# How Can I Know Anything? Descartes on Knowledge and the Mind

Descartes, who was born in 1596, marks the beginning of what is known as **modern philosophy.** Before Descartes’ time, most scholars thought about philosophy (and science and mathematics) in much the same way as Aristotle and Plato did (who had lived around 2,000 years before). Descartes invented a new branch of mathematics (analytic geometry, which used the Cartesian coordinate system), showed how this could be used to revolutionize physics, and then offered a philosophical argument in defense of this method of doing science. His views on the nature of the mind (or “soul”) were equally influential.

## What do I *Really* Know? The Role of Methodological Doubt

During Descartes lifetime, he discovered that most of the things that people had believed for the last 2,000 years were, in fact, very badly supported by the evidence. Thinkers such as Copernicus had established that the earth was not the center of the universe, disproving 2,000 years of astronomy; the Protestant Reformation (and the religious wars that followed it) raised the possibility that widely accepted religious beliefs were also massively wrong. With this in mind, Descartes wanted to find a method that would allow him to be *absolutely sure* that he had found the truth.

Descartes’ method is that of **methodological doubt.** Here is how it works:

* The general idea is to treat any proposition that *might* be false as if it *is* false. Our aim is find some propositions that can’t be doubted; then we can build up a secure foundation on which to build our new science.
  + Bad idea: go through each and every belief, and try to doubt it. There are just too many beliefs for this to work.
  + Better idea: show why *every* belief of a certain type could be false; then we can throw out every belief of that type.
* First category of beliefs that we should doubt: Things that we believe because of the five senses. “I read it in a book.” “I heard her say it.” “I saw Jim murder Jillian.”
  + Reason to doubt: Ordinary perceptions can always be mistaken if we are not careful. We often mistake things when seen from far away, forget to read carefully, don’t listen attentively, and so on.
* Second category of beliefs we should doubt: Generalizations based on many perceptions. “I have two hands.” “Grass is generally green.” “Heavy objects fall to the ground when dropped.”
  + Reason to doubt: We have all had dreams where we were wrong about these sorts of things. Perhaps we are currently dreaming.
* Third category of beliefs we should doubt: “Obvious” mathematical or conceptual truths. “1 + 2 =3”, “A ball cannot be red all over and green all over at the same time.”
  + Reason to doubt: We have all had the experience of being *certain* that a given answer to a mathematical problem is correct, only to discover that we have been mistaken. Perhaps we are being fooled by an “evil demon” (or a mad scientist) into feeling certain about things that are not, in fact, certain.

**Do you agree with Descartes that it is possible to doubt all of these things?**

## One True Thing: Descartes Cogito Argument

At this point in the process of methodological doubt, we will have had to give up beliefs like “I have hands”, “I am not a squirrel”, and “2 x 3 = 6.” However, Descartes thinks there is one belief that *can’t* be doubted: **that I exist.** Here’s his argument for that, which is called the **cogito argument**:

1. Premise: Methodological doubt involves thoughts.
2. Premise: If I am thinking, then I exist.
3. Conclusion: I exist

He has another (implicit) premise: the *reason* that we know that premise 1 and premise 2 are true is because we can “clearly and distinctly” perceive that they are true. Descartes offers a follow-up to the argument, in which he purports to show that I am *identical* to my thoughts:

1. Premise: It is possible for me to doubt that I have a body. In fact, it is possible for me to doubt that I exist in space or time.
2. Premise: It is NOT possible for me to doubt that I am thinking.
3. Conclusion: I am identical to my mind. I am not identical to body. The mind and the body are two *entirely different things.*

This view of the mind and body is known as **Cartesian dualism.** It draws a sharp distinction between physical things, which are defined entirely by the space they take up and are governed by mathematical laws of nature (an idea that Descartes invented) and mental things, which have no location in space, and are governed by beliefs, desires, and intentions. It’s hard to overstate how a radical (and influential) a view this was. Before Descartes’ time, it was commonly assumed that the mind (or “soul”) was an aspect of the physical world (so, for example, most versions of Christianity still hold that resurrection means *bodily* resurrection) and that physical objects had something like “desires” (so, rocks “wanted” to go to the center of the earth).

**Do you agree with Descartes’ cogito argument? With his argument for Cartesian dualism?**

## Some Problems For Descartes

Here are some common criticisms of Descartes that have come up over the last 400 years. What do you think of these criticism?

1. The cogito argument is not valid. It’s possible for both premises to be true and the conclusion to be false. The mere fact that there are thoughts doesn’t guarantee that there is a “thinker” that is the subject of those thoughts.
2. In order to “get back” our ordinary beliefs about the world, Descartes ends up arguing in a circle. Here’s how it works:
   1. He assumes from the very beginning that we can trust our “clear and distinct perceptions.”
   2. He argues that we can clearly and distinctly perceive that we exist (via the cogito argument).
   3. From here, he argues that we can clearly and distinctly that an all-good God exists (via the ontological argument).
   4. From here, he argues that we can trust our clear and distinct perceptions about both everyday things and scientific experiments, since an all-good God wouldn’t fool us about these things.
3. Cartesian dualism is an obviously false view about the relationship between the mind and the body. In particular, it can’t account for the interaction of mind and the body.
   1. If the mental world and the physical world are entirely separate, we need to figure out how the mind and body interact (Why do you feel pain when you burn your finger? Why does your arm move when you “want it” to move?”
   2. Descartes’s solution: The pineal gland is a physical gateway to the soul. No one (even Descartes’ contemporaries) has ever thought that this is correct
   3. The problem of other minds. How do we figure out which other physical things have minds? According to Cartesian dualism, there’s no good way of answering this question. Descartes claims that animals don’t have minds (and thus can’t feel pain) and humans do have minds (and thus can feel pain). This struck people as a strange (and probably false) claim; however, a person who accepts Cartesian dualism has no way of determining whether this is true.

**Do you think these criticisms work? Why or why not?**

## Rationalism and Empiricism

**Rationalism** and **empiricism** are contrasting views about the nature of knowledge (and scientific knowledge, in particular). While the basic ideas have been around for thousands of years, the modern debate was a response to the scientific revolution of the 16th and 17th centuries.

In order to understand the difference between rationalism and empiricism, it’s helpful to distinguish between two ways of knowing that something is true:

1. A proposition is known **a priori** just in the case that one’s knowledge of it doesn’t depend on any particular experience or observation. Two examples are *5 + 6 = 11* and *No triangles have four sides.* Most rationalists and empiricists agree that purely mathematical claims like these are knowable a priori, since we can’t even imagine them being false.
2. A proposition is known **a posteriori**  just in the case that one only knows that it is true because of some specific experience or observation. Two uncontroversial examples: *Chicago has one more than 1,000,000 residents* and *Cindy’s cat is not able to speak English.* You can’t figure out whether these are true or false without some sort of experience, whether this be consulting Wikipedia, counting the number of people in Chicago, or holding a lengthy interview with Cindy’s cat. People with different experiences (for example, someone who has only seen cats as cartoons on TV) wouldn’t have any way of knowing whether these were true.

## Descartes, Rationalism, and the Importance of Mathematics to Science

**Rationalism** is the view that the most fundamental propositions of science are knowable a priori. Rene Descartes (1596-1650), a French scientist and philosopher who helped start the scientific revolution, defended the view on something like the following grounds:

1. The thinkers before Descartes’ time had had thousands of years to draw conclusions from millions of observations. However, this hadn’t done them a whole lot of good, and science hadn’t really advanced at all. Descartes thought that what was missing was *mathematics*, which allowed for the precise expression of laws of nature.
2. Descartes invented the Cartesian coordinate system, which allowed him to use mathematical equations to describe what was happening in the world. He used this invention to formulate the first-ever **laws of nature**, which described how objects moved through space.
3. Descartes recognized that observation all by itself will never allow you to figure out what the laws of nature are, since there will always be LOTS of laws that could fit with everything you have observed. Because of this, Descartes claimed that we knew a priori that the simplest, most natural formulas represented the true laws (he thought that God directly provided this knowledge).
4. Some examples of things Descartes thought we knew a priori: (1)Since I am thinking, I must exist; (2) All things being equal, simpler theories are more likely to be true than complex theories; (3) Every cause must be of greater power/magnitude than its effect.

## Hume, Empiricism, and the Problems With Predicting

**Empiricism** is the view that the most fundamental propositions of science cannot be known a priori. David Hume (1711-1776) was a Scottish philosopher and historian whose skeptical arguments were an important influence on many parts of science, including the development of modern statistics and Einstein’s theory of relativity. Some of Hume’s major arguments were as follows:

1. By the time Hume was writing, the scientific revolution was in full swing, and science had made significant progress. However, there had also been many promising scientific theories that had turned out to be wrong, including the one proposed by Descartes. Because of this, Hume was skeptical that the simplest, most natural equations always represented the real laws of nature.
2. Hume argued that there is no way we can know what a priori what will happen in the future, since we clearly *imagine* many different futures. Hume’s example: We can’t know a priori that the sun will come up tomorrow, because we can clearly imaginewhat it would be like for the sun NOT to come up.
3. While Hume agreed with Descartes that laws of nature were vital to the success of science, he argued these laws were simply concise *summaries* of the experiences we had had so far, and that we had no real way of justifying our belief that these particular laws would continue to hold in the future.
4. Hume thought that Descartes’ a priori “truths” were actually just useful assumptions that made our day-to-day lives easier. He didn’t think that science could take them for granted, though.

## Class Activity: A Priori and A Posteriori Truths

In groups of three or four, determine whether the following statements are knowable a priori. You should do this activity twice: first, pretend you are a rationalist; then, pretend you are empiricist. For some questions, there might not be an obvious right answer. I’ve done the first few for you.

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| **Statement** | **A PRIORI OR A POSTERIORI?** | |
| **Rationalist** | **Empiricist** |
| George Washington was the first president of the United States. | A posteriori | A posteriori |
| Each side of a square is the same length. | A priori | A priori |
| The surface of the sun is much hotter than the surface of the earth. | A posteriori | A posteriori |
| Everything that happens must have a cause. | A priori | A posteriori |
| An object in motion will stay in motion unless it is acted on by an outside force. | A priori | A posteriori |
| The laws of nature that held in the past will continue to hold in the future. |  |  |
| All bachelors are male. |  |  |
| The person reading this sentence exists. |  |  |
| The Green Bay Packers will win the Super Bowl in 2013. |  |  |
| Energy cannot be created or destroyed. |  |  |
| There exists an external world—we are not living in the Matrix. |  |  |
| No object can be both red all over and blue all over at the same time. |  |  |
| It is morally wrong to kill kittens for fun. |  |  |
| Humans and chimpanzees have a common ancestor. |  |  |
| The future will be less orderly (i.e., have more total entropy) than the past. |  |  |