8

Principles of Argument

If all mankind minus one were of one opinion, and only one person were of the contrary opinion, mankind would be no more justified in silencing that one person, than he, if he had the power, would be justified in silencing mankind.

—John Stuart Mill, *On Liberty*, 1859

8.1 THE THROWS OF ARGUMENT

Arguments are discussions in which we strive to attain an objective. There are all sorts of objectives: selling our favorite political candidate, gaining a couple of points on an exam, selecting the movie we want to see, returning an item to a department store, or discovering the truth on an important matter. Verbal and nonverbal exchanges of reasons, threats, emotions, or even bricks, in the interest of reaching an objective, are normally called arguments.

The language in which we talk about argument suggests that we conceive argument metaphorically as a war to be won. Words such as *demolished, overwhelmed, destroyed,* and *thrust,* make frequent appearances in our accounts of arguments. And we know that all is fair in love and war. So the very idea that there are rules governing argument may seem questionable from the start, unless the rules are going to show us how to obtain our objectives more effectively.

Protagoras (490–421 BCE), a Sophist, boasted that he could make equally strong cases for any side of an argument. Sophists were in great demand in ancient Athens, just as lawyers are in great demand today. People then, like today, needed to know how to argue to defend their lives and property. Sophists knew how to argue well and made a good deal of money by teaching others and by bringing the rich to court. Protagoras wrote a book about argument that he titled *The Throws,*

but only the title has survived. The Greek word used in the title was the same word applied to the throws in the sport of wrestling.

Unlike the Sophists, who argued for money, the Athenian philosopher Socrates argued for truth. He believed that knowing the truth about matters such as the nature of social justice, piety, and God was essential to living a good and happy life.

Socrates was skilled in two strategies essential to good philosophical argument. First, he was adept at keeping the point of an argument from being lost. The Sophists often engaged in long flowery speeches on topics such as the nature of love or justice. Socrates was quick to bring his partners in argument back to the point at issue, a maddening practice for those more interested in style than substance. Second, during an argument, Socrates was skillful at devising examples that undermined definitions offered by his opponents. Socratic dialectic is a method of argument in which a definition of an important concept, such as "justice" or "truth," is subjected to a series of questions aimed at testing it.

In the Socratic dialogues that Plato wrote, Socrates tests definitions offered by other participants in the discussion. For instance, early in Socrates' dialogue with Euthyphro, Euthyphro defines piety as "that which is pleasing to the gods." Socrates tests this definition by pointing out that the traditional stories of the gods are full of conflicts, which suggests that what pleases one god may well displease another. While one god may be pleased by a person's action, another may be offended by that same action. If this is the case, what happens to Euthyphro's definition of piety? Is it possible for one action to be both pious and impious? Of course not, and so the definition must be given up, since it leads to an inconsistency.

Socrates' objective in his dialogues may have been to foster the good life, but despite his public spirit, he acquired many enemies in his pursuit of truth. Two respectable Athenian citizens, Anytus and Meletus, charged that Socrates was an atheist who also believed in and taught about gods that were different from those sanctioned by Athens. In his defense, Socrates pointed out that the charge brought against him contained an inconsistency: Reminding his listeners that an atheist is one who believes in no gods, Socrates asked how he could be an atheist and, at the same time, a believer in gods different from those of the state. You can see that Socrates had a good argument for his innocence of the charge on impiety.

Anytus and Meletus also charged him, however, with corrupting the youth. Perhaps it was this charge that persuaded the Athenian jury to find him guilty and sentence him to death. The point of our discussion of Socrates is that the goal of philosophical argument is to pursue and end an inquiry on a particular issue without regard to practical consequences. And it is the goal of truth, or at least justified belief, that leads to the rules of argument expected in good philosophical writing. In most cases, hopefully, you will not be asked to die for your conclusions. But practical considerations such as the approval of peers should be disregarded in philosophical writing.

Before you can argue effectively, you must know how to identify and analyze arguments presented to you. This requires you first to determine if a series of statements is an argument. If it is an argument, you must then discern if the argument is deductive or nondeductive, valid or invalid, and persuasive or tenuous. In this chapter you will learn

- The definition of an argument
- The two basic types of argument
- How to evaluate arguments
- How to use valid forms to cast your arguments

8.2 THE DEFINITION OF AN ARGUMENT

An *argument* is a series of statements that include at least one premise, a conclusion, and connectives that link the premise(s) to a conclusion. A premise is a statement, offered as evidence for a conclusion, which is assumed or taken for granted in a context. For example, the statements "It is wrong to smoke around pregnant women" and "If it is wrong to smoke around pregnant women, then the unborn have rights" are premises. Some expressions that indicate premises are *if, since, because, on the basis of, on the basis of the following observations,* and *the following observation supports my claim.*

Philosophers use the expression *connective* to designate the basic linking expressions of logic. The basic connectives are *it's not the case that, and, or,* and *if . . . then.* The first connective, which is represented by the negation sign, does not really connect statements. Instead, it negates a statement or a group of statements connected by the other connectives. *And* joins two or more statements. *Or* also joins two or more statements and is understood in logic in its inclusive sense. A better rendering of this connective would be *at least one.*

If . . . then does double duty in arguments. In a conditional statement it connects two statements. The statement before *then* is the antecedent, the statement after *then* is the consequent. Compound sentences formed by *if . . . then* are called conditionals. Conditionals often are found as premises in arguments either expressly stated or implied. But *if . . . then* also functions as the basic connective in any argument connecting the premises to the conclusion. An argument can always be translated into a long conditional sentence in which the conjunction of the premises forms the antecedent, and the conclusion is the consequent.

A *conclusion* is the statement or claim presented as resulting from the premise(s). For example, if we accept the premises that (1) it is wrong to smoke around pregnant women, and (2) if it is wrong to smoke around pregnant women, then the unborn have rights, we must reasonably conclude that the unborn have rights. The conclusion follows whether we like the practical consequences it would suggest or not.

The following are all linking expressions that indicate conclusions: *it follows that, therefore, if . . . then, hence, my conclusion is, consequently, it is (probably) the case that,* and *so.*

Generally, arguments are expressed in a way that requires you to reconstruct the premises. Sometimes the arguments can be expressed offensively. Someone who remarks that it is ridiculous for pro life advocates to talk about prenatal life both obscures what might be a good argument and infuriates the people whom it might otherwise influence. In ordinary life it takes a lot of patience and charity to reconstruct what others might mean.

Arguments call for us to take the truth or probable truth of the premises for granted for a moment so that we may determine whether the purported truth of the premises is sufficient to guarantee the truth or probability of the conclusion. In addition to premises and conclusions, arguments may contain extraneous material such as jokes, biographical data, or even personal attacks. Philosophers generally avoid such distracting material, and in argument analysis you should simply disregard it. Some style manuals will tell you not to write in the first person. However, some philosophers find that occasional use of the first person serves to emphasize a point.

Narratives, which are simply chronological stories of actions or events, are not arguments. Yet narratives are effective devices for causing someone to accept a conclusion or causing a person to listen with more tolerance to an argument. Perhaps your instructor will be open to such writing and may even use narratives such as *Sophie's World* in her course. Still, you will eventually be required to say in argumentative language what the narrative, Sophie's or yours, seeks to instill.

3 THE TWO BASIC TYPES OF ARGUMENT

Arguments are either deductive or nondeductive. An argument is *deductive* if it claims that the conclusion must be true if the premises are true. The conclusion is therefore guaranteed by the truth of the premises. If the premises are true and the deductive form of the argument is arranged properly, then the conclusion must also be true. The argument given above about the unborn is a valid deductive argument. It is an instance of the valid form *modus ponens*.

The following argument is deductive because its conclusion, given its premises, is presented as being an unarguable matter of fact:

> Two million and thirty-seven lottery tickets were sold for Wednesday's drawing. I bought two tickets. So, my chance of winning Wednesday is 2 in 2,000,037.

An argument is *nondeductive (inductive)* if it claims only a high degree of probability for the conclusion. An inductive argument, then, allows for some doubt of the truth of the conclusion, and it bases its claim of accuracy on the very good chance that its premises are correct. Here is an example:

> All cats that I have ever seen will eat mice. Jake is a cat. Therefore, Jake will probably eat mice.

It is important to know the difference between deductive and inductive arguments because we must know what an argument demands of us. Does the

argument ask us to accept something as true or only as probably true? The actions we take based upon certainty are different from the actions we take based upon mere probability, and we may hold deductive arguments liable for much stronger bases of proof.

4 VALIDITY AND SOUNDNESS

4.1 Deductive Validity

There are two slightly different definitions of *validity*, which correspond to the two different types of argument, deductive and nondeductive. An argument is *deductively valid* if it is deductive and if the truth of the premises would make it necessary that the conclusion is true also. In other words, an argument is deductively valid if it is deductive and if it cannot be the case that the premises are true and the conclusion is false. The following argument is deductively valid:

PREMISE 1: If God knows everything, then God knows what I will do tomorrow before I make up my mind.

PREMISE 2: God knows everything.

CONCLUSION: God knows what I will do tomorrow before I make up my mind.

The philosopher William James claimed that the second premise is false. Still, the argument is deductively valid; that is, the deduction from the assumed true premises is valid. The argument is deductive because it claims certainty for the conclusion, and it is valid because its conclusion would have to be true if the premises were true.

When you evaluate an argument for deductive validity, you do not yet check for the truth of the premises. The factual truth of the premises is irrelevant to the validity of an argument. Consequently, a deductively valid argument may have false premises and a true conclusion, or it may have false premises and a false conclusion.

In a deductively valid argument the relation between premises and conclusions is not a causal relationship. Premises do not cause a conclusion to be true; they merely explain why, if they are true, the conclusion is also true.

4.2 Nondeductive Validity

Nondeductive arguments make claims in their conclusions that go beyond the evidence of the premises. If I claim "since my chances of winning the lottery are 2 million to 1, then I will probably lose the lottery," then I am making a

nondeductive argument because I am claiming only the probability, not the certainty, of my conclusion. An argument is *nondeductively valid* if it is nondeductive and if the truth or high probability of its premises make the conclusion highly probable also. My argument about the probability of my losing the lottery is nondeductively valid because the high odds against winning do indeed produce a high likelihood that I will lose.

Checking for validity is important because it is the first step in examining an argument in order to see if it is worthwhile to check the actual truth of the premises. If an argument is not valid, there is no point in finding out whether or not the premises are true. If an argument is valid, however, the premises become important.

Imagine you are a member of the National Science Foundation and someone presents a grant for funding. The grant's hypothesis is that since mosquitoes carry malaria, then the people of Kentucky are vulnerable to malaria. As you read the grant, you realize that the argument guiding the proposed research is not arranged in a valid way. Not all mosquitoes carry malaria, and the mosquitoes that carry malaria have not been found in Kentucky. You would not have to consider funding it, because the project would probably produce invalid information. It needs to be reformulated if it is to be worth funding.

Consider the following deductive arguments. Are they valid?

- If President Clinton did what Paula Jones charged in her deposition that he did, then he is guilty of sexual harassment in the workplace. Paula Jones did indeed speak the truth. Therefore, Clinton is a harasser.
- Republican Bob Dole said he would not raise taxes. But Dole voted many times to raise taxes while he was a senator, even while Republicans were in control of the presidency. So, Dole was lying.
- When I am in Memphis, I always go to the services at Al Green's church. If I go to Al Green's church, then I will visit Graceland afterward, since it is nearby. So, if I go to Memphis, then I will visit Graceland.

If you found yourself asking whether Al Green (soul and gospel singer) has a church, how Dole (former United States Senator and Republican candidate for President in 1996) voted, whether Paula Jones spoke the truth, or if Graceland (Elvis Presley's mansion) is indeed close to Al Green's church (it is), then you missed the point. It does not matter to the question of validity whether the statements you questioned are in fact true or false. It matters only whether, if they and the other premises in their respective arguments were true, the truth of the premise would make it necessary that the conclusion be true also. The anti-Clinton bias of the first argument and the anti-Dole bias of the second argument may irritate you, but these biases have nothing to do with the validity of the arguments. Try to filter your worries about bias out and attend to the arguments.

Are the following nondeductive arguments nondeductively valid?

- The United States has never elected a third-party candidate as President. So, Nader will probably not be elected in 2004.
- When people are transferred to Calvary Hospital, they usually die within a week or two. Helene's physician has recommended that she be transferred to Calvary. So, the physician has decided she is beyond recovery.

8.4.3 Cogency

We have discussed three questions that need to be raised when evaluating a passage to test its credentials as an argument:

1. Does it have the components (at least one premise and a conclusion) of an argument?
2. Is the argument type deductive or nondeductive?
3. Is the argument valid or invalid in the manner appropriate to the argument type?

A fourth question remains to be asked: Is the argument cogent?

We may say that an argument is *deductively cogent* (or sound) if it is deductive, deductively valid, and the premises are in fact true. An argument is *nondeductively cogent* (often called strong or correct) if it is nondeductive, nondeductively valid, and its premises are true or highly probable.

The following argument is deductively cogent:

> The electric company charges for electricity. I used electricity from the electric company last month. So, I will be charged for the use of electricity.

The following argument is nondeductively cogent:

> Thousands of tickets are sold for each drawing of the California lottery. I bought only one ticket for the next drawing on Wednesday. So, I will probably lose.

8.5 PATTERNS OF REASONING

Now that we know how to ask four questions that will help us test the philosophically relevant credentials of an argument, we can add to our argument-testing capabilities by understanding sound and unsound patterns of reasoning. When we discussed validity, we relied upon simple examples to elicit your agreement on when the premises would guarantee the truth or high probability of a conclusion. There are mathematical demonstrations of which argument forms are valid or

invalid, but we will not provide mathematical proofs here, for the attempt to do so would take us too far beyond the compass of this book. If you are interested in mathematical proofs, take a course in symbolic logic or look at a good logic text book. We will note the major valid forms and invalid forms also. The invalid forms are important because some intuitively appealing forms of argument are invalid.

VALID FORMS OF ARGUMENT

The practical benefit of learning the valid and invalid argument forms lies in how the forms facilitate argumentative discussion. Once you isolate the author's major thesis and premises for the thesis, you may discover that the author has structured the argument in a valid form, such as *modus ponens* or a *reductio*, and so you would not criticize the author's form of argument, but turn to investigating the premises. But if the author has relied upon eliminative induction, then it may be the case that a possibility has been overlooked and a false dilemma presented. Or, if the author relies upon an invalid form such as affirming the consequent, you can identify her error and criticize or perhaps find a way to repair the argument. And, of course, if you can cast summaries of your own arguments in valid forms, your writing will be more effective.

In sentential logic ordinary language statements are given letters as their names. Each statement gets only one name, one letter. Take the sentence "If this is Tuesday, this must be Brussels." This is a compound sentence containing two statements: "This is Tuesday" and "This is Brussels." Some systems of sentential logic use capital letters and begin with the letter A. Others use small letters and begin with p. Whether "This is Tuesday" is named A or p is a convention. The important thing is that in an argument form it keeps the same name and no other statement is given the same name. So "This is Brussels" is going to be B or q, but certainly not A or p. Could we have called it A before we baptized the other statement A? Sure, provided we baptized the other one something else.

When an argument in ordinary language is translated, replacing its statements with sentence letters and the connectives with their appropriate symbols, then we have exhibited its form. The connectives in sentential logic connect sentences. The connectives are *and, or, it is not the case that*, and *if . . . then*. They are represented by an upside-down v, a right-side-up v, the ~ or −, and an arrow respectively. Punctuation is also provided with parentheses and brackets to insure proper grouping.

1. This is Tuesday and this is Brussels

   $A \wedge B$

   or

   $p \wedge q$

2. This is Tuesday or this is Brussels.

   $A \vee B$

   or

   $p \vee q$

3. If this is Tuesday then this is Brussels.

   $A \rightarrow B$

   or

   $p \rightarrow q$

4. This is not Tuesday

   ~A or

   ~p or

   −A or

   −p

5. It is not the case that this is Tuesday and this is Brussels

   $-(A \wedge B)$

   or

   $-(p \wedge q)$

   and you could replace the – in each example with –.

Two arguments in ordinary language that have the same representation when translated have the same logical or argument form. This is handy because once you know a form is valid and are practiced in recognizing it, you can immediately recognize valid arguments about matters you never heard of.

8.6.1 Tautologies

A *tautology* is a sentence that must be true in all possible worlds. A *contradiction* is a sentence that must be false in all possible worlds. You can recognize tautologies and contradictions by their forms. "A and not A" is a contradiction. "It is snowing in hell and it is not snowing in hell" is a contradiction. Tautologies are redundant and boring, but they are valid. "A or not A" is a tautology: "It is raining right now in Chico or it is not raining right now in Chico." Notice that a tautology requires no premises. It is true on the basis of form alone. So

perhaps tautologies are exceptions to the rules we have looked at governing argument: Tautologies are valid argument forms that require no premises. Philosophers disagree on the question of whether tautologies assert any conclusions at all when sentence names are replaced with ordinary language statements. After all, how much information about the weather is included in the tautology about Chico in this example?

Modus Ponens

A common valid form of argument, *modus ponens* is, as its Latin name implies, a "method of putting." A *modus ponens* argument takes the following symbolic form:

If p, then q.
P.
Therefore q.

A simple example of a *modus ponens* would be as follows:

If July 15 is Graybosch's birthday, then he is a Cancer just like O. J. Simpson, Bill Clinton, and Phyllis Diller.
July 15 is Graybosch's birthday.
Therefore, he is a Cancer just like O. J. and the others.

More complicated *modus ponens* follow patterns such as the following:

If p and q and r, then s or t.
P and q and r.
Therefore, s or t.

Hypothetical Syllogisms

Hypothetical syllogisms are arguments that have the following symbolic form:

If p, then q.
If q, then r.
Therefore, if p, then r.

Here is an example of a valid simple hypothetical syllogism:

If reading someone's personal electronic mail violates the right to privacy, then reading the person's personal electronic mail is wrong.

If reading someone else's personal electronic mail is wrong, then most employers violate employee rights to privacy.
So, if reading someone's personal mail violates the right to privacy, then most employers violate employee rights to privacy.

Syllogisms come in many forms. One is known as the *disjunctive syllogism*, which has the following symbolic form:

P or q.
Not p.
Therefore, q.

Example:

Either you vote or you have no reason to complain. You did not vote. Therefore, you have no reason to complain.

A knowledge of traditional syllogisms will be helpful to you if you are taking a standardized test for graduate or professional school. Here are several valid syllogisms. Notice that traditional syllogisms are not in sentential form.

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

Example:

All rights are valid claims. All valid claims are prima facie moral. Therefore, all rights are prima facie moral.

Another valid syllogism follows:

All A's are B's.
This is an A.
This is therefore also a B.

Example:

All rights are valid claims. Self-defense is a right. Self-defense is a valid claim.

Here is a third valid syllogism:

All A's are B's.
No B's are C's.
Therefore, no A's are C's.

Example:

All uses of hate speech are violations of civil rights. No violations of civil rights are instances of free speech. So, no uses of hate speech are instances of free speech.

A fourth valid syllogism is:

No A's are B's.
Some C's are A's.
Therefore, some C's are not B's.

Example:

No ethnic revolutions are democratic revolutions. Some revolutions in the Balkans are ethnic revolutions. So, some revolutions in the Balkans are not democratic revolutions.

Modus Tollens

Modus tollens, Latin for "method of removing," is an argument that takes the following symbolic form:

If p, then q.
Not q.
Therefore, not p.

Example:

If it is morally wrong to smoke around pregnant women, then the unborn have rights. The unborn do not have rights. So, it is not morally wrong to smoke around pregnant women.

8.6.5 Dilemmas

A *dilemma* is an argument in which there is a choice between two alternatives, neither of which is particularly desirable. A dilemma takes the following symbolic form:

P or q.
If p, then r.
If q, then s.
Therefore, r or s.

Example:

Peter either forgot that it was his son's birthday or did not care enough to buy a gift. If Peter forgot, then he needs to spend less time on work. If Peter did not care enough, then he needs counseling. Therefore, Peter either needs to work less or get counseling.

This is a handy form of argument for use when you know that someone is guilty of one of several offenses but you cannot say which one. You do not have to determine which offense is the real one to convict the person.

8.6.6 Indirect Proof or Reductio ad Absurdum

An *indirect proof*, also known as *reductio ad absurdum*, exhibits that the negation of what it seeks to prove entails a false proposition. Recognition of that logical consequence requires logically the rejection of the proposition that led us to accept the falsity. If that initial proposition must be false, then its negation must be true. *Reductios* have the following form:

To prove p
Suppose: not p.
If not p, then q.
If q, then r.
Not r.
Therefore, not not p.
Therefore, p.

Example:

To prove: Same sex couples should not have the right to marry.

Suppose same sex couples should become legally entitled to marry. If same sex couples marry, then same sex couples will have the right to adopt children. If same sex couples have the right to adopt children, then this will threaten the unique social role of heterosexual marriage. But the unique role of heterosexual marriage ought not to be threatened. Therefore, same sex couples should not be entitled to marry.

The *reductio* looks like an extended version of *modus tollens*. The difference is that the *reductio* is purposely used to throw doubt on a particular premise.

6.7 Contradictions

A *contradiction* is a sentence form that must be false no matter what statements are substituted for the statement names. It has the symbolic form "p and not p." For example, the statement "It is raining right now in Chico and it is not raining right now in Chico" is a contradiction. The negation of a contradiction must be true. So, if you find a contradiction, you should conclude that its negation is true: "It is not the case that it is raining and not raining in Chico right now." In the charge of atheism against Socrates, outlined earlier, we would agree with Socrates that it is not the case that he is both an atheist and a believer in gods.

.8 Analogies

In an *analogy* we draw a comparison between the known qualities of a sample population and the partially known qualities of a target population. If, for example, we have several friends who like heavy metal music, alternative rock, mosh pits, and tattoos, and if we make a new friend who likes three of those things, then it would be reasonable to infer by analogy that the new friend will like the fourth thing.

Our analogy works partially on the basis of similarities. If our friends are similar in three respects, they are probably similar in the fourth. The cogency of this reasoning depends in part on the similar qualities being related to each other. Our first three friends might also like falafel, but I would be less inclined to simply infer that the fourth person shares those likes, because an appreciation of falafel does not seem related to an appreciation of mosh pits.

Analogies often lead to unsound conclusions because they are not properly grounded. It is not just the enumeration of common factors that leads us to accept an analogy and take our new friend for a tattoo. It is also that we have background knowledge that these are common elements in a coherent subarea of American culture. This background knowledge is sometimes referred to as a higher order induction and illustrates how beliefs are nested in a wider context. Some philosophers would defend analogies provided that the reasoner possesses no higher

order inductive evidence to suggest the lack of a causal connection between the elements in an analogy. Others would argue that the reasoner must possess relevant higher order inductive evidence that a connection does hold before accepting an analogy. For our purpose, philosophical writing, it is enough to note that analogies should be queried for the relevance of the factors enumerated to each other.

8.6.9 Induction by Elimination

Induction by elimination is a popular nondeductive form of reasoning in philosophy. It requires three steps. The first is to canvass the alternative perspectives on a question. The second is to find reasons why all alternatives but one cannot be true. Finally, having eliminated all the unacceptable alternatives, you take step three, which is to accept the remaining alternative as the most probable one. The crucial step in this form of reasoning is the first step. If you have not included all the alternatives, you will commit an informal fallacy called a *false dilemma*. We will talk a little more about false dilemmas in Chapter 9.

8.6.10 Induction by Enumeration

In *induction by enumeration* we infer that a quality probably belongs to a whole population on the basis of a finite number of instances.

Example:

> Farmer Jones's turkey believes that Farmer Jones will come to feed him every morning on the basis of a finite number of previous feedings.

This is a fairly reliable inference for the turkey; it is correct every morning except the last.

A *statistical induction* is similar to induction by enumeration. It involves attributing the statistical frequency of a quality in a sample population to the population as a whole.

Example:

> Since 75% of the camels we have seen have two humps, we infer that 75% of all camels have two humps.

Both induction by enumeration and statistical induction uncover connections that may be more than coincidences—connections that may be based on an underlying causal relationship.

.11 Inference to the Best Explanation

Some philosophers accept *inference to the best explanation* as a valid form of nondeductive inference. Suppose there is a series of events whose occurrence can be most reasonably explained if you posit another event or fact as their cause.

Example:

> You notice that every time you play cards with me, you lose. But when you play cards with other people, you do reasonably well. Your losing streak with me might be best explained if you posit that I am a cheat. Perhaps I have marked the cards.

Or

> Suppose you know there are no perfect vacuums in nature, and you also know that energy in imperfect vacuums is unstable. How did the universe begin? Perhaps the best explanation is that a perfect vacuum transformed into an imperfect vacuum in which energy is unstable and there was an explosion? Here the posit is an imperfect vacuum.

For centuries God was the natural posit for explaining the existence of the universe because a lack of scientific knowledge blocked the suggestion of positing an imperfect vacuum. An explanation, therefore, is only as good as our knowledge of the conditions and circumstances of the phenomenon that we are trying to explain. Good background knowledge might justify our claim that the explanation that occurs to us is the only possible one, but because our knowledge is so often more limited than we think, we should normally give low probability to conclusions from this form of reasoning.

12 The Hypothetical-Deductive Method

The *hypothetical-deductive method* is usually attributed to Karl Popper but dates at least from the work of the nineteenth-century American philosopher Chauncey Wright. Popper popularized the method with philosophers of science as his original criterion for differentiating science from nonscience. Popper points out that one can never conclusively verify by empirical means a universal statement, but one can falsify it.

For instance, induction by enumeration cannot establish once and for all that all swans are white. One nonwhite swan can falsify the universal claim about white swans. It may sound odd, but *falsifiability* is actually more helpful to science than verification via inductions. After all, if you can falsify a claim, then you need not pursue it any longer and can move on to another claim.

Popper urges that scientific investigators select the hypothesis with the lowe initial probability, given our background beliefs, for further investigation. It is th hypothesis that has the highest likelihood to turn out to be wrong when empir cally tested. If it survives frequent tests, it is considered corroborated.

8.7 APPLICATIONS

Argumentation is the means by which most philosophy gets done. As yo read philosophical essays, try to determine which particular modes of argumenta tion the writers are using. The premises may be more complicated than the ones have used in my examples above, but the basic forms will be there. Remember learning the throws of argument now will enhance your ability not only to under stand philosophical positions but to find ways to question and perhaps improv upon them in your own writing

Most beginning philosophy courses will require you to analyze arguments Use the valid forms discussed in this chapter to initially lay out the relationship be tween the author's major thesis and major premises. Then treat each majo premise in turn as a conclusion and ask what form of argument is used to suppor it. Expect that in some cases you will have to supply premises yourself that are taken by the author for granted.

Laying arguments out in argument form will also be useful in compare and contrast papers. It will help you notice the common premises of authors who argue for different conclusions. It will also indicate to you which areas might be most use ful to investigate in criticizing one position. Take the valid argument used in this chapter about the rights of the unborn. Most of us agree that it is wrong to smoke in the presence of pregnant women. If we were to evaluate the argument further, we would probably fix our attention on the conditional: If it is wrong to smoke around pregnant women, then the unborn have rights. Perhaps we will argue that this premise is false. It might be that it is wrong to smoke only around pregnant women who want to give birth to a fetus. Or, it might be wrong only if the woman regards the effects of smoking as significantly damaging to her unborn. The rights might not belong to the unborn except through the rights of the woman.

And, of course, as you formulate your own arguments in argumentative papers, you will want to insure they are cogent by casting them in outline in valid forms. If this is not successful, you will know where you need to do more work.

It might seem that some argumentative forms, such as the dilemma, are only useful in criticism. However, a good argumentative paper will anticipate objections and answer them. If you are writing on the immorality of smoking around pregnant women, then you should probably anticipate the objection that such a judgment suggests the unborn have rights, and that conflicts with the right of a woman to choose. The same sorts of argument forms that would help you criticize a real opponent will serve you in criticizing the opponent you anticipate.

At the beginning of this chapter we discussed Socrates' approach to argument and noted that Socrates was adept at coming up with counterexamples to the general definitions offered by his partners in inquiry. In one sense this is an instance of Popper's notion of falsifiability. A definition is a universal statement, and a counterexample, like a single black swan, falsifies a definition. But Socrates' interest in counterexamples was also part of his desire to be clear about the meaning of the concepts he was addressing. The positive message found in the *Apology* is that it is important to be clear about what *atheist* means before investigating whether someone is in fact an atheist.

A MAP OF HOW TO ARRANGE A PHILOSOPHY PAPER

Let us agree that some philosophy papers, the most basic ones, will be expository papers. Here, your task will be to be clear about the meaning of the key philosophical terms and to present some philosopher's position in its form, hopefully valid. So, if you are assigned an expository paper on William James' concept of freedom, your paper will involve an analytic step in which you explain what James meant by terms such as *determinism* and *indeterminism*. It will also involve exhibiting the structure of his argument against determinism, which seems to this writer to involve use of the dilemma.

In a compare/contrast paper you might address the views of freedom in James, B. F. Skinner, and Jonathan Edwards. In such a paper you would still have to do the analytic steps that make up an expository paper. This time, however, there will be three such expository papers—one for each philosopher under examination. The critical part of the compare/contrast paper will center on the validity or invalidity of each philosopher's argument, the defensibility of key definitions, and the truth of the premises offered for each thesis. So, expository papers are contained within compare/contrast papers.

Argumentative papers likewise contain expository and compare/contrast papers. It is very difficult to address a philosophical issue without considering the work of others. If you are working on the justification of making duties to family members a moral priority over duties to the state, it will be helpful to place your discussion in the context of reasons provided by philosophers who disagree with each other on the issue. Some names that occur to me naturally on this issue are Plato, Aristotle, Marx, Firestone, and Hobbes. The comments you make in comparing the positions of these philosophers will serve as reasons for the position you support in your argumentative paper. Marx, for instance, presented the sentimental family as a means of preserving economic classes through inheritance. If you find yourself objecting that this is rarely the reason why people choose to have children, this objection will serve both as a criticism of Marx and a reason in the position you develop.

Realizing the continuity in these three types of papers, we can map out the steps of a philosophical paper as follows. The different types of papers stop at different places.

1. Expository Step
   a. explain key terms
   b. exhibit the form of the argument under consideration
2. Compare/Contrast Step
   a. address the validity of the arguments under consideration
   b. address the cogency of the arguments by considering the evidence for the various premises and also by attempting to formulate counterexamples
   c. repair the arguments by recasting them in valid forms or adding premises to insure that you address the best possible version of an argument
3. Argumentative Step
   a. state which alternative view seems more likely correct based on the premises available
   b. use the criticisms in the compare/contrast phase to state how close your own view is to the preferred alternative
   c. develop your own view further using the criticisms brought against other alternatives as your initial premises
   d. recast your own argument in a valid form
   e. anticipate and address objections to your view
   f. conclude by stating what has been accomplished and what remains to be investigated

9

Avoiding Fallacies

To say that we should drop the idea of truth as out there waiting to be discovered is not to say that we have discovered that, out there, there is no truth. It is to say that our purposes would be served best by ceasing to see truth as a deep matter, as a topic of philosophical interest, or, "true" as a term which repays "analysis."

—Richard Rorty, *Contingency, Irony, and Solidarity*, 1989

FORMAL FALLACIES

Fallacies are errors in reasoning that lead us to accept conclusions that we are not entitled to accept on the basis of the premises. Formal fallacies are reasoning errors that occur because the form or structure of an argument is incorrect. There are an infinite number of formal fallacies, yet a few may be identified that are commonly encountered when analyzing arguments. The ability to recognize them may make your job as a critical writer easier.

Denying the Antecedent

Remember the way we formulated arguments in Chapter 8. Consider an argument in this form:

If p, then q.
Not p.
Therefore, not q.

Example:

If Graybosch wins the lottery, then he can take a vacation. Graybosch cannot win the lottery. Therefore, Graybosch cannot take a vacation.

It would be a lot easier to take a vacation if I won the lottery, but maybe I will take one anyway. The error in the argument form is in assuming that the antecedent (winning the lottery) is necessary to my conclusion (taking a vacation). In actuality, my taking a vacation does not depend upon winning the lottery. Winning the lottery is one sufficient, but not necessary, condition of taking a vacation. *Modus ponens* presents an antecedent which is a sufficient, not a necessary, condition of a consequent.

9.1.2 Affirming the Consequent

Here is another invalid form of reasoning:

If p, then q.
Q.
Therefore, p.

Just because p always leads to q does not mean that q always leads to p. Other sufficient conditions may also result in q.

9.1.3 The Exclusive Fallacy

This fallacy takes the following form:

P or q.
P.
Therefore, not q.

The fallacy lies in confusing the inclusive and exclusive sense of *or*. You are at a party and ask who brought the wine. The host says Fred or Jack brought the wine. If *or* is meant exclusively, then once you know that Fred brought wine, you could conclude that Jack did not. But if *or* is used inclusively, then it means at least Fred and possibly Jack brought wine. Since logic uses the inclusive sense of *or*, you ought not to infer from the fact that Fred brought wine that Jack did not.

Here is an example of the exclusive fallacy:

Either Newt Gingrich is guilty of ethics violations or Bill Clinton is guilty of ethics violations.

Newt Gingrich is guilty of ethics violations.

Therefore, Bill Clinton is not guilty of ethics violations.

The inclusive sense of *or* allows both disjuncts to be true. They both could be guilty; both disjuncts could be true.

Of course, we are familiar with detective stories in which each suspect is eliminated until there is only one left who must be guilty. There are eliminative arguments in which the truth or falsity of a disjunct is relevant to the truth or falsity of others. But they must be carefully phrased to show the relevance of the disjuncts to each other. And you will note that the argument example above did not include a premise that said they both could not be guilty. If it did, it would have been a valid argument. But it would also have had a different argument form.

2 INFORMAL FALLACIES

Informal fallacies are errors in reasoning based in the content of an argument and not in the argument's form. It is possible to construct arguments with valid forms but still fail to have reasoned properly in one of three general ways. First, the premises of the argument could be false or lack the proper degree of probability. Second, our reasoning could leave out evidence in our possession or evidence that is not in our possession that we are still responsible for gathering. Ignorance of contrary evidence is not automatically an acceptable excuse. Third, our argument could mistakenly assert that the premises give more support to the conclusion than the truth or probability of the premises would warrant.

2.1 Susceptibility to Fallacies

Our human desires make us susceptible to fallacies. A common gambling fallacy is to bet on a number that is due because it has not occurred recently. If the dice or the roulette wheel is fair, each outcome has the same probability on each roll or spin regardless of how long it has been since it last occurred. If I throw six snake eyes (two ones) in a row, on the seventh throw it is just as likely that I will throw snake eyes again as it was on the first throw. Snake eyes are not less likely because they have occurred six times in a row, if the dice are fair.

Psychologists have catalogued a number of impediments to reasoning. I am pretty good at math, but I make an increasing number of errors of subtraction in my checkbook toward the end of the month. *Wishful thinking* infects my math. Two other interesting impediments to reasoning are our tendencies to have a

confirmation bias and to *expect one cause* for any given event. The confirmation bias allows us to accept horoscopes and psychic hot lines because we remember only the instances when the "predictions" come true and forget the times when they do not. The expectation that every event has just one cause blinds us to other contributing causes and makes us especially prone to give up good causal connections when we run into one exception. For example,

Smoking does not cause cancer, because my Dad smoked until he was 97.

Perhaps your dad was lucky and had a genetic endowment that helped him resist cancer. There is no guarantee (not yet, anyway) you have that same endowment.

There is also an interesting error made consistently with statistical reasoning. Suppose you read of a study that says that 35 percent of people convicted of heroin possession said they had smoked marijuana before becoming involved with heroin. This correlation might lead you to infer that marijuana use causes heroin use; or you might infer that whatever causes marijuana use also causes heroin use. And people commonly make such inferences. The 35 percent is impressive until you notice that 65 percent did not say that they smoked marijuana before becoming involved with heroin. When you are presented with a statistical correlation between two factors such as marijuana use and heroin use, you really want to know four correlations before drawing a conclusion about the relevance of one to the other:

- What percent of marijuana users also use heroin.
- What percent of marijuana users do not use heroin.
- What percent of the population use heroin only.
- What percent of the population use neither marijuana nor heroin.

Our tendency to accept fallacies is, fortunately, counteracted by our ability to identify them. The following list of informal fallacies has been constructed to assist you in identifying fallacies in arguments.

9.2.2 Invalid Appeal to Authority

An invalid appeal to authority occurs when we rely on defective expertise. Defective expertise is a source of knowledge that presents itself as authoritative but is not. Michael Jordan is an expert basketball player, but he does not necessarily know the best brand of ice cream. Experts may be subject to bias that can cause them consciously or unconsciously to render unfair judgment. A Toyota salesman will probably not provide an unbiased evaluation of a Nissan. And sometimes the experts disagree, leaving us forced to reason for ourselves.

The fact that people have positions of authority does not automatically make their beliefs, or our premises, false or unjustified. When the president or the pope speak, they do not commit a fallacy of invalid appeal to authority just by saying something. Perhaps their office does not give them expertise in all matters, but each has a sphere of expertise—politics and religion—where it is appropriate to speak and be cited as an authority. And, when they venture into other areas, such as the philosophy of love, the arguments they offer ought to be considered. It would be simply unfair to convict them of the fallacy of invalid appeal to authority unless they claim that their position gives them some special expertise. In other words, authorities should have the chance to offer arguments and be given a fair hearing.

3 Straw Person

A straw person is a misrepresentation of the position of an opponent. A straw person is a position or concept that you have formulated because it is more easily attacked than your opponent's real position. The phrase "What so-and-so really means to say" often introduces a straw person argument.

4 Inconsistency

You commit the error of inconsistency when you use inconsistent premises to support a conclusion. If you accept as a premise the idea that smoking does not lead to death but admit that diseases caused by smoking lead to death, your two premises conflict. You can also commit this fallacy by being inconsistent in your words and actions. Or, you could argue for inconsistent conclusions. Sometimes people change a belief over time without offering an explanation why. And, finally, organizations such as corporations or political parties sometimes take inconsistent positions with different audiences or have spokespersons who take differing stands. You and a friend might take opposing viewpoints on an important issue and send letters to a politician and compare the replies you receive. In many cases, it will look like the politician agrees with both of you.

False Dilemma

A false dilemma occurs when all the available alternatives are not considered. Consider this example of a false dilemma often used by parents: "Do you want to go to bed now or after your bath?" Faced with what seem to be only two possible courses of action, the five-year-old child will take the bath and go to bed, without realizing that there may be other, less undesirable alternatives. When she reaches the age of eight or nine, different courses of action, such as continuing to watch television, may occur to her.

In politics, even in the most sophisticated commentaries, false dilemmas appear in questions such as "Should the United States use military force or economic sanctions against Iraq?"

9.2.6 Complex Question

In this fallacy you ask a question in a way that begs the answer to another, usually negatively perceived, question. The idea is to make your opponents grant a premise that will be useful in constructing an argument against a conclusion they wish to resist. "When are you going to become responsible?" If you answer that question, you admit that you have not been responsible in the past and grant a premise that may then be used against you.

9.2.7 Begging the Question

When you beg the question, you argue for a conclusion by assuming at least part of it in your premises. "Why do you doubt that God is good? Does not the Koran say so?" The question assumes that God exists and that the Koran provides an authoritative description of the deity's characteristics.

9.2.8 Suppressed Evidence

Because we cannot spend all our lives in doubt, we must eventually draw conclusions on the basis of the evidence available to us. But whenever we suppress evidence, whether we have it available or not, we engage in fallacious reasoning. It is easier to know when you have suppressed relevant evidence in your possession than it is to know when you have done enough investigation to conclude that there is no conflicting evidence that you have not uncovered. Do you need to have read everything William James ever wrote to know that he believed in free will? Or is reading "The Dilemma of Determinism" enough? The correct answer depends upon your social role and responsibilities, on whether you are a beginning student or an advanced scholar. We often suppress evidence for good motives. When we tell children that bad things will happen to them when they lie, we suppress evidence that not all lies lead to negative consequences.

.2.9 Lack of Proportion

When we overestimate or underestimate actions, interests, or outcomes, we are guilty of applying a lack of proportion in our arguments. Consider the following exhortation, addressed to a typical teenager: "Go ahead and buy the Smashing Pumpkins concert ticket for $300.00. You only live once!"

2.10 Appeal to Unknowable Statistics

It is tempting to insert into our arguments appeals to unknowable statistics. For example: "Let's have one more drink. Nobody has ever died from a six-pack!" Another example: "Battlefield deployment of tactical nuclear weapons has prevented 17 major wars in Europe since 1950."

2.11 Ad Hominem

Ad hominem is Latin for "against the person." It is a fallacy that involves attacking people's character, looks, tastes, or some other irrelevant aspect of their lives to avoid dealing with their arguments.

.12 Guilt by Association

Guilt by association is a form of *ad hominem* argument in which a person's associates are attacked in an attempt to reflect negatively upon that person or her argument. The target person may be beyond reproach, but her associates may be easy targets. Vice presidential candidate Richard Nixon used this strategy in his famous 1951 "Checkers" speech to attack Adlai Stevenson, a politician beyond reproach, by associating Stevenson with Harry Truman, who was very controversial. Although Truman had endorsed Stevenson's candidacy for President, Truman and Stevenson were not constant companions. Politicians commonly employ the opposite of this phenomenon, innocence by association. When wealthy politicians have themselves photographed with the poor, they take advantage of innocence by association.

.13 Two Wrongs Make a Right

A common fallacy involves defending a wrong action by claiming that someone else has done the same thing or has done something just as bad: "Tommy hit me first!" When we base our argument on the wrong behavior of more than two people, this fallacy is called *common practice*: "It's not so bad to cheat on the test; all

my friends do it." When a way of doing wrong has become so accepted that it has attained the status of a proverb, it is called *traditional wisdom*: "The real speed limit is ten miles per hour above the posted speed limit."

9.2.14 Equivocation

Equivocation is the practice of using different meanings of a term that has more than one meaning to derive a conclusion: "Jesus loved prostitutes, and so do I. That's why I pay them well for their services."

9.2.15 Appeal to Ignorance

We appeal to ignorance when we try to get someone to believe that his conclusion is false because he has failed to prove it is true. We may even try to get him to believe that because he has failed to prove his conclusion to be true, then the opposite of his conclusion is true. The failure to prove the existence of extraterrestrial humanoids does not demonstrate that there are none, and the failure to prove that there are no extraterrestrial humanoids does not demonstrate that there are some.

9.2.16 Composition

Composition is a fallacy that occurs when we reason that if the members of a group have a property or characteristic, then the whole group has that characteristic. We might believe, for example, that if all the players on the Oklahoma Sooners football team are individually good players, then the team must be good also. They may not, however, play well together.

9.2.17 Division

Division is the fallacy that occurs when we expect a member of a group to have all the characteristics of a group as a whole: "Native Americans care about the environment." Even if most Native Americans do care about the environment, this does not mean that an individual Native American will.

9.2.18 Hasty Conclusion

When you accept a sweeping conclusion on the basis of a single or small number of incidents, you reach a hasty conclusion. For instance, someone may conclude that all New York City taxi drivers are dishonest if she has been over-

charged for a ride from the airport to downtown. A hasty conclusion is the result of making a judgment on the basis of too small a sample of experiences.

Sometimes, hasty conclusions are referred to as *small samples*. A sample can be too small to reveal a representative trend. You would probably be less likely to accept the conclusion of a survey about pornography and sexual assault if you found out that only twenty-five offenders were surveyed. A sample can also be faulted for being unrepresentative. A survey of New York City cab drivers ought not to be taken as a fair indication of the behaviors of all cab drivers, no matter how many cabbies are surveyed.

Humans are inclined to make inductions from single experiences, but rationally we ought not to do so. Calculating a sufficiently large sample size depends on both the size of the population we study and its diversity. I heard a psychologist on the radio say that she had spoken to over fifty women before drawing her conclusion about how best to end a relationship. A sample of fifty is not enough to draw a conclusion about such a large group of persons. Also, people are more complex entities than Ping-Pong balls. One may expect a greater diversity of opinions within the population of women or men, and this should affect sample size. Statisticians would want you to check with at least 1,200 people in a rigorous, scientifically designed study before drawing a conclusion about a country like the United States.

The sample should also be representative of the population. So, if you want to talk about women in general, then you should make sure your sample is not just about a particular ethnic or economic group.

9 Questionable Cause

The questionable cause fallacy is committed when we take an event as the cause of another on the basis of token evidence, such as a correlation that has not been subjected to further investigation. Political candidates are fond of attributing economic improvements to their economic policies. But they rarely consider that there might have been even greater improvements in the economy if their policies had not been followed: that the economy improved despite their policies and not because of them.

Questionable Analogy

A questionable analogy is the result of drawing a conclusion on the basis of similarities while ignoring or overlooking relevant differences. For example, electric discharges occur both in a computer that is processing information and in the human brain when it is thinking. This might lead us to draw analogies between what goes on in the brain and in the computer as support for the conclusion that

computers and humans both process information in the same sense. But there are many dissimilarities between human brains and computers; in fact, there may be too many relevant dissimilarities to compare artificial intelligence to human intelligence.

9.2.21 Appeal to Pity

Sometimes we are tempted to accept a conclusion or a premise because we have sympathetic feelings either for the person who advances it or for the person's current situation. Perhaps we may accept a job applicant's argument that he deserves a teaching position because if he does not receive it, he and his family will suffer.

9.2.22 Appeal to the Stick

Appeals to the stick are actions that mistake threats for arguments. When we appeal to the stick, we urge someone to accept a conclusion or else suffer stated or implied negative consequences. "Why should I attend class?" asks the student. "Because if you do not, I will lower your grade one level for each absence in excess of two," replies the authoritarian philosophy instructor. The instructor has not persuaded the student of the reasonableness of attending class but instead has tried to supply a motivation.

9.2.23 Appeal to Loyalty

Sometimes we accept a conclusion because it comes from a revered public figure, or it is crucial to our national interest, or its contradiction reflects unfavorably on our nation or another cherished institution, such as a church, school, or family. Some Americans have refused, for example, to believe that our armed forces have committed atrocities.

9.2.24 Provincialism

Like the appeal to loyalty, provincialism blinds us to the value of beliefs and practices of other cultures. We are provincial when we reject the ideas of others not for verified reasons but simply because we are familiar with our own practices

but not with theirs. We may attend a Christian communion service without questioning its value but reject a harvest dance as having no religious value.

2.25 Popularity

We rely upon popularity or appeal to the crowd (argument *ad baculum*) when we argue for a conclusion on the grounds of its widespread acceptance or acceptance by an important group that is not composed of appropriate experts

2.26 Double Standard

A double standard occurs when we treat similar cases in a dissimilar manner. If we expect men but not women to experience premarital sex, we subscribe to a double standard.

2.27 Invincible Ignorance

Some people actually take pride in refusing to listen to argument. This severe form of evading the issue is usually fed by faith, frustration, and self-righteousness. Extremists on both sides of the abortion issue, for example, sometimes exhibit invincible ignorance by demonstrating pride in not listening to arguments of the other side.

IDENTIFYING FALLACIES

Exercises to sharpen your argumentative skills are waiting for you everywhere. But newspapers and other media, especially those featuring politicians, are good places to look. Your task, to identify the fallacies within arguments, will be easier if you approach each example by taking the following steps, in this order:

1. Identify the conclusion that you are being asked to accept.
2. Identify the reasons (premises) that are offered for accepting the conclusion.
3. Determine the appropriateness of the premises—that is, the extent to which the premises lead to the conclusion.
4. Determine adequacy of the premises—that is, the extent to which the premises provide sufficient reason to accept the conclusion.

5. If the premises are inappropriate or inadequate, select the fallacy from the list above that most adequately explains the error in the argument.

9.4 CALCULATING PROBABILITIES

Now that we understand how valid arguments are formed and how to identify fallacies, we may consider how to calculate the probability that certain types of arguments (those whose elements are quantifiable) may be valid. We stated in the previous chapter that a nondeductive argument is one that claims that a conclusion follows from the premises with a high probability of truth. But how high must the probability of truth be in order for us to believe that a conclusion is sufficiently probable? The answer is not clear.

We may begin, however, with the proposition that the probability's sufficiency depends upon the context. In other words, the strength of the proof that we demand will depend upon the importance of what the conclusion demands of us and the costs to us of ignoring the conclusion. For instance, if I owned a truck whose manufacturer sent a recall notice because one in ten thousand have exploding ashtrays, I would take the truck in for service. Taking the truck in for service is a relatively minor inconvenience compared to the potential damage of an explosion, even if the chance of an explosion is remote.

There are some rules you can use in determining probabilities. If you want to know the probability of winning a lottery, you should find out how many tickets are sold. Your probability of being a winner when the ticket is just pulled out of a drum is equal to the number of tickets you bought divided by the number sold. But lotteries are designed for suspense. They are meant to be presented as television drama. You have seen on television the little Ping-Pong balls floating around until they are sucked into a tube and displayed at the bottom of the television screen. This means of selection allows there to be lotteries with no winner in a given drawing, since no one may have picked the right combination. There can also be several winners, since more than one person may pick the right set of numbers.

The odds of winning in such a lottery depend upon the number of possible values and the number of values you have to pick. Perhaps your state lottery asks you to pick seven numbers from a field of fifty. No lotteries I know of allow a number to repeat. A winning ball is not thrown back in before the next is picked. So, in a lottery with seven values picked from a field of fifty, the odds of any one ticket being the winner would be one in 50 times one in 49 times one in 48 times one in 47 times one in 46 times one in 45 times one in 44. This is because there are fifty candidates for the first pick and one less candidate on each subsequent draw when the selected ball is not replaced. Likewise, the probability of getting heads on two successive tosses of a fair coin is calculated by multiplying the probability of each separate occurrence. One-half times one-half equals one-fourth, a one-in-four chance.

If you wanted to know the probability of a disjunction (a particular number on either of two dice)—let's say the chance of getting a six or a three on a single throw of a single die—you would add the individual probabilities. One-sixth plus one-sixth gives us two-sixths or one-third, which is one chance in three. So, the probability of getting a three or a six on a throw of a die is three to one.

But when events are not independent, we must include the effect of one outcome on the other in the calculation of probabilities. In our fifty-number lottery, each numbered ball has a one-in-fifty chance of being selected on the first draw. After the first draw, the numbers not selected have a one-in-forty-nine chance of being selected on draw two. The joint probability of the selection of any two particular numbers is one in fifty times one in forty-nine, because on the second draw there are only forty-nine candidates left: $1/50 \times 1/49 = 1/2{,}450$. This means you have a one-in-2,450 chance to draw, say, a five and a twenty-six.

The task of calculating probabilities is complex and requires more than one textbook to explain, but we have presented here a sample of the types of considerations that are used in calculation.

5 EMOTIVE LANGUAGE

Words are used to do many more things than just describe a factual occurrence or convey our thoughts. When someone says "I promise," she may not be describing what is going on in her head. Perhaps she has no intention at all of doing what she promised. But she promises anyway by saying, "I promise." We also use words to convey feelings of surprise, approval, or disgust. Sometimes, we select and use words in ways that allow us to increase our chances of persuading others to accept a conclusion without doing the hard and honest work required by rational argumentation. Perhaps you noticed how I just used the word "honest" to nudge you in the direction of accepting my view that such forms of nonargumentative persuasion are not only nonrational but immoral. You will be a better critic if you are able to notice these forms of manipulation and a better philosophical writer if you do not use them yourself.

Certain words have positive overtones for the majority of people. It always helps your case if you are an advocate of freedom and self-determination. The positive or negative overtones attached to other words vary with the audience. Certainly, you will be more inclined to grant the presumption of legitimacy to the political actions of a foreign government official if he or she is a premier and not a dictator. A colleague in Israel once remarked that he knew Nicolae Ceausescu, the head of Romania, was doomed the day the Israeli radio began to refer to him as a dictator after calling him premier for years.

A careful choice of words can allow you the opportunity to significantly manipulate others. One common form of manipulation we are all familiar with is doublespeak. Often, doublespeak, using positive or neutral expressions to hide an

unpleasantness or a barbarity, actually appears to be a kindness. Corporations "reengineer" or "downsize" instead of firing or laying off workers.

Academics and other professionals often resort to difficult language to convey what could be conveyed in much more straightforward ways. Sometimes, it is because we are expected to write in an unintelligible manner; sometimes, we are trying to demonstrate that we are highly educated and deserve respect. Some writers seem to get a thrill out of making others feel stupid, and some professions actually create employment opportunities by writing in a special jargon. You need a lawyer to interpret the legalese that some other lawyer used to draw up your lease. The first lawyer creates an employment opportunity for the second.

Language can be used to separate you from your money. Disclaimers on contracts are good examples. The most common application seems to be the small print flashed briefly on television screens during automobile leasing commercials. Sure, you can drive a Mustang for $299 a month—if you have $2,000 down, drive only 12,000 miles a year, and do not mind owning nothing when the three-year lease is up.

Legalese is popular with landlords, bureaucrats, and health maintenance organizations. It is a way of depriving clients of just treatment and washing your hands of guilt at the same time. Opponents at a community debate are silenced by procedures that allow only for two-minute statements. Security deposits disappear to cover cleaning expenses. And HMOs seem to enjoy postponing approval of treatment long enough to tell you that since it is more than sixty days since an injury occurred, you are no longer eligible for the treatment you requested.

Besides these manipulative moves that are connected to the choice of particular expressions, there are other ways of nonargumentative persuasion. One way to discount the legitimate arguments of others and strengthen your own position is to be in a position to interpret their remarks in a way that slants them in your favor.

Sometimes, slanting is accomplished just on the basis of social position. Administrators make it clear that opposition to a redeployment of resources will be regarded as a lack of loyalty. It is also fairly easy to convey, through the tone of presentation, that a view should not be taken seriously. There are modes of expression, material that can be juxtaposed, and even rhetorical questions or pictures in the text to suggest that while a reporter is doing her duty in presenting a view, it ought not to be taken seriously.

Another way in which we can make a weak case seem stronger is to claim only a weak degree of justification for a conclusion. "Terrorists may be involved." If we are right, we look good. If we are wrong, we still look good because we only said it was a possibility. Writers making a case also hope that the weak claim they substantiate will be taken as the stronger one they cannot support and will pass unchallenged.

How you handle objections and questions is also important to how strong a case appears to others. If you can wander away from an issue to one you feel more comfortable with, many people will wander with you. You can also dismiss a question with the attitude that it is inappropriate, immoral, insulting, or farfetched.

Finally, I have a word to offer about humor. Ridicule of an opponent is an *ad hominem* attack. It is fallacious. It is also very effective in slanting an argument. If you become the target of humor, you might try to portray your opponent as superficial for using humor in connection with a serious issue. Humor is, however, a very useful way of presenting an objection to those who have more power than you do. It allows you to be heard and provides the other person with the opportunity to retrench while saving face.

10

Writing Sound Arguments

Believe truth! Shun error!—these, we see, are two materially different laws; and by choosing between them we may end, coloring differently our whole intellectual life.

—William James, *The Will to Believe*, 1896

10.1 WHAT IS A POSITION PAPER?

A philosophical position paper is a written argument. It is an attempt to convince someone to accept a conclusion. It contains

- A conclusion, stated in the beginning of the paper.
- Premises that lead to the conclusion.
- Information that supports the premises.

You may not be aware that you encounter position papers every day. They come in many forms. You see them in television commercials. You hear politicians giving campaign speeches. You listen to sermons in church. All of these events are written arguments: They are forms of position papers. The ability to write an effective argument is an essential skill in many professions. A position paper is a basic written argument that may be used for many different purposes and occupations. The directions in this chapter provide help in writing position papers with a method that is applicable to a wide range of topics.

10.2 THE STEPS TO WRITING A POSITION PAPER

There are nine basic steps to writing a position paper:

1. Select a topic.
2. Conduct research.
3. Select a position (a point you wish to make, your conclusion).
4. Identify one or more premises that lead to the conclusion.
5. Construct an outline of the argument you plan to make.
6. Check the outline for fallacies.
7. Write the argument.
8. Test your argument.
9. Revise your argument.

As you write, remember that the writing process is recursive. This means that the steps outlined above, although taken basically in the order in which they are given, may be repeated during the writing process. For example, once you have constructed some premises, you may decide to change your conclusion. Or, when you have tested your argument, you may feel a need to go back and redefine your premises.

10.2.1 Selecting a Topic

Several considerations govern the selection of topics for position papers for courses in philosophy. First, the topic should be a matter of personal concern to you. It should interest you and, even better, be important to you. Topics related to your religious faith, your career choice or major, or your political views are likely to hold your interest, but remember: A position paper assignment is not written merely to confirm your own prejudices. It provides an opportunity for you to consider new information and perhaps even change your opinion, or at least make it a better-informed one.

With that in mind it will still be useful for you to write a brief paragraph outlining your own view at the start of the writing process. This will help you organize the material you consult in the research phase and alert you when your sources have begun to differ with each other and with you. Having your own view in mind as you read will help avoid the common situation of knowing that two philosophers disagree on an issue while feeling that you agree with both of them.

A second parameter for selecting position paper topics is that papers should address current problems and issues, not historical ones. When you write a paper on an issue that is yet to be resolved, you are participating in the relevant discussions of your own times. A current issue is more likely to be of interest than one that has already been decided. There is even a possibility that the paper, properly submitted to a newspaper or magazine editor, may influence the opinions of others. The issue may be current, but the sources used may be historical. Philosophy position papers often involve applying the views of Socrates, Hume, or Kant to contemporary issues. And it is not uncommon for new positions—virtue ethics—to be revivals of historical positions such as Aristotle's ethics.

A third requirement is that philosophy position paper topics should have an appropriate scope. A common mistake of students is to choose topics that are too complex or that require special technical knowledge or skills beyond those normally available. A good general rule for your position paper is to confine the topic to a matter that you can address without special expertise and with only a moderate amount of research. The availability of relevant data is very important to your choice of topic. Here are some examples of topics. Which of them are obviously sufficiently narrow to be suitable for position papers in philosophy courses? Which are obviously too vague or complex? Which might be appropriate if sufficient data are available?

1. "Deterrence Does Not Justify Capital Punishment"
2. "Humans: Innately Good or Evil?"
3. "The Concept of Freedom in Western Thought"
4. "All Parents Should Be Licensed by the State"
5. "The World Views of Plato and Aristotle"
6. "The Morality of In Vitro Fertilization: A Consequentialist Perspective"
7. "Police Use of Deadly Force Against Fleeing Felons Deters Crime"

Topics 1 and 4 are very likely to be suitable; topics 2, 3, and 5 are either too vague or too complex; and topics 6 and 7 are possibly suitable if sufficient data are available.

10.2.2 Conducting Research

No matter how basic your topic is, you will no doubt have to do at least some research on it. Part Two of this manual explains how to conduct research for topics in philosophy. Many arguments are strengthened by the use of factual data and statistics, so in addition to the books and articles that you will find in your college library and the materials you will find on the Internet, be sure to ask the librarian about the statistical data available in government documents and reports from research institutes.

Also, be aware that it is highly unlikely that you are the first person who has ever investigated the topic you have chosen, whatever it may be. Periodicals will contain arguments that have already been written on your topic. This does not

mean that your job has been done for you. It does mean that you can select the best elements of other writers' arguments, restate and reorganize them in your own words, add new thoughts that they have overlooked, and produce an argument of your own.

2.3 Selecting a Position

Once you have collected some relevant information, you need to identify a conclusion, which is sometimes called a thesis or a position. A position is a declarative statement that sums up the argument you are making. Often, the position gives you the title of your paper, as you can see from the list of positions in the exercise given above. Consider your first attempt to formulate a position to be a hypothesis, a temporary conclusion that allows you to identify premises to support it. As you conduct further research, you may well change your position to reflect the implications of your premises.

2.4 Identifying Premises

Let's suppose the conclusion you wish to argue is "Premarital sex is immoral." In order to define the premises for your argument, you need to state why premarital sex is immoral. A good way to begin is to try to define the predicate of your sentence. What is morality? When is something either moral or immoral? Suppose you decide that something is immoral when it results in harm. If this is the case, then you need to demonstrate that premarital sex causes harm. If you can establish that premarital sex has harmful consequences, such as unwanted pregnancy, sexually transmitted diseases, infant mortality, and abortions, then you may construct a list of premises leading to a conclusion. The result may look something like the following:

Main Argument

PREMISE 1: Activities that cause harm are immoral.
PREMISE 2: Premarital sex results in unwanted pregnancies.
PREMISE 3: Premarital sex results in sexually transmitted diseases.
PREMISE 4: Premarital sex results in infant mortality.
PREMISE 5: Premarital sex results in abortions.
PREMISE 6: Unwanted pregnancies, sexually transmitted diseases, infant mortality, and abortions are harmful to the people who experience them.
PREMISE 7: Premarital sex is a harmful activity.
CONCLUSION: Premarital sex is immoral.

Notice that most, if not all, the premises you list will require supporting evidence. For example, your premise "premarital sex results in unwanted pregnancies" will be strengthened if you provide supporting details like the following ones:

1. Thirty-four percent of pregnancies of unmarried people are terminated in abortions.
2. Thirty-one percent of pregnancies of unmarried people result in adoptions.

Notice further that some of the premises you list may also require arguments to sustain them. For example, Premise 1, which claims that harmful activities are immoral, may not be automatically accepted by your reader and may require a subordinate argument (one that is not the main argument of the paper but that supports a single premise within the main argument) such as the following:

Subordinate Argument

PREMISE 1: Morality is the knowledge of the difference between right and wrong.
PREMISE 2: The knowledge of the difference between right and wrong allows us to make choices between moral and immoral actions.
PREMISE 3: Moral actions are actions taken as a result of choices to decrease or eliminate direct or indirect harm to other living beings.
PREMISE 4: Immoral actions are actions taken as a result of choices to create or increase direct or indirect harm to other living beings.
CONCLUSION: Activities that cause harm are immoral.

Notice that the conclusion of the subordinate argument directly above becomes a premise (Premise 1) for the major argument.

10.2.5 Constructing an Outline

Your list of premises is the first step in outlining your argument. As the passage on outlining in Chapter 1 makes clear, an outline is an essential step in the process of building your argument because it allows you to see the strengths and weaknesses of the logical structure of your argument.

Construct an outline using the heading format described in Chapter 1. For your convenience, the pattern of a generic paper outline is repeated here:

I. First main idea
  A. First subordinate idea
    1. Reason, example, or illustration
    2. Reason, example, or illustration
      a. Detail supporting reason 2

b. Detail supporting reason 2
c. Detail supporting reason 2

B. Second subordinate idea

II. Second main idea

The outline for your position paper will follow the principles embodied in the generic outline above. Notice that premises may be supported by any combination of arguments, subpremises, and supporting details. Examine the sample format below:

I. Premise 1
  A. Argument 1 for Premise 1
    1. Subpremise 1
      a. Detail supporting Subpremise 1
      b. Detail supporting Subpremise 1
      c. Detail supporting Subpremise 1
    2. Subpremise 2
      a. Detail supporting Subpremise 1
      b. Detail supporting Subpremise 1
  B. Argument 2 for Premise 1
    1. Subpremise 1
      a. Detail supporting Subpremise 1
      b. Detail supporting Subpremise 1
      c. Detail supporting Subpremise 1
    2. Subpremise 2
      a. Detail supporting Subpremise 1
      b. Detail supporting Subpremise 1
II. Premise 2
  A. Detail supporting Premise 2
  B. Detail supporting Premise 2
III. Premise 3
IV. Conclusion

If we apply the outline format to our partially developed argument about premarital sex, we have the following partially developed outline:

I. Activities that cause harm are immoral. [Premise 1]
  A. Morality is the knowledge of the difference between right and wrong.
  B. The knowledge of the difference between right and wrong allows us to make choices between moral and immoral actions.
  C. Moral actions are actions taken as a result of choices to decrease or eliminate, directly or indirectly, harm to other living beings.
  D. Immoral actions are actions taken as a result of choices to create or increase, directly or indirectly, harm to other living beings.

II. Premarital sex results in unwanted pregnancies. [Premise 2]
  A. Thirty-four percent of pregnancies of unmarried people are terminated in abortions.
  B. Thirty-one percent of pregnancies of unmarried people result in adoptions.
III. Premarital sex results in sexually transmitted diseases. [Premise 3]
IV. Premarital sex results in infant mortality. [Premise 4]
V. Premarital sex results in abortions. [Premise 5]
VI. Unwanted pregnancies, sexually transmitted diseases, infant mortality, and abortions are harmful to the people who experience them. [Premise 6]
VII. Premarital sex is a harmful activity. [Premise 7]
VIII. Premarital sex is immoral. [Conclusion]

Construct an outline as soon as you can in the writing process. You may change it several times, but each time you do, you will have a clearer picture of the argument you are forming.

10.2.6 Checking for Fallacies

Chapter 9 of this book provides a description of common fallacies. The following checklist is taken from that chapter. Use it to make sure that your argument is not a victim of any one of them.

Checklist of Fallacies

- ☐ Denying the Antecedent
- ☐ Affirming the Consequent
- ☐ The Exclusive Fallacy
- ☐ Invalid Appeal to Authority
- ☐ Straw Person
- ☐ Inconsistency
- ☐ False Dilemma
- ☐ Complex Question
- ☐ Begging the Question
- ☐ Suppressed Evidence
- ☐ Lack of Proportion
- ☐ Appeal to Unknowable Statistics
- ☐ Ad Hominem
- ☐ Guilt by Association
- ☐ Two Wrongs Make a Right
- ☐ Equivocation
- ☐ Appeal to Ignorance

- ☐ Composition
- ☐ Division
- ☐ Hasty Conclusion
- ☐ Questionable Cause
- ☐ Questionable Analogy
- ☐ Appeal to Pity
- ☐ Appeal to the Stick
- ☐ Appeal to Loyalty
- ☐ Provincialism
- ☐ Popularity
- ☐ Double Standard
- ☐ Invincible Ignorance

0.2.7 Writing the Argument

While it is vital to plan adequately, it is also vital that you not plan your paper to death. Once you have what seems to be a viable outline, it is time to begin writing your first draft. The outline, especially in the early stage of your writing, can provide you with the topics—and even the topic sentences—of your paper's individual paragraphs. But writing the first draft also tests your outline, showing you places where the outline holds and places where it may need to be changed. Don't be afraid to depart from the outline if your growing concept of the paper requires you to do so. If such changes do occur, it might be a good idea to pause occasionally in your writing of the first draft to rework the outline, integrating your new insights into it to see where they will finally lead you.

Remember that one of the great benefits of adequate planning is that the confidence it gives you in your material and its organization can transmit itself to your writing. This confidence can help you to write a narrative with a crisp, clear style that allows the reader to understand exactly what you are saying.

.2.8 Testing the Argument

Test your argument by having someone read your draft and then discuss it with you. Ask the person to state the argument you have made in his own words. This allows you to determine if you have been understood correctly. Ask your reader if your argument is convincing. Ask him to point out both the strengths and weaknesses of your argument, as you see them. Testing the argument is a good exercise to conduct in class. Remember, though, that the classmate who is helping you is very probably not experienced at critiquing a colleague's paper and may feel a bit awkward at trying to help you improve your draft. If time allows, it would be a good idea to let your reader take the draft home and read it more than once in a quiet setting before talking with you about it.

10.2.9 Revising the Argument

After you have tested your argument, revise it. You may have picked up a few points since the time you wrote your draft that are worth including in your paper. Always read the paper again after running spell check lest your paper on historical religions turn into one on hysterical religions.

10.3 THE FORMAT OF A POSITION PAPER

Position papers contain five basic elements:

1. Title page
2. Outline page, which summarizes the paper (usually optional)
3. Text, or body of the paper
4. Bibliography (references to sources of information)
5. Appendixes

The format of each of these elements should follow the directions provided in Chapter 6 of this manual. The outline page (item 2 above) should be the final outline that you write, when your paper is completed. It should resemble the sample outline provided in this chapter and should not exceed two pages in length. Do not exceed three levels of headings in the outline you submit with your position paper, even though you may have had several more levels in the outline you used to write the paper.

Two general rules govern the amount of information presented in the body of the paper. First, content must be adequate for the reader to draw a reasonable conclusion. All the facts necessary to accepting the conclusion must be present. The second guideline for determining the length of a position paper is to omit extraneous material. Include only the information that is relevant to the conclusion at hand.

All sources of information in a position paper must be properly cited. Follow the directions for reference formats given in Chapter 7.

Appendixes can be helpful to the reader of position papers by providing information that supplements the important facts contained in the text. You should attach the appendixes to the end of the paper, after the bibliography. You should not append entire government reports, journal articles, or other publications, but selected charts, graphs, or other pages may be appended. The source of the information should always be evident on the appended pages.