CHAPTER

3

Epistemology

As noted in Chapter 2, the French philosopher René Descartes proposed a dualistic philosophy—a way of thinking about reality that suggests that there is a physical, material reality outside of our minds and a spiritual, living reality in our minds. At one level, Descartes was attempting to answer the questions surrounding the connection between being and knowing. Descartes and his contemporaries came to see that if philosophers were going to continue to question being, or existence, they would also have to deal with the question of how they knew about existence.

Epistemology is the study of knowledge—what knowledge is, what we can know, and how we know it. Epistemology has been a major concern of philosophers ever since Descartes called attention to its importance in the seventeenth century.

In This Chapter

- Thinking without experiencing (rationalism)
- Basing thought on experience (empiricism)
- Thinking up and down and back and forth (dialectic)
- Reconciling reason and experience
- Thinking and history

A Time of Epistemological Crisis

In Descartes's day, people's beliefs were changing drastically. The printing press had been around long enough that books were widely available and more people than ever before could read and write. Because people were more informed, they could more easily challenge old ideas, especially religious ideas. In addition, science told people the shocking news: Earth is *not* the center of the universe! But not everyone accepted this idea. Faced with the old belief that the sun rotates around the earth, and with the new idea of the earth spinning around the sun, people never knew exactly where they stood!

FASCINATING FACT

During the Renaissance, some astronomers continued to believe that the sun circled the earth even after recognizing that their mathematical calculations made better sense from the point of view of the earth circling the sun. The idea that humanity is the center of the universe just made better sense to them intuitively and emotionally.

To make things even more confusing, not everyone knew they had to go to work for a living like we do today. Some people (the nobility) believed that the work should be left to other people (the commoners). The nobility saw it as their job to spend the money the commoners made. But this idea was being challenged. In the words of historian Christopher Hill, the world was being turned upside down! Things got so out of hand that people weren't even sure they could trust their own senses.

Cartesian Rationalism

Then along came Descartes, who wanted a solution for this problem of not knowing what to believe. He attempted to figure out what we can know for certain without relying on tradition, on outside authority, or even on what our senses tell us.

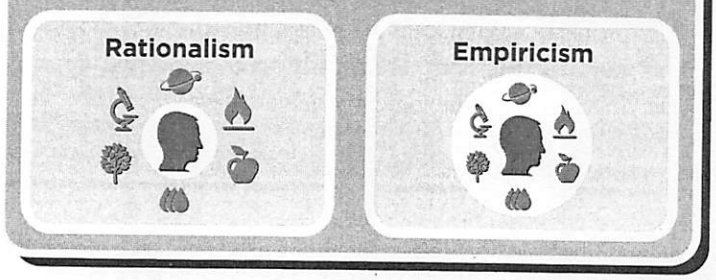
Descartes said that even though we can't believe everything we read, and even if we can't even believe our own senses, we can trust our reason if we settle down quietly and block out the world and all its craziness. Reason, for Descartes, could be relied upon to tell us what is true and what isn't. He reasoned that the very fact that he could think told him for certain that he existed. In his own famous words, "*Cogito ergo sum,*" or, "I think, therefore I am."

Descartes's certainty that he existed led him to feel certain about other things, too, such as the existence of God. Once he became certain that God exists, he felt he could be certain of other, more ordinary things, like the fact that the sky is blue and ants have six legs, and so forth. Descartes's solution to the epistemological problem of what we can know is called *rationalism.* It's the belief that the mind is capable of knowing things even without experience.

Lexicon

Rationalism is the belief that we can have knowledge without experience.

Empiricism is just the opposite—it's the belief that we can only be sure of something once we've tested it—once we've experienced it, so to speak.



Empiricism

While Descartes was philosophizing about rationalism in France, philosophers in England were thinking up a different solution to what we can know. This alternative solution is known as *empiricism*. It's the belief that the best way to be certain of something is to test it with your senses—through actual experience. Empiricism became a major aspect of what we now call science—figuring things out by running tests and experiments.

During the Middle Ages, empiricism was not the obvious, common sense idea that it has become today. People tended to confuse how things worked and what things actually *did* with what things *meant* and how people *felt* about them. Gold, for example, was not just a mineral you could make jewelry out of. People gave gold special meanings and thought it had special power—spiritual properties. Their feelings about gold actually kept them from studying gold empirically, through actual experience. In fact, before the empiricists came along, people tended to think the whole world and everything in it worked more or less by magic.

FASCINATING FACT

Bacon criticized old, magical ideas by calling them "idols of the mind," suggesting people worshipped them as part of a false religion.

During and after the seventeenth century, empiricists like Francis Bacon and John Locke were rejecting the old, magical ideas and arguing that physical (empirical) reality works according to mechanical principles. By studying things empirically, these philosophers believed that they could figure out what these principles were.

To a degree, they were right, and science has been a thriving enterprise ever since. Still, empiricism alone can't tell us everything we want to know about reality and is far from the last word in philosophy.

Rationalism and empiricism, though, provide alternative solutions to epistemological problems. And as different as they are, they both rely heavily on an important, centuries-old tool used by philosophers in dealing with epistemological problems: *logic*.

Logic

Both reason and experience, rationalism and empiricism, rely on logic to get from one idea to the next. Logic is a tool for figuring out everything that can truthfully be said, based on what is already known to be true.

As you may have discovered if you've ever tried to have a logical discussion with someone who thinks differently than you, logic can be very slippery. It works great when applied to math, but when you substitute ideas for numbers, all kinds of funny things can happen.

REALITY CHECK

Logic rarely works in real arguments outside of academic disputes, and it never works in a personal relationship. Don't even bother pretending to use logic in order to win a fight with someone who's close to you. If you say, "Let's talk about this logically," you may get the response, "Okay, I deduce logically that you are a total jerk."

Part of the problem is that words can have more than one meaning. If a word gets used in more than one way without your realizing it, your logic can get thrown out of whack. Another problem with logic is that you usually have to start with at least one set of assumptions. This means that even if your logic is good, your assumptions may be mistaken, which can lead to false conclusions. Finally, people's personalities come into play. Some people like to fool other people, either for the fun of it or to take advantage of them. Thus, someone may use slippery words and mistaken assumptions for the sole purpose of deceiving someone else. This is also why logic works best when people are left out of it and it is applied only to mathematics.

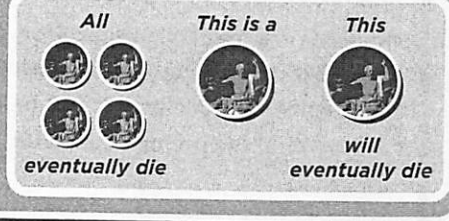
Still, there are a number of ways we can use logic to deal with ideas. Among the most important of these to philosophers are induction and deduction.

Deduction

Deduction is the process of determining what is true based on what is already known to be true. A *premise* is an assertion that begins an argument and leads to a conclusion. Geometry is based on deductive thinking, and so are all those word problems you had to do in math class.

Going Down: Deduction

Deduction is the process of figuring out things that are necessarily true, provided that the assumptions we start with, called **premises,** are true.



Aristotle provided a famous example of a kind of deduction that he called a *syllogism.* It consists of three statements: two premises and a conclusion.

DEFINITION

A **syllogism** is a logical statement with three parts that presents a conclusion deduced from two related premises.

Here is Aristotle's syllogism about Socrates:

All men are mortal.

Socrates is a man.

Socrates is mortal.

From the two premises, we can deduce the conclusion for certain.

As Aristotle himself noticed, the conclusion is only certain if the premises are in fact true. If all men aren't mortal, or if Socrates is not a man, then the conclusion that Socrates is mortal may be false.

As you'll see later in Chapter 7, Aristotle developed a whole philosophical system—including epistemology, metaphysics, and ethics—largely with the help of syllogisms that assured him that his ideas were logically consistent. And, for the most part, his ideas *are* logically consistent. Unfortunately, this does not make them all true. Many of Aristotle's premises can be shown to be false.

Even so, Aristotle's thinking has been extremely influential, partly because he has helped other philosophers focus on the logical consistency of their ideas. Deduction is the best way to expand what we already know. If we can be sure of our premises and the meaning of the words we use, it leads to reliable information.

Induction

Induction is drawing conclusions from particular evidence; if certain things are true, we can induce that other things of the same kind will probably be true. Like deduction, induction moves from premises to conclusions. But unlike deduction, induction leads to conclusions that may *not* be true even if the premises are true. Inductive conclusions are only probable, not certain.

Going Up: Induction

Another important logical process is **induction**—a way of making generalizations about things.

For example, if we want to know what color crows can be and we go out and find a good number of crows and all of them are black, it's a pretty good bet that all crows are black. But can we be sure? Even seeing a million black crows doesn't mean for certain that there isn't a crow out there somewhere that is lime green. The best we can do is say that all crows are *probably* black.

Induction is, in some ways, less certain than deduction, but induction can do a lot that deduction can't. Induction, for example, can help generate hypotheses. A *hypothesis* is a generalization that we think *might* be true, but that might not *actually* be true.

DEFINITION

A **hypothesis** is a theoretical statement that explains things but that may be disproved or confirmed by new evidence.

Hypothetical Thought

Hypotheses are useful things to have in mind while trying to figure out new things. One way philosophers and scientists learn is by constantly testing their hypotheses with new ideas and information. If new information supports the hypothesis, it is just that much more likely that it's true. But what if the new information proves the hypothesis wrong?

That depends on how you feel about your hypothesis. These days, scientists and philosophers are often thrilled if they find a piece of evidence that refutes a leading hypothesis. It means they'll be famous and can start work on developing a whole new hypothesis capable of explaining the new evidence.

An example is the discovery of x-rays. X-rays didn't make sense at first, since then-current ideas about how molecules worked were not capable of explaining them. To explain x-rays, scientists had to throw out the old ideas about molecules and come up with new ones able to explain the new evidence. As a result, people developed all kinds of new knowledge about radioactivity that their old hypotheses had prevented them from considering.

The idea that we learn the most when we discover how much we *don't* know is a key idea in modern science, where people are looking for ways to challenge each other's hypotheses about how reality works. It is associated with the work of the Austrian philosopher Karl Popper, who argued that science depends on the principle of *falsifiability*. We can't *ever* prove that general statements are always true, but we may be able to prove they are false. We can't *ever* prove that all crows are black, since there may be a green crow hiding somewhere out there. But if someday we do find a green crow, then we have falsified the general claim that all crows are black.

Dialectic

The ancient Greek philosopher Socrates became famous for his ability to poke holes in other people's philosophies. He believed that learning how little we know for certain was the best way to gain knowledge. Socrates asked people questions in order to get them to think about the limits of their knowledge. Eventually, he led them to conclusions that showed them how they were mistaken.

This procedure of teaching by asking questions is called the Socratic method—after Socrates. As you'll see in Chapter 5, the Socratic method involves the logical testing of propositions or premises. In some ways, Socrates thought like a modern scientist except that he didn't ask questions about x-rays or astronomy, but rather focused on virtuous behavior.

Socrates tested ideas logically by seeing if they held up next to other ideas. Moving back and forth between ideas helped him to see how accurate they were. This back-and-forth movement, called *dialectic*, has become important to philosophers ever since.

Lexicon

Dialectic is movement back and forth between an idea and something that the idea isn't. This may involve thinking about an idea in terms of another idea or comparing and contrasting two or more ideas.

Dialectic is the Greek word meaning "discussion." This kind of discussion may take the somewhat rambling form of the Socratic method, or it can be more rigidly structured as in Aristotle's *Topics* in which he considers the pros and cons of a number of stated subjects.

A version of Aristotle's pro-and-con approach to dialectic is still used today in formal debates in which the debaters argue opposed positions on a given topic. After the debate, the audience, theoretically, is better able to understand the problem being debated and to decide where they stand.

Synthesis

Dialectic can be useful not only in deciding specific questions like whether or not abortion should be legal or if we all have a moral responsibility to take care of the poor; dialectic can also help clarify and bring together entire ways of understanding things.

The idea is that it can be easier to understand something when you are able to see it in relation to what it isn't. Can you really understand chocolate ice cream if you've never tried vanilla? Of course not.

Dialectic not only helps us understand opposing ideas, it can also lead to a new way of combining opposed ideas into a new unity. Let's go back to the examples of rationalism and empiricism again. These methods of studying knowledge were in conflict for over a century. Both of them had different strengths and weaknesses. Rationalism could do things empiricism could not and vice versa.

The rationalists said that empiricism doesn't tell us anything about things that have been of major importance to philosophers, like whether God exists or whether human nature is basically good or evil.

The empiricists, on the other hand, complained that the rationalists had no hard evidence for their theories. Rationalist philosophy was an extremely speculative enterprise. The rationalists may have been just fooling themselves into believing that their minds were capable of obtaining metaphysical knowledge.

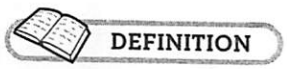
Although you could say that one approach makes up for the weaknesses of the other, you can't just combine the two into a bigger, stronger philosophy, because they're in conflict. The work of one perspective undoes the work of the other.

But if you think dialectically, hitting the Ping-Pong ball of your mind back and forth between empiricism and rationalism, you may be able to see each perspective as a part of the other.

Kantian Dialectic

This is just what the German philosopher Immanuel Kant did. He brought rationalism and empiricism together in two ways. First, he looked at rationalist ideals as empirical conditions of the mind. In other words, he reasoned that the fact that philosophers seem to want to believe in God (a rational ideal) shows us what the mind is like (an empirical fact). Rationalist thought, that is, is an empirical fact of the mind.

Next, he looked at empirical things and reasoned that we can only know them with our minds. As a result, there is a lot about "the world as it is" that depends on how our minds work. This view is called *idealism.*



Idealism is the belief that reality is largely dependent on the mind.

I'll explore Kant with you in Chapter 16. For now, the point is that dialectic is not only good for little things like deciding whether to have cake or pie for dessert, but also for deep, trippy stuff like seeing the relationship between the mind and reality. It can be a whole way of knowing and of seeing what knowledge is.

But wait! If you think Kant is over the edge with his use of dialectic, hold on to your head! One of Kant's followers, the German philosopher Georg Wilhelm Friedrich Hegel, went even further in using dialectic to think about knowledge.

Hegelian Dialectic

For Hegel, dialectic is not just something the mind does in order to think about reality; it is something reality does to the mind. Hegel believed that human consciousness develops and changes through history, and that this historical process is dialectical.

FASCINATING FACT

Hegel viewed ideas both as ways of understanding reality and as giving shape to reality as it changes through history.

We can use the dialectical relationship between empiricism and rationalism as an example. Hegel would say not that Kant worked out this dialectical relationship, but that it worked itself out within human consciousness. For Hegel, individuals are less important than what *everybody* thinks. What everybody thinks is influenced by the conflict of opposing ideas that take shape in history.

Hegel's use of dialectic puts a whole new spin on the study of knowledge by suggesting that what we know and how we know it depends on where we stand in history. The *reason* that figures things out is not the individual's reason, as it was for Descartes, but the shared human consciousness at work in history. Hegel believed that everyone's knowledge is part of a bigger knowledge. In place of "I think, therefore I am," Hegel might say, "History works the same way thinking does, therefore a shared human consciousness exists."

Now let's look at just one more philosophical perspective on the study of knowledge, one that borrows from Hegel's use of dialectic. The German philosopher and political economist Karl Marx made new use of some of Hegel's ideas while changing them in some important ways.

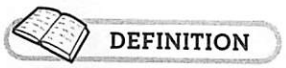
Marxian Dialectic

Marx argued that the dialectic of history was not evidence of a universal human consciousness as Hegel described it. Instead, dialectical movement in history involved changes in the ways society takes care of people's material needs.

This meant that Marx was less interested in the dialectical, or contrasting, relationship between rationalism and empiricism than in the dialectical relationship between industrialism and farming. Marx believed that history was structured by changes in economic relationships. These economic relationships, he argued, influenced the way people think.

Like Hegel, Marx thought that the mind of the individual was only part of the larger picture, a larger picture that influenced how people think. For Hegel, that larger picture was the universal human consciousness. For Marx, the larger picture was the economic forces that determined people's social relationships.

Since, for Marx, social relationships influence the way people think, "knowledge" is limited and structured by the way we see to our material needs. Marx called this structured knowledge *ideology*.



Ideology is a system of beliefs or ideas that reinforce the values of a particular class or group of people.

To see knowledge as ideology is very different from seeing knowledge as reason. Thus Marx's view of knowing is very different from Descartes's. For Descartes, we can get knowledge by reasoning independently of worldly experience. For Marx, ideology develops in response to economic forces. Descartes is thinking about knowing from inside the mind, asking what the mind can do entirely on its own; Marx is thinking about knowing from outside society, asking how economic forces shape the way people think.

In this chapter, we've talked about how different philosophers deal with the issue of epistemology—through reason, experience, logic, and dialectic. We'll come back to these ideas when we look more closely at particular philosophies. First, though, we'll look at one other major philosophical concept, ethics, or acting, in the next chapter.

The Least You Need to Know

- Different views of knowing include rationalism (for example, Descartes), empiricism (Bacon and Locke), idealism (Kant and Hegel), and ideology (Marx).
- Rationalism is the view that knowledge is possible without experience.
- Empiricism is the view that knowledge comes from experience.
- Ideology is a system of beliefs or ideas that reinforce the values of a particular class or group of people.
- Different logical techniques for acquiring and testing knowledge are induction, deduction, and dialectic.