

# Chapter Five - Evaluating Arguments

“Negative logic [i.e., that which points out weaknesses in theory or errors in practice without establishing positive truths]...would indeed be poor enough as an ultimate result, but as a means to attaining any positive knowledge or conviction worthy of the name it cannot be valued too highly.”  
--John Stuart Mill

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## 1. Two models for evaluating arguments

In the previous chapter, we noted that logicians distinguish two kinds of arguments, inductive and deductive. Logic is also often divided into two types, *formal* and *informal*. Each uses a distinct method of analyzing and evaluating arguments. *Informal logic* is often identified with *critical thinking*, and focuses on the evaluation of arguments in natural language. *Formal logic*, on the other hand, evaluates *argument forms* presented in symbols for statements, parts of statements, connectives, and argument indicators. In this chapter, we will introduce a formal method and an informal method for evaluating arguments. The informal method may be used to evaluate any argument. The formal method is useful primarily to evaluate the *validity* of deductive argument *forms*. Most of our attention will be on the informal method of argument evaluation, but we will begin this chapter with a brief introduction to the formal evaluation of deductive arguments.

## 2. Deductive validity

In the previous chapter, we defined deductive reasoning as reasoning that starts with some statement or set of statements (**the premises**) and asserts that some other statement follows *necessarily* from those premises. Put another way, a deductive argument is one whose premises, *if true*, are sufficient to guarantee the truth of their conclusion. Determining whether the *premises* of a deductive argument are *true* is a different task from determining whether something follows with necessity from a statement or set of statements. The latter task is concerned with the *validity* of the reasoning.

A deductive argument is **valid** if the truth of its premises is sufficient to guarantee the truth of its conclusion. The argument “*All men are mortal and Socrates is a man, so Socrates is mortal*” is an example of a **valid deductive argument**. The truth of the statement “All men are mortal and Socrates is a man” would be sufficient to guarantee the truth of the conclusion, “Socrates is mortal.”

A deductive argument is **invalid** if the truth of its premises is *not* sufficient to guarantee the truth of its conclusion. For example, the following deductive argument is *invalid*:

*Some men are tall. Socrates is a man. So, it necessarily follows that Socrates is tall.*

What makes the argument *deductive* is the claim that the conclusion necessarily follows from the premises. What makes it *invalid* is the fact that it is possible for the premises to be true and the conclusion to be false: the truth of the premises does not guarantee the truth of this conclusion.

Here is another example of a *valid* deductive argument:

*All human beings are mortal. The President of the United States is a human being. So, the President of the United States is mortal.*

To say that this argument is **valid** is to say that *the conclusion of this argument follows necessarily from its premises*. To say that the conclusion of this argument follows necessarily from its premises is to say that *if these premises are true, then this conclusion is necessarily true, too*. To put it another way, it would be a **contradiction** to say that *it is true that all human beings are mortal and the President is a human being*, but it is false that *the President is mortal*. **Contradictory statements are statements that cannot both be true or both be false**: if two statements contradict each other, then one is true and the other is false.

Here is another example of an *invalid* deductive argument:

*If Jon caught a fish, then we're having fish for dinner. Jon didn't catch a fish. So we're not having fish for dinner.*

To say that this conclusion does not follow necessarily from its premises, and that this argument is therefore **invalid**, is to say that it is *not a contradiction* to say it is true that *if Jon caught a fish, then we're having fish for dinner* and *Jon didn't catch a fish*, but it is false that *we're not having fish for dinner*. In other words, it could still be true that we are having fish for dinner even if it is true that Jon did not catch a fish. We can always buy some fish for dinner from the local fish dealer. (Note that the first premise does not say that we are *not* having fish if Jon does not catch a fish. It only makes a claim as to what we are having for dinner if he *does* catch a fish; it makes no claim about dinner if he does not catch one.)

Here is another example of a **valid deductive argument**:

*If Jon caught a fish, then we're having fish for dinner. Jon caught a fish. So, we're having fish for dinner.*

If the premises of this argument are true, the conclusion must be true, too. The truth of these premises would be sufficient to guarantee the truth of the conclusion.

## 2.1 Formal logic and some valid deductive argument forms

Formal logic generally focuses on the evaluation of the validity of various deductive argument *forms*. We can best see the form of an argument by presenting it in symbols. (**Formal logic** is often referred to as **symbolic logic**.) Different tests of validity have been devised for several distinct types of deductive argument forms. One type of such evaluation uses **rules of inference** to evaluate arguments put into a particular type of symbolic form. In the next section, you will be introduced to four rules of inference and be given a brief introduction to a formal, symbolic logic, known as **sentential logic**. It is called sentential logic because the sentence (and its truth or falsity) is taken as the basic component of an argument. (Other logics, such as **predicate logic**, evaluate sentences and arguments in terms of the *components* of sentences, such as subjects and predicates.)



**If p then q.**  
**p.** (modus ponens)  
**So, q.**

A complete symbolic representation of modus ponens would be

$p \supset q$   
 $p \therefore q$

Let  $p$  = 'It will rain' and let  $q$  = 'Jones will bring an umbrella.' The following argument will be valid:

**If it will rain then Jones will bring an umbrella.**  
**It will rain.**  
**So, Jones will bring an umbrella.**

If these premises are true, then this conclusion must be true, too. Again, notice that you do not have to know whether the premises are true to know that the argument is valid, i.e., to know that *if* the premises were true it would be necessary that the conclusion be true. Also, notice that the argument form of modus ponens is

Premise 1 is a conditional statement.  
 Premise 2 states the antecedent of the conditional in premise 1.  
 The conclusion states the consequent of the conditional in premise 1.

A third valid form of argument is **modus tollens**.

**If p then q.**  
**Not q.** (modus tollens)  
**So, not p.**

(You should be able to figure out what the symbolic representation of modus tollens would look like.)

Let  $p$  = 'The President is honest' and let  $q$  = 'He is telling the truth.' The following argument will be valid:

**If the President is honest then he is telling the truth.**  
**He is not telling the truth.**  
**So, the President is not honest.**

If these premises are true, then this conclusion must be true, too. The form of modus tollens is:

Premise 1 is a conditional statement.  
 Premise 2 denies the consequent of the conditional statement in premise 1.  
 The conclusion is the denial of the antecedent of the conditional statement in premise 1.

We will consider one more valid argument form: the **hypothetical syllogism**.



the premises of the invalid forms could be true, but their conclusions could be false. In a valid deductive argument, however, the conclusion follows necessarily from the premises: it is not possible for the premises to be true and the conclusion false in a valid deductive argument. *It is possible, however, for an invalid argument to have true premises and a true conclusion.* Remember: **validity** refers to the **inference** of a conclusion from premises, not to the **truth** of the premises or conclusion.

It may still not be clear to you how the premises could be true and the conclusion false in the invalid arguments just presented. It may help to remember that the conditional statement asserts that the antecedent provides a sufficient reason for the consequent. Thus, the conditional *if interest rates are down then the economy is in recession* asserts that the interest rates being down would be a sufficient reason for believing that the economy is in a recession. It does not say any more than that. It does not say, for instance, that interest rates *are* down. It does not say anything about the economy for the condition of interest rates being *up*. You might think that the statement logically implies that if interest rates are *not* up then the economy is *not* in a recession, but it does not. It does not say that *only if* interest rates are down are we in a recession. It leaves it open as to whether there might be other conditions besides interest rates being down which might be sufficient to warrant believing that there is a recession.

Likewise for the other example of affirming the consequent. You might think that the conditional *if Jones is married to Smith then Smith is an attorney* implies that if Jones is *not* married to Smith then Smith is *not* an attorney. It doesn't. The conditional asserts that Jones being married to Smith is sufficient to warrant believing that Smith is an attorney. It does not say that *only if* Jones is married to Smith are we warranted in believing that Smith is an attorney. It does not say anything about Smith's occupation should it be true that Jones is *not* married to Smith. It may well be true that if Jones is married to Smith then Smith is an attorney. (Maybe Jones only marries attorneys.) However, if Jones is not married to Smith, it might still be true that Smith is an attorney.

### 2.3.2 Denying the Antecedent

Again, compare the pairs of arguments below. One pair is in the valid form of **modus tollens**, while the other is in the invalid form of **denying the antecedent**. Study the invalid forms carefully and notice how the premises of the invalid forms could be true, but their conclusions could be false.

1. *If interest rates are down, then the economy is in a recession. The economy is not in a recession. So, interest rates are not down.*

2. *If Jones is married to Smith then Smith is an attorney. Smith is not an attorney. So, Jones is not married to Smith.*

**modus tollens  
(valid)**

1. *If interest rates are down, then the economy is in a recession. Interest rates are not down. So, the economy is not in a recession.*

2. *If Jones is married to Smith then Smith is an attorney. Jones is not married to Smith. So, Smith is not an attorney.*

**denying the antecedent  
(invalid)**

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## Exercises 5-1

**A. For each of the following arguments, identify the argument form as one of those valid or invalid forms mentioned above.**

- \* 1. If this house is a solar home then it is expensive. This house is not expensive, so it is not a solar home.
- 2. If this house is a solar home, then it is expensive. It is expensive. So, this house is a solar home.
- \* 3. If this house is a solar home, then it is expensive. It is a solar home. So, it is expensive.
- 4. If Jones stole the sign then he should be prosecuted. He should not be prosecuted. So, Jones did not steal the sign.
- 5. If Jones stole the sign then he should be prosecuted. Jones did not steal the sign. So, he should not be prosecuted.
- \*6. If Jones stole the sign then he should be prosecuted. He should be prosecuted. So, Jones stole the sign.
- 7. If Jones stole the sign then he should be prosecuted. Jones stole the sign. So, he should be prosecuted.
- 8. Either the Republicans will win the senate election or the ambassador will resign. The Republicans will not win the senate election. So, the ambassador will resign.
- 9. If Rosetta wins an academy award then MGM will reap a windfall in profits. If MGM will reap a windfall in profits then we should invest in MGM. So, if Rosetta wins an academy award, then we should invest in MGM.
- 10. If the hero of this myth is superhuman then this myth is a religious myth. The hero of this myth is a superhuman hero. So, this myth is a religious myth.
- 11. If the hero of this myth is superhuman then this myth is a religious myth. This myth is not a religious myth. So, the hero of this myth is not a superhuman.
- \* 12. If the hero of this myth is superhuman then this myth is a religious myth. The hero of this myth is not a superhuman. So, this myth is not a religious myth.
- 13. If the hero of this myth is a superhuman then this myth is a religious myth. This myth is a religious myth. So, the hero of this myth is a superhuman.
- \* 14. If this myth involves superhuman struggles against evil, then this myth is a religious myth. If this myth is a religious myth, then its hero is superhuman. So, if this myth involves superhuman struggles against evil, its hero is superhuman.
- 15. Either the elephant has escaped from its cage or the zookeeper is sleeping on the job. The zookeeper is not sleeping on the job. So, the elephant has escaped from its cage.
- 16. If there is evil in the universe, then the maker of the universe is evil. There is evil in the universe. So, the maker of the universe is evil.
- 17. If the Creator of the Universe is evil, then there is evil in Creation. The Creator of the Universe is not evil. So, there is no evil in Creation.
- 18. If there is evil in the universe, then the creator is evil. The creator is not evil. So, it is not true that there is evil in the universe.
- \* 19. Either France will go to war with Denmark or Denmark will invade Albania. France will not go to war with Denmark. So, Denmark will invade Albania.
- 20. If France went to war with Denmark then Croatia went to war with Hungary. If Croatia went to war with Hungary then Italy remained neutral. So, if France went to war with Denmark, then Italy remained neutral.

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**B. Each of the following arguments is incomplete. Such arguments are called *enthymemes*. Some leave the conclusion unstated. Some omit stating a premise. Fit each argument into one of the four *valid* argument forms discussed above and determine the unstated premise or conclusion.**

- \* 1. If he was drunk then he's responsible for the accident. And, he was drunk.
- 2. If all human beings are naturally good then God is a French wine merchant. And, God is not a French wine merchant.
- 3. Either Jones is lying or Fermini really does visit the sick. But, Fermini does not visit the sick.
- \* 4. She didn't bring her umbrella, so it's not going to rain.
- 5. Either inflation will cease or the sun will stop shining. And, the sun will not stop shining.
- 6. If an institution allows the people it serves to participate in its governance, then it is a democratic institution. This school is not a democratic institution.
- \* 7. If everything in the universe is made up of atomic particles, the soul must be made up of atomic particles. And everything in the universe is made up of atomic particles.
- 8. If all is one, then individuals are non-existent. But, individuals are not non-existent.
- 9. Either the universe had a beginning or it has existed forever. It's impossible for something to exist forever. So....

\* 10. If I buy a car, then I'll be broke. If I am broke, then it's bye-bye education. So....

### 3. Critical Thinking (Informal Logic) and the evaluation of arguments

The model of argument evaluation for critical thinking is called an *informal* model, since it will *not* be concerned with *formal* tests of validity. This model asks whether assumptions are warranted, premises are relevant and sufficient, and whether relevant information has been omitted. We will use this model for all arguments, deductive as well as inductive.

Since inductive arguments consist of all those arguments that do not claim to prove their conclusions with necessity, the range of arguments that can be called inductive is very large indeed. More importantly, evaluating an argument that purports to provide reasonable grounds for its conclusion is quite different from evaluating the validity of deductive forms. Furthermore, for the purposes of evaluating the arguments of daily life, including those in our courtrooms and scientific journals, reducing arguments to a deductive model is an unnecessary, and, in some cases, a misleading exercise. It is unnecessary because a critical thinker will be able to evaluate the connection between statements equally well with or without training in formal logic. It is misleading in some cases because one is easily deluded into thinking that one's premises are absolutely certain and thus one's necessary conclusion is true when in fact it is just as questionable as one's premises. For example, it follows necessarily that *abortion is murder* from the premises *It is murder to kill a human being unjustly* **and** *abortion is the unjustified killing of a human being*. However, one need not be an expert in syllogisms or any other form of deductive argument to see that the statement *abortion is the unjustified killing of a human being* is a controversial assumption. Thus, any conclusion drawn from it is also controversial.

Using an informal model for argument evaluation forces us to focus our attention on the reasonableness, relevance, and sufficiency of the premises in an argument. Since the purpose of an inductive argument is to provide reasonable grounds for its conclusion, it is essential that the premises of an inductive argument be reasonable themselves. Of course, a sound deductive argument must not only be valid but also be based on true premises. The emphasis on validity, however, restricts the utility of such arguments to those cases where the truth of the premises is beyond question. Such premises, therefore, must be either self-evident or definitions. The perfect model of deductive reasoning would be Euclidean geometry with its deductions from definitions, axioms, and postulates. Claims about the things that matter in everyday life--in religion, in politics, in art, in law, in science, etc. are rarely beyond question. While there is little room for argument over the definition of a triangle or a circle, there will always be disagreement over definitions of such terms as 'just' and 'unjust', 'reasonable' and 'unreasonable,' 'human being,' 'honorable', etc.

This is not to say that the study of formal logic is useless, or even of less value than the study of informal logic. Expertise in deductive validity evaluation is essential in mathematics and all forms of hypothetical and conditional reasoning, including, but not limited to science and computer programming. (Hypothetical reasoning is reasoning which uses *hypotheses* as its premises. It does not assume its premises are true. Hypothetical reasoning asks *what follows if we assume such and such is true?* For example, *what follows if galaxies are moving away from each other at a constant rate?* Conditional reasoning in computer programming presents a set of conditions that must be met before some procedure or calculation is executed. The instructions the programmer gives to the computer may be in the form of elaborate deductive inferences from complex conditional statements.)

For the arguments of everyday life, however, the informal model will prove more valuable. It will prove more valuable if only for the simple reason that we can easily apply it to *all* arguments, even deductive ones. Deductive models of argument evaluation, with their focus on validity of form, cannot be applied to natural language arguments without an elaborate and sometimes questionable process of



translating the natural language argument according to some deductive model. For the student of critical thinking this simply means that *you do not have to identify arguments as deductive or inductive to evaluate them*. Another way of putting this is to say that the distinction between inductive and deductive arguments does not matter, *unless testing the validity of deductive arguments is one's sole or main concern*.

#### 4. Evaluating argumentative reasons and reasoning

The *reasons* are the *premises* of the argument. The *basic* reasons or premises are the *assumptions* of the argument. No reasons are given in support of an assumption. We determine the *reasonableness* of the assumptions of an argument by consulting our knowledge and experience, the source of the information, and the kind of claim being made. We determine the *soundness* or *validity* of the reasoning of the argument by deciding whether the premises provide a sufficient reason to accept the conclusion. Premises, even if warranted, will be insufficient to support a conclusion if they are *weak* or *irrelevant*. That is, the reasoning of the argument will be unsound either because of the *quantity* of the evidence or because of the *quality* of the evidence. Either the evidence will be the right kind of stuff (relevant) but there won't be enough of it to justify accepting the conclusion, or the evidence will be the wrong sort of stuff (be irrelevant).

So, evaluating an argument involves more than just deciding if the assumptions are warranted or not. *To evaluate the argument is to evaluate the relationship between the premises of the argument and their conclusion*. The premises must be *relevant* to proving their conclusion and they must be *sufficient*.

In addition, a good argument must be *complete*: it must present *all the relevant evidence*. Arguers may give their arguments the semblance of a good argument by being very selective in the use of evidence. They omit or suppress relevant information. Thus, an argument based on true, relevant, and apparently sufficient data might in fact be an unsound argument. For example, a researcher on extrasensory perception might provide a very strong case for his position that ESP exists by providing only the data that supports his claim and suppressing the data that is not supportive. He collects the hits and ignores the misses.

Finally, a good argument is called a *valid*, or a *strong*, or a *sound* argument. The Latin *validus* means *strong*. As we have already noted above in our presentation of deductive arguments, the term *valid* is used to designate a deductive argument whose conclusion follows necessarily from its premises. Because deductive validity is distinct from the truth of statements (remember: valid deductive arguments can have true *or* false premises), formal logicians often insist that the term *valid* not be used when talking about *statements*. *Statements* are *true* or *false*; *arguments* are *valid* or *invalid*. Such restrictive use of terms avoids the confusion of having to say of some arguments that they are both valid (have good reasoning) and invalid (give bad reasons). However, the term *valid* is quite often and quite rightly used in ordinary English to describe statements and to describe good inductive reasoning. When applied to statements, *valid* means *warranted*. When applied to inductive reasoning, *valid* means *sound* or *justified*. To avoid confusion, however, we will use 'valid' to refer to deductive arguments whose conclusions follow necessarily from their premises. We will use the term 'sound' to refer to inductive arguments whose premises are adequate to support their conclusion, as well as to valid deductive arguments with warranted assumptions.

To sum up: A good argument is

##### 1. based on clear and accurate (i.e., warranted) assumptions

2. provides relevant and sufficient support for its conclusion, and
3. does not omit relevant evidence.

We will begin at the beginning, with the question of what makes an assumption warranted.

#### 4.1 Warranted assumptions

A sound argument is based on warranted assumptions. **An assumption is a claim that is taken for granted. A warranted assumption is an assumption that is either known to be true or is reasonable to accept without requiring an argument to support it.**

Since a good argument must be based on true or reasonable assumptions, it follows that arguments based upon *false* or *questionable* assumptions are not good arguments. One of the most fundamental criticisms that can be made of an argument is that the argument is *unsound because based on false or questionable assumptions*. A *questionable assumption* is one that is controversial or debatable. Since most strongly stated opinions (probability, necessity, and actuality claims) are debatable, they should be argued for, not given or accepted as assumptions in an argument. Questionable assumptions can be made about facts as well, however.

The assumptions of an argument are the foundations that support the main conclusion of the argument. If the foundation is weak, the conclusion will not be adequately supported. Thus, probably the most basic question we can ask in evaluating an argument is *Are the assumptions on which the conclusion is based warranted?*

However, how do we determine which assumptions of an argument are warranted and which ones are not? It should be obvious that many, if not most, statements can be known to be true or false only by studying the particular field in which the statements are made. If you want to know whether a statement about law is true, you have to study the field of law; if you want to know whether a particular statement about biology is true, you must study biology. Many of the claims you will run across as you read arguments--and, many of the claims you will make in your own arguments--will come from experts and authorities in fields you are not knowledgeable in. We discussed the importance of knowing how to handle claims intelligently in fields beyond your own expertise in chapter three. We determine whether or not assumptions are warranted based on our knowledge, experience, the quality of the source of our information and the type of claim made. If we are unable to determine whether the premises of an argument are warranted, we may still be able to go on and evaluate the *reasoning* of the argument. That is, we can often determine the relevance and sufficiency of evidence *even if we do not know whether the premises are true*. We may conclude our evaluation of an argument sometimes by saying that an argument would be a good one *if* its premises are true. Or, we may conclude that an argument is not a good one even if its premises turn out to be true.

Even if we find that we cannot accept the premises of an argument, we might still find the argument instructive. The argument may clarify concepts we are fuzzy on, or introduce new material we were ignorant of, or make us aware of material that should be included in an argument on the topic at hand. The argument may serve as a model of reasoning; for, the arguer whose premises we cannot accept might be very adept at drawing conclusions from those premises.

Finally, do not consider an assumption unwarranted simply because you do not know whether it is true. Your lack of knowledge does not make a claim questionable.

## 4.2 Fallacies of assumption

A sound argument is free from fallacies. Fallacies are errors, mistakes, or weaknesses regarding the reasons or reasoning in an argument. There are many ways to classify fallacies, and some logicians have made an art form out of naming fallacies. However, there is little usefulness in burdening ourselves with a long list of names of fallacies, especially if the list includes many obsolete Latin expressions.

There are several fallacies that are based on false or questionable assumptions.

### 4.2.1 Begging the question

When an argument assumes what it should be proving, it *begs the question*. If premises entail, include, or otherwise presuppose the conclusion, the argument begs the question. For example: *Abortion is murder because abortion is the unjustified killing of a human being*. The argument assumes that abortion is murder when it assumes that abortion is the unjustified killing of a human being. For, the unjustified killing of a human being *is* murder. This argument assumes not only that a fetus is a human being, but also that every killing of every fetus is unjustified. To prove that abortion is murder, the argument must provide adequate support for both of these claims.

A common form of begging the question is to use a questionable general statement as a premise to support a conclusion that follows from the premise. E.g., *The government should not sell oil exploration leases to drill off the California coast because no ocean area should be dug up to look for oil*. The argument assumes that the government should not sell oil exploration leases to drill off the California coast when it assumes that *no* ocean area should be dug up to look for oil.

*Begging the question* has several forms. One form of begging the question is called *arguing in a circle*. When one uses a premise to support a conclusion which is then used to support the original premise one argues in a circle. E.g., *You can trust me. Ask Richard about me. He's an honest man. He'll tell you that you can trust me*. Or, *God exists because it says so in the Bible and the Bible is the word of God*.

Another form of begging the question is called the *loaded question*. A question is loaded if directly answering it traps one into implying that the truth or falsity of some claim may be taken for granted when, in fact, the truth or falsity of the claim is the issue at hand. E.g., (said to a postal clerk): *Why do you overcharge for such inferior service?* Two assumptions are made here: one, that the post office overcharges, and two, that the service is inferior. Imagine trying to answer this question directly: "well, the reason we overcharge for our inferior service is . . . ."

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### Examples of begging the question

--"How did you manage to escape undetected from the scene of the crime?" - - asked of someone when the issue to be determined is whether she was in fact ever at the scene of the crime. (loaded question)

--“The United States is the freest country in the world, because here alone can you find citizens who are truly freer than anywhere else.”

--“When are you going to get married?” -- asked of someone who has not given the slightest hint that she intends to get married. (loaded question)

--Prisons are inefficient because they do not rehabilitate. Prisons do not rehabilitate because they are not efficient. (arguing in a circle)

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### 4.2.2 Slippery Slope

The **slippery slope fallacy** occurs when one asserts, *without providing any evidence to support the assertion*, that a chain of horrible events will follow the taking or not taking of some action. In other words, the argument *assumes* that the horrible chain of events will occur, but offers no proof. This fallacy is usually combined with an *appeal to fear*. The more horrible the chain of events, the better the chances of this fallacy working on uncritical minds.

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#### Examples of the slippery slope fallacy

They’re at it again. The regulators want to control our lives. Today, it’s smoking. Tomorrow will it be our right to free speech? Our right to read what we want? Where will it stop? Eventually, the regulators will try to control everything. We’ll have no freedom, then. So, vote NO on proposition 10. Don’t let them regulate smoking today or they’ll be back tomorrow and tomorrow and tomorrow....

I have to oppose handgun registration. Regulators won’t stop at that. They’ll be back for rifles and shotguns next. Then, they won’t be satisfied with registration; they’ll have to confiscate all our guns. Only criminals, soldiers, and cops will have guns, and when that war begins, I don’t want to be around.

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### 4.2.3 The gambler’s fallacy

The gambler’s fallacy is to assume that the odds for something with a fixed probability increase or decrease depending upon recent occurrences. This assumption is false: fixed probabilities do not change. The odds of red coming up in roulette are the same even if black has come up ten times in a row. The odds of heads coming up on a coin toss are the same each time, even if tails has come up twenty times in a row. (This assumes that the game is not fixed and the coin is not loaded, of course.) The odds of any given number being selected in a state lottery do not change from week to week. Therefore, picking numbers that have not come up for a long time, or numbers that have recently come up frequently, does not increase your chances of winning.

## 4.3 Relevant premises

In addition to being based on warranted assumptions, a sound argument must have premises that are **relevant** to supporting its conclusion. To say that a premise is relevant to proving a conclusion means that it is *appropriate* to use the premise. It means that the premise is *pertinent* or *germane* to the argument.

Likewise, to say that a premise is **irrelevant** to proving a conclusion is to say that it is *inappropriate* to use it. What makes a premise relevant or irrelevant depends upon the argument. No claim is relevant or irrelevant in itself. **Relevance of premises is always relative to proving or supporting the conclusion.** Whether or not a particular claim is relevant to a conclusion depends on the subject matter and on exactly what the argument is about.

*Relevance* should not be confused with *significance*. Two pieces of evidence may both be relevant to a particular position but one may be more significant than the other. For example, it may be true that a killer wore an expensive set of gloves and that he left a unique and peculiar shaped footprint at the scene of the crime. The fact that the killer wore expensive gloves is relevant but relatively insignificant, since many people own expensive gloves. But the fact that the accused's footprint matches exactly the unique and peculiar footprint taken from the scene of the crime is not only relevant but very significant.

There is, however, very little specific advice to give regarding the evaluation of the relevance of premises. The best general advice is to *avoid the common fallacies of relevance*, the topic of the next section.

## 4.4 Fallacies of relevance

Certain types of *irrelevant* appeals often make their way into arguments. Some types of irrelevant appeals occur so frequently that they have been given names.

### 4.4.1 Ad hominem

One of the most common ways of trying to cast doubt on a claim or position which has been argued for by another is to criticize the *person* making the argument rather than the argument itself. The ***ad hominem*** fallacy is an *irrelevant assertion about a person* who has taken a position or made an argument with which one disagrees. The assertion about the arguer is made in the belief or hope that it will be taken as relevant evidence against the *position* one opposes. Rather than criticize a person's premises or reasoning, *an ad hominem* asserts something about the person's character, associations, occupation, hobbies, motives, mental health, likes or dislikes, etc.

The fallacy in the *ad hominem* is on the *irrelevant* nature of the appeal made, not its *falsity*. If what is said about the person is false, in addition to being irrelevant, two fallacies are committed, *false premise* and *irrelevant premise*. Not only do many people make *ad hominem* attacks, many are seduced by them. The appeal of the *ad hominem* is that it puts bad doctrines (i.e., those you disagree with) into the mouths of bad people. So, one can feel that one's opponents are evil as well as stupid. Attacking a person, rather than the person's position or argument, is usually easier as well as psychologically more satisfying to the simple-minded who divide the world into two classes of people--those who agree with them and are therefore good and right, and those who disagree with them and are therefore evil and wrong.

The *ad hominem* is also attractive to the lazy who would rather *ridicule* or belittle a person than seriously examine an opposing viewpoint. The *ad hominem* is a tactic of the clever manipulator of crowds, the experienced demagogue who knows how to play on the emotions of people and seduce them into transferring their attitude of disapproval for a person to disagreement with that person's position.

### Examples of ad hominem appeals

--"Nietzsche's criticisms of Christianity are completely false; after all, he was insane!"

--"You shouldn't believe a word my opponent says about me since he is just bitter because I'm ahead in the polls."

--"Of course the American Dental Association advises us to have our teeth checked twice a year. Their members stand to profit quite a bit from this advice. Don't listen to them."

--"Reagan's economic policies are absurd; but what should we expect from an actor."

--"We know communism is an erroneous doctrine, since the only people who adhere to it are wicked and evil."

--"Samson's views on strategic air command are wrong; what would a former employee of Disneyworld know about such matters?"

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## 4.4.2 Poisoning the well

A fallacy closely related to the *ad hominem* is the fallacy known as *poisoning the well*. This occurs when a person tries to prejudice the atmosphere against an opponent or an opposing position, thereby making it nearly impossible for the opposition to get a fair hearing. For example, "the Communist Party supports the proposed tax increase, so we can be sure it is a bad idea." Or, "Now that we've heard from the thoughtful group, is there anything any of you *bearded anarchists* have to say?" Or, "Anyone who opposes the President's deployment of troops to Saudi Arabia is a *traitor*! They should be put in a cell with Hanoi Jane Fonda. But, this is America, so go ahead and have your say." Or, "Before you begin spouting your *liberal propaganda*, let me just say..." Or, "This just in from the *femi-nazis*." Or, "And here's one from the *animal rights wackos*."

## 4.4.3 Irrelevant Appeal to Authority

An *irrelevant appeal to authority* is an attempt to get a controversial claim accepted on the basis of its being supported by an admirable or respectable person. For example, *Since the Pope thinks that capital punishment is morally justified, it must be morally justified.* Or, *Einstein believed in God, so God must exist.*

**"The devil can cite Scripture for his purpose."** --William Shakespeare (*Antonio, The Merchant of Venice*)

Perhaps the most frequently appealed to traditional authority is **common sense**, that characteristic which most of us feel is sufficient in ourselves but deficient in others.

Unfortunately, common sense often has little of sense in it--which may account for its being so common! Appeals to common sense and to other forms of **traditional wisdom** or authority are often made in the misguided belief that such appeals will (a)

convince like-minded uncritical thinkers, (b) elicit agreement because of shared emotional attachments and attitudes rather than because of reasonable evidence, and (c) allow one to avoid having to provide any evidence for one's conclusions.

On the other hand, appeals to traditional authority may be made either to exemplify a point or to establish a common ground--a basis for further discussion and communication--and, as such, amount to a *profession of faith*--a way of saying 'this is the foundation upon which I stand.' In either case, **the appeal to traditional wisdom or authority is irrelevant to providing logical grounds for accepting a conclusion.**

Appealing to persons we admire or respect, rather than to evidence or arguments, is seductive since it lets us be lazy while at the same time uniting us with attractive persons. Clever manipulators of the masses use appeals to authority knowing that most people would rather assent to a proposition they don't understand than admit ignorance. People are intimidated by experts and feel humble next to them. Clever speakers, then, know how to seduce us by working on our insecurity and our desire to be associated with appealing persons.

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### Examples of irrelevant appeals to authority

--"Your plan to do this research on the humpback whale is ridiculous; the idea has been rejected by both our president and personnel manager."

--"If the experts at General Electric who build nuclear power plants say they are safe, then they must be pretty safe after all."

--"Norman Mailer's a great writer, and if he thinks that Virgil's *Aeneid* is an excellent book, then it must be."

--"Man is not the aggressive, cruel animal he has been made out to be. Professor Leakey has found new evidence to disprove this erroneous view that human nature is violent."

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### 4.4.4 Ad populum

The *ad populum* fallacy is the appeal to the **popularity** of a claim as a reason for accepting the claim. The number of people who believe a claim is *irrelevant* to the truth of the claim. Fifty million people *can* be wrong. In fact, millions of people have been wrong about many things: that the Earth is flat, for example, and that the stars are lights shining through holes in the sky. The ad populum fallacy is also referred to as the *bandwagon fallacy*, *the appeal to the mob*, *the democratic fallacy*, and *the appeal to popularity*.

The ad populum fallacy is seductive because it appeals to our desire to belong and to conform, to our desire for security and safety. It is a common appeal in advertising and politics. A clever manipulator of the masses will try to seduce the simple-minded, who blithely assume that the majority is always right. Also seduced by this appeal will be the insecure, who will be made to feel guilty if they oppose the majority and who will be made to feel strong by joining forces with large numbers of other uncritical thinkers.

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### Examples of ad populum appeals

--“TRY NEW, IMPROVED [fill in the blank with the name of any one of innumerable commercial products]. EVERYBODY’S USING IT!

--“God must exist, since every culture has some sort of belief in a higher being.”

--“The *Bold and the Listless* must be a great book. It’s been on the best seller list for 8 weeks.”

--“Arnold Killembetter’s movie, *True Garbage*, is the greatest movie of all time. No movie has made as much money as it did.”

--“The fact that the majority of our citizens support the death penalty proves that it is morally right.”

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#### 4.4.5 The argument from ignorance

The fallacy of the *argument from ignorance* occurs when one tries to argue that *something is true because it has not been proved false* or vice-versa. This fallacy might be better called ‘the fallacy from lack of sufficient evidence to the contrary.’ For, the fallacy does not involve claiming that any person is ignorant. Rather, its irrelevance is based on the fact that a claim’s falsity must be shown by refuting evidence to the claim, not by pointing out that a proponent of the claim hasn’t proved it is true. I cannot prove that Einstein’s theory of relativity is true, but that is hardly relevant to the truth or falsity of the theory. I cannot prove it is false that aliens have landed on Earth and are mutilating cattle and kidnapping people for experimentation. However, my inability to disprove the claim does not have any relevance to the issue of whether the claim is true. I cannot explain how unconscious matter can give rise to consciousness, but that is irrelevant to proving that consciousness cannot be material.

If you think of **ignorance** as being **without knowledge**, the name of this fallacy may not be as misleading as it would otherwise be. The fallacy occurs when reasoning from the lack of knowledge that a position is true to the conclusion that an opposing position is therefore true. The argument from ignorance seems to be more seductive when it can play upon **wishful thinking**. People who want to believe in angels, for example, may be more prone to think that the lack of evidence to the contrary of their desired belief is somehow relevant to supporting it.

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#### Examples of argument from ignorance

--“God must exist, since no one has yet been able to prove that God doesn’t exist.”

--“ESP must be a fraud, since no one has yet proved it is real.”

--“There must be life on Mars; after all, no one has been able to prove there isn’t.”

--“I must be innocent; since, so far no one has been able to prove that I’m guilty.”

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#### 4.4.6 Irrelevant comparisons



Many advertisements make irrelevant comparisons, e.g., comparing a relatively inexpensive single-function Minolta copier to an expensive, multi-function Xerox machine. True, both make good copies--and the ad tries to get the consumer to focus on this fact--but the Xerox machine performs a multitude of tasks (such as collating, stapling, back-to-back copying, etc.) which the Minolta cannot do. These differences are ignored in the ad. Thus, even though the ad is correct in stating that copies made on the Minolta will be about equal in quality to those on the Xerox, but much cheaper per copy, the comparison is irrelevant. To be relevant, the Minolta should be compared to an *equivalent* Xerox machine.

Another ad that uses an irrelevant comparison is the one that compares two brands of paper towels by dropping an egg and trying to catch it with the paper towel. Since paper towels generally are not used to catch eggs, the fact that one is better than the other at this task is irrelevant.

Articles on the high cost of going to college also often commit the fallacy of *irrelevant comparison*. It is irrelevant, for example, to compare the cost of going to a public community college with the cost of going to a major private university. Room and board costs are not included in the community college costs, but they are in the private school costs. If one is going to compare costs, then it is not relevant to consider room and board costs for one type of school but not the other. Furthermore, the institutions extremely different. A more relevant comparison would be to compare the costs of various private universities to one another or the costs of various community colleges with one another.

#### **4.4.7 Irrelevant appeals to feelings or emotions, such as vanity, pity, guilt, fear, the desire for pleasure, humor and other**

Arguers often make *irrelevant* emotive appeals when they lack logical reasons for their position or when persuasion rather than truth is their goal. Emotion is generally a much more powerful  *motive* to belief and action than logical reasons are. Hence, emotive appeals are often persuasive. Some people are moved to purchase products they do not need by irrelevant appeals to their vanity, guilt, fear, or the desire for pleasure. Others are vulnerable to appeals to pity. Show them a tear and they open their pocketbooks. When the issue requires logical reasons, do not accept mere emotional appeals as sufficient evidence.

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#### **4.4.8 Evading the issue (the red herring)**

A tactic frequently used in argumentation--especially if one has been accused of wrongdoing--is to *divert attention to an issue irrelevant to the one at hand*, thereby attempting to *evade* the real issue. (The irrelevant diversion is sometimes referred to as a *red herring*.)

There are many reasons for evading an issue, and many ways to do it. One may not want to discuss an issue; one may not want to reveal one's position. One may be lazy, afraid, arrogant, disgusted, etc. One may evade an issue by creating a diversion, such as telling a joke or making a humorous remark, by accusing others of wrongdoing in hopes of putting someone else on the defensive, etc. Remember: *evasion implies a direct attempt to avoid facing an issue*. It is not accurate to accuse an arguer of

**evading an issue** simply because the arguer's evidence is irrelevant or inadequate to support his or her conclusion.

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### Examples of evading the issue

“My opponent has accused me of bribing a witness. This accusation is absurd. For twenty years I have worked hard to build a reputation of the highest type. I am recognized as a good, decent, hard-working and honest man. I have the respect of my peers, even of those I have defeated in the past. These charges are raised by people who dislike my decency and my willingness to represent in court people whom other lawyers would not touch with a ten foot tort.”

“You accuse me of embezzling funds from the Club’s treasury while I served as treasurer. But how about your behavior when you were president of the club? There was much more money unaccounted for when you held office!”

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#### 4.4.9 Non sequitur

When the reasons given for a position are irrelevant to supporting it, the conclusion is said to be a *non sequitur*. Literally, this is saying that ‘it does not follow.’ Technically, any argument based on nothing but irrelevant reasoning is an example of a non sequitur. Fallacious arguments based on *relevant* premises are not said to commit the fallacy of non sequitur. Usually, however, the term is reserved not just to indicate that a premise is irrelevant but that the conclusion is *far removed* from the premises. E.g., “Nothing is certain; so, one should follow the customs of one’s country.” “We have an inborn desire for immortality, so the soul must exist and be created for eternal life.” “I have an innate aversion to water; therefore, I think I should take up sky diving.”

Use the term ‘non sequitur’ if there is a fallacy of relevance which does not fall into one of the categories listed in this section.

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### Examples of non sequitur

“Christians believe the Bible is the word of God. And in the Bible it says that homosexuality is a sin. Therefore, we should make it illegal to be a homosexual.” [What is the relevance of the beliefs of a religious group to the issue of what should or should not be legal? These premises are relevant to a different issue, viz., the issue of whether or not a Christian may be a practicing homosexual.]

“I support property tax relief. The homeowner is being taxed out of existence and must be protected. We must pass the Hogwash-Mishmash Amendment now!” [The premises are not relevant to the conclusion given, but to another issue, viz., that some sort of property tax relief is needed. What would be relevant to the conclusion that the Hogwash-Mishmash Amendment ought to be passed would be evidence that this amendment would provide property tax relief. Note that in addition to being a non sequitur, this argument also begs the question. It assumes what ought to be proved as well as providing nothing but irrelevant premises in support of its conclusion.]

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### Exercises 5-2

**A. Evaluate the premises of each of the following arguments. Are they warranted? Are they relevant to supporting their conclusions? Identify any fallacies.**

- \* 1. (14 year old daughter to her mother) “You should buy me make-up; every other kid’s mother buys her make-up.”
- 2. (Bumper sticker:) CANCER CURES SMOKING
- \* 3.”No one has proved that human beings have free will. I know that all our actions are predetermined, then, and not free.”
- 4. The IBM personal computer must be the best one around since everybody has one.

- \* 5. Your advice on child rearing is useless, since you have no children of your own.
- 6. "There's never been a good argument for price controls; therefore, price controls is obviously a bad idea."
- 7. "The President's position is sheer non-sense....but what can you expect from someone who once shared top billing with a chimpanzee?!"
- \* 8. Your view on prayer in the schools is obviously wrong; after all, you're an atheist.
- 9. "God can't possibly exist; since it is impossible for finite beings to prove the existence of an infinite being."
- \* 10. Publishers in America do not print anything which is known to be false. So, that story about the Russians deliberately and knowingly shooting down a commercial airliner must be true.
- 11. Women are too emotional to be trusted in positions of power. Thus, you shouldn't vote for Ferraro.
- \* 12. A person of your intelligence surely sees the wisdom of my plan.
- 13. "Since you can't give me any good reason why I shouldn't believe you're guilty, I'll just have to assume that you are guilty."
- 14. The speaker's defense of Dr. Mill is not worth considering. Nothing she says in Mill's defense is worth counting since, after all, she and Mill are very good friends.
- \* 15. Of course Smith supports an amendment to give her equal rights. What else can you expect from a Woman's Libber?
- 16. (Advertisement) "I use Pittenween Super Z-99 motor oil in my racing car when I'm driving the Indianapolis 500. You should use it in your car, too. If it's good for my race car, it'll be good for your Honda!"
- 17. "I knew it was against the law to grow marijuana, but so is driving over 55 m.p.h., and everybody does that."
- \* 18. (Bumper sticker:) BETTER ACTIVE TODAY THAN RADIOACTIVE TOMORROW.
- 19. Here we have another *liberal* argument in defense of gun control. Of course, Justice Dorigth favors gun control, since he's always supported the liberal agenda.
- \* 20. Children should not enter child beauty contests because photographers will make them pose for sleazy pictures and judges will give them drugs.
- 21. (Advertisement) "The Fireball 500's have made it over the roughest roads in the world in the Baja 500 mile race. These roads were made in Hell! If these tires can survive the world's most rugged conditions, surely they must be good for your station wagon. Get the Fireball 500's today!"
- 22. (Lawyer to a jury.) "Ask yourselves how you would feel if this young man on trial were your son. Would you want him to go to prison where he'd probably be brutally raped? Think of that when you make your decision about his guilt or innocence."
- \* 23. (Letter to the editor:) "Are all those asbestos deaths of no value or importance? Hundreds upon hundreds of shipyard workers died from the exposure of asbestos because of their work with it....Now we read in *The Bee* that 66 percent of the schools, public and private, checked so far for asbestos hazards have failed to comply with the rules requiring them to identify and report asbestos hazards....We're dragging our feet on this issue in our school systems, and we're allowing a death sentence for our children."

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**B. Evaluate the premises of each of the following arguments. Are they warranted? Are they relevant to supporting their conclusions? Identify any fallacies due to irrelevant appeals.**

- \* 1. As everyone knows, the wise person is the one who does not rock the boat during a storm. Don't be a fool: comply with your orders to report for military duty even if you think the government wants to use you as a pawn in an immoral war. Besides, since no one can really prove that the war is immoral, it seems reasonable to conclude that it is moral after all. Even the Pope thinks it's a good war.
- 2. A man convicted of murdering his parents pleads with the jury: "Please have mercy on me. I'm an orphan!"
- 3. (After Secretary of the Interior James Watt made an insensitive remark about women, minorities and the handicapped, a reader wrote:) "We should dump Watt not because we disagree with his idea of a joke, but because he is one, and a bad one at that."
- \* 4. Senator Strom Thurmond supported a bill that would require the following label on all bottles whose contents are more than 24 percent alcohol: "Caution: Consumption of alcoholic beverages may be hazardous to your health, may be habit forming, and may cause serious birth defects when consumed during pregnancy." Senator Sam I. Hayakawa opposed the bill. Said Hayakawa: "Our Lord at the wedding feast at Cana changed water into wine; there is no record of His having issued any warnings against its abuse on that occasion....If Jesus found such warnings unnecessary, that's good enough for me."
- 5. "Slavery was ordained by God. Christ himself gave a sanction to slavery. He admonished them to be obedient to their masters; and there is not a word in the whole of his life which forbids it...." (William Smith of South Carolina quoted in *The Shaping of the American Past* by R. Kelly)

- \* 6. (A letter from the Faculty Association of California Community Colleges, urging support of a political action committee (PAC), argued the following:) "...many groups of ordinary people have formed PAC's and those groups are gaining influence as well. In recent years the nurses--who make less than we do on the average--have built one of the strongest new PACs in the State....The same story is being repeated with police officers whose State association now numbers 40,000 strong....The list goes on and on...farm workers, chiropractors, bulldozer operators. They're all building PACs...."
7. (From a letter to the editor:) "Re your editorial "Keep the UN In NY": As a newspaper of some repute in Northern California, one would suppose that the Bee would be somewhat familiar with the wishes and attitudes of most of the citizens in the area regarding the U.N. Since the publication of your editorial, President Reagan stated publicly that a great majority of the American people were in accord with the statement pronounced by Ambassador Lichenstein. It appears that the Bee's attitude and recommendation as expressed in the editorial is not a popular one. I suggest that in the future, before heralding such viewpoints, find out what people are thinking on the subject."
- \* 8. We ought to establish a Peace Academy to promote peace. We could get one started for about \$7.5 million for the site, about \$6 million in seed money and about \$10 million for the next year's operating budget. The Pentagon spends more than this on a tank or airplane that often doesn't even work. The idea has the support of 53 co-sponsors in the Senate and more than 100 in the House of Representatives. (This is a paraphrase of an argument made by syndicated columnist Jack Anderson.)
9. (Student to teacher:) "I know I haven't attended any classes since the first week of the semester, but I got real busy and then my car broke down just before I caught the flu. And you have a reputation on campus for not only being the best teacher but also for being the fairest and most decent of them all. Besides, you wouldn't flunk a black man, would you? What would the newspapers think if they found out you were a racist? Give me a break. Just give me a 'C' and I'll be happy."
10. Since most people cheat on their income taxes and are basically dishonest, we ought to do away with tax forms and just charge everybody the same tax. The government just wastes most of our money anyway, so we could make the tax real low by firing most of the public servants who lay around and sun themselves at the public trough. Nobody really cares about honesty. All they care about is themselves and their fancy cars.
- \* 11. It is unnecessary to know how to read or write to get ahead in this society. Idiots control everything. Power goes to those who take it not to those who earn it through honest aggression and accepted forms of immorality. Being stupid and ignorant is what pays in this world. So, there is absolutely no reason in the world why you should want to go to college. Get a job.
12. So what if I took your car without asking. You've done a heck of a lot worse, Dad. I remember you telling me that when you were my age you used to steal your grandfather's horse and ride over to see your girlfriend in another town. Hey, and least I don't do drugs, Dad. Most kids around here stay home and get stoned. And what about my grades, huh? They're pretty good, aren't they. You just don't like me, Dad. You never have. Admit it.
13. "The inquisition must have been justified and beneficial, if whole peoples invoked and defended it, if men of the loftiest souls founded and created it severally and impartially, and its very adversaries applied it on their own account, pyre answering pyre." --Benedetto Croce
14. (William B. Kolender, director of the California Youth Authority, accused *The Sacramento Bee* of making an **irrelevant comparison** in an editorial. Analyze Kolender's reasoning and determine whether or not he was justified in his accusation.) "The Bee's editorial "Prep schools for prison" repeated some of the same, tired rhetoric we have heard for years about other states' juvenile justice systems being cheaper and more effective than California's. This is not supported by the facts. The editorial, for example, claimed that the "cost per juvenile" is \$23,000 a year in Massachusetts and \$31,000 in California. But this is a comparison of apples and oranges. Comparable information would be that it costs California \$31,000 per ward in a secure institution, and it costs Massachusetts \$58,000 per ward in such institutions. Massachusetts' \$23,000 figure is the cost for that state's entire juvenile ward population, including those on supervised parole. The comparable figure for the California Youth Authority (CYA) is an overall cost of about \$21,000 per ward. "Similarly, *The Bee* compared the six out of 10 juveniles released from the CYA who will be arrested again within four years with the reincarceration rate in Massachusetts, which is 23 percent. But rearrest is very different from reincarceration. The rearrest rate is always much higher [than the reincarceration rate]."

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### Exercises 5-3

1. Find three examples of irrelevant reasoning in magazine or newspapers advertisements.
2. Find three examples of irrelevant reasoning in letters to the editor in a daily newspaper.
3. Evaluate the relevance of the premises used in a newspaper or magazine editorial.

4. Find several examples of advertisements of the following types and comment on them in light of what was said in this chapter regarding the reasonable use of authorities:

- a. ads which feature a celebrity or well-known figure;
- b. Ads which emphasize mass appeal, that you ought to get on the bandwagon, too;
- c. Ads which emphasize belonging to the in-crowd;
- d. Ads which emphasize patriotism or loyalty;
- e. Ads which emphasize tradition.

## 4.5 Sufficient reasons

Even if every warranted and relevant premise available were brought forth to support a conclusion, that conclusion still might not be justified. For, the premises might not be *sufficient* to support the conclusion. A conclusion based on insufficient evidence is called a **hasty conclusion**. (If the conclusion is a generalization based on insufficient evidence, it is called a **hasty generalization**.)

No doubt you have heard of a district attorney dropping the charges against someone accused of a crime on the grounds of *insufficient evidence*. Just what constitutes *sufficient* support for a conclusion?

You would think that if there are any clear criteria for determining the sufficiency of evidence it would be found in our courtrooms, where people's lives depend upon other people's ability to evaluate evidence. Yet, the best our legal system has come up with is the criteria of **reasonable doubt**. Weigh the evidence, the jury is told, and if there is a *reasonable doubt* as to the guilt of the accused, then the jury is to bring in a verdict of not guilty. However, if the prosecutor proves to the jury's satisfaction *beyond a reasonable doubt* that the defendant is guilty, then the jury is to bring in a verdict of guilty. What constitutes *reasonable* doubt?

Are there any guidelines for evaluating the sufficiency of premises to support their conclusions? Yes. First, in the area of deductive logic, very clear and precise procedures have been developed for demonstrating that conclusions do or do not necessarily follow from given sets of premises. We discussed formal logical proofs earlier in this chapter and have nothing further to say on the matter except this: for those interested in this extremely important area of reasoning, it is recommended that they take a course in symbolic logic.

Secondly, maintain a critical attitude, an attitude of open-mindedness and sincere desire to improve your beliefs. Be constantly on guard against biased or wishful thinking. Be aware of your purposes. Ask yourself why you are investigating a particular subject and how significant it is to you. Your purposes will sometimes determine how much evidence you should require.

Thirdly, become aware of contemporary standards of evidence in different subjects or areas of inquiry. You cannot judge what would be sufficient evidence to draw a conclusion in science if you know nothing of contemporary methods of testing claims in science. The same is true of any other field. As you study and begin to specialize in areas, you will discover the various standards of different fields for clarity, truth, relevance, completeness and sufficiency.

Finally, pay attention to the *strength* with which a conclusion is asserted to be supported by its premises. *A conclusion should be asserted with a degree of certainty proportionate to the evidence presented in the premises*. Conclusions may be asserted to follow with *necessity* or with some degree of *probability*. The range of strength with which conclusions may be asserted to follow from premises is very broad, indeed. Thus, an argument may sometimes be improved simply by weakening the warrant for the conclusion. That is, the same premises that are insufficient to support a *strong* conclusion may very well support a *weaker* conclusion.

#### 4.5.1 Evaluating the significance of premises

One of the more difficult aspects of argument evaluation is deciding how much *weight* to give to premises which have been determined to be both true and relevant to supporting the position at hand. There are no clear-cut guidelines to present here, since *the significance of any premise will depend on the subject matter*. Here we can give only general advice.

One factor that ought to be considered in determining how much weight to give to a premise is its *source*. All else being equal, the more reliable the source, the more weight the premise ought to be given. Also--again, all other things being equal--*the more warranted a premise, the more weight it ought to be given*.

However, since the significance of any piece of evidence in an argument depends on the nature of the argument, it is difficult to provide useful general advice in this area. To illustrate the general point that different pieces of evidence might be given different weight, one might think of an example from a criminal trial. Some of the eyewitness testimony might be quite strong, while some of it might be weak. Some of the physical evidence might be relevant and indicate a *possible* connection of the defendant with the crime. Still other physical evidence might indicate a *probable* connection of the defendant with the crime. The circumstantial evidence might indicate a *strong probability* of guilt while the physical evidence might be exculpatory and therefore outweigh the circumstantial evidence. Discovery of a *motive* for committing a crime would indicate at least a possible connection to the crime, but in the absence of any other evidence would generally be taken as very weak evidence.

One thing that ought to be remembered is that *the fact that a premise is accepted as true and relevant does not mean that it provides significant--much less sufficient--support for the conclusion*. Nor does the mere fact of accepting several premises imply that all premises are of equal weight. Some premises are bound to be more significant than others. Thus, one is *not* committed to accepting a conclusion simply because one has accepted the premises of an argument. What must be established for a conclusion to be accepted is that the premises *justify* accepting that conclusion. That depends not only on the premises being **true** and **relevant**, but also on their being **sufficient**. If the premises are not sufficient, the argument commits the fallacy of *hasty conclusion* or *insufficient evidence*.

Finally, the expression 'hasty conclusion' is reserved for arguments with **truthful, relevant premises**. Hence, if an argument is unsound due to unwarranted or irrelevant premises, it is not said to commit the fallacy of hasty conclusion. In the examples below, notice how the premises are *relevant* to the conclusion but they are not sufficient to warrant accepting it. Hasty conclusions are often the result of wishful thinking, stereotyping, or other hindrances to critical thinking. In such cases, it is generally not too difficult for the critical thinker to detect this fallacy. However, there will be many cases where reasonable parties will disagree as to the sufficiency of evidence for a given conclusion. In such cases, it would be unwise to simply accuse one party of committing a fallacy of hasty conclusion. As with even the most blatant cases of hasty conclusion--e.g., generalizing on the basis of single, haphazard experience--one should be prepared to present an argument in defense of the position that the evidence of a given argument is insufficient to support the conclusion asserted.

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#### Examples of hasty conclusions

--"Men are all cruel. I know; I was married to one for twenty years."

--“Bonzi shoes are the best in the world. I bought my first pair last week and I really love them. You ought to get a pair, too.”

--“Don’t buy any apples from Jinsten. I tasted one from his sample box, and it was awful!”

--“I must have a brain tumor. I keep getting these terrible pains on the top of my head.”

--“My little niece just loves to play the trombone. That just goes to prove that children have an innate love of music and if given the opportunity they would all make good musicians.”

--“Did you see those teenagers taking the tires off that car. What’s happened to kids today? Why are they all crooks and thieves?”

--’This new diet technique will help anyone lose weight. I tried it for six months and I’ve lost twenty pounds.”

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#### **4.6 Omitting relevant evidence: selective thinking and suppressed evidence**

If we think of the conclusion of an argument as the roof of a building and the premises as the pillars supporting the roof, if relevant information about the pillars isn’t revealed then the building might appear to be stronger than it really is. If we were to find out that some of the pillars were hollow or that they had internal structural flaws, we would not think so highly of the edifice. Similarly, an argument that omits relevant evidence can appear to be stronger than it really is. Thus, the detection of omitted or suppressed evidence is as much the job of an argument evaluator as is the detection of variations from the specifications of the blueprint is the job of the building inspector.

*A sound argument not only presents warranted, relevant premises; a sound argument does not omit relevant evidence.* It is often very difficult to detect when relevant information has been intentionally or unintentionally left out. Thus, relying upon the arguer to provide us with all the information needed to evaluate an argument is often not a wise policy. On the other hand, when preparing to construct an argument of our own, we must seek out opposing views and arguments. We must include all relevant material, even if it does not support our position. We should try to anticipate objections to our arguments and respond to those objections.

It is a rare arguer who actively seeks out opposing views and treats them seriously; yet, that is exactly what a critical thinker must do. The natural tendency of the smug and lazy (i.e., most of us) is to ignore the stronger arguments of opponents and to omit from consideration any point which might make our own appear weaker. Thus, we must strive to overcome the natural tendency to commit this fallacy. We must strive to be well informed; for, obviously it will be easier to deceive us by suppressing evidence if we lack information on the subject argued about.

Besides the obvious cases of advertisements, interested-party press releases and slanted news reports, there are other typical situations where relevant information is likely to be suppressed. Physicians often fail to inform their patients of the possible harmful side effects of a medication. Sometimes this is due to ignorance, as the number of medications is staggering; even so, it is inexcusable. Sometimes this is done out of concern for the patient’s health--would the patient take the medicine if he or she knew of the potential harmful consequences? Also, employers have been known to fail to inform employees of the results of mandatory medical exams or of known health hazards associated with normal employment in an industry. The coal, asbestos, nuclear fuel, and tobacco



industries have knowingly suppressed evidence regarding the health of their employees or the health hazards of their industries.

**Selective thinking** is common in politics, where a candidate may inform an audience that an opponent has been accused of or investigated for some wrongdoing, but will omit informing the audience that the opponent has been cleared of all charges. In parapsychology and other pseudosciences, it is common practice among researchers to count only evidence that supports the belief in the existence of ESP, clairvoyance, remote viewing, etc. Contrary evidence is ignored or suppressed.

Unless you know what evidence has been suppressed or omitted, you cannot detect this kind of unsoundness in an argument. The only advice one can give here is to be on guard in those types of situations where evidence is often conveniently suppressed: in advertisements, in political speeches and press releases, in editorials, in courtroom defenses and prosecutions, in medical prescriptions, in sales pitches and in pseudoscience.

#### 4.6.1 False dilemma

Relevant evidence is often omitted in situations where alternatives are presented. **The fallacy of false dilemma** occurs whenever one restricts the number of alternatives to fewer than there really are, thereby omitting relevant alternatives from consideration. (This fallacy is also called the *black-and-white fallacy* or the *either/or fallacy*.)

The clever manipulator of uncritical thinkers will only present alternatives for consideration that he favors. Clever writers will do the same. Beware of articles or books with “Either/Or” titles. The authors of such articles may have restricted the alternatives to be considered to just two. They will then proceed to demonstrate that one of the alternatives is unreasonable, foolish, or false. The reader is then seduced into accepting the author’s claim that the alternative position is therefore reasonable, wise, or true. The fact is that an alternative not even considered may be more reasonable.

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#### Examples of false dilemma

-- [Wife to husband]. . “Well, the budget is a mess for next month. What do you want to give up, your tennis lessons or the new dress shoes you want?”

-- “You are not for me; so, you must be against me.”

-- “She’s not a Democrat; so, she must be a Republican.”

--“America: Love it or Leave it!”

-- “Either we should fully support our football program so that we can compete with the best universities in the country or we should give up football altogether.”

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#### 4.6.2 The straw man

A sound argument presents alternative positions and anticipates objections. The **straw man fallacy occurs when a position one opposes is presented in a distorted way by exaggerating it or by presenting only its weakest defense.** For example, if an opposing position asserts that something *could* happen, you report it as asserting that it *should* happen; if it says that something *may* be, you report it as saying that it *will* be. If your opponent says that smoking is *a health hazard*, you distort this by saying that she claims that smoking is *the worst health hazard in the history of mankind*. If your opponent advocates increasing the amount of *free medical care given to the aged*, you assert that he says that we should have *socialized medicine*. If your opponent says that we should *curtail the sale of candy in elementary schools*, you assert that she wants *to eliminate all free choice and involve the government in every aspect of our lives*.

The straw man fallacy seems to be appealing to those who would rather *distort by omission and exaggeration* than take seriously an opposing viewpoint. The arguer who resorts to straw man tactics seems to think that by placing his own position next to one which is obviously weak (at least it appears weak in its distorted presentation), his position will appear stronger than it really is.

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### Examples of straw man

*(The issue being argued below is whether to construct a nuclear power plant nearby.)*

Proponent: “Unless we construct a nuclear power plant in this area within the next ten years, we will not be able to meet the significantly growing demand for power.”

Opponent: “What you’re saying is that you couldn’t care less what happens to the wildlife and plant life or even the human lives that might be harmed by the presence of nuclear radiation in this area.”

(Note how opponent distorts the proponent’s position.)

*(The issue being argued below is the Equal Rights Amendment.)*

Proponent: “I must conclude that there is no moral, logical, or legal justification for discriminating against a person on the basis of a person’s sex. Therefore, I am wholeheartedly supporting the Equal Rights Amendment.”

Opponent: “Look, if you want men and women being forced to use the same rest rooms and to sleep together in trenches during wartime, then go ahead and support the ERA. It looks to me though that you women just don’t want to do housework anymore.

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### Exercises 5-4

(Note: good arguments generally require specialized knowledge, or there is little likelihood that there will be general agreement about them. There are many good arguments in non-technical fields, but because personal values often play a major role in establishing fundamental premises as well as the importance of the issues themselves, using such arguments as examples is likely to be as misleading as illuminating. In the exercises that follow, however, some of the arguments presented are arguments I consider to be good, or at least free from any obvious fallacies. There may be disagreements about these arguments; healthy discussions ought to follow.)

**A. Evaluate the following statements or arguments. For the arguments, indicate whether the premises are warranted, relevant and sufficient to support their conclusion. If you believe relevant evidence has been omitted, indicate what data should have been brought up. Identify any fallacies.**

\* 1. Why are bureaucrats always inefficient?

\* 2. It is imperative that we prepare for war; for, either the terrorists will conquer the world or the United States will stop them with its military might.

3. Justice can't exist for the poor because justice is nothing but the way the rich protect their interests.
4. (Letter to the editor:) "Either we execute rapists or we let rapists have free reign over our women. What's it going to be?"
- \* 5. God exists; for, the world needs a Creator.
6. Since the majority of voters think that capital punishment is morally justified, it must be morally justified. The majority can't be wrong about matters of right.
- \* 7. If all humans are created equal then it is not right to discriminate. All humans are not created equal. So, it is right to discriminate.
8. We should draft women into the army because it's a good idea.
9. A politician can't get elected unless he lies. Therefore, all elected officials are liars.
- \* 10. The government ought to pay for the abortions of poor women since they can't afford to pay for them out of their own funds.
- \* 11. Since women are smaller than men, it follows that men are stronger than women.
12. Why can't most high school graduates read or write?
13. (At the conclusion of a final exam, a student writes:) "Thank you for a wonderful learning experience. You are a great teacher! Of all my college classes, none has benefitted me more than yours. I really enjoyed it. Thanks again!"
- \* 14. If all humans are created equal, then it is not right to discriminate. It is not right to discriminate. So, all humans are created equal.
- \* 15. There are some philosophers who believe that someday it will be possible to develop a computer that thinks. But they are wasting their time. Computers cannot think; for, if something is a machine, then it cannot think.
16. I believe in equal rights, but the President and priests are and should be men. The first president was a man, and Jesus and his apostles were all men.
17. (Police officer to suspect.) "When were you at the scene of the crime?"
- \* 18. "Free speech will be abused. Every liberty is abused."
19. There is no question about it: we simply cannot afford to continue our current high lifestyle. We're either going to have to quit giving money to charity or quit going out to dinner once a week.
- \* 20. Since 7 is greater than 5, and 12 is greater than 7, it follows that 12 is greater than 5.
- \* 21. (Advertisement:) Dr. Ferriss Wheel can help you lose weight right now. No obligation. Get thin for the summer, now! No strenuous exercise required. Eat all you want and still lose weight on the fabulous, proven Ferriss Wheel 180 day Superlosers Diet.
- \* 22. "Meanings do not reside in the words themselves. Meanings are in the minds of the people who use and hear the words." (Richard Weaver)
- \* 23. Most politicians never intend to keep their campaign promises. So, don't believe anything this candidate claims he's going to do.
- \* 24. A California state consultant on readability, Dr. Eycanmakitsimple, claimed that any text can be rewritten to the 6th- to 7th-grade reading level without loss of accuracy or detail in its content. She graduated from Harvard *magna cum laude*. Therefore, it certainly is possible to produce a grade school edition of *Finnegan's Wake* and Kant's *Critique of Pure Reason*.
25. (From a letter to the editor criticizing a judge's decision that agreed with the University of Georgia's claim that it had a right to know how professors on a tenure committee voted.) "The ruling sounds like the beginning of a totalitarian state. Next the government will want to prohibit secret voting in unions, professional organizations, civic organizations, corporations, and finally in general elections."
26. You can be sure that Elmo Zentug is a lazy cheat with a phony back problem, since he's on welfare and most welfare recipients are able-bodied persons who are too lazy to work and who would rather cheat the government than take an honest job.
- \* 27. Anyone who opposes legislation that would allow abortions only when the life of the mother is endangered condones the murder of innocent children. Therefore, Melissa, you are condoning murder if you oppose this proposed law.
- \* 28. Children should not enter child beauty contests because photographers will make them pose for sleazy pictures and judges will give them drugs. Once they get hooked on drugs they'll turn to prostitution and pornography to support their drug habit. They'll probably get AIDS and die from dirty sex or dirty needles.



**B. Evaluate the following statements or arguments. For the arguments, indicate whether the premises are warranted, relevant and sufficient to support their conclusion. If you believe relevant evidence has been omitted, indicate what data should have been brought up. Identify any fallacies.**

- \* 1. The best counselors for juvenile delinquents are ex-convicts who were juvenile delinquents themselves. So, we ought to hire this character Smith since he's the only candidate for the job with a long history of juvenile delinquency.
- 2. "At the heart of the issue of abortion is the question of what America is all about. Will we continue to destroy the innocent and helpless for mere self-gratification or go back to a nation that protects its children?"
- \* 3. We should establish a Peace Academy to train young Americans to promote peace because a Peace Academy would definitely prove to a dubious world that the United States is serious about resolving international conflicts without resorting to military might.
- \* 4. (Letter to the editor: "Abortions should be made illegal because murder in any form should be unlawful. Slaughtering innocent children should never be condoned. The next thing you know, handicapped children and old people will be murdered in the name of 'freedom of choice'. Don't be fooled by the Pro-Choice rhetoric. Free choice is freedom to be killed if they don't like the way you look.")
- \* 5. "Remembering, which occurs now, cannot...possibly prove that what is remembered occurred at some other time, because the world might have sprung into being five minutes ago, exactly as it then was, full of acts of remembering which were entirely misleading." --Bertrand Russell, *An Outline of Philosophy*
- 6. All unhappiness is due to unsatisfied desires. All happiness is due to satisfied desires. And, no one can satisfy all his or her desires. Therefore, either one must give up desires and be happy or one must resign oneself to a life of unhappiness. (This is a paraphrase of one of the teachings of the Buddha, Siddhartha Gautama.)
- 7. (Advertisement:) "Why should you take Casavetti's word for it when we tell you that we'll give you the best deal in town on a new car? That's a good question, and we'll give you an honest answer. You can take our word because you can count on us to always deal fair and square. That's the truth! Believe me!"
- \* 8. It is unreasonable to believe in punishment in the afterlife. For, either there is no afterlife or there is one. If there is none, then it is absurd to believe in punishment after death. If there is an afterlife, then an all-just and all-merciful God would not punish a creature for being too weak to resist desires instilled by the Creator.
- \* 9. You argue that we should not use American tax dollars to support the Contras in their attempt to overthrow the communist government of Nicaragua. What you are really advocating is support of communism. If we follow your line of reasoning, we should let the communists walk all over us. We should just step out of their way when they set their greedy eyes on another country to conquer.
- 10. [George Bush, in his closing statement during a debate with Democratic vice-presidential candidate Geraldine Ferraro, Oct. 11, 1984]: "The choice is: Do we move forward with strength and with prosperity, or do we go back to weakness, despair, disrespect?"
- 11. "We have two alternatives to solving the criminal problem. Either we start sentencing criminals to life in prison without possibility of parole or we institute something similar to Moslem law and begin castrating rapists and cutting off the hands of thieves."
- \* 12. "There are only three alternatives possible for the origin of the world: it is self-existent, or self-caused, or caused by some external agency. And each of these alternatives is really without meaning to our minds. We cannot conceive that a thing exists in its own right without any source beyond itself; we cannot conceive self-creation, for that implies that the thing exists before it exists; and to refer it to an external creator merely defers the question. For we have to ask, Whence the creator?" --William Ernest Hocking, *Types of Philosophy*.
- 13. (The following pleas to viewers to send in money is from the wife of a televangelist who had recently purchased a home for \$449,000, a Rolls-Royce and a Mercedes Benz.) "Jim and I can't pay the bills. We've given everything we have. And literally we have given everything. I have offered to sell everything I own because things really don't mean that much when it comes to getting the gospel of Jesus Christ out."
- \* 14. (President Reagan)"If Congress does not pass the IBBM Bill, it is inevitable that there will be an international monetary crisis of insurmountable proportions. Not one country on the face of the earth will be left unscathed and economic ruin will be the result for hundreds of nations throughout the world.
- 15. All the great minds have been minds of men. The great sculptors have been men--Michelangelo, Rodin, Polyclitus, Moore--and the great painters--Vermeer, da Vinci, Rembrandt--and the great writers--Homer, Dante, Flaubert--and the great philosophers--Plato, Rousseau, Nietzsche--and so on.
- 16. (Letter to the Editor:) "During the holidays, I was stopped in a California Highway Patrol drunk-driver checkpoint. Although the officers were very polite and the time I was stopped was very brief, I felt this checkpoint was only the beginning of things to come. If the checkpoint program is allowed to stand, by the courts and the public, then next will be a checkpoint just for drugs, or infant car seats, or driver's licenses. As a retired police officer, I can express my dislike of the drunk driver. I can understand the checkpoints as a police tool, but I think the citizens' right to free movement is more important. I think if we allow the checkpoints now we will regret them in the future."
- \* 17. "*The rich aren't paying their share of taxes*. That probably is the most popular of all the liberal shibboleths. The figures: In 1980, wealthy Americans (let us agree to call an American wealthy who earns \$50,000 per year or more) amounted to 3

percent of the population. They paid 31 percent of the taxes collected....In sum, the top 3 percent are paying at least five times as many taxes as the bottom 50 percent. Put that in your rich-get-away-with-everything gun, aim at Reagan and pray that someone changes the subject.” (William F. Buckley, from his syndicated column of October 5, 1983.)

18. (Reporter) “Mr. President, what do you think about your Secretary of State saying that

American women will change their minds on South Africa once they realize they’ll have to give up their diamonds if the United States imposes economic sanctions against that country in protest of its policy of apartheid?”

(President) “You guys are always trying to stir up trouble. The secretary’s comments were made off the record. I’ll bet you buy your lady friends diamonds. I’ll bet your mother likes diamonds.

\* 19. (The issue being argued is whether illegally obtained evidence should be excluded from use by the prosecution during a trial.)

**Proponent:** “We should continue excluding illegally obtained evidence in order to protect all citizens from abuses of power on the part of the police. If there are no restrictions on how they obtain evidence--if they are permitted to violate the law at their discretion--then all of us give up a needed protection.”

**Opponent:** “So, you favor letting criminals go free? You would rather have murderers running around loose in the community than let police officers perform their legal duties.”

20. (Letter to the editor:) “Can’t you see your inconsistency? In your lead editorial of Feb. 20 you condemn Reagan’s hypocritical human rights policy for not opposing human rights violations across the board. Yet you followed with an editorial giving vague endorsement to some form of draft. Isn’t it apparent that the draft, by compelling involuntary servitude, is a form of slavery and thus is the greatest of all human rights violations--the right to one’s own life?...To endorse a draft is to accept the basic principle of all totalitarian regimes--that the individual exists for the sake of the state. In this country, theoretically at least, isn’t the government’s purpose to protect the rights of the individual, not violate them?”

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**C. Evaluate the following statements or arguments. For the arguments, indicate whether the premises are warranted, relevant and sufficient to support their conclusion. If you believe relevant evidence has been omitted, indicate what data should have been brought up. Identify any fallacies.**

- \* 1. (Letter to the editor, in response to Walter Mondale’s opposition to a constitutional amendment which would allow organized but voluntary prayer in public schools:) “So Mondale wants to remove religious freedom from schools. This country was founded on God and prayer. We need a president who believes in prayer and the Bible.”
- 2. (Letter to the editor:) “Marx predicted that unrestrained capitalism would destroy itself as the rich grew richer and the poor poorer. It was generally believed that the painful process of establishing restraints by the western powers held the Marxist prediction at bay. Business opposed these restraints, but adapted to them. There was enough leeway for free enterprise to contribute a variety of useful products....Now, under Reaganomics, these restraints have been torn away and unrestrained capitalism rules. All the Russian bear has to do is to sit by and watch unrestrained capitalism destroy itself. The Marxist prediction will be realized.”
- \* 3. U.S. Supreme Court Justice William J. Brennan, Jr. argued against the death penalty many times. In a speech at Hastings College of Law on November 18, 1985, he said : “The state, even as it punishes, must treat its citizens in a manner consistent with their intrinsic worth as human beings....The calculated killing of a human being by the state involves by its very nature an absolute denial of the executed person’s humanity and, therefore, violates the constitutional ban on cruel and unusual punishment.”
- 4. “The so-called Child Care Act, which has been introduced into the U.S. Senate, ought to be defeated. It is a deceptive bill; its real aim is to replace parents with government authority. This bill is a spinoff of the declaration by the Communist dominated United Nations, which declared this year the Year of the child. As a member of Citizens for Responsible Government, I urge you to oppose this dangerous bill which, in its own words, will `provide assistance and coordination in the provision of child-care services for children living in homes with working parents and for other purposes.”
- \* 5. The problems that plague nuclear power plants are serious and worth thinking about before heavy investment is made in them. Quite apart from the question of safety, there is the matter of disposing the nuclear waste produced by the plants. The wastes can be trapped and reduced to a solid form so that they do not escape into the atmosphere. But what then? Radioactive solids with a half-life of thousands of years will be an enormous burden to future generations. Unless we solve the problem ourselves, we will be creating a situation in which numerous future generations will have to assume an unfair and undeserved responsibility.
- \* 6. (Letter to the editor:) “What are we up against in the selection of a president? Inflation is worse than ever -- many banks have gone out of business, farmers have gone into foreclosure, warmongering about the world is common, and yet this

administration claims success. At least our president doesn't lie--he just atones for it all with excuses. Does he want to be re-elected to further saddle the U.S. with another \$100 billion deficit or so?...If we re-elect the present administration, this country will be at its mercy when either the U.S. will go into bankruptcy or be forced to have the highest tax rate in the world. Nobody is better off today because of present administration actions--some may be better off from only natural economic trends....The opponent to the president is sincere and honest. Let's hope the election will result with what's best for the United States."

7. (Former California State Senator John Briggs made the following argument concerning a public initiative to forbid homosexuals from teaching in the state's public schools.) "If the initiative is defeated, then all of those [homosexuals] are going to be asked to come out of the closet and declare themselves, and then what we have done is placed in front of our children those legitimized role models for our young children to emulate. And I think it just portends a period of moral decay in this country that is going to lead to the carrying out or bearing out of the prediction of Gen. MacArthur, who stated that no civilization has ever been recorded as having survived when it falls into a period of economic decline and moral decay. We are certainly in both periods right now . . . .The thrust of the gay liberation movement is to have males reject females in favor of another male and females reject males in favor of the female. Well, if you follow that to its logical conclusion, and since every group wants to multiply many times over, we would breed ourselves out of existence as a country over a long period of time."

\* 8. (Advertisement:) .... The Environmental Protection Agency by promulgating--or causing to be promulgated--unnecessarily restrictive regulations, will block the burning of millions of tons of good American coal. Coal that is critical to America's energy needs. They have decided that, in implementing the Clean Air Act, the only way to protect human health from stack gas emissions is to measure the sulfur-oxides at the top of the stack--instead of at ground level where people live and breathe....Will E.P.A. accept the responsibility for the economic effect their restrictive decision will have on the country? Oh no! They'll try to wriggle off the hook by saying you can burn all the coal in America if you'll just install stack gas scrubbers....The naked truth is that there does not exist today a reliable non-polluting stack gas scrubber for electric utility use to eliminate sulfur-oxide emissions. A conclusion shared by the Federal Power Commission, T.V.A., and other respected authorities....At a time when America needs all the coal it can get, it is absolutely senseless for the E.P.A. to stubbornly insist on a particular method for meeting the ambient air standards of the Clean Air Act. It is the results that are important--not the method. ...It would be a crime if a significant portion of this vast American asset went unused because the Environmental Protection Agency could see only one way...their way...to meet the mandate of the Clean Air Act....We know their way won't work. That's what burns.

9. (Letter to the editor:) "I oppose the plan to have federal and state governments turn over our prison systems to private enterprise for the purpose of turning a profit out of inmate labor. How long will it be before political dissidents are arrested on trumped up charges and sent off to the corporate concentration camps to shut them up? How long will it be before the vagrancy laws are reintroduced to acquire cheap slave labor? How long will it be before certain inmates are hired as corporate hit-men to keep the other inmates on the job and producing? How long will it be before judges are offered commissions (i.e., bribes) by corporations for each convict they send to prison? The fact is that our government--federal and state--are rotten to the core. The private prisons idea will provide nothing but corporate slave-labor concentration camps for whatever private business is willing to pay off the government officials put in charge of running the programs. Any government official who supports this idea of prisons run by private corporations ought to be indicted for criminal racketeering."

\* 10. (Letter to the editor:) "The ultimate perversion of our actions seems to be what we are doing in Nicaragua, where the Somoza family that had oppressed the country for years was ousted. By supporting Somoza's defeated mercenaries with CIA money and by threatening Nicaragua with our fleet off both the Atlantic and Pacific coasts, we are, by sabotage, trying to destroy this newly formed government. The CIA-sponsored "contras," which we have labeled, ironically, Freedom Fighters, are destroying bridges, dams and towns, and killing women and children. In this situation, it should be no surprise that the Nicaraguans turn to Cuba and the U.S.S.R. for help....What a peculiar way for us, a nation born in revolution only a little more than 200 years ago, to be acting. The greatest mistakes in policy have been made by the present administration, but previous administrations, both Democratic and Republican, have supported oppression in developing countries. We must rethink our policies. Otherwise, we will be the most hated nation in the world, and at the same time, oppressed peoples will look to the U.S.S.R. for help in breaking their chains of bondage, instead of to the U.S."

11. (Letter to the editor:) "Every month an innocent woman is put to death in a most brutal manner. The murderer, when apprehended, is treated to months of trials, fed, housed, and if not released for lack of evidence, is given an extremely short jail term. The criminal justice system has in essence stated, 'Every person has the right to take another's life, and we will in turn treat the offender as if he/she were the person who was oppressed.' We have two alternatives to solving the criminal problem in California. The first is to abolish the lenient sentencing system. If a person commits a planned murder, for example, the minimum sentence should be life with no parole. The second alternative would be something similar to Moslem law. If, for example, a thief steals, his hands would be cut off, And, a rapist would be castrated."

\* 12. (Letter to the editor:) “Your paper has not been living up to its potential and it has not been doing its job. In several instances recently, your staff could have taken a mundane or morbid stories and made incisive commentaries on the human condition. Instead, you opted for mediocrity. In an article on the deaths of three local youths, you could have dealt with the role of nutrition in mental illness, but you didn’t. In an article on the Blues Festival, you could have discussed the music, but you didn’t. And, in an article on renovating slums, you could have chided an elected official for hypocrisy, but you failed to do so.”

13. (Letter to the editor, written in response to the imposition of a \$50 per semester education fee for full-time community college students:) “I keep hearing all of this bilge about how the imposition of fees in community colleges will have a negligible effect. I could expect no less from an individual, Governor George, who views the current governor’s salary of \$49,000 a year as woefully inadequate.... Education is the great equalizer of individuals. To impose additional financial burdens on the backs of the politically disenfranchised is to further increase the disparity of economic conditions within our state. Education should be provided to all at the lowest, or no, cost....Education is expensive to provide. Nonetheless, education is crucial for the social and material development of this nation. The greater expense and travesty would be to deprive, de facto, those with scarce resources of an education....Governor George reminds me of a certain British monarch. The monarch merely taxed tea. Governor George would impose a tax on learning.”

14. (Letter to the editor, in response to an editorial which complained that too much farmland is being bought up by land developers and that legislators ought to do something about it to protect farmland the way certain public lands are protected’): “The ownership of private property separates a free people from an enslaved people. It is not our farmland; this land belongs to the individual farmer. I own state parks, I own public property, I do not own the farmland. If we the people permit government to start owning private farmland, where will this lead us? The next step will be government owning other rights of individual citizens, such as your bank account, your choice of where you live, your choice of work and so on and so on....It is time to stop encouraging our people to refer to farmland, ranchland or any land owned by a private individual as “ours.” If the American people are now ready to embrace the Communistic philosophy of government ownership of land and production, then I guess starting with farmland is the first logical step. I, for one, am not ready to hand over my rights to private property; neither am I ready to take the rights of the farmer or any other American to buy and sell his property to suit his financial or personal needs....Who knows, maybe next year government control of newspapers for the so-called “good of the people” will follow the confiscation of private land use.”

\* 15. (The following passage is a response to the question “Should voters enact some federal laws directly?”) “The proposed national legislative initiative is a mischievous and deceptive means of centralizing, polarizing and destabilizing a tested Constitutional order. It would undermine the government of balanced power, reason and broad-based consent, prophetically advanced by our Founding Fathers. The Supreme Court, the states, Congress, political parties and the presidency would have to take a back seat to well-financed campaigns by passionate single-issue groups for simplistic national solutions to complex problems. Consider the havoc which would be caused by “yes” votes on initiatives repealing civil rights acts, or balancing the Federal budget by percentage reductions in defense appropriations.” [Peter G. Fish, associate professor of political science, Duke University]

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### Exercise 5-5 Self-test: true or false?

1. It is an irrelevant appeal to authority to try to establish the truth of a controversial point by noting that a well-known expert has taken the position you are supporting.
2. The assumptions of an argument are the basic premises upon which the argument stands or falls.
3. A non sequitur is a type of hasty conclusion.
4. The slippery slope fallacy always occurs when one asserts that a chain of horrible events will follow the taking or not taking of some action.
5. An assumption in an argument is a premise for which no support is given.
6. If the conclusion of an argument is false then that conclusion cannot follow from the argument’s premises.
7. When an arguer assumes something questionable in order to support a questionable claim, she is said to be begging the question.
8. All else being equal, the more reliable a source for a given premise, the more weight the premise ought to be given.
9. When evaluating the testimony of others, we are evaluating their character and integrity as well.
10. When a conclusion is based upon insufficient evidence the argument is said to commit the fallacy of hasty conclusion.
11. A conclusion should be asserted to follow with a degree of certainty proportionate to the evidence presented in the premises.
12. If it is not certain that a premise is true, the most reasonable belief is that the premise is probably false.

13. An argument with an irrelevant or false premise should not be rejected as completely unsound if there are more significant premises which, taken together, provide adequate support for the conclusion.
14. To try to divert attention away from a charge being made against a person is called an ad hominem.
15. Emotive appeals are rarely persuasive.
16. Human emotions are generally much more powerful motives to action than logical reasons are.
17. If the premises of an argument are false or questionable, then the argument is unsound.
18. The argument from ignorance might be more accurately called 'the fallacy of lack of sufficient evidence to the contrary.'
19. The slippery slope fallacy is usually combined with an appeal to vanity.
20. Hypothetical assertions are questionable assertions assumed to be false.
21. The non sequitur fallacy occurs when a position one opposes is presented in a distorted way by exaggerating it or by presenting only its weakest defense.
22. The fallacy of ad populum occurs when one restricts the number of alternatives to fewer than three.
23. A good argument is clear and is based on relevant, warranted assumptions.
24. A question is loaded if directly answering it traps one into asserting the truth or falsity of some claim which is questionable.
25. Perhaps the most frequently used technique for making an argument appear stronger than it really is, is to omit relevant evidence.
26. The ad hominem fallacy occurs when the fact that large numbers of people believe something is taken as a sufficient reason for accepting the belief as true.
27. A good argument does not try to mislead, nor does it omit warranted, relevant evidence.
28. The fallacy of the argument from ignorance occurs when one tries to argue that something is true only because it hasn't been proved false or false only because it has not been proved true.
29. Whenever an arguer assumes what ought to be proved, she is said to be affirming the consequent.
30. If the premises upon which a conclusion stands are false or questionable, then the argument is said to be unsound because based on unwarranted assumptions.
31. Relevant premises are those which are germane or pertinent to proving the conclusion of the argument.