent dangerous weapons from being carried aboard airliners, those seeking to board must pass through a magnetometer and submit to a possible pat-down search. Therefore, to prevent alcohol and drugs from being carried into rock concerts, it is appropriate that those entering submit to similar search procedures.
20. Mr. Flemming's arguments against the rent control initiative on the September ballot should be taken with a grain of salt. As a landlord he would naturally be expected to oppose the initiative.
21. India is suffering a serious drought, thousands of children are dying of starvation in their mothers' arms, and homeless beggars line the streets of the major cities. Surely we must give these poor downtrodden people the chance of bettering their condition in America, the land of wealth and opportunity.
- 22. Members of the jury, you have heard Shirley Gaines testify that she observed the entire scene and that at no time did the defendant offer to perform acts of prostitution for the undercover police officer. But Gaines is a known prostitute herself and a close friend of the defendant. Also, only a year ago she was convicted of twelve counts of perjury. Therefore, you should certainly discount Gaines's testimony.
23. It is ridiculous to hear that man from Peru complaining about America's poverty. Peru has twice as much poverty as America has ever had.
24. The secular humanists say that science comes closer to the truth than religion. But what kind of science is secular humanism? What kind of

experiments does it conduct? Are its predictions fulfilled by subsequent discoveries? Is there a Nobel Prize awarded in the field of secular humanism? Clearly, the answer to all these questions is "no." We can only conclude that the secular humanists are preaching nonsense.

- 25. No one has ever proved that massive federal deficits are actually harmful to the economy. We can only conclude that such deficits pose no real danger.
- 26. Freedom of speech is guaranteed by the First Amendment. Therefore, your friend was acting within his rights when he shouted "Fire! Fire!" in that crowded theater, even though it was only a joke.
- 27. No one, upon encountering a watch lying on a forest trail, would expect that it had simply appeared there without having been made by someone. For the same reason, no one should expect that the universe simply appeared without having been made by some being.
- 28. On Monday I drank ten rum and Cokes, and the next morning I woke up with a headache. On Wednesday I drank eight gin and Cokes, and the next morning I woke up with a headache. On Friday I drank nine Bourbon and Cokes, and the next morning I woke up with a headache. Obviously, to prevent further headaches I must give up Coke.
- 29. The U.S. Committee for Nuclear Awareness says that nuclear power is safe and that it holds the answer for America's energy needs in the years ahead. We can only conclude that the best policy is to push forward with nuclear power.
- 30. Some of the parents in our school district have asked that we provide bilingual education in Spanish. This request will have to be denied. If we provide this service, then someone will ask for bilingual education in Greek. Then it will be German, French, and Hungarian. Polish, Russian, Chinese, Japanese, and Korean will follow close behind. We certainly can't accommodate all of them.

3.4 FALLACIES OF PRESUMPTION, AMBIGUITY, AND GRAMMATICAL ANALOGY

The **fallacies of presumption** include begging the question, complex question, false dichotomy, and suppressed evidence. These fallacies arise not because the premises are irrelevant to the conclusion or provide insufficient reason for believing the conclusion but because the premises presume what they purport to prove. Begging the question attempts to hide the fact that a certain premise may not be true, and the fallacy of complex question attempts to trick the respondent into making some statement that will establish the truth of the presumption hidden in the question. The third fallacy of presumption, false dichotomy, presumes that an "either . . . or" statement presents mutually exhaustive alternatives. The fourth fallacy of presumption, suppressed evidence, pre-

sumes that no important piece of evidence has been overlooked by the premises.

The fallacies of **ambiguity** include equivocation and amphiboly. These fallacies arise from the occurrence of some form of ambiguity in either the premise or the conclusion (or both). Chapter 2 distinguished ambiguity from vagueness. A term is vague if its meaning is blurred so that one cannot tell with any degree of precision whether it applies to a given situation. A term is ambiguous, on the other hand, if it is susceptible to different interpretations in a given context. Terms such as "light," "bank," and "race" lend themselves to ambiguous interpretations, while "love," "conservative," and "happiness" are often vague. As we will see in this section, ambiguity can affect not only terms but whole statements. When the conclusion of an argument depends on a certain interpretation being given to an ambiguous term or statement, the argument commits a fallacy of ambiguity.

The **fallacies of grammatical analogy** include composition and division. Arguments that commit these fallacies are grammatically analogous to other arguments that are good in every respect. Because of this similarity in linguistic structure, such fallacious arguments may appear good yet be bad.

15. Begging the Question (*Petito Principii*)

Begging the question occurs when an arguer uses some form of phraseology that tends to conceal the questionably true character of a key premise. If the reader or listener is deceived into thinking that the key premise is true, he or she will accept the argument as sound, when in fact it may not be. Two requirements must be met for this fallacy to occur:

1. The argument must be valid.
2. Some form of phraseology must be used to conceal the questionably true character of a key premise. *

The kind of phraseology used varies from argument to argument, but it often involves using the conclusion to support the questionable premise. One way of accomplishing this is to phrase the argument so that the premise and conclusion say the same thing in two slightly different ways. Example:

Capital punishment is justified for the crimes of murder and kidnapping because it is quite legitimate and appropriate that someone be put to death for having committed such hateful and inhuman acts.

To say that capital punishment is "justified" means the same thing as to say that it is "legitimate and appropriate." Because premise and conclu-

sion mean the same thing, it is obvious that if the premise is true, the conclusion is also true; so the argument is valid. The only question that remains is whether the premise is true. When read apart from the context of the argument, the premise is questionable, at best. But when it is preceded by the conclusion, as it is here, the alleged truth is strengthened. This strengthening is caused by the psychological illusion that results from saying the same thing in two slightly different ways. When a single proposition is repeated in two or more ways without the repetition becoming obvious, the suggested truth of the proposition is reinforced.

Another form of begging the question affects chains of arguments. Example:

Ford Motor Company clearly produces the finest cars in the United States. We know they produce the finest cars because they have the best design engineers. The reason why they have the best design engineers is because they can afford to pay them more than other manufacturers. Obviously, they can afford to pay them more because they make the finest cars in the United States.

In this chain of arguments the final conclusion is stated first. The truth of this conclusion depends on each link in the chain, and ultimately on the first premise (stated last), which asserts the same thing as the final conclusion (stated first). This example illustrates why begging the question is frequently called circular reasoning. The artifice used in arguments such as this depends on the fact that several statements intervene between the final conclusion and the first premise. The reader or listener tends to get lost in the maze of arguments, and since every statement appears to be supported by some other statement, he or she can be fooled into thinking that the final conclusion is necessarily true. What the reader or listener may fail to recognize is that the truth of the final conclusion is really supported only by itself, and therefore by nothing at all.

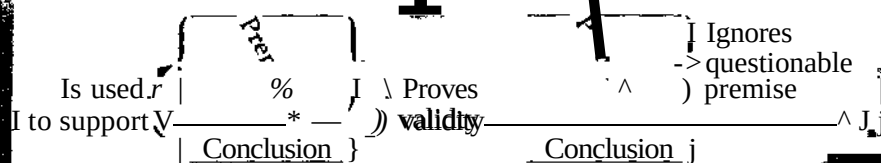
A third form of begging the question occurs when a questionably true premise, which is needed to make the argument valid, is completely ignored. Example:

Murder is morally wrong. This being the case, it follows that abortion is morally wrong.

The questionable premise that is ignored is, "Abortion is a form of murder." The argument begs the question, "How do you know that abortion is a form of murder?" The premise that is stated, of course, is undisputably true, and the phrase "This being the case" makes it appear that the stated premise is all that is needed. If the reader or listener

Begging the question

1



concentrates on the truth of the stated premise and overlooks the fact that a highly questionable premise is needed to complete the argument, he or she is liable to accept the argument as immediately sound.

An essential characteristic of begging the question is that some form of phraseology be used that tends to conceal the questionably true character of a key premise. If this premise is obviously true, then no such concealment is relevant, and the fallacy cannot occur. Consider the following arguments:

No dogs are cats.

Therefore, no cats are dogs.

London is in England and Paris is in France.

Therefore, Paris is in France and London is in England.

Each of these arguments is valid, and the premise of each is true. Therefore, the arguments are sound and commit no fallacy. Arguments having this form appear in Chapters 4 and 7. The reason they do not commit the fallacy of begging the question is because there is no concealment of any questionably true premise. Each argument has exactly one premise, and that premise is obviously true. Of course both arguments are trivial, but mere triviality is not a fallacy.

Here is another example:

Rome is in Germany or Rome is in Germany.

Therefore, Rome is in Germany.

Even here, no fallacy is committed. The argument is valid and the premise false. Thus the argument is unsound, but there is no phraseology that conceals anything. Arguments having this form also appear in Chapter 7

Literally, *petitio pnnapii* means "postulation of the beginning." In other words, what the argument sets out to do in the beginning is postulated instead of proven. "Begging the question" means the same thing. The argument begs the question at issue; it asks that the statement to be proved be granted beforehand.

16. Complex Question

The fallacy of **complex question** is committed when a single question that is really two (or more) questions is asked and a single answer is then applied to both questions. Every complex question presumes the existence of a certain condition. When the respondent's answer is added to the complex question, an argument emerges that establishes the presumed condition. Thus, although not an argument as such, a complex question involves an implicit argument. This argument is usually intended to trap the respondent into acknowledging something that he or she might otherwise not want to acknowledge. Examples:

Have you stopped cheating on exams?
Where did you hide the cookies you stole?

Let us suppose the respondent answers "yes" to the first question **and** "under the bed" to the second. The following arguments emerge:

You were asked whether you have stopped cheating on exams. You answered "yes." Therefore, it follows that you have cheated in the past.

You were asked where you hid the cookies you stole. You replied "under the bed." It follows that you did in fact steal the cookies.

On the other hand, let us suppose that the respondent answers "no" to the first question and "nowhere" to the second. We then have the following arguments:

You were asked whether you have stopped cheating on exams. You answered "no." Therefore, you continue to cheat.

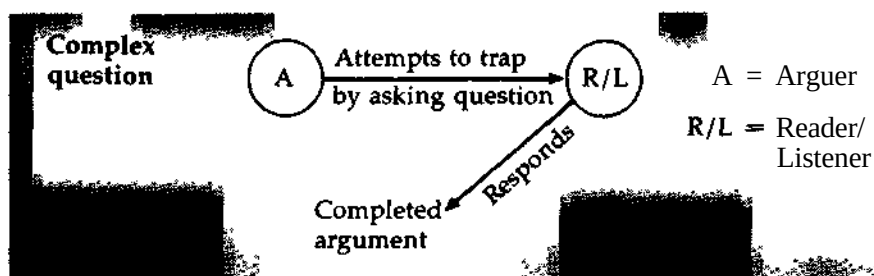
You were asked where you hid the cookies you stole. You answered "nowhere." It follows that you must have stolen them and eaten them.

Obviously, each of the above questions is really two questions:

Did you cheat on exams in the past? If you did cheat in the past, have you stopped now?

Did you steal the cookies? If you did steal them, where did you hide them?

If respondents are not sophisticated enough to identify a complex question when one is put to them, **they** may answer quite innocently and be trapped by a conclusion **that** is **supported** by no evidence at all; or, they may be tricked into providing the evidence themselves. The



correct response lies in resolving the complex question into its component questions and answering each separately.

The fallacy of complex question should be distinguished from another kind of question known in law as a leading question. A *leading question* is one in which the answer is in some way suggested in the question. Whether or not a question is a leading one is important in the direct examination of a witness by counsel. Example:

Tell us, on April 9, did you see the defendant shoot the deceased? (leading question)

Tell us, what did you see on April 9? (straight question)

Leading questions differ from complex questions in that they involve no logical fallacies; that is, they do not attempt to trick the respondent into admitting something he or she does not want to admit. To distinguish the two, however, it is sometimes necessary to know whether prior questions have been asked. Here are some additional examples of complex questions:

Are you going to be a good little boy and eat your hamburger?
Is George Hendrix still smoking marijuana?
How long must I put up with your snotty behavior?
When are you going to stop talking nonsense?

17. False Dichotomy

The fallacy of **false dichotomy** (otherwise called "false bifurcation" and the "either-or fallacy") is committed when one premise of an argument is an "either ... or" (disjunctive) statement that presents two alternatives as if they were jointly exhaustive (i.e., as if no third alternative were possible). One of these alternatives is usually preferred by the arguer. When the arguer then proceeds to eliminate the undesirable alternative, the desirable one is left as the conclusion. Such an argument is clearly

valid; but since the disjunctive premise is usually false, the argument is almost always unsound. Of course, not all unsound arguments are fallacious. The fallacious nature of false dichotomy lies in the attempt by the arguer to delude the reader or listener into thinking that the disjunctive premise presents jointly exhaustive alternatives and is therefore true by necessity. The fallacy is commonly committed by children and adolescents when arguing with their parents, by advertisers, and by adults generally. Here are some examples:

Either you let me attend the Neil Diamond concert or I'll be miserable for the rest of my life. I know you don't want me to be miserable for the rest of my life, so it follows that you'll let me attend the concert.

Either you use Ultra Guard deodorant or you risk the chance of perspiration odor. Surely you don't want to risk the chance of perspiration odor. Therefore, you will want to use Ultra Guard deodorant.

Either you buy only American-made products or you don't deserve to be called a loyal American. Yesterday you bought a new Toyota. It's therefore clear that you don't deserve to be called a loyal American.

None of the disjunctive premises in these arguments presents alternatives that are jointly exhaustive. Yet in each case the arguer wants to make it appear that it does. For example, in the first argument the arguer wants to convey the illusion that either he or she goes to the concert or faces a lifetime of misery, and no other alternatives are possible. Clearly, however, such is not the case.

False dichotomy is classified as a fallacy of presumption because the soundness of the argument depends on the presumption that the two alternatives presented are the only ones that exist. If they are not the only ones that exist, the "either . . . or" statement is false, and the argument is unsound.

Most instances of false dichotomy are not presented as complete arguments. Only the disjunctive premise is expressed, and the arguer leaves it to the reader or listener to supply the missing parts:

Either you buy me a new mink coat, or I'll freeze to death when winter comes.

Either I continue smoking, or I'll get fat and you'll hate to be seen with me.

The missing premise and conclusion are easily introduced.

18. Suppressed Evidence

Chapter 1 explained that a cogent argument is an inductive argument with good reasoning and true premises. The requirement of true premises includes the proviso that the premises not ignore some important piece of evidence that outweighs the presented evidence and entails a very different conclusion. If an inductive argument does indeed ignore such evidence, then the argument commits the fallacy of suppressed evidence. Consider, for example, the following argument:

Most dogs are friendly and pose no threat to people who pet them. Therefore, it would be safe to pet the little dog that is approaching us now.

If the arguer ignores the fact that the little dog is excited and foaming at the mouth (which suggests rabies), then the argument commits a suppressed evidence fallacy. This fallacy is classified as a fallacy of presumption because it works by creating the presumption that the premises are true in a complete sense when in fact they are not.

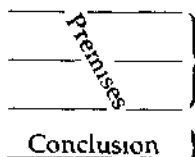
The mere fact that a piece of salient evidence has been overlooked, however, is not sufficient for deciding that the suppressed evidence fallacy has been committed. The evidence that is suppressed must be so important that it outweighs the presented evidence, and it must require a different conclusion than the one drawn. In most real-life instances, the suppression is intentional: The arguer has something to gain by ignoring the evidence and thereby tricking an unsuspecting reader or listener into accepting a defective argument. Example:

Used cars salesman to buyer—Mrs. Webb, I have just the car you need. This 1978 Chevrolet was recently traded in by a little old lady who kept it in the garage most of the time. The odometer reads low mileage, and the engine was recently tuned up. If you buy this car, it will give you trouble-free service for years.

Mrs. Webb accepts the salesman's argument and buys the car, only to have it fall apart two months later. Unfortunately, the salesman had failed to tell her that whenever the car was not in the garage the little old lady was driving it cross-country, that the odometer had rolled around twice, and that even though the engine was recently tuned up, it had two cracked pistons and a burned valve. By suppressing this evidence, the salesman made it appear that Mrs. Webb was getting a good deal, whereas in fact she was getting a pile of junk for her money.

Another form of suppressed evidence is committed by arguers who quote passages out of context from sources such as the Bible, the

Suppressed evidence



Ignores stronger evidence that supports a different conclusion

Constitution, and the Bill of Rights to support a conclusion that the passage was not intended to support. Consider, **for** example, the following argument against gun control:

The Second Amendment to the Constitution states that the right of the people to keep and bear arms shall not be infringed. But a law controlling handguns would infringe on the right to keep and bear arms. Therefore, a law controlling handguns would be unconstitutional.

In fact, the Second Amendment reads, "A well regulated militia, being necessary to the security of a free state, the right of the people to keep and bear arms, shall not be infringed." In other words, the amendment states that the right to bear arms shall not be infringed when the arms are necessary for the preservation of a well-regulated militia. Because a law controlling handguns (pistols) would have little effect on the preservation of a militia, it is unlikely that such a law would be unconstitutional. By ignoring the militia qualification, the first premise of the above argument makes it appear that *any* law controlling guns would be unconstitutional, which is clearly not the case. In fact, the Supreme Court has upheld a federal law banning the unauthorized interstate shipment of sawed-off shotguns because these arms are unrelated to the preservation of a well-regulated militia.

To detect the fallacy of suppressed evidence, the reader or listener must make sure the arguer is not ignoring stronger evidence that supports a different conclusion. This, in turn, requires a general knowledge of the topic to which the argument pertains and a familiarity with the devices used by unscrupulous individuals to pass off half-truths as the whole truth.

19. Equivocation

The fallacy of **equivocation** occurs when the conclusion of an argument depends on the fact that one or more words are used, either explicitly or

implicitly, in two different senses in the argument. Either such arguments are invalid or a premise is false and the argument is unsound. Examples:

Some triangles are obtuse. Whatever is obtuse is ignorant.
Therefore, some triangles are ignorant.

Any law can be repealed by the legislative authority. But the law of gravity is a law. Therefore, the law of gravity can be repealed by the legislative authority.

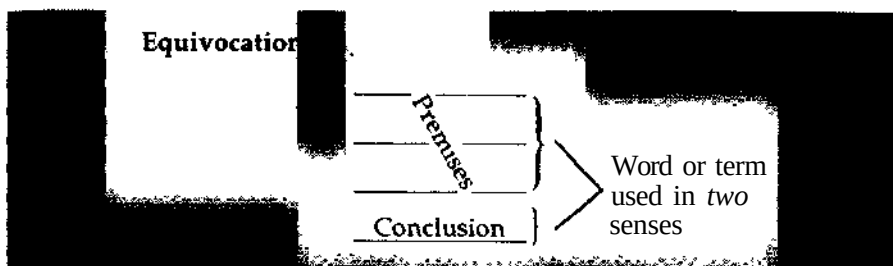
We have a duty to do what is right. We have the right to speak out in defense of the innocent. Therefore, we have a duty to speak out in defense of the innocent.

A mouse is an animal. Therefore, a large mouse is a large animal.

In the first argument "obtuse" is used in two different senses. In the first premise it describes a certain kind of angle, while in the second it means dull or stupid. The second argument equivocates on the word "law." In the first premise it means statutory law, and in the second it means law of nature. The third argument uses "right" in two senses. In the first premise "right" means morally correct, but in the second it means a just claim or power. The fourth argument illustrates the ambiguous use of a relative term. The word "large" means different things depending on the context. Other relative terms that are susceptible to this same kind of ambiguity include "small," "good," "bad," "light," "heavy," "difficult," "easy," "tall," "short," and so on.

For an argument that commits an equivocation to be convincing, it is essential that the equivocal term be used in two ways that are subtly related. For this reason the triangle argument would probably not convince anyone. It takes but a moment for the reader or listener to realize that something is wrong with this argument and only a few additional seconds to see that the problem stems from the equivocal use of a word. For the same reason, few would be fooled by the second example either; but there are some who might be taken in by the third. In the third example, both senses of the word "right" pertain to ethics, and the conclusion, if not true, is at least plausible. If the reader or listener fails to distinguish the two meanings of "right," he or she is liable to think that the conclusion follows from the premises, when in fact it does not.

Most actual occurrences of the fallacy of equivocation do not, however, occur in succinct, straightforward arguments such as those above. Rather, they occur in protracted, drawn out arguments of the sort found in political speeches. If a certain word gradually shifts in meaning throughout the duration of a lengthy speech, and different conclusions



are drawn from the different meanings, detection of the fallacy becomes more difficult. Terms that lend themselves to this kind of meaning shift include "disarmament," "equal opportunity," "gun control," "national security," "balanced budget," and "environmental protection."

Another strategy used by speechmakers is to use a certain word in one sense when addressing one group of people and in quite another sense when addressing an opposing group. Depending on the specific usage, completely different conclusions may be drawn. For example, a speechmaker addressing a group of defense contractors might argue in favor of disarmament, but the context of the speech would make it clear that by "disarmament" he or she means the limitation of only a narrow range of weaponry. Such an interpretation would certainly please those in attendance. That same speechmaker, later addressing a group of antiwar militants, might again argue in favor of disarmament, but this time meaning the curtailment of all forms of weaponry. To detect the fallacy the listener would have to compare the *two* speeches.

20. Amphiboly

The fallacy of **amphiboly** occurs when the arguer misinterprets a statement that is ambiguous owing to some structural defect and proceeds to draw a conclusion based on this faulty interpretation. The original statement is usually asserted by someone other than the arguer, and the structural defect is usually a mistake in grammar or punctuation—a missing comma, a dangling modifier, an ambiguous antecedent of a pronoun, or some other careless arrangement of words. Because of this defect, the statement may be understood in two clearly distinguishable ways. The arguer typically selects the unintended interpretation and proceeds to draw a conclusion based upon it. Here are some examples:

The tour guide said that standing in Greenwich Village, the Empire State Building could easily be seen. It follows that the Empire State Building is in Greenwich Village.

John told Henry that he had made a mistake. It follows that John has at least the courage to admit his own mistakes.

Professor Johnson said that he will give a lecture about heart failure in the biology lecture hall. It must be the case that a number of heart failures have occurred there recently.

The premise of the first argument contains a dangling modifier. Is it the observer or the Empire State Building that is supposed to be standing in Greenwich Village? The correct interpretation is the former. In the second argument the pronoun "he" has an ambiguous antecedent; it can refer either to John or to Henry. Perhaps John told Henry that *Henry* had made a mistake. In the third argument the ambiguity concerns what takes place in the biology lecture hall; is it the lecture or the heart failures? The correct interpretation is probably the former. The ambiguity can be eliminated by inserting commas ("Professor Johnson said that he will give a lecture, about heart failure, in the biology lecture hall") or by moving the ambiguous modifier ("Professor Johnson said that he will give a lecture in the biology lecture hall about heart failure").

Two areas where cases of amphiboly cause serious problems involve contracts and wills. The drafters of these documents often express their intentions in terms of ambiguous statements, and alternate interpretations of these statements then lead to different conclusions. Examples:

Mrs. Hart stated in her will, "I leave my 500-carat diamond necklace and my pet chinchilla to Alice and Theresa." Therefore, we conclude that Alice gets the necklace and Theresa gets the chinchilla.

Mr. James signed a contract that reads, "In exchange for painting my house, I promise to pay David \$5000 and give him my new Cadillac only if he finishes the job by May 1." Therefore, since David did not finish until May 10, it follows that he gets neither the \$5000 nor the Cadillac.

In the first example, the conclusion obviously favors Alice. Theresa is almost certain to argue that the gift of the necklace and chinchilla should be shared equally by her and Alice. Mrs. Hart could have avoided the dispute by adding either "respectively" or "collectively" to the end of the sentence. In the second example, the conclusion favors Mr. James. David will argue that the condition that he finish by May 1 affected only the Cadillac and that he therefore is entitled to the \$5000. The dispute could have been avoided by properly inserting a comma in the language of the promise.

Amphiboly differs from equivocation in two important ways. First, equivocation is always traced to an ambiguity in the meaning of one or more *words*, whereas amphiboly involves a structural defect in a *statement*. The second difference is that amphiboly usually involves a

Amphiboly

Premises

} Mentions statement that
is ambiguous owing
to structural defect

Conclusion

} Misinterprets that statement

mistake made by the arguer in interpreting an ambiguous statement made by someone else, whereas the ambiguity in equivocation is typically the arguer's own creation. If these distinctions are kept in mind, it is usually easy to distinguish amphiboly from equivocation. Occasionally, however, the two fallacies occur together, as the following example illustrates:

The *Great Western Cookbook* recommends that we serve the oysters when thoroughly stewed. Apparently the delicate flavor is enhanced by the intoxicated condition of the diners.

First, it is unclear whether "stewed" refers to the oysters or to the diners, and so the argument commits an amphiboly. But if "stewed" refers to the oysters it means "cooked," and if it refers to the diners it means "intoxicated." Thus, the argument also involves an equivocation.

21. Composition

The fallacy of **composition** is committed when the conclusion of an argument depends on the erroneous transference of an attribute from the parts of something onto the whole. In other words, the fallacy occurs when it is argued that because the parts have a certain attribute, it follows that the whole has that attribute too and the situation is such that the attribute in question cannot be legitimately transferred from parts to whole. Examples:

Maria likes anchovies. She also likes chocolate ice cream. Therefore, it is certain that she would like a chocolate sundae topped with anchovies.

Each player on this basketball team is an excellent athlete. Therefore, the team as a whole is excellent.

Each atom in this piece of chalk is invisible. Therefore, the chalk is invisible.

Sodium and chlorine, the atomic components of salt, are both deadly poisons. Therefore, salt is a deadly poison.

In these arguments the attributes that are transferred from the parts onto the whole are designated by the words "Maria likes," "excellent," "invisible," and "deadly poison," respectively. In each case the transference is illegitimate, and so the argument is fallacious.

Not every such transference is illegitimate, however. Consider the following arguments:

Every atom in this piece of chalk has mass. Therefore, the piece of chalk has mass.

Every picket in this picket fence is white. Therefore, the whole fence is white.

In each case an attribute (having mass, being white) is transferred from the parts onto the whole, but these transfereces are quite legitimate. Indeed, the fact that the atoms have mass is the very reason *why* the chalk has mass. The same reasoning extends to the fence. Thus, the acceptability of these arguments is attributable, at least in part, to the *legitimate* transference of an attribute from parts onto the whole.

These examples illustrate the fact that the fallacy of composition is indeed an informal fallacy. It cannot be discovered by a mere inspection of the form of an argument—that is, by the mere observation that an attribute is being transferred from parts onto the whole. In addition, detecting this fallacy requires a general knowledge of the situation and of the nature of the attribute being transferred. The critic must be certain that, given the situation, the transference of this particular attribute is not allowed.

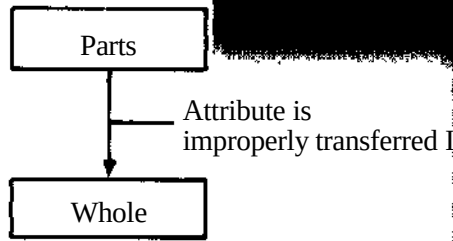
Further caution is required by the fact that composition is sometimes confused with hasty generalization. The only time this confusion is possible is when the "whole" is a class (such as the class of people in a city or the class of trees in a forest), and the "parts" are the members of the class. In such a case composition proceeds from the members of the class to the class itself. Hasty generalization, on the other hand, proceeds from the specific to the general. Because it is sometimes easy to mistake a statement about a class for a general statement, composition can be mistaken for hasty generalization. Such a mistake can be avoided if one is careful to keep in mind the distinction between a general statement and a class statement. This distinction falls back on the difference between the collective and the distributive predication of an attribute. Consider the following statements:

Fleas are small.

Fleas are numerous.

The first statement is a general statement. The attribute of being small is predicated distributively; that is, it is assigned (or distributed) to each and every flea in the class. Each and every flea in the class is said to be

Composition



small. The second statement, on the other hand, is a class statement. The attribute of being numerous is predicated collectively; in other words, it is assigned not to the individual *fleas* but to the *class* of fleas. The meaning of the statement is not that each and every flea is numerous but that the class of fleas is large.

To distinguish composition from hasty generalization, therefore, the following procedure should be followed. Examine the conclusion of the argument. If the conclusion is a general statement, that is, a statement in which an attribute is predicated distributively to each and every member of a class, the fallacy committed is hasty generalization. But if the conclusion is a class statement, that is, a statement in which an attribute is predicated collectively to a class as a whole, the fallacy is composition. Example:

Less gasoline is consumed by a car than by a truck. Therefore, less gasoline is consumed in the United States by cars than by trucks.

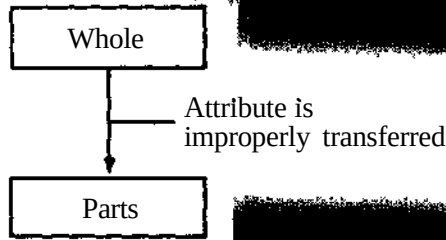
At first sight this argument might appear to proceed from the specific to the general and, consequently, to commit a hasty generalization. But in fact the conclusion is not a general statement at all but a class statement. The conclusion states that the whole class of cars uses less gas than does the whole class of trucks (which is false, because there are many more cars than trucks). Since the attribute of using less gasoline is predicated collectively, the fallacy committed is composition.

22. Division

The fallacy of **division** is the exact reverse of composition. As composition goes from parts to whole, division goes from whole to parts. The fallacy is committed when the conclusion of an argument depends on the erroneous transference of an attribute from a whole (or a class) onto its parts (or members). Examples:

Salt is a nonpoisonous compound. Therefore, its component elements, sodium and chlorine, are nonpoisonous.

Division



This jigsaw puzzle, when assembled, is circular in shape. Therefore, each piece is circular in shape.

The Royal Society is over 300 years old. Professor Thompson is a member of the Royal Society. Therefore, Professor Thompson is over 300 years old.

In each case the attribute, designated respectively by the terms "nonpoisonous," "circular in shape," and "over 300 years old," is illegitimately transferred from the whole or class onto the parts or members. As with the fallacy of composition, however, this kind of transference is not always illegitimate. The following arguments contain no fallacy.

This piece of chalk has mass. Therefore, the atoms that compose this piece of chalk have mass.

This field of poppies is uniformly orange in color. Therefore, the individual poppies are orange in color.

Obviously, one must be acquainted with the situation and the nature of the attribute being transferred to decide whether the fallacy of division is actually committed.

Just as composition is sometimes prone to being confused with hasty generalization (converse accident), division is sometimes prone to being confused with accident. As with composition, this confusion can occur only when the "whole" is a class. In such a case, division proceeds from the class to the members, while accident proceeds from the general to the specific. Thus, if a class statement is mistaken for a general statement, division may be mistaken for accident. To avoid such a mistake, one should analyze the premises of the argument. If the premises contain a general statement, the fallacy committed is accident; but if they contain a class statement, the fallacy is division. Example:

Stanley Steamers have almost disappeared.
This car is a Stanley Steamer.
Therefore, this car has almost disappeared.

The first premise is not a general statement but a class statement. The attribute of having almost disappeared is predicated collectively. Accordingly, the fallacy committed is division, not accident. Sometimes, however, it is more difficult to decide whether a certain statement is a general or a class statement. Consider the following argument:

The average American family has 2.5 children.
The Jones family is an average American family.
Therefore, the Jones family has 2.5 children.

Is the statement "The average American family has 2.5 children" a general statement or a class statement? While at first glance it might appear to make an assertion about each and every family, the sense of the statement is clearly *not* that each and every family has 2.5 children. In other words, the attribute of having 2.5 children is not predicated distributively, so the statement is not a general statement. Upon further analysis we see that saying that the *average* family has 2.5 children is equivalent to saying that the *class* of families is reducible to 55% children and 45% adults. In other words, the first premise is really a class statement, and so, once again, the fallacy is division, not accident.

In the foregoing account of composition and division, we have presented examples of arguments that commit these fallacies in conjunction with other, structurally similar arguments that do not. Because of the structural similarity between arguments that do and do not *commit* these fallacies, composition and division are classified as fallacies of grammatical analogy.

Summary of informal fallacies

Appeal to force: Arguer threatens reader/listener.

Appeal to pity: Arguer elicits pity from reader/listener.

Appeal to the people (direct): Arguer arouses mob mentality.

Appeal to the people (indirect): Arguer appeals to reader/listener's desire for security, love, respect, etc.

Argument against the person (abusive): Arguer verbally abuses other arguer.

Argument against the person (circumstantial): Arguer shows predisposition of other arguer.

Argument against the person (*tu quoque*): Arguer presents other arguer as hypocrite.

Accident: General rule is applied to a specific case it was not intended to cover.

Straw man: Arguer distorts opponent's argument and then attacks the distorted argument.

Missing the point: Arguer draws conclusion different from that supported by premises.

Red herring: Arguer leads reader/listener off track.

Appeal to authority: Arguer cites untrustworthy authority.

Appeal to ignorance: Premises report that nothing is known or proved, and then conclusion is drawn.

Hasty generalization: Conclusion is drawn from atypical sample.

False cause: Conclusion depends on nonexistent or minor causal connection.

Slippery slope: Conclusion depends on unlikely chain reaction.

Weak analogy: Conclusion depends on defective analogy.

Begging the question: Questionably true premise is concealed.

Complex question: Multiple questions are asked as single question.

False dichotomy: "Either ... or ..." statement hides alternatives.

Suppressed evidence: Arguer ignores evidence that outweighs given evidence and requires different conclusion.

Equivocation: Conclusion depends on multiple use of term.

Amphiboly: Conclusion depends on ambiguous statement.

Composition: Attribute is wrongly transferred from parts to whole.

Division: Attribute is wrongly transferred from whole to parts.

EXERCISE 3.4

I. Identify the fallacies of presumption, ambiguity, and grammatical analogy committed by the following arguments. If no fallacy is committed, write "no fallacy."

- 1. Either we commit ourselves to massive increases in defense spending, or we will fall behind the Soviets in the ever-accelerating arms race. We certainly cannot afford to fall behind the Soviets. Therefore, we must commit ourselves to massive increases in defense spending.
2. Every sentence in this paragraph is well written. Therefore, the paragraph is well written.
3. A salesman is a human being. Therefore, a good salesman is a good human being.
- 4. James said that he saw a picture of a beautiful girl stashed in Stephen's

locker. We can only conclude that Stephen has broken the rules, because girls are not allowed in the locker room.

5. Why is it so difficult for you to reach a decision?
6. Water will quench one's thirst. Water is composed of hydrogen and oxygen. Therefore, hydrogen and oxygen will quench one's thirst.
- 7. Philosophers are highly intelligent individuals, because if they weren't highly intelligent they wouldn't be philosophers.
8. Hydrogen is combustible. Therefore, it burns.
9. Homosexuals of both sexes should never be given high-level security clearances, because these persons are always subject to being black-mailed.
- 10. If Thomas gives Marie a ring, then Thomas and Marie will be engaged. Thomas did give Marie a ring. In fact, he phoned her just the other night. Therefore, Thomas and Marie are engaged.
11. Why did you lie on the witness stand?
12. Johnson is employed by the General Services Administration, and everyone knows that the GSA is the most inefficient branch of the government. Therefore, Johnson must be an inefficient worker.
- 13. All men are mortal. Therefore, some day man will disappear from the earth.
14. Each and every cell in this carrot is 90 percent water. Therefore, the entire carrot is 90 percent water.
15. George said that he was interviewing for a job drilling oil wells in the supervisor's office. We can only conclude that the supervisor must have an awfully dirty office.
- 16. The American National 30-year whole-life insurance policy incorporates a wonderful savings feature: It builds up a cash value, just like a savings account. During the life of the policy, you are guaranteed a 3 percent interest rate on the cash balance, and if you ever need to borrow money from the policy, you can do so at an interest rate of only 10 percent. Clearly, this policy offers an excellent investment opportunity.
17. Either you marry me right now or I'll be forced to leave you and never speak to you again. I'm sure you wouldn't want me to leave you and never speak to you again. Therefore, you'll marry me right now.
- J 18. Either Taiwanese fishermen have stopped using drift nets, or they continue to kill thousands of dolphins and seals. Taiwanese fishermen have not stopped using drift nets. Therefore, they continue to kill thousands of dolphins and seals.
- 19. Switzerland is 48 percent Protestant. Heidi Gilsing is a Swiss. Therefore, Heidi Gilsing is 48 percent Protestant.
20. Picasso is the greatest artist of the twentieth century. We know that this

is so because art critics have described him in these terms. These art critics are correct in their assessment because they have a more keenly developed sense of appreciation than the average person. This is true because it takes a more keenly developed sense of appreciation to realize that Picasso is the greatest artist of the twentieth century.

21. An atomic bomb causes more damage than a conventional bomb. Therefore, during World War II more damage was done by atomic bombs than by conventional bombs.
- 22. Are you still drinking excessively?
23. The author warns about numerous computational errors in his accounting text. Therefore, he must have written it very carelessly.
24. Emeralds are seldom found in this country, so you should be careful not to misplace your emerald ring.
- 25. Of course abortion is permissible. After all, a woman has a right to do as she pleases with her own body.

II. Answer "true" or "false" to the following statements:

- 1. Arguments that commit the fallacy of begging the question have conclusions that genuinely follow from the premises.
- 7 2. The effect of begging the question is to hide the fact that a premise may not be true.
- "7" 3. The correct way of responding to a complex question is to divide the question into its component questions and answer each separately.
- ^ 4. False dichotomy always involves an "either . . . or" statement, at least implicitly.
- g 5. The fallacy of equivocation arises from a structural defect in a statement.
- ^ 6. The fallacy of amphiboly usually involves the ambiguous use of a single word.
- r 7. Amphiboly usually arises from the arguer's misinterpreting a statement made by someone else.
- / 8. The fallacy of composition always proceeds from whole to parts.
- f 9. The fallacy of division always proceeds from parts to whole.
- I 10. A general statement makes an assertion about each and every member of a class.
- 11. A class statement makes an assertion about a class as a whole.
- y 12. In the statement "Divorces are increasing," an attribute is predicated distributively.
- 13. In the statement "Waistlines are increasing," an attribute is predicated distributively.
- 14. In the fallacy of begging the question, the conclusion is irrelevant to the premises.

-<" 15. Equivocation and amphiboly are classified as fallacies of ambiguity.

III. Identify the fallacies of relevance, weak induction, presumption, ambiguity, and grammatical analogy committed by the following arguments. If no fallacy is committed, write "no fallacy."

1. In his *History of the American Civil War*, Jeffry Noland argues that the war had little to do with slavery. However, as a historian from Alabama, Noland could not possibly present an accurate account. Therefore, his arguments should be discounted.
2. Mr. Wilson said that on July 4 he went out on the veranda and watched fireworks go up in his pajamas. We conclude that Mr. Wilson must have had an exciting evening.
3. Television evangelist Jimmy Swaggart has said that sex education classes in our public schools are promoting incest. Given Swaggart's expertise in these matters, we have no alternative but to abolish these classes.
4. A crust of bread is better than nothing. Nothing is better than true love. Therefore, a crust of bread is better than true love.
5. Every member of the Delta Club is over 70 years old. Therefore, the Delta Club must be over 70 years old.
6. Of course you should eat Wheaties. Wheaties is the breakfast of champions, you know.
7. On Friday I took Virginia out to dinner. She told me that if I wasn't interested in a serious relationship, I should forget about dating her. On Saturday I took Margie to a film. When we discussed it afterward over a drink, she couldn't understand why I wasn't interested in babies. Women are all alike. All they want is a secure marriage.
8. The twenty-story Carson Building is constructed of concrete blocks. Each and every concrete block in the structure can withstand an earthquake of 9.5 on the Richter scale. Therefore, the building can withstand an earthquake of 9.5 on the Richter scale.
9. No one has ever proved that the human fetus is not completely human. Therefore, abortion is morally wrong.
- *10. California condors are practically extinct. This bird is a California condor. Therefore, this bird is practically extinct.
11. When a car breaks down so often that repairs become pointless, the car is thrown on the junk heap. Similarly, when a person becomes old and diseased, he or she should be mercifully put to death.
12. Judge Adams is going soft on dope peddlers. The other day he gave a suspended sentence to a 15-year-old girl after he heard that the girl's father had forced her to sell marijuana.
- *13. Ronald Reagan maintained a hard line against the Soviet bloc countries throughout his eight years as president. Then, shortly after he left office,

communism disappeared from most of Eastern Europe. Obviously Reagan's policy was effective.

14. This administration is not anti-German, as it has been alleged. Germany is a great country. It has contributed immensely to the world's artistic treasury. Goethe and Schiller made magnificent contributions to literature, and Bach, Beethoven, Wagner, and Brahms did the same in music.
15. Paul, it was great to see you at the party the other night. Everyone there was doing crack. Incidentally, how long have you been dealing that stuff?
- 16. Pope John Paul II has stated that artificial insemination of women is immoral. We can only conclude that this practice is indeed immoral.
17. Senator Kennedy's arguments in favor of health care for the poor and aged should be ignored. Kennedy is a do-gooder who supports this kind of legislation only to get his name in the newspapers.
18. Professor Andrews, surely I deserve a "B" in logic. I know that I have gotten "F"s on all the tests, but if you give me an "F" for my final grade, I will lose my scholarship. That will force me to drop out of school, and my poor, aged parents, who yearn to see me graduate, will be grief-stricken for the rest of their lives.
- 19. Molecules are in constant random motion. The Statue of Liberty is composed of molecules. Therefore, the Statue of Liberty is in constant random motion.
20. Either the government solicits oil leases in federally protected wilderness areas, or our country will remain subject to the whims of the Arab oil cartel. Certainly we don't want to remain subject to the whims of the Arab oil cartel. Therefore, the government must solicit oil leases in federally protected wilderness areas.
21. White sheep eat more than black sheep (because there are more of them). Therefore, this white sheep eats more than that black sheep.
- *22. If someone rents a piece of land and plants crops on it, the landlord is never permitted to come and take those crops for himself when harvest time arrives. Similarly, if couples enlist the services of a surrogate mother to provide them with a baby, the mother should never be allowed to welch on the deal and keep the baby for herself once it is born.
23. Motives and desires exert forces on people, causing them to choose one thing over another. But force is a physical quantity, governed by the laws of physics. Therefore, human choices are governed by the laws of physics.
24. Each and every brick in the completely brick-faced Wainright Building has a reddish brown color. Therefore, the Wainright Building has a reddish brown color.
25. Humanitarian groups have argued recently about the need for housing for the poor and homeless. Unfortunately, these high-density housing

projects have been tried in the past and have failed. In no time they turn into ghettos with astronomical rates of crime and delinquency. Chicago's Cabrini-Green is a prime example. Clearly, these humanitarian arguments are not what they seem.

26. Pauline said that after she had removed her new mink coat from the shipping carton she threw it into the trash. We conclude that Pauline has no appreciation for fine furs.
27. We know that induction will provide dependable results in the future because it has always worked in the past. Whatever has consistently worked in the past will continue to work in the future, and we know that this is true because it has been established by induction.
- *28. What goes up must come down. The price of gold has been going up for months. Therefore, it will surely come down soon.
29. Mr. Prime Minister, I am certain you will want to release the members of our National Liberation Group whom you currently hold in prison. After all, I'm sure you will want to avoid having car bombs go off in the centers of your most heavily populated cities.
30. Are you in favor of the ruinous economic policy of the Democratic Platform Committee?
- *31. The nuclear freeze people argue in favor of an immediate halt to nuclear arms production. But the point is that we have always had wars. Even those most civilized of peoples, the ancient Greeks, fought wars. Why, the Peloponnesian War raged for a period of 27 years. Unfortunately, civilization will never be entirely free of war. Clearly, the nuclear freeze people are deluding themselves.
32. The Japanese argue that our import restrictions on steel, autos, and textiles are protectionist and threaten a trade war. What hypocrisy! The Japanese use hundreds of covert schemes to block the import of dozens of products, including supercomputers, rice, beef, lumber, and citrus fruits.
33. The farmers of our state have asked that we introduce legislation to provide subsidies for soybeans. Unfortunately, we will have to turn down their request. If we give subsidies to the soybean farmers, then the corn and wheat growers will ask for the same thing. Then it will be the cotton growers, citrus growers, truck farmers, and cattle raisers. In the end, the cost will be astronomical.
- *34. The travel brochure states that walking up O'Connell Street, the statue of Parnell comes into view. Apparently that statue has no trouble getting around.
35. A line is composed of points. Points have no length. Therefore, a line has no length.
36. Professor Glazebrooks' theory about the origin of the Martian craters is undoubtedly true. Rudolph Orkin, the great concert pianist, announced his support of the theory in this morning's newspaper.