ULTIMATE QUESTIONS

Thinking About Philosophy

FOURTH EDITION

Pearson

Nils Ch. Rauhut

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Nils Ch. Rauhut
Coastal Carolina University

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Brief Contents

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Preface

There are multiple effective ways to introduce beginning students to the study of philosophy. One can focus on classic texts, like Plato's *Republic* and Descartes' *Meditations*, or alternatively one can focus on critical thinking and argumentative writing and teach a problem-oriented course. My focus in this book is **active student learning**. I have tried to write a book that helps instructors get students involved in what happens in the classroom. The book is designed to make students talk, read, and think together with the instructor and the other students in the course. In order to achieve that goal, the book contains more than one hundred *Food for Thought* exercises that have grown out of my own teaching experience and which are designed to generate opportunities for genuine conversations among students and between students and instructors. The exercises are intended to be used during lectures and they therefore provide welcome breaks during which the students can get active and find out whether they indeed understand how to apply philosophical concepts correctly. The book is based on the belief that philosophy is foremost a conversation and a dialogue. Nothing is more detrimental to the practice of philosophy than silent and unresponsive students who listen to a never-ending instructor monologue. My hope is that the book will help students to discover that philosophy is about them and their beliefs just as much as it is about the arguments of famous philosophers.

New to this Edition

In this fourth edition of *Ultimate Questions: Thinking About Philosophy*, I have made several changes. First, I have added a new chapter "Should We Be Afraid of Death?" This chapter provides instructors with the opportunity to end the course by exploring a classical philosophical question that integrates several topics (e.g., personal identity, mind-body problem, the existence of God), which have been covered in separate chapters. I hope the new chapter provides a welcome synthesis and offers instructors new possibilities of how to structure a semester-long course. In addition, I have reworked and improved every prior chapter. In Chapter 5, I have added a discussion of narrative identity. In Chapters 2 and 3, I have added a new and improved discussion of definitions as well as a new section on fake news and propositional attitudes. In Chapter 8, I have completely reworked the presentation of both utilitarianism as well as Kant's ethical theory. Finally, I have added ten multiple-choice questions at the end of each chapter that give students the opportunity to find out whether they are able to answer these questions correctly. I have found in my own teaching that beginning students not only enjoy answering multiple-choice questions, but that well-designed multiple-choice questions can have a beneficial effect on student learning. Beginning students are, in my experience, much more likely to ask questions in class when they have found out that they answered a multiple-choice question incorrectly. These questions in turn allow instructors to help students avoid common misconceptions and conceptual confusions. I hope that this new section of multiple-choice questions at the end of each chapter will have the same effect in other classrooms as well and lead to more frequent student questions in class.

Acknowledgements

I would like to thank all those students at Coastal Carolina University who have given me opportunity to introduce them to philosophy over the past twenty years. The current edition is shaped and influenced by my interactions with them. I also would like to thank Dennis Earl, David Holiday, Eva Kort, Julinna Oxley, Ed Perez, Michael Ruse, Renee Smith, Cliff Sosis, Jonathan Trerise and Casey Woodling for many insightful discussions about teaching philosophy over the past years. Special thanks are due to my friend Gary Schmidt who provided the excellent translation of the Herman Hesse poem in Chapter 9. Last but not least, I would like to thank my wife Karin. Without her love and steady support this new edition would not have been possible.

Nils Ch. Rauhut

Myrtle Beach

August 2019

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Chapter 1
What Is Philosophy?

Learning Objectives

1.1 Explain the similarities and differences between mythology, religion, and philosophy.

1.2 Differentiate between scientific and philosophical questions.

1.3 Summarize the major fields of philosophy.

Making Sense of the World

1.1 Explain the similarities and differences between mythology, religion, and philosophy.

Although not everyone has an interest in physics, psychology, geography, or economics, most people have a pretty clear idea of what these academic disciplines are about. The same is not true for philosophy. It is quite common to meet educated people who have only a foggy idea of what philosophy is and what philosophers do. Let us therefore begin with a brief explanation of the nature and scope of philosophy.

One way to clarify the nature of philosophy is to explore an imaginary scenario. Suppose that you are a member of a typical nomadic tribe living, say, four thousand years ago. Life is tough for your tribe; most of your time is spent hunting for food and shelter. However, there are also good days, especially during the summers when food is plentiful and temperatures are comfortable. Suppose that during one summer evening your fifteen-year-old daughter sits down next to you, points at the star-filled sky, and says, "I am amazed at the beauty of the sky. I have the feeling that this whole universe is an incredible place. But looking at these stars also makes me feel very small and insignificant. Tell me, do these stars care about us? Do they take an interest in what we do down here?" At this point you probably wish that your daughter would be more like the other teenage girls in your tribe, who worry only about who will ask them to dance at the next sacred hunting celebration. But since it is such a fine summer evening, you sit back and try to respond to her questions as well as you can.

In order to answer your daughter's questions, you need to provide what one might call a big-picture view of the universe, which always involves some kind of story that attempts to make sense of the world in which we live. There are several ways to tell such a story. A natural way is the use of mythology.[1] Every culture has developed powerful mythological stories to make sense of the world. In the Western world, one of the oldest surviving mythologies is Homer's *Iliad*. Homer's poem of the battle for Troy not only tells us something about history and cosmology but also explores the nature of the underworld and the world of the gods. Mythologies provide an effective way to understand the cosmos and the role we humans play within it. So in our imaginary scenario, you might tell your daughter a mythological story

SOURCE: Esteban De Armas/123RF.

Telling mythological stories is one way to make sense of the world in which we live.

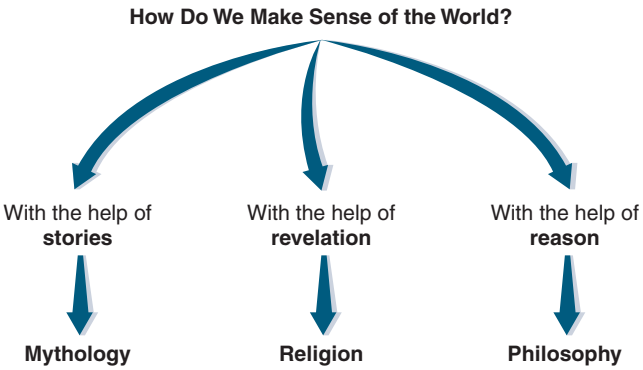
similar to Homer's *Iliad* or Hesiod's *Theogony*. Aside from merely entertaining your daughter by the campfire, you would be instilling in her a sense of how the heavens came to be and what interest the gods take in our deeds and actions. It is, however, apparent that mythological stories leave something to be desired. Imagine that you have a critical-minded daughter. After listening politely to your mythological story, she might very well respond, "Wow, that was a great story, but how do you know that it is actually true?"

Food for Thought

It might seem as if mythology is a thing of the past. Who would base his or her understanding of the world on simple, powerful stories? Upon closer examination, however, it becomes clear that our understanding of the world is still shaped by invented stories. List some examples of how invented stories still influence and affect our understanding of the world.

At this point you have several options. You might either point to the long tradition of your tribe and try to convince your daughter that your tribe would not have survived for so long if these traditional stories were all bogus, or else you can try to provide additional support to show that the story you have told is true. There are several ways to offer such additional support. One way consists of the claim that one of your ancestors was very close to the gods (or God), and that a god revealed the truth of this story to him or her. When mythological stories are combined with divine revelations, mythology has a tendency to turn into religion.[2]

Religion is the second widely established means through which we can provide a big-picture view of the universe. Religion resembles mythology in that most religions contain stories that—at first glance—have the sound and look of mythological stories. However, religious stories, unlike mythologies, contain a reason that we should believe that they are true: divine revelation. Divine revelation can take very different forms. It might come as a dream, as it did for the Bible's Abraham; or it might come during meditations, as it did for the prophet Muhammad in the cave Hira; or it might consist of the discovery of holy texts, as occurred with the founder of the Mormon religion, Joseph Smith. No matter what form these divine revelations take, they offer a reason that religious stories are true.



Let us go back to our imaginary scenario. Suppose you defend your story with the claim that the gods revealed the story to some of your ancestors. Your daughter might respond to this defense as follows: "Oh, I do not doubt that our great ancestors were closer to the gods than we are now, but what makes me curious is this: I recently met a wandering medicine man from a tribe far away. He told me about the religious beliefs that have guided his tribe for centuries. Guess what? Their religious beliefs support completely different stories about the world and the gods. What reason do I have to believe our own religious stories, while I reject those of other tribes?"

This response shows that religion, as a method of understanding the world, is challenged by the fact that not all divine revelations are compatible. When different religious systems come into contact with one another, it becomes rather difficult to decide which revelation is more trustworthy. Although some individuals (especially if they have had religious experiences) may be convinced that a particular revelation is true while all others are misguided, not everybody can justify such strong convictions.

At this point philosophy enters the picture; it is a third major way of providing a big-picture view of reality. The word *philosophy* derives from the Greek words *philia* ("love") and *sophia* ("wisdom"). Philosophy can therefore be understood as love of wisdom. But what does this mean? We can understand the nature of philosophy better if we clarify the relationship among philosophy, mythology, and religion. Philosophy is related to mythology insofar as philosophers also try to provide a comprehensive, big-picture view of reality. Philosophy resembles religion in that philosophers provide reasons that their picture of reality is true. However, philosophers never appeal to divine revelation or to tradition in order to show that their theories are true; instead, they appeal to the power of reason. In a broad sense, **philosophy** can therefore be understood as an attempt to develop a big-picture view of the universe with the help of reason.

Let us go back to our imaginary situation. What would it mean to explain the cosmos to your daughter with the help of reason? Well, you might say something along the following lines:

> "You have asked me, among other things, whether stars take an interest in what we are doing. In order to answer this question, we need to clarify the nature of stars. I believe that stars are balls of fire. You might not believe me, but here is the reason I think this is a plausible idea. Look at this campfire. It is a source of light. I have walked through many dark nights, and I can tell you that whenever I have seen light, it had something to do with fire. Consider lightning, for example. It causes trees to burn and is also a kind of fire. So it seems to me that wherever there is light, there must be fire. Since stars are a source of light, they too must be a kind of fire. Moreover, since fire does not seem to be able to perceive anything, I do not believe that stars are aware of what we are doing."

What you have just done is use an argument to defend your belief that stars are not aware of our actions. This is a key element in philosophy. Philosophers not only try to explain the world with the help of claims and stories but also try to defend their claims with the help of arguments. We start to philosophize when we present arguments in defense of our big-picture view of reality.[3]

Although our understanding of philosophy is still incomplete, it is already possible to point to four key elements of philosophical reflections. First, in order to philosophize, we need to know more about arguments. We need to know how to construct arguments and how to evaluate them. We will do this in the next chapter. Second, the hypothetical situation that I described here illustrates that philosophy emerges as a response to persistent questioning. If your daughter had not been so reluctant to accept traditional

stories, there would not have been any reason to present arguments in defense of your beliefs. Philosophy therefore comes most easily to us when we are in a critical state of mind, questioning whether our standard picture of the universe is really accurate. As long as we are absolutely convinced that our beliefs about the world are correct, we feel little need to justify them with the help of arguments. However, many people encounter situations in their lives when they begin to question their beliefs and convictions. It is during these times that philosophy emerges most naturally.

Food for Thought

Philosophy emerges most naturally in situations when we question whether our ordinary beliefs about the world are really true. The Russian writer Leo Tolstoy (1828–1910) described in his *Confessions* how he started to question everything in his life:

> So I lived; but five years ago something very strange began to happen to me. At first I experienced moments of perplexity and arrest of life, as though I did not know what to do or how to live; and I felt lost and became dejected. But this passed and I went on living as before. Then these moments of perplexity began to recur oftener and oftener, and always in the same form. They were always expressed by the questions: What is it for? What does it lead to?[4]

In normal everyday life we tend not to be as reflective and critical as Tolstoy was when he wrote his *Confessions.* However, it has been suggested that we all become self-doubting and perplexed at certain points in our lives. Is that true? If yes, what kinds of experiences or situations typically undermine our confidence that we understand the world correctly?

Third, doing philosophy is a social activity. It requires that we present our ideas and arguments to other people and that we are willing to listen to what others have to say about our claims. Philosophy thus requires courage as well as empathy. You will discover quickly that an argument that sounds brilliant to you might strike others as problematic. Being a good philosopher involves listening to the questions others have and modifying our ideas in light of these questions. The British philosopher John Stuart Mill (1806–1873) wrote that a person does not deserve to be confident in his opinions unless "he has kept his mind open to criticism of his opinions and conduct. Because it has been his practice to listen to all that could be said against him."[5] What is important to realize in this context is that somebody who questions your ideas does not—in normal circumstances—aim to attack you as a person. Anyone who thinks in that way becomes defensive and brings a quick end to all philosophical dialogue. Philosophy flourishes when people feel comfortable to question each other in an atmosphere of mutual trust and respect.

Food for Thought

Philosophy thrives when we can question each other's beliefs in a cooperative and safe environment in which it is possible to test and evaluate ideas without creating hostility and resentment. Creating such an environment is far from easy. Clarify in your own mind what you can do to help create such an environment in this classroom. Are there also some things which we should avoid doing? Compare your thoughts with your neighbor and the rest of the class.

Finally, the hypothetical conversation with your fifteen-year-old daughter also shows that philosophy has a tendency to lead to a plurality of different answers. I can defend my claim that stars are balls of fire with the help of an argument, but there are also arguments in defense of the claim that stars are unchanging, perfect entities. For

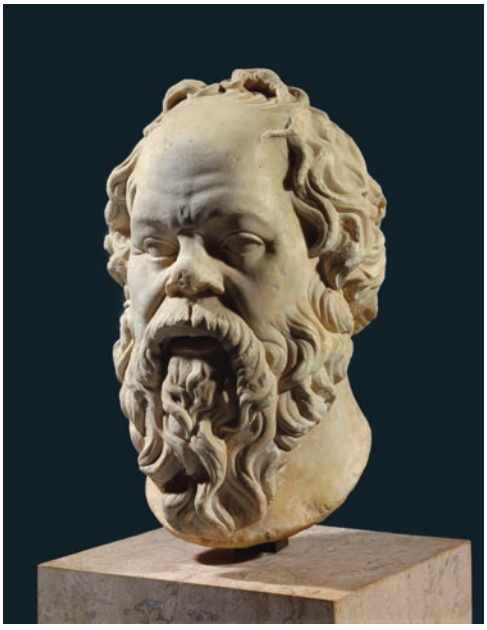
most complex questions there are different answers that appear—at least for a while—equally reasonable. There are, of course, also some thoroughly misguided answers that one can show to be quite unreasonable. Although philosophy has the goal of producing one truthful picture of the universe, in practice it generates many different accounts of the world, which stand in opposition to each other. It often takes hundreds of years before some arguments are recognized to be mistaken. Progress in philosophy is a slow process; those of us who like immediate results and absolute certainty tend to be annoyed by philosophical reflection. However, studying questions that lead to opposing answers has the benefit of showing us new possibilities. The philosopher Bertrand Russell (1872–1970) wrote in this context:

> Philosophy, though unable to tell us with certainty what is the true answer to the doubts which it raises, is able to suggest many possibilities which enlarge our thoughts and free them from the tyranny of custom. Thus, while diminishing our feeling of certainty as to what things are, it greatly increases our knowledge as to what they might be; it removes the somewhat arrogant dogmatism of those who have never traveled into the region of liberating doubt, and it keeps alive our sense of wonder by showing familiar things in an unfamiliar aspect.[6]

Philosophy introduces us to multiple ways of seeing the world, thus enriching our perspective but at the same time exposing us to risks. Once we are able to see many different points of view, we are in danger of losing a firm orientation. Ideas that are central to the way in which we live our lives can suddenly appear to be shallow conjectures. For this reason, philosophy is often accused of being subversive. Is it then beneficial to pursue philosophy and to risk undermining the most fundamental beliefs that shape our lives? This question cannot be answered universally. Studying philosophy can lead us to new knowledge and to a new outlook on life. But reflecting on the most fundamental questions in life can also result in perpetual doubt—or a reconfirmation of what we have believed since childhood. What the study of philosophy will do to you and your beliefs is not clear until you have practiced it on your own. The following pages give you an opportunity to do just that.

Food for Thought

The Ancient Greek philosopher Socrates (469–399 BCE) was famous for wandering the streets of Athens, questioning people until they admitted that they did not know as much as they thought they knew. As you might imagine, this upset many Athenians—especially those in influential positions. They considered Socrates' questioning to be a danger to the city and eventually brought charges against him. In 399 BCE Socrates was condemned to death for corrupting young people and undermining the traditional religious beliefs of the city. Plato's *Apology* purportedly presents Socrates' famous defense speech, in which Socrates claimed that his questioning was beneficial to the Athenians and that they should have rewarded him instead of condemning him. Socrates claimed that it is better to be aware of one's ignorance than to go on believing dubious and unjustified ideas. He concluded that "the unexamined life is not worth living." Do you agree with Socrates? Is questioning one's beliefs a good thing, even if one ends up being perplexed?



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The Relationship Between Science and Philosophy

1.2 Differentiate between scientific and philosophical questions.

In the last section, we defined philosophy as an attempt to explain the world with the help of reason. Some of you may find this definition puzzling. If philosophy is an attempt to explain the world with the help of reason, how then does philosophy differ from science? Scientists obviously also use reason when they explain the features of this world.

It is important to realize that what we call science was initially a part of philosophy. Aristotle (384–322 BCE), one of the greatest philosophers of antiquity, was a very influential physicist and biologist. Physics was historically described as natural philosophy. It is only during the last several hundred years that we distinguish more sharply among the various academic disciplines. Philosophy has given birth to natural science, psychology, sociology, and linguistics. In today's world we seem to learn most of the things that we can reasonably claim about the universe not from philosophers, but from physicists, astronomers, biologists, or psychologists. Consider the example from the previous section: What is the nature of stars? In order to answer this question we would turn to an astrophysicist, not a philosopher.

This raises a crucial question: If philosophy has prepared the grounds for modern science, and if modern science currently is our best tool to explain the universe with the help of reason, what role does philosophy play in the world today? Can philosophy tell us something about the world beyond what the sciences tell us? Would we lose anything if we closed all philosophy departments and directed the money saved into the various science departments?

In order to answer this question, we need to know a bit more about scientific disciplines such as physics or chemistry. Each scientific discipline deals with a specific subject matter. A physicist can tell you why you see lightning before you hear the thunder, but a physicist cannot explain to you whether going to law school will make you happy. Similarly, economists can explain the macroeconomic consequences of a low savings rate but cannot explain to you why your cholesterol level is so high. Thus, each scientific discipline deals with only a part of reality, but not with the whole. The Austrian philosopher Ludwig Wittgenstein (1889–1951) wrote: "[E]ven when all possible scientific problems have been answered, the problems of life have not been put to rest."[7]

Let me illustrate this with an example. I have always been curious as to whether or not I have a soul. Souls, if they exist, are entities that we cannot see, measure, or weigh. Souls are not like rocks, fingernails, or other physical objects. Since science obtains information about the world predominantly by measurements and experimentation, science can tell us a lot about rocks, clouds, and planets. However, science has a much harder time telling us about souls or a possible afterlife. Finding the answer to the question of whether we have souls requires not only observations and experiments but also a good deal of conceptual analysis; that is, we need to clarify what we mean by the term *soul* before we can make any progress in determining whether souls exist. Analyzing and clarifying complex concepts is an integral part of philosophy; it often involves testing definitions and analyzing hypothetical situations. The question of whether we have souls is therefore a good example of a philosophical question, which involves conceptual analysis and requires more than observations and experimentation.

Philosophical questions are "open" in the sense that we cannot easily predict what would constitute satisfactory answers. No scientific procedure can produce a quick answer to a philosophical question. Moreover, philosophical questions

often deal with foundational matters that are not addressed within any science. Mathematicians, for example, can tell us lots of things about numbers. They can prove, for instance, that there are infinitely many prime numbers or that the square root of two is an irrational number. However, mathematicians very rarely address the fundamental question of what kind of things numbers actually are. Are numbers abstract entities that exist on their own, independent of any human cognition, or are numbers dependent on our minds? These kinds of foundational questions are left for philosophers to investigate, and they form an integral part of the philosophy of mathematics. What is interesting to note is that every science involves foundational questions that are not directly addressed by the science itself. We thus can speak of a philosophy of biology, a philosophy of physics, or a philosophy of science in general. Philosophy offers a home for foundational questions that fall outside the scope of ordinary scientific investigations.

It is worthwhile to stress that the line between philosophy and science is not fixed. Some philosophical questions have eventually turned into scientific questions once the appropriate scientific methodology was developed. For example, the question "Is there life on Mars?" is now clearly a scientific question, but it used to be a philosophical one. Similarly, the question "Are computers able to think?" is currently a philosophical question, but it might turn into a scientific question for cognitive scientists. This understanding clarifies why scientific investigations can have an important impact on philosophy. Although science by itself cannot answer philosophical questions, it can help philosophers to see open questions in a new light. Philosophers are, therefore, obligated to pay close attention to scientific results. However, most classical philosophical questions, like the question of whether God exists, appear to be such that it is difficult to imagine (in principle) that they can be answered with the help of any scientific procedure.

Food for Thought

Contemporary thinkers are divided whether science has anything useful to say about the existence of God. The scientist Stephen Jay Gould thinks that all "questions of ultimate meaning and moral value" are beyond the reach of science.[8] The scientist Richard Dawkins, on the other hand, disagrees. In his book *The God Delusion* he writes: "The existence of God is a scientific hypothesis like any other . . . God's existence or non-existence is a scientific fact about the universe, discoverable in principle if not in practice."[9] According to Dawkins, science shows us that the existence of God is highly unlikely, whereas Gould comes to the conclusion that the existence of God is beyond the realm of science. What position in this dispute looks more plausible to you? Please note that the question whether Richard Dawkins or Stephen Jay Gould is correct in their views on science is clearly a philosophical question that cannot be answered by science.

Since philosophy deals with open questions that cannot be answered quickly and which often invite controversy, some people are wary of doing philosophy at all; they have the feeling that philosophers do not get anywhere, since they have been exploring some of the same open questions for thousands of years without arriving at final answers. This is not a silly complaint, but before one concludes that philosophy is inherently a fruitless and frustrating activity, it is worthwhile to keep the following considerations in mind: Although it is probably impossible to answer open questions so that every reasonable person agrees with a given answer, it is very well possible to answer such questions satisfactorily in light of your experiences and observations of the world.

Food for Thought

Take a look at the following questions, and decide whether they are predominantly scientific or philosophical questions. Keep in mind that some questions might have scientific as well as philosophical components.

1. How many chromosomes does a human being have?
2. Is it morally permissible to remove chromosomes from an embryo?
3. What is the meaning of life?
4. What happens inside a black hole?
5. What caused the extinction of the dinosaurs?
6. Is the temperature on Earth increasing?
7. Is homosexual love unnatural?
8. Did extraterrestrials visit Earth in the past?
9. Are quarks the smallest particles in the universe?
10. Can we know that there are particles that are too small to be observed?
11. What caused the universe to exist?
12. Would it be a good thing to live forever?
13. When will the sun go supernova?

Philosophy, unlike science, has a personal component. The purpose of philosophical activity is to clarify in your own mind, which solution to an open question seems most reasonable. This does not mean that you can assert whatever strikes your fancy. Philosophy, as we have seen, is not mythological fantasy; philosophers are committed to adopting the solution that appears most reasonable in light of the best arguments available. It is, however, quite possible that different rational persons answer the same open question differently, because they have different experiences or because they make different background assumptions. One person, for example, might come to the conclusion that near-death experiences are all hogwash and the product of wishful thinking, whereas another person, who actually has had an after-death experience, is convinced that we will continue to exist after we die. Both positions might appear to be the most reasonable in light of the best arguments available to these two thinkers. Thus, the point of your philosophical activity is, in part, to determine which solutions to open questions are the most reasonable in light of your own experiences and thoughts about the world. What is especially interesting in this context is that the answers we give to philosophical questions can change throughout our lives. As a six-year-old boy, I was certain that God was a white, bearded man who walked upon the clouds and who observed whether we followed his rules. As I got older, I didn't find this way of thinking about God satisfactory. My big-picture view of the universe began to change and this change prompted me to think differently about God. This process of adjusting my thinking never came to a stop. I have been revising my thinking about the nature of God in light of my overall lived experiences ever since.

Food for Thought

Have you ever changed your mind about a philosophical question in your life? If yes, what prompted you to think differently?

It will, of course, not always be possible for you to select one solution to an open question as the most reasonable. At certain points in our lives, we might realize that we do not know what to think about certain questions. You might conclude, for example, that you really do not know whether you are always responsible for all your actions or whether you will survive your death. But this, too, can constitute progress. Many students who start a philosophy class with the firm conviction that they know the answers to open questions later come to realize that their arguments weren't as convincing and reasonable as they initially thought. This awareness of the limits of our knowledge makes the world a more mysterious place. Perhaps mysteries are not only a key feature of good movies but also a key ingredient of a stimulating life.

Food for Thought

What Is Your Philosophy?

Engaging in philosophical activity frequently causes us to change our attitudes toward fundamental questions. In order to see whether your attitudes change during this class, it might be useful for you to record your positions at the beginning of the class. Answer the following questions with Yes, No, or I don't know, and discuss the questions with the rest of the class.

1. After bodily death a person continues to exist in a nonphysical form.
2. The ultimate goal in life is to live as pleasurably as possible.
3. Democracy is the best form of government.
4. God exists.
5. I am now the same person that I was when I was five years old.
6. I am always responsible for my actions.
7. It is irrational to be afraid of one's death.
8. Ghosts exist.
9. One day there may be computers that understand Shakespeare better than I do right now.
10. It is wrong to impose the death penalty.
11. There are universal moral standards that apply to all human beings regardless of where they live.
12. The best way to treat depression is to inject chemicals into the brain.
13. If I had been born into a different environment, I might have become a professional killer.
14. It is impossible to know anything with absolute certainty.
15. The future is fixed; how one's life unfolds is a matter of destiny.
16. The life of a young child is more valuable than the life of a twenty-two-year-old college student.
17. If God does not exist, then there are no moral obligations, and no action is right or wrong.
18. It is impossible to be truly happy if one is an immoral person.
19. If we live forever then any activity will eventually get boring and pointless.

The Main Branches of Philosophy

1.3 Summarize the nature of the major fields of philosophy.

Traditionally, philosophical questions can be divided into five different fields of study: **metaphysics**, **epistemology**, **ethics**, **aesthetics**, and **logic**. It is useful to be familiar with these different areas of inquiry in order to obtain an overview of the major questions studied in philosophy.

Metaphysics is usually defined as the study of ultimate reality; however, this definition is not the most insightful. One way to get a better understanding of this field of study is to list everything that we think exists in the universe. Can you imagine making such a list? Most of us would probably start our lists with familiar things such as cars, trees, cats, and people we know. However, after a while, some of us would perhaps also include items like angels, souls, and God. If we compared our lists, certain questions would ultimately develop. For example, I could ask, "Do you really believe that angels exist in the world?" This is a typical metaphysical question. As we will see later on, philosophers frequently wonder whether souls, God, time, numbers, or colors really exist, and all of these questions are part of metaphysics. In addition, metaphysics is concerned with clarifying how various entities are related to each other. Many people have thought, for instance, that every event has a cause. But how is this compatible with freedom? If everything we do is caused by events in the past, how is it possible to be free? Clarifying the relationship between causality and freedom is part of the problem of free will, and this question, too, belongs to the field of metaphysics.

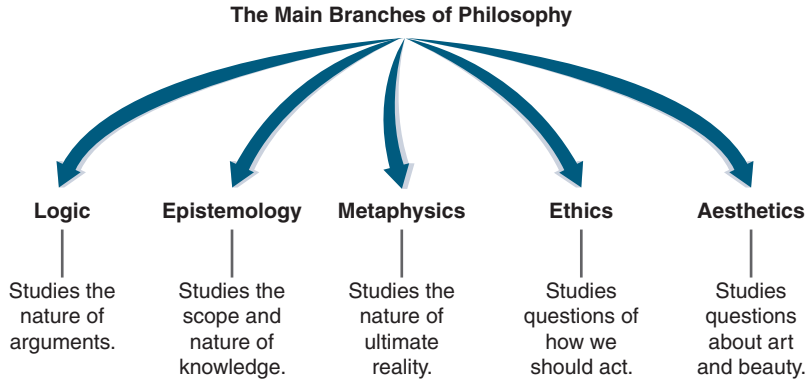
Epistemology, the study of knowledge, is important for philosophers because it sometimes happens that in the process of exploring a question, we come to the conclusion that we cannot possibly know what answer to a question is correct. Many people believe, for instance, that we can never know whether God exists or not. People who deny that we can know answers to certain questions are called **skeptics**. It is an important part of philosophy to determine under what conditions skepticism is a

reasonable position to adopt. This determination of the scope and limits of knowledge is the main part of epistemology.

The fields of **ethics** and **aesthetics** both deal with questions of value. Ethics is concerned with clarifying how people ought to act. Most people think, for example, that it is wrong to steal. But why exactly is stealing wrong? Could there be situations in which stealing could be morally justified? What about murder? Is murder always wrong, or are we sometimes permitted to take the life of another human? Is it even possible to answer questions like these in an objective way? The study of ethics deals with all of these questions.

Aesthetics is the study of art and beauty. When you listen to your favorite song on the radio or when you attend a performance of your favorite artist, you undergo aesthetic experiences. These experiences are pleasant and important. Can you imagine how bland the world would be without art? However, it is far from clear what kinds of factors are involved in aesthetic experiences and judgments. Is there something universal in aesthetic experiences that transcends cultural traditions and personal tastes? Are legitimate aesthetic judgments possible? These and related questions are central to the study of aesthetics.

The final—and in some sense most fundamental—area of philosophy is the field of **logic**. We have seen that philosophy requires that we defend our claims about the world with arguments. However, it is obvious that not all arguments are equally good. Many arguments are actually quite misleading and weak. Logic is the field of study that clarifies how we can distinguish good arguments from bad ones. We will start our exploration of philosophy with a brief excursion into the field of logic. The following chart should be useful for remembering the major fields of philosophy.



Although some fundamental questions have metaphysical, epistemological, and ethical aspects, most philosophical questions belong in one of these categories. Practice your grasp of these fundamental disciplines by completing the following exercise.

Food for Thought

Take a look at the following claims, and decide whether they are predominantly metaphysical, epistemological, ethical, aesthetic, or logical in nature.

1. It is better to suffer an injustice than to inflict one on others.
2. Vampires exist only in movies or books.
3. Nobody can know whether a fetus is a person or simply a collection of cells.
4. A valid argument can have false premises.
5. Everything that exists is a physical object.
6. A copy of a famous sculpture cannot be a work of art.
7. Only doctors can know the causes of diseases.
8. There are more irrational numbers than rational numbers.
9. Don't pursue a major that will not make you rich.
10. It is impossible to predict the future.
11. Your stories are full of contradictions.
12. We will never understand why God lets innocent children suffer.
13. Those who think only about themselves lead unhappy lives.

Multiple-Choice Questions

The following multiple-choice questions should help you understand whether you have mastered the concepts in this chapter. If you answer all questions correctly, you have reason to think that you understand the chapter reasonably well. The answers can be found at the very end of the book.

1. All humans try to make sense of the world that surrounds them. What method of making sense of the world primarily relies on revelation?
   a. Mythology
   b. Religion
   c. Philosophy
   d. Science
2. What claim about the relationship between science and philosophy is true?
   a. Science and philosophy are completely unrelated endeavors to make sense of the world.
   b. In philosophy one encounters various competing theories that aim to answer the same question. In science, on the other hand, one and the same question cannot be answered by competing theories.
   c. Both science and philosophy use reason to make sense of the universe.
   d. It is impossible that a philosophical question turns into a scientific question.
3. The question "Do electrons have more mass than protons" is a
   a. Philosophical question
   b. Scientific question
   c. Both a scientific and a philosophical question.
   d. Neither a scientific nor a philosophical question.
4. The question "Did college freshmen in the year 2019 drink more or less alcohol than college freshmen drank in the year 1972?" is a
   a. Philosophical question
   b. Scientific question
   c. Both a scientific and a philosophical question.
   d. Neither a scientific nor a philosophical question.
5. The question "Is death the separation of the soul from the body?" is a
   a. Philosophical question
   b. Scientific question
   c. Both a scientific and a philosophical question.
   d. Neither a scientific nor a philosophical question.
6. The question "What caused the universe to exist?" is a
   a. Philosophical question
   b. Scientific question
   c. Both a scientific and a philosophical question.
   d. Neither a scientific nor a philosophical question.
7. The question "Is there a black hole at the center of our galaxy" is a
   a. Philosophical question
   b. Scientific question
   c. Both a scientific and a philosophical question.
   d. Neither a scientific nor a philosophical question.
8. The question "Does God exist?" is a
   a. Epistemological questions
   b. Metaphysical question
   c. Ethical questions
   d. Logical question
9. The question "Does this conclusion follow from these premises?" is a
   a. Epistemological questions
   b. Metaphysical question
   c. Ethical questions
   d. Logical question
10. The question "Is the death penalty morally justified?" is a
    a. Epistemological questions
    b. Metaphysical question
    c. Ethical question
    d. Logical question

Study and Reflection Questions

1. Religion and philosophy use different methods of explaining the world. Philosophy uses reason, and religion uses revelation to explain events. Does this mean that religion and philosophy have to be at odds with each other? Can the truths of reason be identical with the truths of revelation? Explain.
2. The practice of philosophy often means that we become unsure of whether all the things we used to believe are really true. Is this a good or bad situation? Do our lives become better if we question everything? Would it be better if we were to accept certain beliefs as truth, even if we could not justify them? Explain.
3. The study of mythology seems to be passé. But if you think about it, movie and television show themes have many similarities to myths. Is it fair to say that, if we still use myths as plots in television shows and movies, we are using mythology to make sense of our world? Provide pros and cons to this argument in your answer.
4. Science is not able to answer every question that we have about our lives. For example, no scientific discipline can answer the question "What is the meaning of life?" In your opinion, are such open questions meaningful? Should we assume that only questions easily answered by science are meaningful, and that all remaining open questions are of no

value without clear meaning? If we follow this line of thought, we arrive at the conclusion that science—although not able to answer all questions—can answer all meaningful questions. Do you agree with this conclusion? Why or why not?

5. What philosophical question is most important to you? State the question, and give reasons that it is important at this stage in your life.

For Further Reading

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Endnotes

1. I understand the term *mythology* in a very general sense as referring to any invented story that has been transmitted orally over many generations within a given culture. I am grateful to Steven Duncan for pointing out that, from an anthropological point of view, it might very well be false to think that mythological stories stand in any direct competition with philosophical, religious, or scientific claims. However, my imaginary scenario is not designed to make any anthropological or historical claims about how mythology, religion, and philosophy have developed. Instead, I use the imaginary scenario simply to stress that there are relevant logical and epistemological differences among mythological, religious, and philosophical explanations of reality. An additional empirical question, which I would like to leave unanswered, is whether these logical and epistemological differences among mythology, religion, and science have had any actual historical significance.
2. I understand religion here predominantly as an epistemological phenomenon, that is, as a method of shaping beliefs about the world. It should be quite clear that not all religions have such an epistemological element, and that the term *religion* is typically used with a much broader meaning that includes a wide range of sociological and psychological phenomena as well. My goal here is not to say anything profound about religion; I want to stress instead that religion tends to provide types of explanations that differ from those of philosophical inquiry.
3. It is worth noting that not all philosophical traditions make argumentation the center of philosophical activity. Robert Abele pointed out to me that in Eastern philosophy, it is traditionally not arguments and concepts that take precedence. Rather, it is the experience of enlightenment that counts, through the use of various methods of meditation. However, even in the Eastern philosophical tradition, argumentation plays a significant role, and it is therefore not completely misleading to claim that arguments are an important ingredient of all philosophy.
4. Leo Tolstoy, *A Confession and Other Religious Writings* (Lawrence, KS: Digireads.com, 2010), p. 11.
5. John Stuart Mill, *On Liberty* (New York: Longman, 2006), p. 32.
6. Bertrand Russell, *The Problems of Philosophy* (Oxford: Oxford University Press, 1912), p. 156.
7. Ludwig Wittgenstein, *Tractatus Logico-Philosophicus*, trans. D. F. Pears and B. F. McGuinness (London: Routledge and Kegan, 1961), Proposition 6.52. Although Wittgenstein acknowledged that philosophical questions go beyond the limits of scientific investigations, he was very skeptical about whether our language allows us to express philosophical questions and possible answers to them. For Wittgenstein, philosophical questions cannot be clearly expressed and, therefore, push us into a nondiscursive mystical realm beyond language.
8. Stephen Jay Gould, *Rocks of Ages: Science and Religion in the Fullness of Life* (New York: Ballantine, 1999.)
9. Richard Dawkins, *The God Delusion* (Boston: Houghton Mifflin, 2006), p. 50.

Chapter 2
Philosophical Tools

Learning Objectives

2.1 Learn to recognize logical inconsistencies.

2.2 Test definitions by using counterexamples and thought experiments.

2.3 Differentiate between logical and causal possibility.

2.4 Reconstruct arguments in standard form.

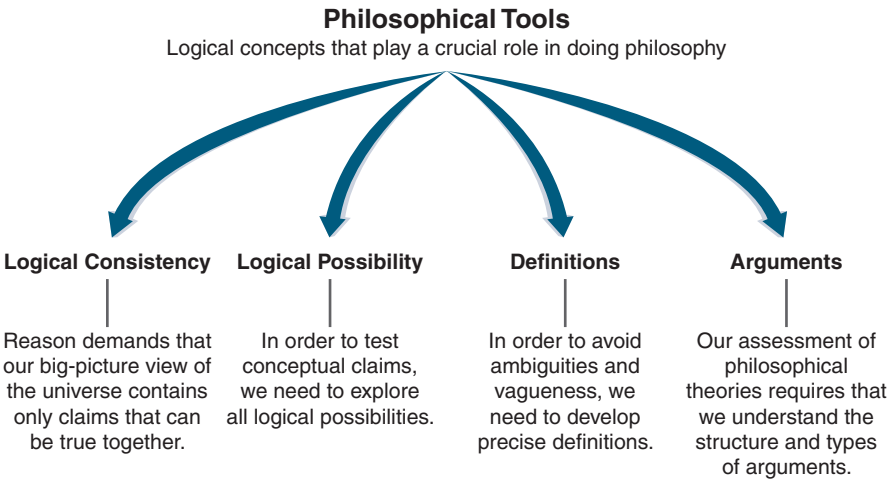
2.5 Evaluate inductive and deductive arguments.

At its heart, philosophy consists of exploring and assessing answers to open questions. This process—especially the assessment of arguments—demands that philosophers use certain logical tools and techniques that may be foreign to you. For example, let's consider the following quotation from an encyclopedia entry about the problem of evil:

> The argument from evil focuses upon the fact that the world appears to contain states of affairs that are bad, or undesirable, or that should have been prevented by any being that could have done so, and it asks how the existence of such states of affairs is to be squared with the existence of God. But the argument can be formulated in two very different ways. First, it can be formulated as a purely **deductive argument** that attempts to show that there are certain facts about the evil in the world that are **logically incompatible** with the existence of God. One especially ambitious form of this first sort of argument attempts to establish the very strong claim that it is **logically impossible** for it to be the case both that there is any evil at all, and that God exists. Alternatively, rather than being formulated as a **deductive argument** for the very strong claim that it is **logically impossible** for both God and evil to exist, (or for God and certain types, or instances, or a certain amount of evil to exist), the argument from evil can instead be formulated as an **evidential (or inductive/probabilistic) argument** for the more modest claim that there are evils that actually exist in the world that make it unlikely—or perhaps very unlikely—that God exists.[1]

Confused? Probably. Trained philosophers can read this encyclopedia entry without any problem, but for beginning students the text can be quite challenging. If you look closely, the text contains several terms that are important to philosophy, but that might not be familiar to you if you are encountering philosophy for the first time. This chapter will help you to become familiar with some important logical tools that philosophers frequently use in thinking and writing. The following chart will give you an overview of the concepts that we will discuss in this chapter.

Learning to use logical tools can be a bit challenging, but your efforts to master these techniques will pay off in later chapters when we explore and evaluate responses to significant philosophical problems. Don't get discouraged if you can't understand the usefulness of these tools immediately. The role that they play will become clearer as we explore more specific philosophical questions later on.



Logical Consistency

2.1 Learn to recognize logical inconsistencies.

In everyday life we rarely step back and test whether all our beliefs about the world are compatible with each other. In philosophical investigation, on the other hand, the search for **logical consistency** becomes a driving force for innovation and philosophical progress. Philosophy is, as American philosopher William James (1842–1910) pointed out, "an unusually stubborn effort to think clearly."[2] But what precisely is logical consistency, and how is it related to thinking clearly about the world? Some examples will help to illustrate this important philosophical tool.

Suppose you meet somebody who holds the following two beliefs:

A. It is always morally wrong to take the life of a human being.

B. It is morally permissible to execute serious criminals.

It is clear that there is a logical tension between these two claims. If assertion A is true and it is always wrong to take the life of a human being, then it follows that it must also be wrong to execute serious criminals. So claims A and B cannot be true at the same time, and they are, therefore, logically inconsistent with each other. In general, we can say that a set of claims is **logically consistent** if and only if it is possible that all claims in the set are true at the same time; a set of claims is **logically inconsistent** if and only if it is impossible that all claims in the set are true at the same time.

Initially, you might think that holding inconsistent beliefs happens rarely and only in the minds of foolish people. Unfortunately—or perhaps fortunately for philosophy—this is not the case. Even the smartest thinkers find it difficult to avoid inconsistencies. The following exercise illustrates how easy it is to harbor inconsistent beliefs in one's big-picture view of the universe.

Food for Thought

Determine whether the following sets of statements are logically consistent with each other.

1. All rich people are happy./Some homeless people are happy.
2. All philosophers are male./Simone de Beauvoir is a female philosopher.
3. Alec is taller than Xavier./Tori is taller than Alec./Xavier is taller than Tori.
4. The future is unknowable./God is omniscient.
5. The theory of evolution is true./God exists.
6. Shadeisha is smaller than Bryce./Emily is smaller than Bryce./Emily is smaller than Shadeisha.

7. It is always morally wrong to kill innocent persons./Having an abortion is morally acceptable.
8. Nobody is perfect./My father is flawless.
9. Humans are free./The past determines the future.
10. Death is the end of all perception./Death is a good thing.
11. There exists a first cause./Everything is caused.
12. No animal has a soul./Humans are animals.
13. Democracy is the best form of government./The majority of people in every society are stupid.
14. All birds can fly./Penguins cannot fly.

As you can see from these examples, identifying logical inconsistencies may not be a trivial affair. Most inconsistencies are not easy to spot and require the discussion and analysis of additional beliefs. In order to illustrate this more clearly, consider the following example. Suppose you meet somebody who holds the following two beliefs:

A. Everything that exists is a physical entity.

B. Angels exist.

A and B together are not yet logically inconsistent with each other. However, we can ask whether the person also holds the following background belief:

C. Angels are nonphysical entities.

If it turns out that the person does hold belief C in addition to A and B, then we have shown that those beliefs are logically inconsistent with each other. This example illustrates that the search for logical consistency requires that we also investigate background beliefs. We are frequently not fully aware of what our background beliefs are and whether they are in conflict with the rest of our belief system. Philosophy helps us to unravel hidden aspects of our belief system. In this way we can discover that our own views of the universe are much more complex than we initially imagined them to be.

A Demand of Reason: Avoid Contradictions

Once we realize that some of our beliefs about the world are logically inconsistent with each other, we have found a reason to reevaluate and change our big-picture view of the world. Many of us, however, are not excited about the prospect of having to modify our beliefs; we want to hold on to that which is familiar and comforting. In an extreme case, one might imagine somebody who resists change in the following way: "All right, you have shown that my beliefs about the world are in conflict with one another. So what? I think that logical consistency is overrated. I am happy to have a logically inconsistent belief system. My thoughts are free, and I have the right to believe whatever I want."

A specific example might help us to illustrate the problematic nature of holding logically inconsistent beliefs. Suppose you meet Maria, who believes the following:

A. God loves all people.

B. If God loves somebody, then God makes sure that the person will be saved.

C. Some people will go to hell.

D. All people who go to hell are not saved by God.

This set of beliefs is logically inconsistent. Suppose Maria realizes this, but she is nevertheless unwilling to change her belief system. What is wrong with that? In this situation we can show Maria that her beliefs A and B commit her to believing that all people will be saved by God. Moreover, her beliefs C and D commit her to believing that some people will not be saved by God. Putting these two beliefs together, we can show Maria that she has to believe the following as well: All people will be saved by God, and some people will not be saved by God.

This last belief is very peculiar. Philosophers call this type of statement a **contradiction**, that is, a sentence that both denies and asserts that something is the case. Contradictions have a unique property in that no matter what the world is like, we can know right away that contradictions cannot be true. They are necessarily false statements and thus ought not to be part of a reasonable view of the world. It is a demand of reason that we eliminate logical inconsistencies in our big-picture view of the world and that we are willing to change our beliefs if they have been shown to entail logical inconsistencies or contradictions.

The good news is that there is always more than one way to make an inconsistent set of beliefs logically consistent again. In the case of Maria there are numerous ways for her to modify her beliefs. For example, she might decide to modify her belief A and believe that God loves most but not all people. Alternatively, she might modify her belief D and believe that people who go to hell (temporarily) can nevertheless be saved in the end. As you can see from these examples, there are endless possibilities. The more creative your mind, the more options you will see. However, selecting the right adjustment of your big-picture view of the universe is often tricky. Any modification of one belief can lead to unforeseen consequences in other parts of your belief system. Thinking through these consequences is a lot of fun and a natural by-product of doing philosophy.

Food For Thought

The Ancient Greek philosopher Socrates (469–399 BCE) is famous for his ability to detect logical inconsistencies among the beliefs of his contemporaries. He would start a conversation by asking, for instance, "What is courage?" After soliciting a definition of courage from his interlocutor, Socrates would proceed to show that this definition together with some other plausible beliefs leads to a contradiction. Socrates' dialogue partners are often puzzled and confused to discover that such inconsistencies exist in their belief system. In response, Socrates invites them to change either their background beliefs or their definition of the virtue. When interlocutors do this, Socrates proceeds to find a new inconsistency. This type of questioning is sometimes referred to as the "Socratic Method." As you can easily imagine, the use of the Socratic method leads frequently to confusion and anger. People are frustrated when they are shown that they have inconsistent beliefs. This means that their big-picture view of the universe cannot be true and needs to be modified. Have you ever seen anybody use a line of questioning that resembles the Socratic Method? If yes, what were the results? Under what condition is this method especially useful?

Definitions

2.2 Test definitions by using counterexamples and thought experiments.

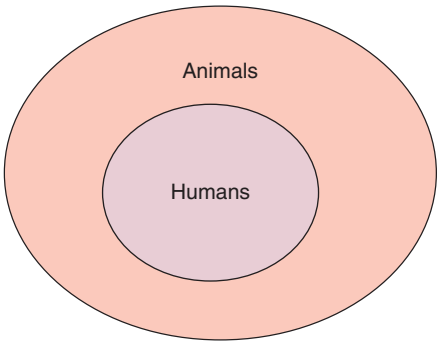
In order to detect logical inconsistencies among various claims we often have to define terms clearly. Consider the following two claims:

1. It is always morally wrong to kill innocent persons.
2. Having an abortion is morally acceptable.

Are these claims logically consistent with each other? In order to answer this question we have to clarify the meaning of the term "person." We need a definition! Only if we understand clearly what we mean by "person" can we decide whether a fetus is a person or not. Defining terms is a natural and important part of doing philosophy. However, as you can see in this example, arriving at satisfactory definitions is often hard and difficult work. In order to help you become better at developing definitions I want to introduce you to one well-known method of defining terms in philosophy: defining terms with the help of *necessary and sufficient conditions*.

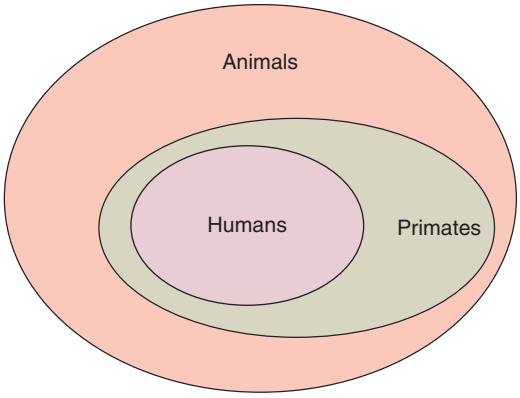
Let us start with some terminology. The term which is clarified through a definition is called the **definiendum.** The sentence or phrase that is providing the clarification is

called the **definiens.** So, when we want to clarify the meaning of the term *person*, *person* is the definiendum and what we say to clarify it, is the definiens. One of the most popular methods of clarifying terms entails identifying *necessary and sufficient conditions* for the correct application of the term.[3] In order to illustrate this philosophical technique, let us consider a straightforward example. Suppose you meet someone who is confused about the term human. In order to help him, you can say, "A human is a kind of animal." What you have just done is to state a necessary condition for being a human; being an animal is a necessary condition for being a human because it is impossible for something to be a human if it is not an animal. We can illustrate this conceptual relationship visually with the help of the adjacent diagram.



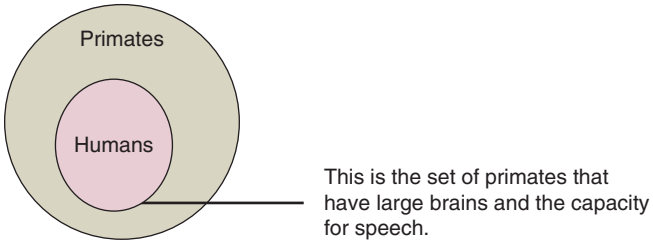
This picture illustrates that being an animal is a necessary condition for being human.

In general, one can define necessary conditions as follows: *A condition q is necessary for p if it is impossible for something to be p without being q*. Specifying necessary conditions for the correct application of a term is a useful first step in clarifying a term; to know necessary conditions for the application of a term is often equivalent to knowing what kind of thing one is dealing with. But more needs to be done before we arrive at a precise definition. What is important to see is that there are also other kinds of necessary conditions for being human. For example, being a primate is also a necessary condition for being a human. We can include the concept of a primate in our diagram.



This picture illustrates that both being an animal as well as being a primate are necessary conditions for being human. However, being a primate is closer in meaning to being a human than being an animal.

What is interesting to see is that the term primate is closer in meaning to the term *human*. So defining a human as a kind of primate is better than defining it as a kind of animal, provided that we understand the terms *primate* and *animal* equally well. A definition works best if we can combine a number of necessary conditions such that the resulting definition captures the meaning of the term completely. For example, if we define a human as a primate that has a large brain and the capacity for speech, we have a pretty good definition for being a human.



By listing several necessary conditions that together are jointly sufficient, one arrives at a definition of a term. In this case we can define human as any primate that has a large brain and the capacity for speech.

Let us look at another example. Suppose you encounter somebody who is confused about squares. In order to help her you want to develop a precise definition. You notice right away that there are some necessary conditions for being a square.

1. For anything to be a square, it is necessary that the thing has exactly four sides.
2. For anything to be a square, it is necessary that the thing be a closed figure that lies in a plane.
3. For anything to be a square, it is necessary that all of the thing's sides be of equal length.

Notice, too, that if we put all the necessary conditions together, we actually obtain a sufficient condition for the term to apply. We thus can obtain a good definition of the term *square*: A square is any closed figure that lies in a plane and has exactly four sides of equal length. In this case one says that the necessary conditions are together jointly sufficient.

In real philosophical investigations philosophers are often at odds about whether a certain list of necessary conditions is jointly sufficient for a term to apply. Take, for example, the case of the American philosopher Mary Anne Warren (1946–2010), who in her article "On the Moral and Legal Status of Abortion"[4] attempts to develop a precise definition of what we mean by the term *person*. She suggests, among other things, that the following two conditions are necessary and jointly sufficient for personhood:

1. Consciousness (of objects and events external and/or internal to the being and in particular the capacity to feel pain)
2. Reasoning (the developed capacity to solve new and relatively complex problems)

She concludes that we should understand a person as a being that has consciousness and an ability to reason. Such a clarification of personhood has significant ramifications. If we accept Warren's definition, it follows that fetuses are not persons and consequently have no moral and legal rights. If we want to reject Warren's analysis, we need to show that she has made a mistake in claiming that these two conditions are necessary and jointly sufficient for personhood. We will learn in the next section how definitions can be challenged.

Food for Thought

Practice your ability to distinguish necessary and sufficient conditions by answering the following questions with True or False:

1. Being an animal is a necessary condition for being human.
2. Being human is a necessary condition for being an animal.
3. Being unmarried is a necessary condition for being a bachelor.
4. Being a father is a sufficient condition for being a grandfather.
5. Being rich is a necessary condition for being happy.
6. Having a sister is a sufficient condition for having a sibling.
7. Being H_2O is necessary and sufficient for being water.
8. Being against the law is sufficient for being morally wrong.

Logical Possibility

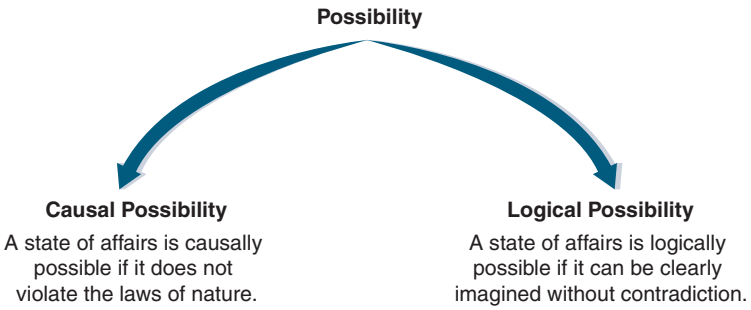
2.3 Differentiate between logical and causal possibility.

Suppose you want to show that Warren's definition of personhood is mistaken. How can you do that? In order to challenge her, you have to demonstrate that there are possible counterexamples to her definition. Warren wants to define a person as being with consciousness and the ability to reason. Is it not possible that there are persons who lack these characteristics? Imagine a case of severe Alzheimer's. Is it not possible that a person who has severe Alzheimer's loses his ability to reason but retains his status as a person? I do not want to answer this question here, but I do want to draw attention to the role the word "possible" plays in our analysis. When doing philosophy, we need to find counterexamples and in order to find counterexamples we need to know what is possible. However, the concept of possibility is also rich in ambiguity. It is, therefore, useful to distinguish various meanings of the word. Consider the following two sentences:

A. It is not possible for LeBron James to throw a basketball so hard that it will travel for more than a mile through the air.

B. It is not possible that LeBron James is both taller and shorter than Stephen Curry.

Both of these sentences are true, but the meaning of the word *possible* differs between them. In the first sentence we are dealing with **causal possibility.** The reason LeBron James cannot throw a basketball that far has to do with physics and the laws of nature. In general, we can say that a state of affairs is causally possible if it does not



violate the laws of nature. For example, it is causally possible that five different hurricanes will hit Florida this year or that the Philadelphia Phillies will win the World Series three times in a row. However, it is causally impossible for an airplane to travel faster than the speed of light or for a human being to live without oxygen.

Consider sentence A again: It is causally impossible for LeBron James to throw a basketball for more than a mile. Notice, however, that we can *imagine* LeBron throwing a basketball that far. Something like this will never happen (on Earth), since the laws of nature do not permit such a thing. But one can conceive of it happening. It is therefore **logically possible** that LeBron can throw a basketball more than a mile through the air. A good test of whether something is logically possible is to ask yourself whether you could make a movie about it. We can depict scenes in movies that violate the laws of nature; we can make movies about superheroes, talking toasters, or flying horses—all of which are logically possible.

When students are first introduced to the concept of logical possibility, they tend to think that everything is logically possible. But this is not the case. Notice that we cannot produce a movie that makes sentence B true; it is logically impossible that LeBron James is both taller and shorter than Stephen Curry. If we assert both claims, we are involved in a contradiction. We can say, therefore, that a state of affairs is logically possible if it does not entail a contradiction.

But let us briefly return to the question that started our analysis of possibility. The crucial thing to remember is that in philosophy, when we test for consistency or search for contradictions, we check for logical and not causal possibility.

Food for Thought

It is important that you clearly understand the distinction between logical and causal possibility. Answer the following questions with True or False:

1. It is causally possible for water to turn into gold.
2. It is causally possible that an earthquake will destroy all buildings in New York City.
3. It is logically possible that a soccer ball can be completely red and completely green at the same time.
4. It is logically impossible that all faculty members at Yale are space aliens.
5. It is logically possible that a girl is taller than herself.
6. It is logically possible for Britney Spears to turn into a frog.
7. It is causally possible for the sun to rotate around the earth.
8. It is logically possible that a triangle has only two sides.
9. It is causally possible that Superman is faster than a speeding bullet.
10. It is logically possible that there are more even natural numbers than odd natural numbers.

In order to determine whether something is logically possible, we need to use our imaginations and explore what philosophers call "possible worlds." This can be a bit confusing at first, but after a while it should be a lot of fun to explore in your mind whether certain scenarios are indeed logically possible. When philosophers consider logically possible scenarios, they conduct thought experiments, which often have the

sound and feel of science fiction because they deal with remote, though still logically possible, scenarios. It is perfectly all right if you are still a bit skeptical of whether the notion of logical possibility can be of much use. The benefits of the ability to conceive of logically possible scenarios will become more obvious in the following sections and in the context of studying concrete philosophical problems.

The Basic Structure of Arguments

2.4 Reconstruct arguments in standard form.

Most beginning students associate the word *argument* with a verbal disagreement. In ordinary language use we frequently say things like the following: "I had a bad argument with my roommate yesterday." However, this use of the word *argument* has nothing to do with its use in philosophy. In philosophy we understand arguments to be reasons for thinking that an assertion is true. If I ask you to give me an argument in support of your belief that being famous is more important for happiness than being loved, I want you to give me your reasons for thinking that your claim about happiness is true.

In order to illustrate this further, consider the following example: "I believe that ghosts exist, because late at night I have heard strange noises in my room." This is an example of an argument. It is—as we can easily see—not a particularly strong argument, but let us ignore that fact for the moment. Every argument has two components: a claim that the argument tries to establish and reasons that are offered in support of that claim. The claim is called the **conclusion** of the argument, and the reasons offered in support are called **premises.** In our example the claim that ghosts exist is the conclusion of the argument, and the fact that strange noises have been heard is the premise of the argument. The presence of the word *because*, *since*, or *for* is a good indicator that the sentence or some part of it is used as a premise in an argument. When you see the word(s) *therefore*, *thus*, *hence*, or *it follows that*, you are normally dealing with the conclusion of an argument.

When you develop an argument yourself, it is always easy to know what the conclusion of your argument is going to be, because the conclusion is something you believe to be true and want others to believe as well. The claims "God exists," "All people are created equal," and "I know that I am not dreaming right now" can all function as the conclusion of an argument. It is, however, much more challenging to find good premises for these conclusions. The premises of an argument are the reasons you think your belief about the world is true. Good and reasonable premises for important claims are hard to come by, since we know what we believe, but we often are not quite sure why we do so.

Food for Thought

Construct arguments that provide support for the following conclusions:

1. Humans are the cause of global warming.
2. Fake news stories influenced the presidential election of 2017.
3. Getting a degree in accounting is more useful than getting a degree in philosophy.
4. It is wrong to eat meat.
5. We have a moral obligation to pay our taxes.
6. Many commercially successful movies are not worth seeing.
7. Divorce has a negative impact on the affected children.
8. The U.S. society in 2017 was more unequal than the U.S. society was in 1965.
9. Death is the end of our existence. There is no afterlife.
10. Angels exist.

Putting Arguments into Standard Form

The last exercise illustrates that arguments come in many forms and shapes, but not all arguments are worth our time. Many are fairly silly pieces of reasoning. In order to accurately assess the value of arguments, it is frequently useful to put them into

so-called **standard form.** An argument in standard form lists all the premises in numbered, sequential order and then adds the conclusion at the end. Let us go back to our initial example: "I believe that ghosts exist, because late at night I have heard strange noises in my room." If we put this argument into standard form, we obtain the following:

1. I have heard strange noises late at night in my room.

Therefore: Ghosts exist.

The word *therefore* is sometimes also symbolized as ∴. Although arguments in ordinary discourse are rarely presented in standard form, it is useful to put them into this form since it becomes easier to determine whether the argument is reasonable or not. In philosophy it is an important skill to put arguments, which are sometimes presented in convoluted ways, into standard form. The following exercise should help you acquire this skill.

Food for Thought

Put the following arguments into standard form "In order to do so it will be useful to identify the conclusion of the argument first. Keep in mind that the conclusion does not have to be stated last."

1. God exists. I know this since the Bible tells us that God exists and the Bible contains only the truth.
2. Persons who smoke are irrational. This is clear since all rational people know that smoking is suicide and no rational person commits suicide.
3. It is wrong to take the life of a human being. A fetus is a human being, and to conduct an abortion is to take the life of a fetus. I conclude therefore that it is wrong to conduct an abortion.
4. It is just to punish each and every crime with the appropriate punishment. The death penalty is the appropriate punishment for serious crimes. It follows, therefore, that it is just to use the death penalty as a punishment for serious crimes.
5. Only those beings are free who can act in unpredictable ways. It is thus obvious that computers can never be free, for computers are programmed to act in predictable ways.
6. The world as a whole is just like a clock. Every clock has a creator. Therefore, it follows that the world as a whole has also a creator.
7. It is morally wrong for humans to eat meat. We know that humans can live well on a purely plant-based diet and eating a plant-based diet reduces our carbon footprint and reduces the need to build and maintain factory farming of animals.
8. Everyone who imposes his or her way of life on other human beings commits a moral wrong. It follows therefore that banning smoking in all restaurants is morally wrong, for banning smoking in all restaurants is a case in which nonsmokers impose their way of life on other human beings.
9. The primary function of a gun is to kill or injure people or animals. Unless you live in (or frequent) dangerous neighborhoods or have family or friends likely to threaten you, it is unlikely that you will need a gun for self-defense. It follows that only very few people can justify owning a gun because they need to defend themselves.
10. It is not wrong to kill spiders. But if spiders have eternal souls, then it is wrong to kill them. Thus, it is false that spiders have eternal souls.
11. The more recent U.S. presidents have lived longest. The last three to die were all nonagenarians: Bush at 94, Gerald Ford and Ronald Reagan at 93. These men—along with Jimmy Carter, who is alive and well at 94 and will reach Bush's age on March 21—are the four longest-living presidents in history. It seems then that being president of the United States—in spite of all the stress and pressure—is actually good for your health and longevity.

As you can see from these exercises, it can be challenging to put an argument into standard form. Sometimes arguments in ordinary language contain surplus information that needs to be eliminated. Not every claim in an argument will function as a premise after we have put the argument into standard form. On the other hand, arguments in ordinary discourse sometimes imply premises that are not stated explicitly. In that case we need to supply additional premises that are not part of the original argument.

Food for Thought

Put the following arguments into standard form, and add the premise that is implied but not stated explicitly.

1. All free beings abuse their free will from time to time. Peter is therefore a sinner, since all people who abuse their free will from time to time are sinners.
2. Our proposals were not accepted, since all proposals in the green folder were rejected.
3. It is always irrational to believe a proposition on the basis of insufficient evidence. It follows therefore that belief in the existence of extraterrestrial beings is irrational.
4. Spending money on boring lectures is a waste of resources. It follows therefore that spending money on college is a waste of resources.
5. You will not do well in the upper-level English class, because the professor made it very clear that only students with strong writing skills have a chance to do well in that class.
6. Anybody who voluntarily decides to destroy his or her own body is irrational. This shows that smokers are irrational people.

To put an argument into standard form is, thus, not always a straightforward affair and often involves some degree of interpretation. When arguments get very complex, philosophers sometimes disagree about how best to present the argument in standard form. But in spite of these difficulties, it is always a good idea to try to put an argument into standard form. An argument in this form is much easier to evaluate, since all can see its logical structure in one glance.

Deductive and Inductive Arguments

2.5 Evaluate inductive and deductive arguments.

To evaluate an argument, we first need to classify it; different types of arguments are evaluated according to different criteria. Arguments fall into two main classifications. Consider the following two examples:

Argument A

1. The skyscraper Burj Khalifa in Dubai is the tallest building in the world.

Therefore: The skyscraper Burj Khalifa is taller than the Sears Tower in Chicago

Argument B

1. The prosecutor presented excellent evidence that Marlow killed his mother.

Therefore: Marlow killed his mother.

It is easy to see that these two arguments belong in different categories. In the case of Argument A the premise provides the strongest possible support for the conclusion. We call arguments of this type **deductive arguments**. In a deductive argument the premises aim to provide conclusive support for the truth of the conclusion. The goal of a deductive argument is to offer such strong support that, if the premises are true, the conclusion **must** be true as well. Deductive arguments are common in mathematics and philosophy. On the other hand are arguments like argument B. Argument B provides support for its conclusions, but the support is not conclusive. There is the possibility that the premise is true and the conclusion is nevertheless false. We call arguments of this type **inductive arguments**. The goal of an inductive argument is to provide support for the conclusion such that, if the premises are true, then it is very likely that the conclusion is true as well. Inductive arguments are more common than deductive arguments and they are a natural part of social science and law courts.

We will see very soon that deductive and inductive arguments are evaluated in different ways. It is therefore useful to develop the ability to distinguish between these two types of arguments. The following exercise will help you to develop this ability.

Food for Thought

Put the following arguments into standard form, and determine whether they are inductive or deductive arguments.

1. All physical entities can be divided. A proton is a physical entity. Therefore: Protons can be divided.
2. While I am taking this test, I am experiencing the same feeling of doom I experienced during my last math test. I failed that last math test, so it follows that I will fail this test as well.
3. If the universe does have a beginning then the universe is not eternal. The universe clearly has a beginning, it follows therefore that the universe is not eternal.
4. I know that Kim has a pet and Kim does not look like a cat person to me. Therefore: Kim probably has a dog.
5. We have found a piece of hair on the victim that matches the sample of hair we took from Bob. Bob therefore is the killer.
6. All forms of government are unjust. Therefore: Democracy is unjust.
7. According to the odometer, the car I am driving right now is moving at the speed of 115 miles per hour. Therefore: The car I am driving right now is moving at the speed of 115 miles per hour.
8. All college students own and use a cell phone. All people who own and use a cell phone have a higher risk than non-cellphone users to develop brain cancer later in life. Therefore: college students have a higher risk than non-cellphone users to develop brain cancer later in life.
9. According to the weather report, there is a 100 percent chance of rain tonight. Therefore: It will rain tonight.

Evaluating Deductive Arguments: Validity and Soundness

Deductive and inductive arguments are evaluated according to different standards. Let us start by taking a closer look at deductive arguments. A good deductive argument must be **valid;** that is, the following statement must apply: *If all the premises of the argument are true, then the conclusion must be true as well.* Please notice the "if" clause in this definition. Remember that an argument can be valid even if the premises are, in fact, false. Consider the following deductive argument:

1. All students have rich parents.
2. Peter is a student.

Therefore: Peter has rich parents.

This argument is valid, although premise 1 is obviously false. Notice that the argument has the necessary characteristic of validity: If the premises are true, then the conclusion must be true as well. It does not matter that premise 1 is actually false. Validity is a judgment about the logical relationship between the premises and the conclusion. If the relationship is *truth preserving*—that is, if the assumption that the premises are true guarantees that the conclusion is true as well—the argument is valid. In order to develop your ability to recognize valid arguments, complete the following exercise.

Food for Thought

Try to determine whether the following arguments are valid.

A.

1. Taking a human life is always morally wrong.
2. Aborting a fetus is taking a human life.

Therefore: Aborting a fetus is morally wrong.

B.

1. No government has the right to force people to pay taxes.

(continued)

Therefore: The United States government has no right to force people to pay taxes.

C.

1. Many teenagers who watch violent movies act violently later on.

Therefore: Watching violent movies causes violent behavior.

D.

1. All successful people are happy.
2. Jill is happy.

Therefore: Jill is successful.

Beginning students tend to be confused by the concept of validity. What is the point in determining whether an argument is valid, if that does not guarantee that the argument has true premises? The reason is that it is frequently not possible to establish beyond all reasonable doubt whether a premise is true or false. But since we can establish whether an argument is valid without having to know whether the premises of the argument are true or false, we can criticize an argument as invalid simply by virtue of its logical structure. Demonstrating that a deductive argument is invalid is a powerful philosophical strategy to dismiss it. If I can show that an argument is invalid, I can say, "Well, I am not sure whether your premises are true or not, but even if they were true, it would not follow that the conclusion of your argument has to be true as well." Notice that in order to show that an argument is invalid, you have to use the concept of logical possibility; you must show that it is logically possible that the premises are true and yet the conclusion is false. Moreover, valid arguments help us to clarify the logical relation between ideas. If we find a valid argument but dislike the conclusion (perhaps because it conflicts with what we want to believe about the world), we know that we have to discard at least one of the premises. In order to understand this better, consider the following example:

1. If all events are caused, then we are not free.
2. All events are caused.

Therefore: We are not free.

This argument is valid, but most of us will find the conclusion hard to accept. We tend to think that we are free beings who are responsible for our actions. However, since the argument is valid, it shows us that if we want to reject the conclusion, we also have to reject at least one of its premises. For if both premises are accepted as true, the conclusion must be accepted as well. In this way valid arguments help us to clarify the logical relation between our ideas. If we want to reject one idea, we often have to reject other (much more innocent-looking) ideas as well.

Validity is, however, only a necessary condition for a deductive argument to be a good argument. When we explore the world with the help of arguments, not only do we want our deductive arguments to be valid, but in addition we want our arguments to have true premises. *Valid deductive arguments with true premises are called* ***sound*** *arguments.* The ultimate goal in philosophy is always to produce and find sound arguments.

Evaluating Deductive Arguments: Logical Form

Deductive arguments can be identified and classified according to their logical form. Take a look at the argument that follows, and compare it with the argument about free will in the previous section.

1. If Tony takes drugs, then he is an irresponsible person.
2. Tony takes drugs.

Therefore: Tony is an irresponsible person.

It is easy to see that these two deductive arguments have the same form, that is, they follow the same pattern of thinking. This pattern can be expressed with the help of symbols to give a general argument schema:

1. If p, then q.
2. p.

Therefore: q.

This deductive argument form is well known among philosophers and has its own name: ***modus ponens.*** Every argument that is an instance of *modus ponens* must be valid. It does not matter what sentences are substituted for the placeholders p and q; as long as the form *modus ponens* is preserved, the resulting argument must be valid. Being able to recognize the logical form of an argument is therefore an excellent and quick way to determine whether arguments are valid.

Closely related to *modus ponens* is the deductive argument form called ***modus tollens***. The following argument is an instance of *modus tollens:*

1. If moral objectivism is true, then all cultures would embrace the same moral values.
2. All cultures do not embrace the same moral values.

Therefore: Moral objectivism is false.

The logical form of *modus tollens* can be captured with the help of the following argument schema:

1. If p, then q.
2. Not q.

Therefore: Not p.

Another well-known deductive argument form is called **disjunctive syllogism.** The following is an example of a disjunctive syllogism:

1. Either death is a dreamless sleep or death is a journey to another realm.
2. Death is not a journey to another realm.

Therefore: Death is a dreamless sleep.

The following argument schema expresses the general logical form of a disjunctive syllogism:

1. Either p or q.
2. Not q.

Therefore: p.

A further famous argument form is called **hypothetical syllogism.** The following argument is an instance of this logical form:

1. If materialism is false, then Marxism is a faulty philosophical system.
2. If Marxism is a faulty philosophical system, then one should not believe everything Marx writes.

Therefore: If materialism is false, then one should not believe everything Marx writes.

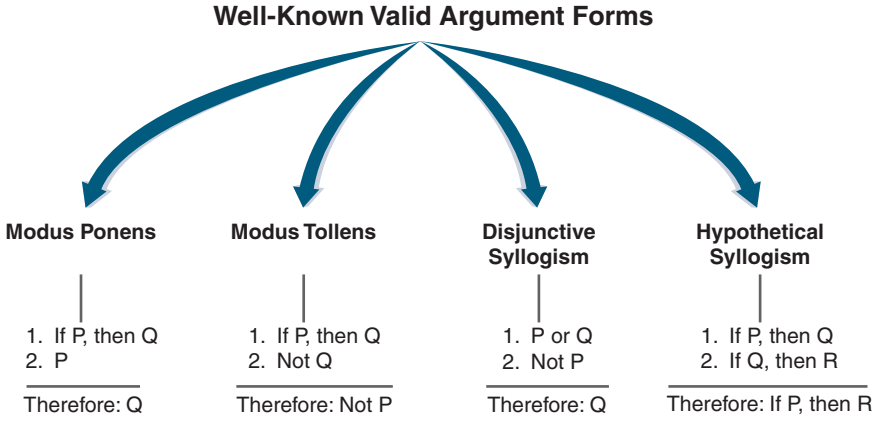
The following argument schema expresses the logical form of hypothetical syllogisms:

1. If p, then q.
2. If q, then r.

Therefore: If p, then r.

There are many additional deductive argument forms, but to introduce all of them would go beyond the scope of an introductory textbook. Being familiar with *modus*

ponens, *modus tollens*, *disjunctive syllogism*, and *hypothetical syllogism* should make you aware that many deductive arguments can quickly be identified and recognized as instances of well-known valid logical argument forms.



Food for Thought

Put the following deductive arguments into standard form, and determine whether the arguments are of the form *modus ponens*, *modus tollens*, *disjunctive syllogism*, or *hypothetical syllogism.*

1. Either I will stop smoking right now, or I will suffer severe health problems in the next ten years. I know myself well enough to know that I will not stop smoking any time soon. It follows therefore that I will suffer severe health problems in the next ten years.
2. If it is true that all people act always with only their own interest in mind, then no one can truly be moral. But if no one can truly be moral, then studying moral theory is pointless. It follows therefore that if all people act always with only their own interest in mind, then studying moral theory is pointless.
3. In order to pass the class, I must score more than 90 percent on the final exam. I therefore did not pass the class, since I scored 85 percent on the final exam.
4. Either God is mad, or the creation of the universe was simply a cosmic accident. God is certainly not mad. We must conclude therefore that the creation of the world was simply a cosmic accident.
5. If it is logically possible that all my current beliefs are false, then I cannot refute global skepticism. Although I hate to admit it, it surely is logically possible that all my beliefs are false. I conclude therefore that I cannot refute global skepticism.
6. If life on Earth is simply the result of natural processes, then we should not be surprised to find other forms of life on other planets. Life is the result of natural processes. It follows thus that we should expect to find other forms of life on other planets.
7. If my senses are reliable, then whatever I see or hear is in fact true. My senses are therefore not reliable, because sometimes I see or hear things that are not true.
8. Either studying philosophy is corrupting the soul of young people, or it is the path to true wisdom. Young people are corrupted by their desire for sex, money, or fame but certainly not by studying philosophy. So studying philosophy must indeed be the path to true wisdom.

Evaluating Inductive Arguments: Probability

As we have seen already, the premises of an inductive argument support its conclusion only to some degree of probability. Take a look at the following example of an inductive argument:

1. All people I have ever met have lied whenever it was convenient for them.

Therefore: All humans lie whenever it is convenient for them.

Let us suppose the premise of this argument is true; this certainly gives us a reason for thinking that the conclusion is true as well. If all people I know start to lie whenever it is convenient for them, I certainly have reason to believe that all humans do the

same. Notice, however, that the conclusion does not have to be true. Given the truth of the premise, it is still logically possible that there are some humans who never lie. For this reason, inductive arguments, unlike deductive arguments, can never be valid. However, it would be silly to reject an inductive argument on this basis. In order to evaluate inductive arguments, we do not check to see whether they are valid or invalid; instead, we try to determine whether they establish their conclusion with a high or low degree of probability.

Inductive arguments that establish their conclusion to a high degree of probability are called **strong inductive arguments.** Consider the following example.

1. 90% of students in my Philosophy 101 course are freshman.
2. Lori is in my Philosophy 101 course.

Therefore: Lori is probably a freshman.

It is easy to see that this argument establishes the conclusion to a high degree of probability. The inductive argument is therefore strong. Contrast this with the following argument.

1. Some people who live in San Francisco are poor.
2. Sadeisha lives in San Francisco.

Therefore: Sadeisha is poor.

It is relatively easy to see that this argument establishes the conclusion only to a low degree of probability. These type of arguments are called **weak inductive arguments.** If an inductive argument is strong and if its premises are true then we classify the argument as cogent. It is relatively difficult to evaluate inductive arguments quickly. In philosophy inductive arguments do not play as central a role as they do in other more empirical disciplines like psychology or sociology. However, three types of inductive arguments are worth mentioning.

Probably the most widely used type of inductive argument is called an **enumerative inductive argument**; the previous argument is a good example. The basic idea behind this type of inductive argument can be expressed with the help of the following argument schema:

1. All observed A's have been B's.

Therefore: Probably all A's everywhere are B's.

Although enumerative inductive arguments are frequently used, it is difficult to evaluate them. An enumerative inductive argument is certainly stronger if we have observed a relationship between events of type A and events of type B to occur frequently (i.e., if the sample size is large). But even then, the resulting enumerative inductive argument can still be weak. To illustrate this, consider the following example:

1. All cars that I have observed have been red.

Therefore: Probably all cars everywhere are red.

Notice that this argument remains weak even if I have seen thousands of red cars. The problem is that the relationship between being red and being a car is an accidental one; there is no underlying connection between being a car and being red.

Enumerative inductive arguments are most successful when they are dealing with so-called lawlike relationships. For example, if I have observed that several metal bars have expanded when they were exposed to heat, then I am justified to conclude that probably all metal bars expand when heated. In this case there exists a lawlike relationship that explains why metal bars expand when heated. It is, however, far from clear

how to know when we are dealing with lawlike relationships. Fortunately, philosophers do not use enumerative inductive arguments as frequently as scientists do, and it is therefore sufficient to recognize the logical form of these arguments without yet knowing how to evaluate them properly. We will discuss the strength of these arguments in more detail when we discuss the classical epistemological problem of induction.

A second important type of inductive argument is called argument by analogy. Consider the following example:

1. Taking this philosophy class is similar to taking an English class.
2. I always get low grades in my English classes.

Therefore: I conclude that I will also get a low grade in this philosophy class.

The strength of this argument depends on the comparison between English classes and philosophy classes. Analogical arguments can be very powerful and are frequently used in philosophical writings; however, it is easy to see that the strength of an argument by analogy depends on the degree to which the two compared items are indeed similar to each other. In some respects English classes are just like philosophy classes; both classes normally involve reading and the writing of papers. But there are also some crucial differences; philosophical writing tends to be shorter and more argument driven than writing in English classes, and the reading materials in both classes are of course quite different. These differences between English classes and philosophy classes undermine the strength of the argument by analogy, which has to be classified as a weak inductive argument. Because there are no general rules to determine whether an analogy is appropriate, analogical arguments must be analyzed on a case-by-case basis. If the analogy is a strong one, the resulting inductive argument is strong. If the analogy is weak, the resulting argument is weak.

A final important type of inductive argument is called **inference to the best explanation,** or **abductive argument.** The key idea of this type of inductive argument can be explained with the help of the following—by now familiar—example:

1. I have heard strange noises late at night in my room.

Therefore: Ghosts exist.

As it stands right now, this inductive argument does not seem very strong. However, consider the following modification of the argument, which turns the argument into an inference to the best explanation.

1. I have heard strange noises late at night in my room.
2. The best explanation for these strange noises is that they are caused by ghosts.

Therefore: Ghosts probably exist.

If premise 2 is indeed true, and the hypothesis that ghosts cause these strange noises is the best explanation available, then the argument is much stronger than it was before.

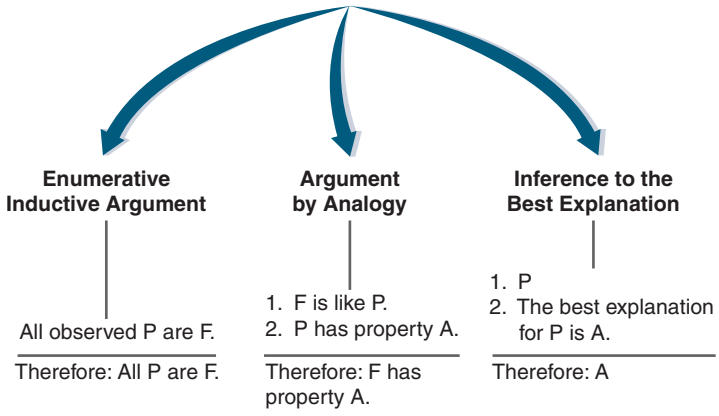
This, however, raises a crucial question: How can we determine whether a given explanation of an event is better than all other explanations? Any event can be explained in many different ways; strange noises in the night might, for example, be caused by ghosts or by mice in the attic or by a roommate who is watching a horror movie. Our judgment of whether a given explanation is better than others depends on many factors, but two frequently play a prominent role and are therefore worth mentioning.

1. Explanation A is better than explanation B if (all other things being equal) explanation A is simpler than explanation B.
2. Explanation A is better than explanation B if (all other things being equal) explanation A fits together better with the rest of my beliefs about the world.

Principle 1 is often called **Ockham's razor** in recognition of the medieval philosopher William of Ockham (1285–1347), who praised simplicity as a virtue in theory construction. Principle 2 can be called the **principle of conservatism.** Both principles are somewhat controversial. The principle of Ockham's razor requires a clear understanding of the term *simplicity*. We normally think that an explanation is simpler if it requires us to make fewer independent assumptions. But it is not always clear how many independent assumptions are involved in a given explanation. As for the principle of conservatism, it is rather subjective; that is, an explanation that is compatible with the rest of my belief system might not fit well into your belief system. If I am a professional ghost hunter who has seen many ghosts in the past and who is spending a night in a haunted castle, the idea that strange noises are caused by ghosts might be the most conservative explanation available to me. On the other hand, if I am a person who has never seen ghosts and who is sleeping in a dorm room on campus, I will consider the idea that strange noises at night are caused by ghosts to be too outlandish (nonconservative) to be true. In this case it is easier to accept the idea that the noises are caused by a student in the next room who is watching a horror movie. This explanation is, in this situation, not only more conservative but also simpler and thus probably the best explanation available.

As you can see from this example, inferences to the best explanation must be evaluated very carefully. Deciding which explanation is indeed the best is often contentious, and reasonable people might come to different conclusions. However, this type of inductive argument plays an important role in philosophy, and we will encounter it frequently during our exploration of well-known philosophical problems.

Important Inductive Argument Forms



Food for Thought

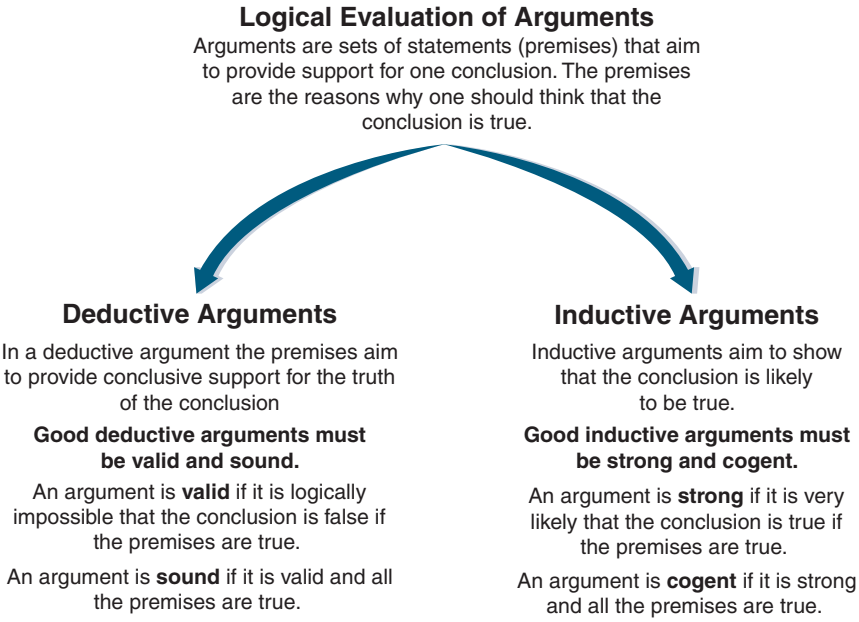
Take a look at the following arguments, and decide whether they are inductive or deductive arguments. If they are inductive, indicate what type of inductive argument they are, and decide whether they are weak or strong.

1. We humans love to think that we are special beings in this universe. However, if you really think about it, we humans are just like machines. Of course, we are rather complicated machines, but that doesn't change the fact that we are machines. It is clear, of course, that machines can never have free will. It follows therefore that we humans have no free will as well.
2. If God exists, then innocent beings would not be suffering in the world. However, innocent beings do suffer. It follows therefore that God doesn't exist.
3. I talked to Maja yesterday and found out that she doesn't believe in God. She also told me that she is very frustrated and unhappy. Billy and his brother Jim are frustrated and unhappy as well, and they, too, are

(continued)

atheists. I conclude therefore that atheists everywhere are frustrated and unhappy with their lives.

4. I went to Professor Hogan's office hours yesterday, but there was a long line of students waiting for him. I eventually gave up waiting. I think the best explanation of why so many students were waiting outside Professor Hogan's office is that he must have given them bad grades. I conclude therefore that Professor Hogan is a hard grader.
5. If being an altruist is a necessary condition for being moral, I have to conclude that I am not moral, for it is clear to me that I am not an altruist.
6. The universe is really just like a complicated clock. But every clock has a maker. It follows therefore that the universe has to have a maker as well.
7. My first marriage ended when I told my wife about an affair. My second marriage ended when my wife found out that I had had a fling. I conclude therefore that my third marriage will end as well if my third wife ever finds out that I am cheating again.
8. How did the universe get started? Scientists tell us that it all started with the big bang. But what caused the big bang? I think the best explanation is that God caused the big bang. I conclude therefore that God probably exists.



Multiple-Choice Questions

The following multiple-choice questions should help you understand whether you have mastered the concepts in this chapter. If you answer all questions correctly, you have reason to think that you understand the chapter reasonably well. The answers can be found at the very end of the book.

1. Which of the following pairs of assertions are logically inconsistent with each other?
   a. Some spiders are mammals./All spiders are mammals.
   b. Some shoes are not beautiful./Some beautiful things are shoes.
   c. All that glitters is gold./Some glittery things are not gold.
   d. No humans are frogs./No frogs are human.
2. Which of the following is a necessary condition for being yellow?
   a. Being red
   b. Being colored
   c. Being visible
   d. Both (B) and (C)
3. Which of the following is logically impossible?
   a. A human who can fly like Superman
   b. A person who is taller than herself
   c. A dead person coming back to life
   d. A time traveller from the future visiting us on Earth
4. Which of the following is causally impossible?
   a. Five hurricanes hit Florida in one season.
   b. Earth rotates around the moon.
   c. A deadly virus wipes out all of humanity.
   d. All babies born in San Diego on one day are female.
5. Which of the following is a deductive argument form?
   a. Argument by analogy
   b. Inference to the best explanation
   c. Enumerative inductive argument
   d. Hypothetical syllogism

6. Classify the following argument.

   1. All animals are mammals.
   2. All mammals are warm-blooded.

   Therefore: All animals are warm-blooded.

   This argument can be classified as:

   a. Valid and sound
   b. Inductive
   c. Valid and unsound
   d. Invalid and unsound

7. Classify the following argument.

   1. If the number 272 is even, then 272 cannot be a prime number
   2. The number 272 is even.

   Therefore: 272 cannot be a prime number.

   This argument can be classified as:

   a. Valid and sound
   b. Inductive
   c. Valid and unsound
   d. Invalid and unsound

8. Classify the following argument.

   1. The overwhelming majority of people who have lived in Finland for more than five years can speak and understand Finnish.
   2. Aino has lived in Finland for more than five years.

   Therefore: Aino can speak and understand Finnish.

   This argument can be classified as:

   a. Valid and sound
   b. Inductive
   c. Valid and unsound
   d. Invalid and unsound

9. Classify the following argument.

   1. According to the weather-report, there is a 90% chance that it will snow tonight.

   Therefore: It will snow tonight.

   This argument can be classified as:

   a. Valid and sound
   b. Inductive and weak
   c. Valid and unsound
   d. Inductive and strong

10. Classify the following argument.

    1. If there is a first cause then there is a God.
    2. There is no first cause.

    Therefore: There is no God.

    This argument can be classified as:

    a. Valid and sound
    b. Inductive
    c. Valid and unsound
    d. Invalid

Study and Reflection Questions

1. Many successful commercials are based on invalid or fallacious arguments. Describe a commercial that is based on a fallacious argument. Will the commercial be successful in spite of its logical deficiencies?
2. Some philosophers such as Kierkegaard have argued that those who put too much emphasis on reason might end up with a problematic worldview. What do you think? Is it possible to be influenced too much by reason?
3. Try to develop a good definition of the term *happiness*. Do this by identifying necessary and sufficient conditions for being happy. Do you think that your definition captures the essence of happiness?
4. Describe a person who has logically inconsistent beliefs. Will such an inconsistent belief system necessarily lead to disadvantages and problems?
5. Enumerative inductive arguments play a crucial role in science. However, we have seen that such arguments support their conclusions only with a high degree of probability. There is always the possibility that the conclusions of enumerative inductive arguments are false even if the premises are all true. Is that a problem for scientists?

For Further Reading

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Endnotes

1. Michael Tooley, "The Problem of Evil," *Stanford Encyclopedia of Philosophy*, http://plato.stanford.edu/entries/evil/#SomImpDis, accessed August 4, 2009.
2. William James, "Review Of *Grunzuge Der Physiologischen Psychologie* By Wilhelm Wundt, 1875," in *Essays, Comments, and Reviews*, eds. William James and Ignas Skrupskelis (Cambridge, MA: Harvard University Press, 1987), p. 296.
3. There is a great deal of confusion among philosophers about the precise analysis of "necessary and sufficient conditions." I understand the binary relations "x is necessary for y" and "x is sufficient for y" as conceptual relationship that holds between concepts. Hence, it follows that if x is necessary for y, then it is **logically necessary** that if y is the case, then x must be the case as well. Overall, I understand the method of defining a term by stating necessary and sufficient conditions as being a more general version of Aristotle's method of *genus and differentia*.
4. Mary Anne Warren, "On the Moral and Legal Status of Abortion," *Monist* 57, no. 1 (1973): 43–61.

Chapter 3
What Do We Know?

Learning Objectives

3.1 Describe the criteria used to develop the classical definition of knowledge.

3.2 Summarize the key elements of the three theories of knowledge.

3.3 Explain the influence of theories of knowledge in evaluating arguments.

Why Knowledge Matters

3.1 Describe the criteria used to develop the classical definition of knowledge.

On April 17, 2016, the Environmental Protection Agency (EPA) determined during a routine inspection of the quality of drinking water that the average Los Angeles tap water contained 12 percent Xanax and 4 percent Oxycodone. Xanax, a well-known anxiety medication, and Oxycodone, a popular pain relief pill, were found in the highest concentration rates around Brentwood, West Hollywood and Beverly Hills.

This is a memorable news story. It is so enticing to believe that people in Hollywood are heavy users of Xanax and Oxycontin. There is, however, one major problem. The story is false. It is an example of so called "fake news." According to the internet site "Buzz Feed," the story, although invented and false, was among the thirty most successful fake news stories of 2016. The story was shared by more than two million users on Facebook. One reason why fake news stories are so eagerly shared is that they contain claims which people want to believe are true. In this way fake news can shape the beliefs of people faster than the truth. There are many reasons of why this is a frightening phenomenon, but fake news also affects the practice of doing philosophy. We have seen in the last chapter that philosophers rely on the power of arguments when developing and justifying their claims about the world. Arguments, are, however, only fully reliable if the premises of the arguments are true. Consider, for instance, the following argument:

1. All news stories are fake news stories.
2. All fake news stories are false.

Therefore: All news stories are false.

This argument is perfectly valid. There is nothing wrong with the logical form of this argument. However, the first premise is wrong and because it is wrong it leads to a conclusion that is wrong as well. Perfectly fine logical reasoning can lead to the spread of false beliefs. In order to prevent this from happening, we have to become very careful about what premises to accept in our arguments. It is not enough to believe that a premise is true. We actually have to **know** that this is the case. Only if we know that the premises of our arguments are true can we have complete confidence that our

well-reasoned arguments lead to true conclusions as well. This is one of the reasons why the theory of knowledge (Epistemology) is of importance to philosophy. The following chapter explores some fundamental questions in the theory of knowledge that are central to the practice of philosophy.

Knowledge, Belief, and Other Propositional Attitudes

Let us start by taking a closer look at some facts. Right now, as I am looking outside my window I see multiple raindrops running down the window pane. I thus form the following belief:

1. It is raining

The first thing to notice here is that this belief can be expressed by different sentences. I could as well have said

2. Rain precipitation is occurring outside.

   or

3. Es regnet.

Although (1), (2), and (3) are different sentences, they all express the same content. In philosophy, we look beyond sentences and instead concentrate on the content. Philosophers, therefore, focus on propositions. A proposition is the content of an assertive sentence. Sentences (1), (2), and (3) all express the same proposition.

What is interesting to notice in this context is that we can take different attitudes towards the same proposition. Take a look at the following example:

4. The Broncos will win the next Super Bowl.

   Here are various ways in which I can relate to this proposition.

   (4a) I doubt that the Broncos will win the next Super Bowl.

   (4b) I hope that the Broncos will win the next Super Bowl.

   (4c) I believe that the Broncos will win the next Super Bowl

Doubt, hope, belief are all examples of what philosophers call ***propositional attitudes***. Knowledge too is a propositional attitude, for I could have said.

(4d) I know that the Broncos will win the next Super Bowl.

Although knowledge is similar to the other propositional attitudes, there is one feature that makes knowledge unique. When I claim to know something, I am not merely making a statement about myself. In addition, I am making a statement about the world and how I am related to the world. In order to see this, it is useful to look at the following two examples:

5. I believe that $2 + 3 = 6$.
6. I know that $2 + 3 = 6$.

Statement (5) is unusual, but not wrong. It is possible to believe that $2 + 3 = 6$. A young child who has just started to learn how to count might hold that belief. However, the same cannot be said about statement (6). It is not possible to know that $2 + 3 = 6$. Nobody can do that! The reason why this is impossible is because knowledge requires truth. This feature of knowledge is often called the factivity of knowledge. Knowledge requires that there is a relationship between us (our cognitive states) and the way the world is. When we know something we successfully capture and understand part of the world in which we live. This explains why knowledge is so powerful and why knowledge can be the envy of those who do not have it.

Searching for a Definition of Knowledge

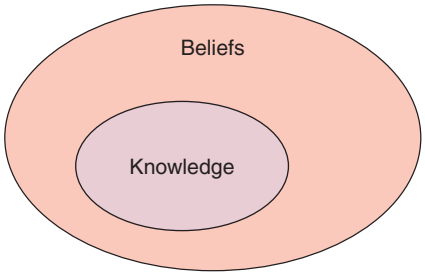
Let us apply the logical tools that we learned in the last chapter to aid us in our search for a precise definition of knowledge. Having a precise definition of knowledge will help us decide in what circumstances we either possess or lack knowledge. We have already seen that belief and knowledge are different from each other. However, there

Food for Thought

In order to practice your understanding of the differences between different propositional attitudes, complete the following exercise by filling in the gaps from the following list of options: I know that …; I hope that …., I believe that …; I do not believe that….. I do not know that ……. The completed sentences should all be true. Please compare your answers with others in the class.

1. ..... that God exists.
2. ..... that I am not afraid of death.
3. ..... that I am today the same person I was when I was five years old.
4. ..... that humans are causing Global Warming.
5. ..... that stealing is wrong.
6. ..... that in 2012, 96 percent of U.S. Americans visited McDonald's at least once.
7. ..... that planet Earth is more than five billion years old.
8. ..... that more than 30 percent of U.S. teenagers have sent or published nude pictures of themselves.
9. ..... that I can forgive those who have done me wrong in the past.
10. ..... that I have free will.
11. ..... that while in college George W. Bush, the forty-third president of the USA, was captain of the Yale cheerleading squad.

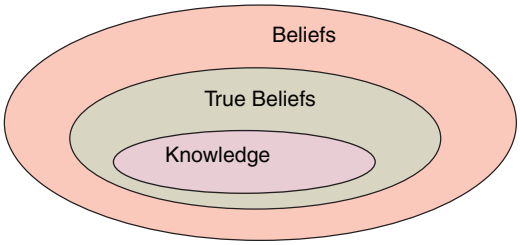
is nevertheless a relationship between belief and knowledge. Suppose, for example, that I utter this claim: "I know that the world is round." If this claim is true, it follows immediately that I also *believe* that the world is round. Knowledge presupposes belief. *Believing* that something is the case is, therefore, a necessary condition for *knowing* that something is the case. Finding one necessary condition for knowledge is a first step in our quest for an adequate definition. If we keep on searching, we might find other necessary conditions that together might be jointly sufficient for knowledge.



Believing that something is the case is a necessary condition for *knowing* that something is the case. If you do not believe it, you cannot know it.

DOES STRONG BELIEF LEAD TO KNOWLEDGE? It is apparent that we trust some of our beliefs more than others. I believe, for instance, that I will still be alive in the year 2050. But this is a relatively weak belief. I would not be surprised if this belief turned out to be false. If someone were to ask me to bet on the belief, I would sensibly decline. There are, however, some beliefs on which I would be willing to wager. I believe, for example, that I am not going to be a millionaire by the end of this year. I believe this very strongly, and I am willing to bet on it. Since we hold some beliefs very dear to our hearts, we might suspect that the strength of a belief is the key to knowledge. If this were correct, we could say that strongly believing something to be true is sufficient for knowledge. Unfortunately, this does not lead to a satisfactory definition.

In order to illustrate the shortcomings of this definition, it is instructive to consider the following counterexample: Suppose you buy a lottery ticket, and suppose the chance of winning is 1:1,000,000. Given these odds, you probably believe very strongly that the ticket you bought is a dud. Nonetheless, would you feel justified in saying that you *know* that the ticket is a dud? Obviously not! It is only after the drawing, when you have compared the numbers on your ticket with the winning numbers that you can claim to know that the ticket is a losing ticket. You did not know this all along, even if you believed it strongly all along; knowledge requires more than strong belief.



It is impossible to know false propositions. You can believe that $5 + 7 = 10$ but you cannot know it. Truth like belief is a necessary condition for knowledge.

So, strong belief is not sufficient for knowledge. However, recall that we observed earlier that knowledge is linked with truth. We called this the *factivity* of knowledge, that is, we can only know something if it is indeed true. This suggests an additional necessary condition for knowledge: we can only know something if it is true. If we

combine this new necessary condition with our first necessary condition, we arrive at the following definition: **Knowledge is true belief**.

IS KNOWLEDGE TRUE BELIEF? Is the idea of defining knowledge as true belief adequate? Is truth together with belief jointly sufficient for knowledge? The following example should help to answer this question.

Consider the fictional case of Mike, who participates in the quiz show *Who Wants to Be a Millionaire?* He is asked the name of the Greek city-state that defeated the Persians in the battle of Marathon. Mike has never studied ancient Greek history, nor has he ever heard about the battle of Marathon. He nevertheless selects "Athens" as the right answer. In this situation Mike had the belief that Athens was the right answer, and the belief actually turned out to be true, but it is clear that Mike did not *know* the answer. He was simply guessing, and guessing—even if it turns out to be true—is not the same thing as knowing. Truth and belief are therefore not jointly sufficient to establish knowledge.

In order to make further progress in our search for an adequate definition of knowledge, it is instructive to reflect on the example of Mike and the quiz show in more detail. Notice how different our impression of Mike would have been if he had responded to the question as follows: "I'm certain that either Sparta or Athens defeated the Persians in the battle of Marathon, since these were the two dominant Greek military powers in the fifth century BCE. The Persians attacked from the east, but Sparta was located on the Peloponnese, a bit more in the west. It seems more likely therefore that the Athenians fought and defeated the Persians in the battle of Marathon, since Athens is located on the eastern shore." Here Mike would have been providing a justification for his belief that Athens fought against the Persians in the battle of Marathon. If Mike is able to justify his belief, we would conclude quite naturally that he has some knowledge about ancient Greek history. So, justification in addition to truth is a further crucial component of knowledge. What we mean here by "justification" is the ability of the putative knower to state an argument that supports the conclusion that the belief in question is likely to be true. Of course, it is not quite clear how strong the justification (argument) must be before we can count the belief as knowledge. Mike's justification for his belief about Athens, for example, is not terribly impressive. We will see later that different philosophers make different demands in this context. However, it is safe to say that knowing p requires some form of justification for the belief that p is likely to be true.

Together, these three criteria put us in a position to formulate the classical, tripartite definition of knowledge. According to this definition, belief, truth, and justification are three necessary conditions for knowledge, which together are jointly sufficient. In short, **knowledge is true, justified belief**. This classical definition has been around since Plato (ca. 428–ca. 347 BCE), who was the first philosopher to suggest it. In recent times some epistemologists have challenged this definition. They claim to have

Food for Thought

Practice your understanding of the classical definition of knowledge by deciding whether the following sentences, uttered by you, are true or false. If you think that a sentence is true, provide a justification for thinking so.

1. I know that I have two hands.
2. I know that my physical death is the end of my existence
3. I know that other people experience the smell of coffee just as I do.
4. I know that the number 3 is larger than the number 2.
5. I know that water is H_2O.
6. I know that killing people is wrong.
7. I know that I am awake right now.
8. I know that dinosaurs have existed on Earth in the past.
9. I know that there are nine planets in our solar system.
10. I know that there exists life on other planets.

found cases in which this definition is not quite adequate and conclude that another condition is needed. Although this is an important concern, we cannot pursue it in the context of an introduction to epistemology. For our purposes the classical definition of knowledge is precise enough, and we will use it in the remainder of this chapter.

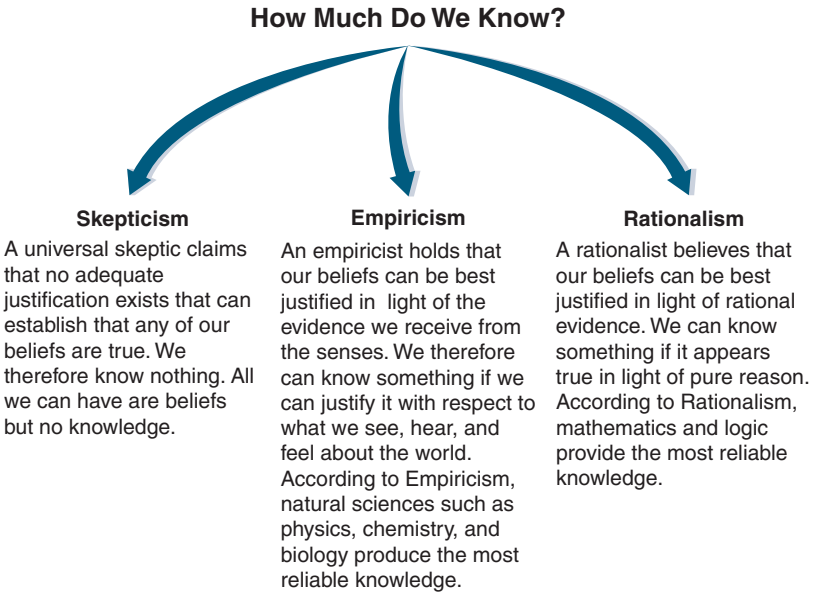
Food for Thought

Situations seem to exist—so-called Gettier cases—in which true, justified beliefs do not amount to genuine knowledge. Can you think of such situations?

Three Different Theories of Knowledge

3.2 Summarize the key elements of the three theories of knowledge.

The discussion in the last section has given us a better idea of what knowledge is, but we have yet to answer the most essential question in epistemology: What do we know? It would be ideal if we could answer this question once and for all, but the question is—as are all philosophical questions—an open one, meaning that there is more than one way in which we can answer it. The key objective is to develop a satisfactory theory of epistemic justification. We have seen that knowledge is true, justified belief; therefore, if we can clearly determine when and how our beliefs are justified, we can also determine the scope and limit of our knowledge. Not surprisingly, different philosophers have developed different theories in response to this question. Our task is to consider which theory appears most reasonable. Roughly speaking, we can identify three major theories of knowledge: skepticism, empiricism, and rationalism. The three positions are illustrated in the chart.



The chart is, of course, an oversimplification. In addition to skepticism, empiricism, and rationalism, alternate and more refined epistemological positions exist. It is nevertheless useful to focus on these three major epistemological theories.

Skepticism

THE CASE FOR SKEPTICISM. A skeptic is someone who denies that we have genuine knowledge. According to the skeptic, we have only beliefs about the world, and none of these beliefs can count as knowledge. We can distinguish among different forms of skepticism. On the one hand is global (universal) skepticism, which holds that no knowledge of any kind about any subject matter is possible. It is rare that someone explicitly advocates global skepticism, because it seems to undermine itself. Since global skeptics claim that there is no knowledge whatsoever, they themselves cannot know whether global skepticism is true or not. Later on, however, we will see how global skepticism can emerge in a more indirect and thus more threatening way.

A more attractive form of skepticism can be dubbed local skepticism. It is more limited in scope than global skepticism and focuses on particular fields of knowledge or particular methods of justification. A local skeptic will say that we cannot have

knowledge about certain subjects (e.g., God or the existence of the external physical world) or that certain ways of acquiring beliefs (such as reading fortune cookies) can never produce knowledge. Clearly, we are all local skeptics with respect to some ways of acquiring beliefs. I am, for example, a skeptic about psychic hotlines. If you were to tell me that you broke up with your partner because a psychic informed you that your partner was seeing someone else, I would think you were extremely gullible. Your belief that your partner was unfaithful would seem completely unjustified. You certainly would be wrong to claim that you knew it on the basis of that telephone call. I am also a skeptic about astrology and alternative medicine, although a fair number of people put great faith in horoscopes and herbal treatments.

A local skeptic seeks to establish that a particular type of justification does not link our beliefs to the truth. For example, if you claim to know that you will spend a dream vacation with your partner because the moon is in Sagittarius, a skeptic about astrology would question the validity of your belief justification. How in the world, the skeptic would ask, is the position of the moon related to your vacation and your relationship? Unless there is some plausible connection, the skeptic would seem to be in a strong position to reject all astrological belief justifications. You could, of course, hold on to your belief that the position of the moon has an effect on your vacation, but the skeptic would have shown that this belief does not amount to knowledge. It seems epistemically irresponsible to modify a belief about a relationship because of a belief about the position of the moon.

Although most people agree that astrology and psychic hotlines are not reliable ways to acquire true beliefs, the question arises about whether we can trust any other methods of acquiring beliefs. I acquire, for example, a fair number of my beliefs about the world from reading the *New York Times*. But are the beliefs I acquire from reading the *NYT* so much more reliable than the beliefs I acquire from the psychic hotline? Sure, the psychic hotline is often wrong, but isn't the *NYT* often wrong as well? This is actually the sneaky way in which global skepticism can make its stand. If it turns out that local skepticism is plausible with respect to all subject areas and all ways of acquiring and justifying beliefs, then local skepticism has suddenly turned into global skepticism. In the remaining part of this chapter, we will investigate what form of skepticism can and should be avoided.

Food for Thought

How skeptical are you? Take a look at each of the following claims and rate your confidence that each claim is true from 10 (I have complete confidence that the claim is true) to 0 (I have complete confidence that the claim is false).

1. Extraterrestrials have visited Earth in the past.
2. Eating meat is morally wrong.
3. In 2018, the life expectancy of the average person living in the United States was lower than the life expectancy of the average person living in Switzerland
4. Earth is flat.
5. The number 13 is an unlucky number.
6. Some people can move physical objects with their minds only without making any physical contact with the object.
7. The surface temperature on planet Venus is hotter than the surface temperature on planet Mars.
8. The Apollo 11 moon landing did not take place but was faked by NASA.
9. Vaccinations can cause autism
10. Global Warming is taking place and is causing major problems.

DESCARTES' QUEST FOR CERTAINTY. The French philosopher René Descartes (1596–1650) was the first modern philosopher who addressed the question of whether we can prevent skepticism from undermining every claim to knowledge. Descartes lived during confusing times, as we do now. The seventeenth century was a period of change in Europe: The Reformation had weakened the credibility of religious authorities.

New scientific thinking was challenging traditional ways of thinking about physics and the universe. In short, the seventeenth century produced a hodgepodge of competing beliefs about God and the universe. But which of these beliefs were worthy of being called knowledge, Descartes asked.

To find an answer to this question, Descartes followed an original strategy. According to him, we cannot trust any of our beliefs as long as there is any chance that they might be mistaken. He wrote: "I ought no less carefully to withhold my assent from matters which are not entirely certain and indubitable than from those which appear to me manifestly to be false."[1] Through doubting and examining all of his beliefs, Descartes attempted to distill those beliefs that were certain and indubitable. He thought that only these beliefs truly deserved to be considered knowledge. This method of distinguishing mere belief from knowledge is often called Descartes' method of doubt.

To respond to the threat of skepticism, let us follow this Cartesian method of doubt. Are there beliefs that we cannot doubt are true? In day-to-day life, most people do not doubt that what they see is true. When I walk across the street and see a truck approaching, I have little reason to doubt that the truck is really bearing down on me. I trust my senses and get out of the way of the truck. But are our perceptual beliefs, that is, those beliefs that are formed on the basis of perception, indubitable and certain? Descartes said they are not.

SOURCE: GL Archive/Alamy Stock Photo.

René Descartes tried to find knowledge by finding beliefs which he could not doubt to be true.

Food for Thought

Descartes suggested that a belief cannot be considered an instance of knowledge if it is possible to doubt that the belief is true. In order to develop an impression of how this method of doubt works, let us consider the following beliefs. Try to determine whether these beliefs can be doubted.

1. I will live at least until the year 2027.
2. I will pass this class.
3. My parents love me.
4. The parents who raised me are indeed my biological parents.
5. I am heterosexual.
6. I find watching movies more enjoyable than reading books.
7. $2 + 2 = 4$
8. I am right now feeling a pain in my front tooth.

To show that it is possible to doubt what our senses tell us, Descartes presented a series of skeptical arguments. One of them is the famous dream argument, which can be presented in standard form as follows:

1. If it is possible that I am dreaming right now, then I have reason to doubt whether my current perceptual beliefs are true.
2. It is possible that I am dreaming right now.

Therefore: I have reason to doubt whether my current perceptual beliefs are true (i.e., my perceptual beliefs are not indubitable and certain).

Beginning students often misunderstand Descartes' dream argument. The point of the argument is not to show that one is dreaming or that life can be a dream. The point of the argument is simply to show that our current perceptual beliefs (the beliefs that are based on what I see, feel, and hear right now) are not indubitable or absolutely certain. The argument is an instance of the argument form *modus ponens*, which we discussed in Chapter 2; it is therefore valid. We thus need to turn our attention to the question of whether the argument is sound. Are the premises of the argument true? The first premise appears very reasonable. For instance, at this very moment it seems to me that I am sitting in front of a computer. I am hearing the little humming noise of the ventilator, and I see the cursor

blinking. However, if it is possible that these experiences are part of a vivid dream, then I have reason to doubt whether I am indeed sitting in front of a computer. If it should be the case that I am really dreaming at this very moment, then I am probably lying in bed and there is no computer in front of me. So, premise 1 seems true. If it is possible that I am dreaming, then I have reason to doubt whether my current perceptual beliefs are true. What about the second premise? Is it really possible that I am dreaming at this very moment? I feel very awake. I see my fingers moving across the keyboard. I remember waking up this morning and having breakfast. But does any of this make it certain that I am awake? Descartes said no and supported his claim with the following line of reasoning:

1. It is impossible to distinguish with certainty between dream experiences and waking experiences.
2. If it is impossible to distinguish with certainty between dream experiences and waking experiences, then I cannot know whether I am awake right now.
3. If I cannot know that I am awake right now, then it is possible that I am dreaming right now.

Therefore: It is possible that I am dreaming right now.

This argument is a combination of two valid argument forms—*modus ponens* and *hypothetical syllogism*—and is therefore valid. Premises 2 and 3 are very plausible; the key premise is premise 1. Might this premise be false? Might it be possible to distinguish with certainty between waking experiences and dream experiences? Sure, sometimes when I am dreaming, I am aware that my experiences are part of a dream. However, this is not always the case. Some dreams are so vivid that I am convinced that my dream experiences are real. How then can I tell with certainty that my current perceptual experiences are not dream experiences? Any experience that I can have right now I can, at least in principle, also experience while I am dreaming. It follows therefore that I cannot eliminate the possibility that I am right now dreaming completely. Although my belief that I am right now awake is a strong one (i.e., I would be willing to bet a good deal of money on it), I have to acknowledge that the belief is not absolutely certain to be true. There remains the genuine possibility that my current experiences are actually part of an amazingly realistic dream.

Food for Thought

Initially, most beginning students find the dream argument weak, for they are certain they can show that they are awake. Take a look at some of the following attempts to defeat the dream argument, and decide whether they are successful.

1. I always dream in black and white. I never dream in color. However, right now I am having color experiences (i.e., I see a red pen in front of me). This means that I must be awake and not dreaming.
2. Although I can experience feelings of fear, pride, and shame in my dreams, I cannot experience the sensation of sharp pains in my dreams. Right now, I am inserting a needle into my fingers, and I am experiencing a sharp pain. It follows therefore that I must be awake.
3. Whenever I dream, I can tell that I am dreaming because I actively influence what happens in my dreams. I have learned this from a dream master in China. But I do not influence and shape what is happening right now. Therefore, I am not dreaming right now.
4. I have never been bored in any of my dreams. As a matter of fact, my dreams are pretty exciting and are full of monsters and women who look like Angelina Jolie. Right now, however, I am experiencing incredible boredom while I appear to be sitting in this philosophy class. I must be awake.
5. If these experiences I am having right now are waking experiences, then later I will get tired and go to sleep. Although I do not know right now that I will later get tired and go to sleep, there will come a time when this will be the case. At the very moment just before I fall asleep, I will know that all the experiences that I am having right now were indeed waking experiences.
6. If these experiences I am having right now were dream experiences, then it would not be possible for me to remember what I had for breakfast this morning. However, I can clearly remember that I had toast with jelly for breakfast this morning. It follows therefore that I must be awake.

The essential idea behind the dream argument can be presented in a variety of ways. Descartes, for example, considered not only the possibility that we might be dreaming but also the possibility that there might exist a devious and powerful demon that uses all its powers to deceive us. Descartes called such a being an evil genius and argued that we could not be certain that such a being does not exist. In recent times philosophers have presented Descartes' skeptical worries in a scenario suggesting that any of us might simply be a brain in a vat. Imagine a brain suspended in a liquid and wired to a computer, which feeds the brain all the current experiences you are having right now. If you were such a brain, nothing in your experience would reveal that you were actually a brain in a vat. You might believe that you were a six-foot tall, brown-haired dude from California reading a philosophy book, but that belief, together with all your other perceptual beliefs, would be false. These skeptical arguments even find their way into popular movies. The movie *The Matrix,* for example, is constructed around the idea that we only appear to be living in a normal world; in reality, we are lying in bathtubs wired to the matrix while machines harvest our energy.

Food for Thought

We have seen that there are a variety of arguments in defense of Cartesian skepticism: the dream argument, the evil-genius argument, the brain-in-a-vat argument, the matrix argument. Although all these arguments are similar to each other, some of them establish a more fundamental form of skepticism than others. Compare the dream argument with the brain-in-a-vat argument. Which of the arguments presents a stronger version of skepticism?

It is important not to lose sight of the point of these skeptical arguments. Descartes tried to find beliefs that are indubitable and certain; these skeptical arguments are designed to show that there are no such beliefs—every belief seems to be subject to doubt. How can we respond to this challenge? Three answers seem possible. First, we can simply accept global skepticism. If knowledge requires that we have to be certain that our beliefs are true, then we have to conclude in light of these skeptical arguments that knowledge does not exist.

Second, we can follow Descartes and try to find certainty in spite of these arguments. This might seem impossible, but Descartes suggested an ingenious argument. Assume that the worst-case scenario is true and that we are brains in vats or are deceived by an evil genius. In this case, it seems we must doubt everything. However, Descartes discovered something interesting about doubt. In order to understand this let's look at several examples of doubt.

1. I doubt that it will rain tomorrow.
2. I doubt that I am awake right now.
3. I doubt that I have a physical body.
4. I doubt that I am thinking.

The first three examples of doubt are not problematic, but (4) raises some interesting questions. Is it possible for me to doubt that I am thinking? In order to doubt that I am thinking, is it not necessary that I think? What Descartes discovered was that we cannot legitimately doubt that we are thinking. However, if we cannot doubt that we are thinking (when we are thinking), then we can also **know** that we are thinking (when we are thinking). This then is the absolute certain starting point Descartes has been trying to find all along: **As long as we think, we can know that we are thinking.** Moreover, Descartes also had another insight. Thinking is a very special activity. Thinking cannot happen by itself. All thinking requires somebody who is doing the thinking. Who is this somebody who is doing the thinking which I can know to be

going on? It is me! Thus, Descartes concluded: "After having reflected well and carefully examined all things, we must come to the definite conclusion that this proposition: I am, I exist, is necessarily true each time that I pronounce it."[2] This is Descartes' famous "I think, therefore I am" (in Latin: *Cogito, ergo sum*). It is an interesting and influential philosophical insight. Even in light of the most fundamental skepticism, Descartes claimed that he could know—*with absolute certainty*—that he existed as long as he was thinking. It is worth noticing that Descartes' certainty was derived from thinking (reason) alone; therefore, he is classified as a rationalist. He held that reason provides the most reliable foundation for all knowledge.

Food for Thought

Descartes' *cogito* is much more complex than it appears at first glance. Descartes seemed to assert that as long as he was thinking, he could know with absolute certainty that the sentence "I think" was true, and he could conclude therefore that the sentence "I exist" had to be true as well. Bertrand Russell (1872–1970) discussed the *cogito* in his book *The Problems of Philosophy*:

> But some care is needed in using Descartes' argument. "I think, therefore I am" says rather more than is strictly certain. It might seem as though we were quite sure of being the same person today as we were yesterday, and this is no doubt true in some sense. But the real Self is as hard to arrive at as the real table, and does not seem to have that absolute, convincing certainty that belongs to particular experiences. When I look at my table and see a certain brown color, what is quite certain at once is not "I am seeing a brown color," but rather, "a brown color is being seen." This of course involves something (or somebody) which (or who) sees the brown color, but it does not of itself involve that more or less permanent person whom we call "I." So far as immediate certainty goes, it might be that the something which sees the brown color is quite momentary, and not the same as the something which has some different experience the next moment.[3]

What do you think? Do you agree with Russell's criticism?

Even if we accept Descartes' claim that I can know that I exist as long as I think, the resulting view of what little we know is somewhat discouraging. Very few things are as certain as my belief that I exist. Ultimately, Descartes' project (although Descartes himself disagreed here[4]) seems to lead to a philosophical position called **solipsism**, which asserts that we can know only the contents of our own minds. This is a rather lonely view of the world. If solipsism is correct, it becomes very doubtful whether we can know that there is an external world or that there are other people with minds like us. But it surely seems as if we do know that there are trees, cars, and other people in the world besides us. It is therefore tempting to look for an alternative to Descartes' epistemic project.

Food for Thought

Descartes himself did not think that his insistence that knowledge must be founded on an absolute certain foundation created unsurmountable problems. He concluded that in addition to knowing that he himself exists he also could know that an all-good God exists and that an all-good God guarantees that he can trust all clear and distinct ideas to be true. These results seemed too optimistic to many who read his "Meditations." Contrary to his own conclusions, many readers of Descartes' "Meditations" walked away with the impression that nothing could be known besides the fact that one is a thinking being. In 1663, thirteen years after Descartes' death, the Catholic Church put his "Meditations" on the list of prohibited books for spreading skepticism and atheism.

The third, and for me most attractive, response to Cartesian skepticism is to modify our demands for epistemic justification. As we have seen, Descartes insisted that we can know something only if we can be *certain* that the belief in question is true. In short, Descartes required epistemic justification to be infallible. That is perhaps too high a standard for justification. It might be quite reasonable to say that I am justified to believe that p is the case even if there is a chance that the justification for my belief in p will later be defeated by additional evidence. For example, suppose that it is Saturday night and that you are watching *Saturday Night Live.* You hear the actors on the show utter several times that the show is broadcast live from New York. In this situation it seems plausible to say that you are justified to believe that you are watching a live broadcast. Later, however, as you watch the credits for the show, you find out that the show was actually a recording. Although your reasons for thinking that the show was a live broadcast were later defeated, you had prima facie reasons for thinking that the show was a live broadcast. The term *prima facie* is Latin for "at first sight" and refers to evidence that is immediately available.

It is tempting to construct a viable theory of epistemic justification on the basis of prima facie justification. To illustrate how such a theory might look, let us consider the *Saturday Night Live* example one more time. Suppose you are in the same situation: You are watching *Saturday Night Live* on a Saturday evening and hear the actors announce that the show is a live broadcast. Suppose further that it is indeed a live broadcast. In this scenario you had prima facie reasons for thinking that the show was a live broadcast, and these prima facie reasons were not later defeated by other evidence. It is tempting to think that prima facie justification that goes undefeated might be sufficient for knowledge. Such justification is obviously neither certain nor infallible, but it might nevertheless be the kind of justification we are looking for.

The danger we face is that such justification might permit too many weakly justified beliefs to count as knowledge. To determine whether there is room for a plausible, prima facie version of justification that is strong enough to lead to knowledge, we will have to take a closer look at two of the most attractive sources of prima facie justification for belief: experience and reason. We will start our discussion by investigating the most common theory of knowledge, empiricism.

Empiricism

Empiricism is a very plausible and intuitive theory of knowledge. It is closely associated with the British philosophers John Locke (1632–1704), George Berkeley (1685–1753), and David Hume (1711–1776). An empiricist maintains that we can know something if we can justify it with respect to what we see, hear, smell, touch, or taste. Assume, for instance, that I am right now looking at my right hand, and I see that I have five fingers on this hand. This perception triggers in me the belief that I have five fingers on my right hand. Moreover, this perception, together with my belief that my eyes are working properly, bestows such a high degree of justification on my belief that I am very confident that I *know* that I have five fingers on my right hand. Empiricists believe that examples such as these are paradigm examples of knowledge. Our beliefs about the world are most reliable when they can be justified with the help of our experiences of the world. Historically, empiricism is also associated with the idea that we are born as a *tabula rasa* (Latin for "blank slate"), which means that all of our ideas and concepts are derived from experience. Let us call beliefs that are directly derived from our experiences basic empirical beliefs. For instance, my seeing a red telephone triggers in me the belief that there is a red telephone in front of me. This belief is a basic empirical belief since it is a direct result of certain specific experiences. An empiricist maintains that basic empirical beliefs, in ordinary circumstances, are strongly justified beliefs and count as evidence.

The precise way in which basic empirical beliefs are justified is a matter of philosophical controversy. We will see in a later section that an empiricist faces some tough questions in this context. But setting aside possible difficulties, let us agree with the

Food for Thought

Consider the following beliefs, and decide whether they are basic empirical beliefs or not.

1. I believe that I am experiencing a throbbing pain in my head.
2. I believe that New York City has more than two million inhabitants.
3. I believe that there are more than three people in the room in which I am standing at this very moment.
4. I believe that my coworker is secretly in love with me.
5. I believe that the manifold species that we see today on Earth were created by the forces of natural selection over a span of millions of years.
6. I believe that I am reading a book right now.
7. I believe that there are massive black holes inside the Milky Way galaxy.
8. I believe that I had oatmeal for breakfast this morning.

empiricist that basic empirical beliefs are justified and count as evidence and instances of knowledge. The next step for empiricists is to insist that inferential beliefs—that is, beliefs that are about what is not directly observable—must be justified with the help of basic empirical beliefs. For example, the belief that dinosaurs once roamed the earth is not a basic empirical belief. I cannot see, touch, and feel any dinosaurs in my backyard or in a zoo. It is, however, possible to justify this belief in light of what I can see right now, namely, bones and other paleontological remains (e.g., preserved footprints). It follows, therefore, that an empiricist would consider the inferential belief that dinosaurs once roamed the earth as justified by available empirical evidence.

An empiricist insists that all such inferential claims that are to count as knowledge must be justified by empirical evidence. Empiricists are therefore skeptical about any beliefs that cannot be confirmed or falsified by empirical evidence. For example, the claim that all men are created equal is not linked in any obvious way to empirical observations. An empiricist would therefore conclude that we can believe this, but that we cannot know this to be so. Similarly, an empiricist would be skeptical about a claim like "God wrote the Bible," for it is hard to see how that belief can be justified in terms of basic empirical beliefs. In general, many empiricists are skeptical about claims of moral and religious knowledge.

Food for Thought

Suppose that you are an empiricist. Which of the following knowledge claims do you think are justified? Explain your answers.

1. I know that there are more people in the United States than in Cuba.
2. I know that if the United States had not used the atomic bomb, Japan would not have surrendered and many more people would have died in the subsequent fighting than died in the bombings of Hiroshima and Nagasaki.
3. I know that in the year 2025 there will be more than six billion humans on Earth.
4. I know that a baseball thrown against a cement wall will bounce off.
5. I know that Elvis Presley was addicted to drugs.
6. I know that more than forty different people have been elected president of the United States.
7. I know that the average American read fewer books in the year 2010 than in the year 1990.
8. I know that medium-sized physical objects like soccer balls and kitchen tables are ultimately only collections of molecules.
9. I know that men have brains that are different from those of women.
10. I know that another universe exists parallel to our universe.

There is something sobering and appealing about empiricism. An empiricist will not quickly jump to grand conclusions but will carefully consider the empirical evidence and see what conclusions are plausible in light of that evidence. If the evidence is insufficient to support any final conclusions, an empiricist will withhold judgment.