PHILOSOPHY

The Quest for Truth

Tenth Edition

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PHILOSOPHY IS THE NAME that philosophers have given to both a discipline and a process. As a discipline, philosophy is one of the humanities, a field of study out of which several other fields have evolved—physics, biology, political science, and many others. As a process, philosophy is a penetrating mode of reflection for understanding life's most important truths. This mode is what we may call the *philosophical method*—the systematic use of critical reasoning to try to find answers to fundamental questions about reality, morality, and knowledge. The method, however, is not a master key used exclusively by professional philosophers to unlock mysteries hidden from common folk. The philosophical method is the birthright of every person, for we are all born with the capacity to reason, to question, to discover. For thousands of years, great minds like Aristotle, Plato, Confucius, Descartes, Aquinas, and Sartre have used it in their search for wisdom, and what they found has changed countless lives. But amateur philosophers like you have also used it—and continue to use it—to achieve life-altering understanding that would have eluded them otherwise.

THE GOOD OF PHILOSOPHY

Philosophy is not just about ideas; it's about *fundamental* ideas, those upon which other ideas depend. A fundamental belief logically supports other beliefs, and the more beliefs it supports the more fundamental it is. Your belief or disbelief in God, for example, might support a host of other beliefs about morality, life after death, heaven, hell, free will, science, evolution, prayer, abortion, miracles, homosexuality, and more. Thanks to your upbringing, your culture, your peers, and other influences, you already have a head full of fundamental beliefs, some of them true, some false. Whether true or false, they constitute the framework of your whole belief system, and as such they help you make sense of a wide range of important issues in life—issues concerning what exists and what doesn't, what actions are right or wrong (or neither), and what kinds of things we can know and not know. Fundamental beliefs, therefore, make up your "philosophy of life," which informs your thinking and guides your actions.

Perhaps now you can better appreciate philosophy's greatest *practical* benefit: it gives us the intellectual wherewithal to improve our lives by improving our philosophy of life. A faulty philosophy of life—that is, one that comprises a great many false fundamental beliefs—can lead to a misspent or misdirected life, a life less meaningful than it could be. Philosophy is the most powerful instrument we have for evaluating the worth of our fundamental beliefs and for changing them for the better. Through philosophy we exert control over the trajectory of our lives, making major course corrections by reason and reflection.

The Greek philosopher Socrates (469–399 B.C.), one of Western civilization's great intellectual heroes, says, "An unexamined life is not worth living." To examine your life is to scrutinize the core ideas that shape it, and the deepest form of scrutiny is exercised through philosophy. This search for answers goes to the heart of the traditional conception of philosophy as a search for wisdom (the term *philosophy* is derived from Greek words meaning "love of wisdom"). With the attainment of wisdom, we come to understand the true nature of reality and how to apply that understanding to living a good life.

Philosophy's chief *theoretical* benefit is the same one that most other fields of inquiry pursue: understanding for its own sake. Even if philosophy had no practical applications at all, it would still hold great value for us. We want to know how the world works, what truths it hides, just for the sake of knowing. And philosophy obliges. Astronomers search the sky, physicists study subatomic particles, and archaeologists search for ancient ruins, all the while knowing that what they find may have no practical implications at all. We humans wonder, and that's often all the reason we need to search for answers. As the great philosopher Aristotle says, "For it is owing to their wonder that people both now begin and at first began to philosophize."

For many people, the quest for understanding through philosophy is a spiritual, transformative endeavor, an ennobling pursuit of truths at the core of life. Thus, several philosophers speak of philosophy as something that enriches or nurtures the soul or mind. Socrates, speaking to the jurors who condemned him for practicing philosophy on the streets of Athens, asked, "Are you not ashamed that, while you take care to acquire as much wealth as possible, with honor and glory as well, yet you take no care or thought for understanding or truth, or for the best possible state of your soul?" In a similar vein, the Greek philosopher Epicurus (341–270 B.C.) said, "Let no young man delay the study of philosophy, and let no old man become weary of it; for it is never too early nor too late to care for the well-being of the soul." And in our own era, the philosopher Walter Kaufmann (1921–1980) declared, "Philosophy means liberation from the two dimensions of routine, soaring above the well known, seeing it in new perspectives, arousing wonder and the wish to fly."

Along with philosophical inquiry comes freedom. We begin our lives at a particular place and time, steeped in the ideas and values of a particular culture, fed ready-made beliefs that may or may not be true and that we may never think to question. If you passively accept such beliefs, then those beliefs are *not really yours.* If they are not really yours, and you let them guide your choices and actions, then they—not you—are in charge of your life. You thus forfeit your personal freedom. But philosophy helps us rise above this predicament, to transcend the narrow and obstructed standpoint from which we may view everything. It helps us sift our hand-me-down beliefs in the light of reason, look beyond the prejudices that blind us, and see what's real and true. By using the philosophical method, we may learn that some of our beliefs are on solid ground and some are not. In either case, through philosophy our beliefs become truly and authentically our own.

PHILOSOPHICAL TERRAIN

Philosophy's sphere of interest is vast, encompassing fundamental beliefs drawn from many places. Philosophical questions can arise anywhere. Part of the reason for this is that ordinary beliefs that seem to have no connection with philosophy can become philosophical in short order. A physiologist may want to know how our brains work, but she ventures into the philosophical arena when she wonders whether the brain is the same thing as the mind—a question that science alone cannot answer. A lawyer studies how the death penalty is administered in Texas, but he does philosophy when he considers whether capital punishment is ever morally permissible. A medical

scientist wants to know how a human fetus develops, but she finds it difficult to avoid the philosophical query of what the moral status of the fetus is. An astrophysicist studies the Big Bang, the cataclysmic explosion thought to have brought the universe into being—but then asks whether the Big Bang shows that God caused the universe to exist. On CNN you see the horrors of war and famine, but then you find yourself grappling with whether they can be squared with the existence of an all-powerful, all-knowing, and all-good God. Or you wonder what your moral obligations are to the poor and hungry of the world. Or you ponder whether government should help people in need or leave them to fend for themselves.

We can divide philosophy's subject matter into four main divisions, each of which is a branch of inquiry in its own right with many subcategories. Here's a brief rundown of these divisions and a sampling of the kinds of questions that each asks.

Metaphysics is the study of reality in the broadest sense, an inquiry into the elemental nature of the universe and the things in it. Though it must take into account the findings of science, metaphysics generally focuses on basic questions that science cannot address. Questions of interest: Does the world consist only of matter, or is it made up of other basic things, such as ideas or minds? Is there a spiritual, ideal realm that exists beyond the material world? Is the mind the same thing as the body? How are mind and body related? Do people have immortal souls? Do humans have free will, or are our actions determined by forces beyond our control? Can they be both free and determined? Does God exist? How can both a good God and evil exist simultaneously? What is the nature of causality? Can an effect ever precede its cause? What is the nature of time? Is time travel possible?

Epistemology is the study of knowledge. Questions of interest: What is knowledge? What is truth? Is knowledge possible—can we ever know anything? Does knowledge require certainty? What are the sources of knowledge? Is experience a source of knowledge? Is mysticism or faith a source? Can we gain knowledge of the empirical world through reason alone? If we have knowledge, how much do we have? When are we justified in saying that we know something? Do we have good reasons to believe that the world exists independently of our minds? Or do our minds constitute reality?

Axiology is the study of value, including both aesthetic value and moral value. The study of moral value is known as **ethics**. Ethics involves inquiries into the nature of moral judgments, virtues, values, obligations, and theories. Questions of interest: What makes an action right (or wrong)? What things are intrinsically good? What is the good life? What gives life meaning? What makes someone good (or bad)? What moral principles should guide our actions and choices? Which is the best moral theory? Is killing ever morally permissible? If so, why? Are moral standards objective or subjective? Is an action right merely because a culture endorses it? Does morality depend on God? What makes a society just?

Logic is the study of correct reasoning. Questions of interest: What are the rules for drawing correct inferences? What are the nature and structure of deductive arguments? How can propositional or predicate logic be used to evaluate arguments? Upon what logical principles does reasoning depend? Does logic describe how the world is—or just how our minds work? Can conclusions reached through inductive logic be rationally justified?

In addition to these divisions, there are subdivisions of philosophy whose job is to examine critically the assumptions and principles that underlie other fields. Thus we have the philosophy of science, the philosophy of law, the philosophy of mathematics, the philosophy of history, the philosophy of language, and many others. When those laboring in a discipline begin questioning its most basic ideas—ideas that define its subject matter and principles of inquiry—philosophy, the most elemental mode of investigation, steps in.

THINKING PHILOSOPHICALLY

As we have seen, to think philosophically is to bring your powers of critical reasoning to bear on fundamental questions. When you do this, you are usually clarifying the meaning of concepts, constructing and evaluating philosophical theories, or devising and evaluating logical arguments. This latter task constitutes the principal labor of philosophy. Socrates, Plato, Aristotle, Descartes, and other great thinkers do not deliver their philosophical insights to us without argument, as if we are automatically to accept their views with no questions asked. Philosophers provide *reasons* for thinking their ideas are plausible—that is, they give us arguments. And if we believe what they say, it should be because there are good reasons for doing so. Likewise, if we expect intelligent people to accept *our* philosophical views, we must argue our case. Since the philosophy we read will most likely contain arguments, our understanding of the text will hang on our ability to identify and understand those arguments.

Reasons and Arguments

As you might have guessed, the term *argument* does not refer to heated disagreements or emotional squabbles. An **argument** is a group of statements in which one of them is meant to be supported by the others. A **statement** (or **claim**) is an assertion that something is or is not the case and is therefore the kind of utterance that is either true or false. In an argument, the statement being supported is the **conclusion**, and the statements supporting the conclusion are the **premises**. The premises are meant to provide reasons for believing that the conclusion is true. A good argument gives us good reasons for accepting a conclusion; a bad argument fails to provide good reasons. In philosophy—and in any other kind of rational inquiry—accepting a conclusion (statement) without good reasons is an elementary mistake in reasoning. Believing a statement without good reasons is a recipe for error; believing a statement for good reasons increases your chances of uncovering the truth.

When we do philosophy, then, we are likely at some point to be grappling with arguments—we are trying to either (1) devise an argument to support a statement or (2) evaluate an argument to see if there really are good reasons for accepting its conclusion.

Note that *argument* in the sense used here is not synonymous with *persuasion*. An argument provides us with reasons for accepting a claim; it is an attempted "proof" for an assertion. But persuasion does not necessarily involve giving any reasons at all for accepting a claim. To persuade is to influence people's opinions, which can be accomplished by offering a good argument but also by misleading with logical

fallacies, exploiting emotions and prejudices, dazzling with rhetorical gimmicks, hiding or distorting the facts, threatening or coercing people—the list is long. Good arguments prove something whether or not they persuade. Persuasive ploys can change minds but do not necessarily prove anything.

Now consider these two simple arguments:

Argument 1

It's wrong to take the life of an innocent person. Abortion takes the life of an innocent person. Therefore abortion is wrong.

Argument 2

God does not exist. After all, most college students believe that that is the case.

In Argument 1, the conclusion is "abortion is wrong," and it is backed by two premises: "It's wrong to take the life of an innocent person" and "Abortion takes the life of an innocent person." In Argument 2, the conclusion is "God does not exist," which is supported by the premise "After all, most college students believe that that is the case." Despite the differences between these two passages (differences in content, the number of premises, and the order of their parts), they are both arguments because they exemplify basic argument structure: a conclusion supported by at least one premise.

Though the components of an argument seem clear enough, people often fail to distinguish between arguments and strong statements that contain no arguments at all. Suppose we change Argument 1 into this:

Abortion is wrong. I can't believe how many people think it's morally okay. The world is insane.

Now there is no argument, just an expression of exasperation or anger. There are no statements giving us reasons to believe a conclusion. What we have are some unsupported assertions that may merely *appear* to make a case. If we ignore the distinction between genuine arguments and nonargumentative material, critical reasoning is undone.

The simplest way to locate an argument is to *find its conclusion first, then its premises.* Zeroing in on conclusions and premises can be a lot easier if you keep an eye out for *indicator words.* Indicator words often tag along with arguments and indicate that a conclusion or premise may be nearby.

Here are a few conclusion indicator words:

consequently	as a result
thus	hence
therefore	so
it follows that	which means that

Here are some premise indicator words:

in view of the fact	assuming that
because	since

due to the fact that for
inasmuch as given that

Just remember that indicator words do not *guarantee* the presence of conclusions and premises. They are simply telltale signs.

Assuming we can recognize an argument when we see it, how can we tell if it is a good one? Fortunately, the general criteria for judging the merits of an argument are simple and clear. A good argument—one that gives us good reasons for believing a claim—must have (1) solid logic and (2) true premises. Requirement (1) means that the conclusion should follow logically from the premises, that there must be a proper logical connection between the supporting statements and the statement supported. Requirement (2) says that what the premises assert must in fact be the case. An argument that fails in either respect is a bad argument.

There are two basic kinds of arguments—deductive and inductive—and our two requirements hold for both of them, even though the logical connections in each type are distinct. **Deductive arguments** are intended to give *logically conclusive* support to their conclusions so that if the premises are true, the conclusion absolutely must be true. Argument 1 is a deductive argument and is therefore supposed to be constructed so that if the two premises are true, its conclusion cannot possibly be false. Here it is with its structure laid bare:

Argument 1

1. It's wrong to take the life of an innocent person.
2. Abortion takes the life of an innocent person.
3. Therefore, abortion is wrong.

Do you see that, given the form or structure of this argument, if the premises are true, then the conclusion *has to be true*? It would be very strange—illogical, in fact—to agree that the two premises are true but that the conclusion is false.

Now look at this one:

Argument 3

1. All dogs are mammals.
2. Rex is a dog.
3. Therefore, Rex is a mammal.

Again, there is no way for the premises to be true while the conclusion is false. The deductive form of the argument guarantees this.

So a deductive argument is intended to have this sort of airtight structure. If it actually does have this structure, it is said to be *valid*. Argument 1 is deductive because it is intended to provide logically conclusive support to its conclusion. It is valid because, as a matter of fact, it does offer this kind of support. A deductive argument that fails to provide conclusive support to its conclusion is said to be *invalid*. In such an argument, it is possible for the premises to be true and the conclusion false. Argument 3 is intended to have a deductive form, and because it actually does have this form, the argument is also valid.

An elementary fact about deductive arguments is that their validity (or lack thereof) is a *separate issue* from the truth of the premises. Validity is a structural matter, depending on how an argument is put together. Truth concerns the nature of the claims made in the premises and conclusion. A deductive argument is supposed to be built so that *if* the premises are true, the conclusion must be true—but in a particular case, the premises might *not* be true. A valid argument can have true or false premises and a true or false conclusion. (By definition, of course, it cannot have true premises and a false conclusion.) In any case, being invalid or having false premises dooms a deductive argument.

Inductive arguments are supposed to give *probable* support to their conclusions. Unlike deductive arguments, they are not designed to support their conclusions decisively. They can establish only that, if their premises are true, their conclusions are probably true (more likely to be true than not). Argument 2 is an inductive argument meant to demonstrate the probable truth that "God does not exist." Like all inductive arguments (and unlike deductive ones), it can have true premises and a false conclusion. So it's possible for the sole premise—"After all, most college students believe that that is the case"—to be true while the conclusion is false.

If inductive arguments succeed in lending probable support to their conclusions, they are said to be *strong*. Strong arguments are such that if their premises are true, their conclusions are probably true. If they fail to provide this probable support, they are termed *weak*. Argument 2 is a weak argument because its premise, even if true, does not show that more likely than not God does not exist. What college students (or any other group) believe about God does not constitute good evidence for or against God's existence.

But consider this inductive argument:

Argument 4

1. Eighty-five percent of the students at this university are Republicans.
2. Sonia is a student at this university.
3. Therefore, Sonia is probably a Republican.

This argument is strong. If its premises are true, its conclusion is likely to be true. If 85 percent of the university's students are Republicans, and Sonia is a university student, she is more likely than not to be a Republican too.

When a valid (deductive) argument has true premises, it is a good argument. A good deductive argument is said to be *sound*. Argument 1 is valid, but we cannot say whether it is sound until we determine the truth of the premises. Argument 3 is valid, and if its premises are true, it is sound. When a strong (inductive) argument has true premises, it is also a good argument. A good inductive argument is said to be *cogent*. Argument 2 is weak, so there is no way it can be cogent. Argument 4 is strong, and if its premises are true, it is cogent.

Checking the validity or strength of an argument is often a plain, commonsense undertaking. Using our natural reasoning ability, we can examine how the premises are linked to the conclusion and can see quickly whether the conclusion follows from the premises. We are most likely to make an easy job of it when the arguments are simple. Many times, however, we need some help, and help is available in the form of methods and guidelines for evaluating arguments.

Having a familiarity with common argument patterns, or forms, is especially useful when assessing the validity of deductive arguments. We are likely to encounter these forms again and again. Here is a prime example:

Argument 5

1. If the surgeon operates, then the patient will be cured.
2. The surgeon is operating.
3. Therefore, the patient will be cured.

This argument form contains a *conditional* premise—that is, a premise consisting of a conditional, or if-then, statement (actually a compound statement composed of two constituent statements). Premise 1 is a conditional statement. A conditional statement has two parts: the part beginning with *if* (called the *antecedent*), and the part beginning with *then* (known as the *consequent*). So the antecedent of Premise 1 is "If the surgeon operates," and the consequent is "then the patient will be cured."

The best way to appreciate the structure of such an argument (or any deductive argument, for that matter) is to translate it into traditional argument symbols in which each statement is symbolized by a letter. Here is the symbolization for Argument 5:

1. If *p*, then *q*.
2. *p*.
3. Therefore, *q*.

We can see that *p* represents "the surgeon operates," and *q* represents "the patient will be cured." But notice that we can use this same symbolized argument form to represent countless other arguments—arguments with different statements but having the same basic structure.

It just so happens that the underlying argument form for Argument 5 is extremely common—common enough to have a name, *modus ponens* (or affirming the antecedent). The truly useful fact about *modus ponens* is that any argument having this form is valid. We can plug any statements we want into the formula and the result will be a valid argument, a circumstance in which if the premises are true, the conclusion must be true.

An equally prevalent argument form is *modus tollens* (or denying the consequent). For example:

Argument 6

1. If the dose is low, then the healing is slow.
2. The healing is not slow.
3. Therefore, the dose is not low.

1. If *p*, then *q*.
2. Not *q*.
3. Therefore, not *p*.

Modus tollens is also a valid form, and any argument using this form must also be valid.

There are also common argument forms that are invalid. Here are two of them:

Argument 7 (Affirming the Consequent)

1. If the mind is an immaterial substance, then ESP is real.
2. ESP is real.
3. Therefore, the mind is an immaterial substance.

1. If *p*, then *q*.
2. *q*.
3. Therefore, *p*.

Argument 8 (Denying the Antecedent)

1. If morality is relative to persons (that is, if moral rightness or wrongness depends on what people believe), then moral disagreement between persons would be nearly impossible.
2. But morality is not relative to persons.
3. Therefore, moral disagreement between persons is not nearly impossible.

1. If *p*, then *q*.
2. Not *p*.
3. Therefore, not *q*.

The advantage of being able to recognize these and other common argument forms is that you can use that skill to readily determine the validity of many deductive arguments. You know, for example, that any argument having the same form as *modus ponens* or *modus tollens* must be valid, and any argument in one of the common invalid forms must be invalid.

Inductive arguments also have distinctive forms, and being familiar with the forms can help you evaluate the arguments. In *enumerative induction*, we arrive at a generalization about an entire group of things after observing just some members of the group. Consider these:

Argument 9

Every formatted disk I have bought from the computer store is defective.

Therefore, all formatted disks sold at the computer store are probably defective.

Argument 10

All the hawks in this wildlife sanctuary that I have observed have had red tails.

Therefore, all the hawks in this sanctuary probably have red tails.

Argument 11

Sixty percent of the Bostonians I have interviewed in various parts of the city are pro-choice.

Therefore, 60 percent of all Bostonians are probably pro-choice.

As you can see, enumerative induction has this form:

X percent of the observed members of group A have property P.

Therefore, X percent of all members of group A probably have property P.

The observed members of the group are simply a sample of the entire group. So based on what we know about this sample, we can generalize to all the members. But how do we know whether such an argument is strong? Everything depends on the sample. If the sample is large enough and representative enough, we can safely assume that our generalization drawn from the sample is probably an accurate reflection of the whole group of members. A sample is representative of an entire group only if each member of the group has an equal chance of being included in the sample. In general, the larger the sample, the greater the probability that it accurately reflects the nature of the group as a whole. Often common sense tells us when a sample is too small.

We do not know how many formatted disks from the computer store are in the sample mentioned in Argument 9. But if the number is several dozen and the disks were bought over a period of weeks or months, the sample is probably sufficiently large and representative. If so, the argument is strong. Likewise, in Argument 10 we don't know the size of the sample or how it was obtained. But if the sample was taken from all the likely spots in the sanctuary where hawks live, and if several hawks were observed in each location, the sample is probably adequate—and the argument is strong. In Argument 11, if the sample consists of a handful of Bostonians interviewed on a few street corners, the sample is definitely inadequate and the argument is weak. But if the sample consists of several hundred people, and if every member of the whole group has an equal chance of being included in the sample, then the sample would be good enough to allow us to accurately generalize about the whole population. Typically, selecting such a sample of a large population is done by professional polling organizations.

In the argument form known as *analogical induction* (or argument by analogy), we reason in this fashion: Two or more things are similar in several ways; therefore, they are probably similar in one further way. Consider this argument:

Argument 12

Humans can walk upright, use simple tools, learn new skills, and devise deductive arguments.

Chimpanzees can walk upright, use simple tools, and learn new skills.

Therefore, chimpanzees can probably devise deductive arguments.

This argument says that because chimpanzees are similar to humans in several respects, they probably are similar to humans in one further respect.

Here's an argument by analogy that has become a classic in philosophy:

Argument 13

A watch is a complex mechanism with many parts that seem arranged to achieve a specific purpose—a purpose chosen by the watch's designer.

In similar fashion, the universe is a complex mechanism with many parts that seem arranged to achieve a specific purpose.

Therefore, the universe must also have a designer.

We can represent the form of an argument by analogy in this way:

X has properties P1, P2, P3, plus the property P4.

Y has properties P1, P2, and P3.

Therefore, Y probably has property P4.

The strength of an analogical induction depends on the relevant similarities between the two things compared. The more relevant similarities there are, the greater the probability that the conclusion is true. In Argument 12, several similarities are noted. But there are some unmentioned dissimilarities. The brain of a chimpanzee is smaller and more primitive than that of a human, a difference that probably inhibits higher intellectual functions such as logical argument. Argument 12, then, is weak. A common response to Argument 13 is that the argument is weak because although the universe resembles a watch in some ways, in other ways it does not resemble a watch. Specifically, the universe also resembles a living thing.

The third type of inductive argument is known as **inference to the best explanation** (or abduction), a kind of reasoning that we all use daily and that is at the heart of scientific investigations. Recall that an argument gives us reasons for believing *that* something is the case. An *explanation*, on the other hand, states *how* or *why* something is the case. It attempts to clarify or elucidate, not offer proof. For example:

1. Megan definitely understood the material, for she could answer every question on the test.
2. Megan understood the material because she has a good memory.

Sentence 1 is an argument. The conclusion is "Megan definitely understood the material," and the reason (premise) given for believing that the conclusion is true is "for she could answer every question on the test." Sentence 2, though, is an explanation. It does not try to present reasons for believing something; it has nothing to prove. Instead, it tries to show why something is the way it is (why Megan understood the material). Sentence 2 assumes that Megan understood the material then tries to explain why. Such explanations play a crucial role in inference to the best explanation.

In inference to the best explanation, we begin with premises about a phenomenon or state of affairs to be explained. Then we reason from those premises to an explanation for that state of affairs. We try to produce not just any old explanation, but the best explanation among several possibilities. The best explanation is the one most likely to be true. The conclusion of the argument is that the preferred explanation is indeed probably true. For example:

Argument 14

Tariq flunked his philosophy course.

The best explanation for his failure is that he didn't read the material.

Therefore, he probably didn't read the material.

Argument 15

Ladies and gentlemen of the jury, the defendant was found with the murder weapon in his hand, blood on his clothes, and the victim's wallet in his pocket. We have an eyewitness putting the defendant at the scene of the crime. The best explanation for all these facts is that the defendant committed the murder. There can be very little doubt—he's guilty.

Here's the form of inference to the best explanation:

Phenomenon *Q*.

E provides the best explanation for *Q*.

Therefore, it is probable that *E* is true.

In any argument of this pattern, if the explanation given is really the best, then the argument is inductively strong. If the explanation is not the best, the argument is inductively weak. If the premises of the strong argument are true, then the argument is cogent. If the argument is cogent, then we have good reason to believe that the conclusion is true.

The biggest challenge in using inference to the best explanation is determining which explanation is the best. Sometimes this feat is easy. If our car has a flat tire, we may quickly uncover the best explanation for such a state of affairs. If we see a nail sticking out of the flat and there is no obvious evidence of tampering or of any other extraordinary cause (that is, there are no good alternative explanations), we may safely conclude that the best explanation is that a nail punctured the tire.

In more complicated situations, we may need to do what scientists do to evaluate explanations, or theories—use special criteria to sort through the possibilities. Scientists call these standards the *criteria of adequacy*. Despite this fancy name, these criteria are basically just common sense, standards that you have probably used yourself.

One of these criteria is called *conservatism*. This criterion says that, all things being equal, the best explanation or theory is the one that fits best with what is already known or established. For example, if a friend of yours says—in all seriousness—that she can fly to the moon without using any kind of rocket or spaceship, you probably wouldn't believe her (and might even think that she needed psychiatric help). Your reasons for doubting her would probably rest on the criterion of conservatism—that what she says conflicts with everything science knows about spaceflight, human anatomy, aerodynamics, laws of nature, and much more. It is logically possible that she really can fly to the moon, but her claim's lack of conservatism (the fact that it conflicts with so much of what we already know about the world) casts serious doubt on it.

Here is another useful criterion for judging the worth of explanations: *simplicity*. Other things being equal, the best explanation is the one that is the simplest—that is, the one that rests on the fewest assumptions. The theory making the fewest assumptions is less likely to be false because there are fewer ways for it to go wrong. In the example about the flat tire, one possible (but strange) explanation is that space aliens punctured the tire. You probably wouldn't put much credence in this explanation because you would have to assume too many unknown entities and processes—namely, space aliens who have come from who-knows-where using who-knows-what methods to move about

and puncture your tires. The nail-in-the-tire theory is much simpler (it assumes no unknown entities or processes) and is therefore much more likely to be true.

When you are carefully reading an argument (whether in an essay or some other context), you will be just as interested in whether the premises are true as in whether the conclusion follows from the premises. If the writer is conscientious, he or she will try to ensure that each premise is either well supported or in no need of support (because the premise is obvious or agreed to by all parties). The needed support will come from the citing of examples, statistics, research, expert opinion, and other kinds of evidence or reasons. This arrangement means that each premise of the primary argument may be a conclusion supported in turn by premises citing evidence or reasons. In any case, you as the reader will have to evaluate carefully the truth of all premises and the support behind them.

Fallacious Reasoning

You can become more proficient in reading and writing philosophy if you know how to identify fallacies when you see them. **Fallacies** are common but bad arguments. They are defective arguments that appear so often in writing and speech that philosophers have given them names and offered instructions on how to recognize and avoid them.

Many fallacies are not just failed arguments—they are also deceptively plausible appeals. They can easily appear sound or cogent, misleading the reader. Their potential for slipperiness is another good reason to study fallacies. The best way to avoid being taken in by them is to study them until you can consistently pick them out of any random selection of prose. Here are some of the more prevalent ones.

Straw Man

The **straw man** fallacy is the misrepresentation of a person's views so they can be more easily attacked or dismissed. Let's say you argue that the war in Afghanistan is too costly in lives and money, and your opponent replies this way:

> My adversary argues that the war in Afghanistan is much too difficult for the United States, and that we ought to, in effect, cut and run while we can. But why must we take the coward's way out?

Thus, your point has been distorted, made to look more extreme or radical than it really is; it is now an easy target. The notion that we ought to "cut and run" or "take the coward's way out" *does not follow* from the statement that the war in Afghanistan is too costly.

The straw man kind of distortion, of course, proves nothing, though many people fall for it every day. This fallacy is probably the most common type of fallacious reasoning used in politics. It is also popular in many other kinds of argumentation—including student philosophy papers.

Appeal to the Person

Closely related to the straw man fallacy is **appeal to the person** (also known as the *ad hominem* fallacy). Appeal to the person is the rejecting of a statement on the grounds that it comes from a particular person, not because the statement, or claim, itself is false or dubious. For example:

You can safely discard anything that Susan has to say about government. She's a dyed-in-the-wool socialist.

Johnson argues that our current welfare system is defective. But don't listen to him—he's a conservative.

Ad hominem arguments often creep into student philosophy papers. Part of the reason is that some appeals to the person are not so obvious. For example:

Swinburne's cosmological argument is a serious attempt to show that God is the best explanation for the existence of the universe. However, he is a well-known theist, and this fact raises some doubts about the strength of his case.

Dennett argues from the materialist standpoint, so he begins with a bias that we need to take into account.

Some of the strongest arguments against the death penalty come from a few people who are actually on death row. They obviously have a vested interest in showing that capital punishment is morally wrong. We therefore are forced to take their arguments—however convincing—with a grain of salt.

Each of these arguments is defective because it asks us to reject or resist a claim solely because of a person's character, background, or circumstances—things that are generally irrelevant to the truth of claims. A statement must stand or fall *on its own merits.* The personal characteristics of the person espousing the view do not necessarily have a bearing on its truth. Only if we can show that someone's dubious traits somehow make the claim dubious are we justified in rejecting the claim because of a person's personal characteristics. Such a circumstance is rare.

Appeal to Popularity

The **appeal to popularity** (or appeal to the masses) is another extremely common fallacy. It is arguing that a claim must be true not because it is backed by good reasons, but simply because many people believe it. The idea is that, somehow, there is truth in numbers. For example:

Of course there's a God. Everyone believes that.

Seventy percent of Americans believe that the president's tax cuts are good for the economy. So don't try to tell me the tax cuts aren't good for the economy.

Most people believe that Jones is guilty, so he's guilty.

In each of these arguments, the conclusion is thought to be true merely because it is believed by an impressive number of people. The number of people who believe a claim, however, is irrelevant to the claim's truth. What really matters is how much support the claim has from good reasons. Large groups of people have been—and are—wrong about many things. Many people once believed that Earth is flat, mermaids are real, and human sacrifices help crops grow. They were wrong.

Remember, however, that the number of people who accept a claim *can* be relevant to its truth if the people happen to be experts. Twenty professional astronomers who predict an eclipse are more reliable than one hundred nonexperts who swear that no such eclipse will occur.

Genetic Fallacy

A ploy like the appeal to the person is the **genetic fallacy**—arguing that a statement can be judged true or false based on its source. In an appeal to the person, someone's character or circumstance is thought to tell the tale. In the genetic fallacy, the truth of a statement is supposed to depend on origins other than an individual—organizations, political platforms, groups, schools of thought, even exceptional states of mind (like dreams and intuitions). Look:

> That new military reform idea has gotta be bunk. It comes from a liberal think tank.
>
> At the city council meeting Hernando said that he had a plan to curb the number of car crashes on Highway 19. But you can bet that whatever it is, it's half-baked—he said the plan came to him when he was stoned on marijuana.
>
> The U.S. Senate is considering a proposal to reform affirmative action, but you know their ideas must be ridiculous. What do they know about the rights of the disadvantaged? They're a bunch of rich, white guys.

Equivocation

The fallacy of **equivocation** is assigning two different meanings to the same significant word in an argument. The word is used in one sense in a premise and in a different sense in another place in the argument. The switch in meaning can deceive the reader and disrupt the argument, rendering it invalid or weaker than it would be otherwise. Here's a classic example:

> Only man is rational.
>
> No woman is a man.
>
> Therefore, no woman is rational.

And one other:

> You are a bad writer.
>
> If you are a bad writer, then you are a bad boy.
>
> Therefore, you are a bad boy.

The first argument equivocates on the word *man*. In the first premise, *man* means humankind; in the second, male. Thus, the argument seems to prove that women are not rational. You can see the trick better if you assign the same meaning to both instances of *man*. Like this:

> Only humans are rational.
>
> No woman is a human.
>
> Therefore, no woman is rational.

In the second argument, the equivocal term is *bad*. In the first premise, *bad* means incompetent; in the second, immoral.

Appeal to Ignorance

As its name implies, this fallacy tries to prove something by appealing to what we *don't* know. The **appeal to ignorance** is arguing that either (1) a claim is true because

it hasn't been proven false or (2) a claim is false because it hasn't been proven true. For example:

> Try as they may, scientists have never been able to disprove the existence of an afterlife. The conclusion to be drawn from this is that there is in fact an afterlife.
>
> Super Green Algae can cure cancer. No scientific study has ever shown that it does not work.
>
> No one has ever shown that ESP (extrasensory perception) is real. Therefore, it does not exist.
>
> There is no evidence that people on welfare are hardworking and responsible. Therefore, they are not hardworking and responsible.

The first two arguments try to prove a claim by pointing out that it hasn't been proven false. The second two try to prove that a claim is false because it hasn't been proven true. Both kinds of arguments are bogus because they assume that a lack of evidence proves something. A lack of evidence, however, can prove nothing. Being ignorant of the facts does not enlighten us.

Notice that if a lack of evidence could prove something, then you could prove just about anything you wanted. You could reason, for instance, that since no one can prove that horses *can't* fly, horses must be able to fly. Since no one can disprove that you possess supernatural powers, you must possess supernatural powers.

False Dilemma

In a dilemma, you are forced to choose between two unattractive possibilities. The fallacy of **false dilemma** is arguing erroneously that since there are only two alternatives to choose from and one of them is unacceptable, the other one must be true. Consider these:

> You have to listen to reason. Either you must sell your car to pay your rent, or your landlord will throw you out on the street. You obviously aren't going to sell your car, so you will be evicted.
>
> You have to face the hard facts about the war on drugs. Either we must spend billions of dollars to increase military and law enforcement operations against drug cartels, or we must legalize all drugs. We obviously are not going to legalize all drugs, so we have to spend billions on anti-cartel operations.

The first argument says that there are only two choices to consider: Either sell your car or get evicted, and since you will not sell your car, you will get evicted. This argument is fallacious because (presumably) the first premise is false—there seem to be more than just two alternatives here. You could get a job, borrow money from a friend, or sell your DVD player and TV. If the argument seems convincing, it is because other possibilities are excluded.

The second argument asserts that there are only two ways to go: Spend billions to attack drug cartels or legalize all drugs. Since we won't legalize all drugs, we must therefore spend billions to assault the cartels. The first (either/or) premise, however, is false; there are at least three other options. The billions could be spent to reduce and prevent drug use, drug producers could be given monetary

incentives to switch to non-drug businesses, or only some drugs could be legalized.

Begging the Question

The fallacy of **begging the question** is trying to prove a conclusion by using that very same conclusion as support. It is arguing in a circle. This way of trying to prove something says, in effect, "X is true because X is true." Few people would fall for this fallacy in such a simple form, but more subtle kinds can be beguiling. For example, here's the classic instance of begging the question:

> The Bible says that God exists.
>
> The Bible is true because God wrote it.
>
> Therefore, God exists.

The conclusion here ("God exists") is supported by premises that assume that very conclusion.

Here's another one:

> All citizens have the right to a fair trial because those whom the state is obliged to protect and give consideration are automatically due judicial criminal proceedings that are equitable by any reasonable standard.

This passage may at first seem like a good argument, but it isn't. It reduces to this unimpressive assertion: "All citizens have the right to a fair trial because all citizens have the right to a fair trial." The conclusion is "All citizens have the right to a fair trial," but that's more or less what the premise says. The premise—"those whom the state is obliged to protect and give consideration are automatically due judicial criminal proceedings that are equitable by any reasonable standard"—is equivalent to "All citizens have the right to a fair trial."

When circular reasoning is subtle, it can ensnare even its own creators. The fallacy can easily sneak into an argument if the premise and conclusion say the same thing but say it in different, complicated ways.

Slippery Slope

The metaphor behind this fallacy suggests the danger of stepping on a dicey incline, losing your footing, and sliding to disaster. The fallacy of **slippery slope**, then, is arguing erroneously that a particular action should not be taken because it will lead inevitably to other actions resulting in some dire outcome. The key word here is *erroneously.* A slippery slope scenario becomes fallacious when there is no reason to believe that the chain of events predicted will ever happen. For example:

> This trend toward gay marriage must be stopped. If gay marriage is permitted, then traditional marriage between a man and a woman will be debased and devalued, which will lead to an increase in divorces. And higher divorce rates can only harm our children.

This argument is fallacious because there are no reasons for believing that gay marriage will ultimately result in the chain of events described. If good reasons could be given, the argument might be salvaged.

Composition

Sometimes what is true about the parts of a thing is also true of the whole—and sometimes not. The fallacy of **composition** is arguing erroneously that what can be said of the parts can also be said of the whole. Consider:

Each piece of wood that makes up this house is lightweight. Therefore, the whole house is lightweight.

Each soldier in the platoon is proficient. Therefore, the platoon as a whole is proficient.

The monthly payments on this car are low. Hence, the cost of the car is low.

Just remember, sometimes the whole does have the same properties as the parts. If each part of the rocket is made of steel, the whole rocket is made of steel.

Division

If you turn the fallacy of composition upside down, you get the fallacy of **division**—arguing erroneously that what can be said of the whole can be said of the parts:

The house is heavy. Therefore, every part of the house is heavy.

The platoon is very effective. Therefore, every member of the platoon is effective.

That herd of elephants eats an enormous amount of food each day. Therefore, each elephant in the herd eats an enormous amount of food each day.

Identifying Arguments

Consider these simple arguments:

1. Because banning assault rifles violates a constitutional right, the U.S. government should not ban assault rifles.
2. The *Wall Street Journal* says that people should invest heavily in stocks. Therefore, investing in stocks is a smart move.
3. When Judy drives her car, she's always late. Since she's driving her car now, she will be late.
4. Listen, any movie with clowns in it cannot be a good movie. Last night's movie had at least a dozen clowns in it. Consequently it was awful.
5. The war on terrorism must include a massive military strike on nation X because without this intervention, terrorists cannot be defeated. They will always be able to find safe haven and support in the X regime. Even if terrorists are scattered around the world, support from nation X will increase their chances of surviving and launching new attacks.
6. No one should buy a beer brewed in Canada. Old Guzzler beer is brewed in Canada, so no one should buy it.

Here are the same arguments laid out so the parts are easily identified:

1. [Premise] Because banning assault rifles violates a constitutional right, [Conclusion] the U.S. government should not ban assault rifles.

2. [Premise] The *Wall Street Journal* says that people should invest heavily in stocks.
   [Conclusion] Therefore, investing in stocks is a smart move.
3. [Premise] When Judy drives her car, she's always late.
   [Premise] Since she's driving her car now,
   [Conclusion] she will be late.
4. [Premise] Any movie with clowns in it cannot be a good movie.
   [Premise] Last night's movie had at least a dozen clowns in it.
   [Conclusion] Consequently it was awful.
5. [Premise] Without a military intervention in nation X, terrorists cannot be defeated.
   [Premise] They will always be able to find safe haven and support in the X regime.
   [Premise] Even if terrorists are scattered around the world, support from nation X will increase their chances of surviving and launching new attacks.
   [Conclusion] The war on terrorism must include a massive military strike on nation X.
6. [Premise] No one should buy a beer brewed in Canada.
   [Premise] Old Guzzler beer is brewed in Canada.
   [Conclusion] So no one should buy it.

What all of these arguments have in common is that reasons (the premises) are offered to support or prove a claim (the conclusion). This logical link between premises and conclusion is what distinguishes arguments from all other kinds of discourse.

Now consider this passage:

> The cost of the new XJ fighter plane is $650 million. The cost of three AR21 fighter-bombers is $1.2 billion. The administration intends to fund such projects.

Is there an argument here? No. This passage consists of several claims, but no reasons are presented to support any particular claim (conclusion), including the last sentence. This passage can be turned into an argument, though, with some minor editing:

> The GAO says that any weapon that costs more than $50 million apiece will actually impair our military readiness. The cost of the new XJ fighter plane is $650 million. The cost of three AR21 fighter-bombers is $1.2 billion. We should never impair our readiness. Therefore, the administration should cancel both these projects.

Now we have an argument because reasons are given for accepting a conclusion. Here's another passage:

> Allisha went to the bank to get a more recent bank statement of her checking account. The teller told her that the balance was $1725. Allisha was stunned that it was so low. She called her brother to see if he had been playing one of his twisted pranks. He hadn't. Finally, she concluded that she had been a victim of bank fraud.

Where is the conclusion? Where are the reasons? There are none. This is a little narrative hung on some descriptive claims. But it's not an argument. It could be turned into an argument if, say, some of the claims were restated as reasons for the conclusion that bank fraud had been committed.

Being able to distinguish between passages that do and do not contain arguments is a very basic skill—and an extremely important one. Many people think that if they have clearly stated their beliefs on a subject, they have presented an argument. But a mere declaration of beliefs is not an argument. Often such assertions of opinion are just a jumble of unsupported claims. Search high and low and you will not find an argument anywhere. A writer or speaker of these claims gives the readers or listeners no grounds for believing the claims. In writing courses, the absence of supporting premises is sometimes called "a lack of development."

Here are three more examples of verbiage sans argument:

> Attributing alcohol abuse by children too young to buy a drink to lack of parental discipline, intense pressure to succeed, and affluence incorrectly draws attention to proximate causes while ignoring the ultimate cause: a culture that tolerates overt and covert marketing of alcohol, tobacco and sex to these easily manipulated, voracious consumers.—Letter to the editor, *New York Times*
>
> [A recent column in this newspaper] deals with the living quarters of Bishop William Murphy of the Diocese of Rockville Centre. I am so disgusted with the higher-ups in the church that at times I am embarrassed to say I am Catholic. To know that my parents' hard-earned money went to lawyers and payoffs made me sick. Now I see it has also paid for a high-end kitchen. I am enraged. I will never make a donation again.—Letter to the editor, *Newsday*
>
> I don't understand what is happening to this country. The citizens of this country are trying to destroy the beliefs of our forefathers with their liberal views. This country was founded on Christian beliefs. This has been and I believe still is the greatest country in the world. But the issue that we cannot have prayer in public places and on public property because there has to be separation of church and state is a farce.—Letter to the editor, *Douglas County Sentinel*

The passage on alcohol abuse in children is not an argument but an unsupported assertion about the causes of the problems. The passage from the disappointed Catholic is an expression of outrage (which may or may not be justified), but no conclusion is put forth, and no reasons supporting a conclusion are offered. Note the contentious tone in the third passage. This passage smells like an argument. But, alas, there is no argument. Each sentence is a claim presented without support.

Some Applications

Let us apply these brief lessons of logic to reading philosophy. Because the key to philosophy is the argument, you will want to concentrate and even outline the author's reasoning. Find his or her thesis or conclusion. Usually, it is stated early on. After this, identify the premises that support or lead to the conclusion. For example, Thomas Aquinas (1224–1274) holds the conclusion that God exists. He argues for this conclusion in five different ways. In the second argument, he uses the following premises to reach his conclusion: There is motion, and there cannot be motion without something initiating the motion.

It helps to outline the premises of the argument. For example, here's how we might set forth Aquinas' second argument:

1. Some things are in motion. (Premise)
2. Nothing in the world can move itself but must be moved by another. (Premise)

3. There cannot be an infinite regress of motions. (Premise)
4. There must be a First Mover who is responsible for all other motion. (Conclusion of premises 1–3, which in turn becomes a premise for the rest of the argument)
5. This First Mover is what we call God. (Explanation of the meaning of God) (Premise)
6. ∴ God exists. (Conclusion of second part of the argument, premises 4 and 5)

After you have identified the premises and conclusion, analyze them, looking for mistakes in the reasoning process. Sometimes arguments are faulty, but not obviously so. Then stretch your imagination and think of possible counterexamples to the claims of the author.

Because philosophical arguments are often complex and subtle (and because philosophers do not always write as clearly as they should), a full understanding of an essay is not readily available after a single reading. So read it twice or even thrice. Here is one good approach: the first time you read a philosophy essay, read it for understanding. After the first reading, leave the essay for some time, ruminating on it. Then go back a day or so later and read the essay a second time, this time, trying to determine its soundness.

A few pointers should be mentioned along the way. Some students find it helpful to keep a notebook on their reflections on the readings. If you own the book, you might want to make notes in the margins—initially in pencil because you may want to revise your impressions after a second reading.

Finally, practice charity. Give the author the best possible interpretation in order to see if the argument has merit. Always try to deal with the most generous version of the argument, especially if you don't agree with its conclusion. A position has not been seriously challenged unless the best arguments for it have been refuted. That's why it is necessary to construe all arguments, including those of your opponents, as charitably as possible. The exercise will broaden your horizons and help you develop sharper reasoning skills.

Exercises in Critical Reasoning

I. Analyze the following arguments and tell whether they are *valid* and *sound*:

1) 1. If Missy is a cat, then she is a mammal.
   2. Missy is not a mammal.
   3. Therefore she is not a cat.

2) 1. If Fido is a dog, then he is a mammal.
   2. Fido is a dog.
   3. Therefore he is a mammal.

3) 1. If nine hundred million people die of malnutrition each year, something needs to be done about the distribution of food.
   2. Nothing needs to be done about the distribution of food.
   3. Therefore [fill in the blank].

4) 1. If Fido is a dog, then he is a mammal.
   2. Fido is *not* a dog.
   3. Therefore Fido is not a mammal.
5) 1. If Fido is a dog, then he is a mammal.
   2. Fido is a mammal.
   3. Therefore he is a dog.
6) 1. If my boyfriend, John, is a dog, then he is a mammal.
   2. John is a mammal.
   3. Therefore John is a dog.
7) 1. If we keep burning so much coal and oil, the greenhouse effect will continue to get worse.
   2. But it will be a disaster if the greenhouse effect gets worse.
   3. Therefore, we have to cut down on these fossil fuels.
8) 1. If this wire is made of copper, it will conduct electricity.
   2. This wire conducts electricity.
   3. Therefore this wire is made of copper.
9) 1. If a world government doesn't occur soon, then we're in for a lot more terrorism and war.
   2. A world government isn't going to occur soon.
   3. Therefore we're in for a lot more terrorism and war.
10) 1. Either the Yankees will win the American League pennant or their manager will get fired.
   2. The Yankees will not win the American League pennant.
   3. Therefore, the manager will get fired.

II. Indicate whether the following arguments are *strong* or *weak*.

1) The three fish that I caught in this stream were bass, so all the fish in this stream must be bass.
2) One thousand samples of water taken from sites all along the Miami river show unsafe concentrations of toxic chemicals. Therefore, the water in the river is unsafe.
3) Seventy percent of adults in Cincinnati and 90 percent of adults in Orange County, California, are conservatives. So a large majority of people in this country are conservatives.
4) All the evidence in this trial suggests that Mack the Knife committed the murder. There can be only one conclusion: He is guilty.
5) For the past year, every time Aziz left his apartment, he forgot to lock the door. He will probably forget this time, too.
6) Eighty percent of Americans believe in an afterlife, and 75 percent of Canadians do. Therefore the afterlife is a reality.

7) You should buy a Dell computer. They're great. I bought one last year and it has given me nothing but flawless performance.
8) All the celebrities highlighted on Fox TV have drug problems. Why are all the celebrities such stoners?
9) I have asked twenty undergraduates at this school if they believe in God, and ten of them have said yes. So half of the undergraduates at this school must be atheists.
10) Almost every Arabic-speaking person interviewed by CNN thinks that the United States is evil. Clearly, Arabic-speaking people throughout the world believe that the United States is evil.

III. *Fallacious Reasoning.* Find an example of each of the following fallacies:

1. Appeal to the Personal
2. Appeal to Popularity
3. Begging the Question
4. Appeal to Ignorance
5. False Dilemma
6. Slippery Slope
7. Straw Man
8. Genetic Fallacy
9. Fallacy of Composition
10. Equivocation

IV. Symbolize the form of the following arguments and tell whether they are valid. Where possible, identify the form by name.

1) 1. If Mary gets the job, then she will be happy.
   2. Mary will get the job.
   3. Therefore, Mary will be happy.
2) 1. If Napoleon was born in Chicago, he was Emperor of France.
   2. Napoleon was not born in Chicago.
   3. Therefore Napoleon was not Emperor of France.
3) An Environmental Argument:
   1. If I wash, I'll pollute the water.
   2. If I don't wash, I'll pollute the air.
   3. Therefore whatever I do I will be a polluter.
4) 1. All cadets at military institutions are drug-free.
   2. Timothy Leary was once a West Point cadet (a true statement).
   3. Therefore Timothy was drug-free.
5) 1. If John is a bachelor, he is unmarried.
   2. John is married.
   3. Therefore [fill in blank].

6) 1. If Mary gets the job, she will be happy.
   2. If she is happy, then her husband will be happy.
   3. If her husband is happy, her mother-in-law will be happy.
   4. If her mother-in-law is happy, her mother-in-law's boss, Bob, will be happy.
   5. If Bob will be happy, his dog will be happy.
   6. Therefore [fill in the blank].

7) 1. All dogs are animals.
   2. All cats are animals.
   3. Therefore all dogs are cats.

8) 1. If the fetus is a person, abortion is immoral.
   2. Abortion is not immoral.
   3. Therefore, the fetus is not a person.

Study and Discussion Questions

1. What is an argument? Using the argument forms discussed in this chapter, construct an argument of your own for each form shown.
2. Explain the difference between deductive, inductive, and abductive reasoning.
3. Explain the difference between validity and soundness.
4. Get a copy of your student newspaper or your local newspaper and analyze two arguments therein. Begin to look at the claims of others in argument form.
5. Philosophy can be seen as an attempt to solve life's perennial puzzles. Taking the material at hand, it tries to unravel enigmas by thought alone. See what you can do with the puzzles and paradoxes included here.
   a. There is a barber in Barberville who shaves all and only those barbers who do not shave themselves.

   Does this barber shave himself? Who does shave him?

   b. You are the sole survivor of a shipwreck and are drifting in a small raft parallel to the coast of an island. You know that on this island there are only two tribes of natives: Nobles, kind folk who *always* tell the truth, and Savages, cannibals who always lie. Naturally, you want to find refuge with the Nobles. You see a man standing on the shore and call out, "Are you a Noble or a Savage?" The man answers the question, but a wave breaks on the beach at that very moment, so you don't hear the reply. The boat drifts farther down along the shore when you see another man. You ask him the same question, and he replies, pointing to the first man, "He said he was a Noble." Then he continues, "I am a Noble." Your boat drifts farther down the shore where you see a third man. You ask him the same question. The man seems very friendly as he calls out, "They are both liars. I am a Noble. They are Savages."

   The puzzle: Is the data given sufficient to tell you any man's tribe? Is it sufficient to tell you each man's tribe?

   c. Mrs. Smith, a schoolteacher, announces to her class on Friday that there will be a surprise test during the following week. She defines "surprise test" as one that no one could reasonably predict on the day of the test. Johnny, one of her students, responds that she may not give the test on pain of contradicting herself. Mrs. Smith asks, "Why not?" Johnny replies, "You cannot give the test on Friday because on Friday everyone

would know that the test would take place on that day, and so it would not be a surprise. So the test must take place on a day between Monday and Thursday. But it cannot take place on Thursday, for if it hasn't taken place by then, it would not be a surprise on Thursday. So the test must take place between Monday and Wednesday. But it cannot take place on Wednesday for the same reason that we rejected Friday and Thursday. Similarly, we can use the same reason to exclude Tuesday and Monday. On no day of the week can a surprise test be given. So the test cannot be given next week."

Mrs. Smith heard Johnny's argument and wondered what the solution was. She gave the test on Tuesday, and everyone was surprised, including Johnny.

How was this possible?

d. It is sometimes said that space is empty, which means presumably that there is nothing between two stars. But if there is nothing between stars, then they are not separated by anything, and, thus, they must be right up against one another, perhaps forming some peculiar sort of double star. We know this not to be the case, of course.[1]

What follows from this puzzle?

6. A good reason to be a critical thinker is to avoid getting cheated. Occasionally, you may be in danger of being duped by an unscrupulous salesperson. Thinking clearly may save you. Here is an example of such a situation that occurred after the Loma Prieta earthquake in the California Bay Area in 1989.

> Last week the 55 year old [Eva] Davis was evicted from her . . . home of 22 years by San Francisco sheriff's deputies. Her troubles began in 1990 when a contractor offered to repair front steps damaged in the Loma Prieta earthquake. Two hours later came a disaster worse than an earthquake, a disaster with a smile, a representative of Congress Mortgage Co. of San Jose. Convinced that she was getting a federal loan that didn't have to be repaid until the house was sold, Davis signed a 15 percent loan with a 15 percent origination fee. The 15 points meant a $23,000 fee, instead of a usual $4,000 or so. Suddenly, Davis had $1,800 monthly payments instead of $459. It was only a matter of time before the house belonged to Congress Mortgage.
>
> Congress Mortgage sold the home, valued at $225,000. The company makes some 400 loans a year and has scheduled 51 foreclosure sales in the next month alone. The bust business is booming. (Rob Morse, *San Francisco Chronicle* [Feb. 20, 1994])

Think of other examples of how critical thinking can save people from evil.

NOTE

1. Jay Rosenberg, *The Practice of Philosophy* (Englewood Cliffs, NJ: Prentice Hall, 1978), p. 89.