Making Sense of the World

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 teenagers in your tribe, who only worry about with whom 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. A “big
picture" view of the universe 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. 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 it 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 similar to Homer’s *Iliad* or Hesiod’s *Theogony*. Aside from merely entertaining your daughter by the campfire, you will be instilling in her a sense of how the heavens came to be and what interests 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 in the claim that one of your ancestors was very close to the gods (or God), and that 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.

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 why 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 consist of the discovery of holy texts, as with the founder of the Mormon religion, Joseph Smith; or it might take the form of an enlightening religious experience, as with Buddhism’s Siddhartha. No matter what form these divine revelations take, they offer a reason why 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. It might be that your daughter will 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 in 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.

It is at this point that philosophy enters the picture. Philosophy, in addition to mythology and religion, is a third major way of providing a “big picture” view of reality. The word philosophy derives from the Greek words *phila* (“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 between philosophy, mythology, and religion. Philosophy is related to mythology insofar as philosophers also try to provide a comprehensive, “big picture” view of reality. Philosophy also resembles religion in that philosophers provide reasons why 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 the attempt to develop a “big picture” view of the universe with the help of reason.
Food for Thought

We have seen that religion and philosophy are both powerful methods of understanding the world. Yet they support their claims and explanations in very different ways. Does this mean that philosophy and religion must necessarily produce different pictures of the world?

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 a 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 for 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 defend your belief that stars are not aware of our actions with the help of an argument. This is a key element in philosophy. Philosophers not only try to explain the world with the help of claims and stories, but they 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.

Although our understanding of philosophy is still incomplete, it is already possible to point to three 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 above 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 our beliefs with the help of arguments. However, many humans encounter situations in their lives where 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) describes in his Confessions how he started to question everything in his life. He writes: “Thus I proceeded to live, but five years ago something very strange began to happen with me: I was overcome by minutes at first of perplexity and then of an arrest of life, as though I did not know how to live or what to do . . . 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?

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 a plurality of 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.

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 considered it on your own. The following pages give you an opportunity to do just that.

Food for Thought

The 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?

The Relationship Between Science and Philosophy

In the last section, we defined philosophy as the attempt to explain the world with the help of reason. Some of you may find this definition puzzling. If philosophy is the 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 tend to distinguish sharply between the various academic disciplines. Philosophy, the attempt to explain the world with the help of reason, 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 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 above and 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 with his or her training and theories cannot explain to you whether going to law school will make you happy. Similarly, psychologists can explain to you why you begin to stutter when you talk to strangers, but they cannot explain to you why your cholesterol level is so high. These two examples illustrate that each scientific discipline deals with only a part of reality, but not with the whole. One might suspect that if we take all scientific disciplines collectively, this would account for all aspects of reality and would produce a comprehensive rational understanding of the universe. Fortunately (for philosophy), this is not the case. Even if we take all scientific disciplines together, we do not obtain a comprehensive rational analysis of the whole universe. Ludwig Wittgenstein (1889–1951) wrote in this context: “...even when all possible scientific problems have been answered, the problems of life have not been put to rest.”

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 predominately 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 or not 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. Such concept clarification often involves testing definitions and analyzing hypothetical situations. The question of whether or not we have souls is therefore a good example of a philosophical question. We can define philosophical questions as questions that involve conceptual analysis and that require for their solution more than observations and experimentation. Philosophical questions are “open questions” in the sense that we cannot easily predict what would constitute a satisfactory solution to them. No scientific procedure can produce a quick answer to philosophical questions.

It is worthwhile to stress that the line between philosophy and science is not fixed. Some philosophical questions 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. 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. As a result, some people find philosophy frustrating. 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 solutions. 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 predominately 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 required for beliefs to be rational?
4. What caused the extinction of the dinosaurs?
5. Is homosexual love unnatural?
6. Did extraterrestrials visit Earth in the past?
7. Are quarks the smallest particles in the universe?
8. Can we know that there are particles that are too small to be observed?
9. What caused the universe to exist?
10. Are economic theories genuine scientific theories?
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—insofar as you practice philosophy—can assert whatever strikes your fancy. Philosophy, as we have seen, is not mythological fantasy. Philosophers are committed to adopt the solution that appears most reasonable in light of the best arguments available to us. 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 afterdeath experience, is convinced that we will continue to exist after we die. Both positions might appear to be most reasonable in the light of the best arguments available to these two thinkers. The point of philosophical activity is, in part, to determine which solutions to open questions are most reasonable in the light of your own experiences and thoughts about the world. It will, of course, not always be possible for you to select one solution to an open question as the most reasonable. You might conclude, for example, that you really do not know whether you are always responsible for 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 most 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. But perhaps mysteries are not only a key feature of good movies, but also the key ingredients 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 will change during this class, it might be useful for you to record your positions at the beginning of this class. Answer the following questions with “Yes,” “No,” or “I don’t know,” and discuss them with the rest of the class.

1. On 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 5 years old.
6. I am always responsible for my actions.
7. To allow an innocent child to suffer needlessly when one could easily prevent it is morally reprehensible.
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 22-year-old college student.
17. If God does not exist, then there are no moral obligations. In this case, no action would be right or wrong.
18. It is impossible to be truly happy if one is an immoral person.
19. The possession of drugs for personal use should be decriminalized.

The Main Branches of Philosophy

We have seen in the last section that philosophers try to find reasonable solutions to open questions. 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 so that one can 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 very illuminating. One way to get a better understanding of this field of study is to list all the things that we think exist in
CHAPTER TWO

PHILOSOPHICAL TOOLS

Philosophers search for reasonable solutions to open questions. In the process they employ a wide range of logical and conceptual tools. This chapter introduces some logical tools and techniques that are frequently used by philosophers. Learning to use these logical tools can be a bit challenging, but your effort in mastering these logical techniques will pay off in later chapters when we discuss significant philosophical problems.

Logical Consistency

In the last chapter, we have seen that philosophers aim to develop a comprehensive and reasonable "big picture" view of the universe. This goal requires that our beliefs fit together into a coherent system of thought. 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, as American philosopher (1842–1910) William James pointed out, "an unusually stubborn effort to think clearly." 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 believes:

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

and

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 another 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.

Food for Thought

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

1. Nobody knows the future. / God is omniscient.
2. The theory of evolution is true. / God exists.
3. It is always morally wrong to kill innocent persons. / Having an abortion is morally acceptable.
4. Nobody is perfect. / My father is flawless.
5. Humans are free. / The past determines the future.
6. I am the same person that I was when I was five years old. / Everything changes.
7. Raping another person is morally wrong. / Everything is relative.
8. No animal has a soul. / Humans are animals.
9. Democracy is the best form of government. / The majority of people in every society are stupid.

As you can see from the examples above, identifying logical inconsistencies is rarely 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 the person whether he holds, in addition to A and B, the following background belief:

C. Angels are non-physical entities.
If it turns out that the person holds belief C in addition to A and B, then we have shown that his or her beliefs are logically inconsistent with each other. This example illustrates that the search for logical consistency requires that we also investigate our 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.

Realizing that some of our beliefs about the world are logically inconsistent with each other gives us a strong 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.” What exactly should we say to a person who dismisses logical consistency as being of no value? A specific example might help us to illustrate the problematic nature of holding logically inconsistent beliefs. Suppose you meet Maria and Maria 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 belief is very peculiar. Philosophers call these types of statements contradictions. A contradiction is a sentence that both denies and asserts that something is the case. Contradictions have a very unique property in that no matter what the world is like, we can know right away that contradictions cannot be true. Contradictions are necessarily false statements and thus ought not to be part of a reasonable view of the world. We should therefore say to Maria that her willingness to embrace logically inconsistent beliefs makes her “big picture” view of the world necessarily false, and that it is unreasonable to believe something that does not even have the chance of being true. 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.

Logical Possibility

We have seen in the last section that contradictions are statements that cannot possibly be true. But what exactly do we mean by the word “possible” here? The term “possible” is used differently in different contexts, and it is therefore useful to distinguish various meanings of the word. Consider the following two sentences:

A. It is not possible for Tiger Woods to run 80 miles per hour.
B. It is not possible for Tiger Woods to win all major men’s professional golf tournaments in 2008 but to lose the U.S. Open Golf Championship that year.

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 Tiger Woods cannot run 80 miles per hour has to do with the laws of nature. A human body is constructed such that it is causally impossible to reach such a velocity. 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 hit Florida this year or that the Red Sox 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 Tiger Woods to run 80 miles per hour. Notice, however, that we can imagine that Tiger Woods runs that fast. It 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 Tiger
Woods runs 80 miles per hour. A good test of whether something is logically possible is to ask yourself whether you could make a movie about it. If you have seen the movie Forrest Gump, you know that we can make movies about people who run very fast—faster in fact than is causally possible for humans. In the same fashion we can make movies about talking toasters or flying horses. All of these states of affairs 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 make a movie that makes sentence B true. It is logically impossible that Tiger Woods wins all major men's professional golf tournaments in the year 2008 and also loses the U.S. Open during that year. The assertion that Tiger Woods wins all major men's professional golf tournaments in the year 2008 and the assertion that he loses the U.S. Open in 2008 are logically inconsistent with each other. If we nevertheless assert both of them, 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.

In order to determine whether something is logically possible, we need to use our imagination 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 with your mind whether certain scenarios are indeed logically possible. When philosophers consider logically possible scenarios, they conduct thought experiments. Thought experiments 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.

Definitions

Although philosophical thinking starts by reflecting about our ordinary experiences, it quickly leads to more abstract questions. For instance, a philosopher might start by asking whether he is morally obligated to follow the laws of his country, but in order to answer this question he must clarify the nature of morality and the nature of moral obligation. Similarly, a philosopher might wonder whether her future is already determined, but in order to answer this question she has to think about time, causality, probability, and free will. Although we use terms like "causality," "morality," "time," and "freedom" in our everyday conversations, we tend not to step back and ask "What is time? What is causality?" or "What is freedom?". In everyday life we simply assume that we have a sufficiently clear understanding of what these terms mean. Philosophical reflection, however, forces us to take a closer look at these abstract terms, and we often realize that we do not know how to explain them. The medieval philosopher Augustine (354-430) remarked in this context that he knew perfectly well what time was unless somebody asked him to explain it.

One way to clarify terms like "time," "freedom," or "morality" is to develop precise definitions of these terms. For this reason, philosophers since the time of Socrates have thought very carefully about how to develop and test definitions. There are, however, very different ways to approach definitions, and not all of them work very well in philosophy. Most beginning students think that definitions can simply be found in dictionaries. If I do not know the precise meaning
of the word “moral,” for instance, I can look it up in a good dictionary. Definitions that are stated in standard dictionaries are called lexical definitions. The goal of lexical definitions is to explain how a particular word is generally used by English speakers. Lexical definitions are often helpful, but in philosophy their usefulness is limited. Let us consider the example of the word “moral.” Suppose my dictionary tells me that the word “moral” means “conforming to accepted standards of behavior.” This lexical definition might very well be true, that is, it is indeed true that the majority of all English speakers use the word “moral” with this meaning. However, it should be pretty clear that this lexical definition does not sufficiently explain what it is to be moral. It seems entirely possible, for instance, that some immoral acts conform to accepted standards of behavior as well. There is more to being moral than simply conforming to accepted standards of behavior. This example shows that lexical definitions do not offer much help with philosophical investigations. In philosophy we want to find out what morality and virtue really are and not just how the majority of English speakers use the word “moral” or “virtue.” Lexical definitions rarely provide the kind of insight needed in order to make progress in philosophical investigations.

A more useful method for developing definitions goes back to Plato and Aristotle, and it consists of defining a term by stating necessary and sufficient conditions for the correct application of the term. In order to illustrate this philosophical technique, let us consider an example. Suppose you meet someone who is confused about the term “vertebrate.” In order to help him you can say: “A vertebrate is a kind of animal.” What you have just done is to state a necessary condition for being a vertebrate. Being an animal is a necessary condition for being a vertebrate because it is impossible for something to be a vertebrate if it is not an animal. 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. But more needs to be done before we arrive at a precise definition. Let us return to our term “vertebrate.” We have seen that being an animal is a necessary condition for being a vertebrate. What else do we need to know in order to state a precise definition of “vertebrate”? What we need in addition are the specific conditions that distinguish vertebrates from other kinds of animals. Vertebrates are animals with a segmented spinal cord. Having a segmented spinal cord is a sufficient condition for being a vertebrate since it is impossible for something that has a segmented spinal cord to not be a vertebrate. In general, one can define a sufficient condition as follows: A condition \( q \) is sufficient for \( p \) if it is impossible for something to be \( q \) and not \( p \). After having clarified necessary and sufficient conditions for the term “vertebrate,” we are in a position to develop a precise definition. Vertebrates are animals with a segmented spinal cord. Practice your understanding of necessary and sufficient conditions by completing the following exercises.

### Food for Thought

Complete the following sentences by filling in one of the following phrases: a) necessary condition; b) sufficient condition; c) necessary and sufficient condition; d) neither necessary nor sufficient condition.

1. Being an animal is a [ ] for being a monkey.
2. Being immortal is a [ ] of being a superhero.
3. Being a grandfather is a [ ] for being a father.
4. Being against the law is [ ] for being immoral.
5. Being born in New York City [ ] for being a US citizen.
6. Being a dog is [ ] for being a collie.
7. Being H\(_2\)O is a [ ] for being water.
8. Being free is a [ ] for being morally responsible.
9. Being rich is [ ] for being happy.

### Food for Thought

Fill in the gaps in the following claims so that they form precise definitions.

2. “Skyscraper” means very tall [ ].
3. “Stallion” means [ ] horse.
4. [ ] means young sheep.
5. “Midget” means [ ].
7. Knowledge is [ ] belief.
8. [ ] is frozen water.
It should be noted that it is not trivial to specify necessary and sufficient conditions for philosophical concepts. Take the concept of "freedom." As we will see in a later chapter, it is rather challenging to develop a satisfactory definition of freedom. Is it, for example, a necessary condition for being free to have the power to act otherwise than we did in fact act? Is it a sufficient condition for being free to be able to do what one wants? Philosophers disagree on these points. However, even if we deal with very complex concepts, the search for necessary and sufficient conditions helps us to understand the concepts more clearly than before. A good example of how the search for necessary and sufficient conditions can help us in clarifying a philosophical concept is provided by the Food for Thought exercise below.

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**Food for Thought**

In her article "On the Moral and Legal Status of Abortion," published in the journal *The Monist* in 1973, the philosopher Mary Anne Warren attempts to clarify the concept of being a person in the following way:

I suggest that the traits which are most central to the concept of personhood, or humanity in the moral sense, are, very roughly the following:

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);
3. self-motivated activity (activity which is relatively independent of either genetic or direct external control);
4. the capacity to communicate, by whatever means, messages of an indefinite variety of types, that is, not just with an indefinite number of possible contents, but on indefinitely many possible topics;
5. the presence of self-concepts, and self awareness, either individual or racial, or both . . . .

We need not suppose that an entity must have all of these attributes to be properly considered a person. (1) and (2) alone may well be sufficient for personhood, and quite probably (1)–(3) are sufficient. Neither do we need to insist that any one of these criteria is necessary for personhood, although once again (1) and (2) look like fairly good candidates for necessary conditions, as does (3), if "activity" is construed so as to include the activity of reasoning.

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Do you agree with Mary Anne Warren's suggestion that conditions 1 and 2 might be necessary and sufficient conditions for being a person?

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**Counterexamples**

Philosophers clarify concepts by stating necessary and sufficient conditions for the correct application of the term in question. Developing definitions for controversial concepts like "person" or "human rights" is rarely free of controversy. It is often the case that one philosopher challenges the definition that has been suggested by another thinker. The most effective way to challenge definitions is to find counterexamples. Let us consider an example in order to familiarize ourselves with this important philosophical technique. Suppose someone claims that being a human is a necessary condition for speaking English. Is this a true claim? As of yet, we have not discovered a species other than humans that is capable of speaking English. This, however, does not establish the claim at issue. When we claim that being a human is a necessary condition for speaking English, we claim that there is a logical relationship between being human and being able to speak English. Whether this logical relationship really holds can be tested with the help of a thought experiment. Notice that we can easily conceive that nonhuman creatures on other planets can learn to speak English or that we can build a computer that can speak English. This shows that it is logically possible that nonhumans speak English. This logically possible state of affairs constitutes a counterexample to the claim that being human is a necessary condition for speaking English. The claim that being human is a necessary condition for speaking English is therefore flawed.

At first, many students find it surprising that logically possible scenarios can refute theories. Many people tend to think that theories can only be refuted by facts, that is, by events that really happen. But this overlooks the fact that philosophy is mostly concerned with clarifying the relationships that hold between concepts. Conceptual relationships are logical in nature, and for this reason, logically possible scenarios need to be taken into consideration.

The ability to test and refute conceptual claims with the help of thought experiments is an important philosophical technique. Practice your ability to find counterexamples to theories with the help of the next exercise.
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 Darwin's theory of evolution is wrong, or we humans are related to monkeys.
2. Humans are not related to monkeys.

Therefore: Darwin's theory of evolution is wrong.

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.

It is relatively easy to see that 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 because they are 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 from 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 is 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.

*Continued*
a lawlike relationship that explains why metal bars expand when heated. It is, however, far from clear how we can tell when we are dealing with lawlike relationships and when not. Fortunately, philosophers do not use enumerative inductive arguments as frequently as scientists, and it is therefore sufficient if we can recognize the logical form of the 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 analogical argument. 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 therefore 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 analogical argument 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. It is obvious that these differences between English classes and philosophy classes undermine the strength of the analogical argument above. The argument thus has to be classified as a weak inductive argument. However, there are no general rules according to which we can quickly tell whether an analogy is appropriate or not. 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 somewhat 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 hypotheses that ghosts cause these strange noises is the best explanation available, then the argument is much stronger than before. This, however, raises a crucial question: How can we determine whether a given explanation of an event is better than all other explanations?

It is easy to see that 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 my roommate who is watching a horror movie. Our judgment of whether a given explanation is better than others depends on many factors. However, two factors frequently play a prominent role and are therefore worth mentioning:

1. An explanation A is better than explanation B if (all other things being equal) explanation A is simpler than explanation B.
2. An explanation A is better than explanation B if (all other things being equal) explanation A fits together better with the rest of my other 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 the explanation requires us to make fewer independent assumptions. But it is not always clear how many independent assumptions are involved in a given explanation. The principle of
conservatism is rather subjective; that is, an explanation that is well 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 next door 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. It is often a contentious issue to decide which explanation is indeed the best, 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.

Food for Thought

Discuss under what situations the following “best explanations” would seem unreasonable. Where possible, make use of the principle of Ockham’s Razor and the principle of conservatism.

1. The best explanation for why I failed my mathematics exams is that I simply cannot do math.
2. The best explanation for why some people are rich and others are poor is that the rich people are hard working and the poor people are lazy.
3. The best explanation for why so many people call the psychic hotline is that these psychics can indeed predict the future.
4. The best explanation for why my friend’s radiation therapy was successful is that God created a miracle.
5. The best explanation for why I am overweight is that my parents were overweight as well.
6. The best explanation for why innocent beings suffer so much on Earth is that God wants us to learn from that suffering.

Endnotes


For Further Reading


