

Week 9–10 Notes

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1 Descartes' Rationalism

In his Second Meditation, Descartes spent some time thinking about a piece of wax. Here's an excerpt:¹

Let us consider the things that people ordinarily think they understand best of all, namely the bodies that we touch and see. I don't mean bodies in general—for our general thoughts are apt to be confused—but one particular body: this piece of wax, for example. It has just been taken from the honeycomb; it still tastes of honey and has the scent of the flowers from which the honey was gathered; its colour, shape and size are plain to see; it is hard, cold and can be handled easily; if you rap it with your knuckle it makes a sound. In short, it has everything that seems to be needed for a body to be known perfectly clearly. But as I speak these words I hold the wax near to the fire, and look! The taste and smell vanish, the colour changes, the shape is lost, the size increases; the wax becomes liquid and hot; you can hardly touch it, and it no longer makes a sound when you strike it. But is it still the same wax? Of course it is; no-one denies this. So what was it about the wax that I understood so clearly? Evidently it was not any of the features that the senses told me of; for all of them—brought to me through taste, smell, sight, touch or hearing—have now altered, yet it is still the same wax.

Perhaps what I now think about the wax indicates what its nature was all along. If that is right, then the wax was not the sweetness of the

¹This is from pp.6–7 of Jonathan Bennett's translation of Descartes' meditations, which is available at <<http://www.earlymoderntexts.com/assets/pdfs/descartes1641.pdf>>.

honey, the scent of the flowers, the whiteness, the shape, or the sound, but was rather a *body* that recently presented itself to me in those ways but now appears differently. But what exactly is this thing that I am now imagining? Well, if we take away whatever doesn't belong to the wax (-that is, everything that the wax could be without-), what is left is merely something extended, flexible and changeable. What do 'flexible' and 'changeable' mean here? I can imaginatively picture this piece of wax changing from round to square, from square to triangular, and so on. But that isn't what changeability is. In knowing that the wax is changeable I understand that it can go through endlessly many changes of that kind, far more than I can depict in my imagination; so it isn't my imagination that gives me my grasp of the wax as flexible and changeable. Also, what does 'extended' mean? Is the wax's extension also unknown? It increases if the wax melts, and increases again if it boils; the wax can be extended in many more ways (-that is, with many more shapes-) than I will ever bring before my imagination. I am forced to conclude that the nature of this piece of wax isn't revealed by my imagination, but is perceived by the mind alone. (I am speaking of •this particular piece of wax; the point is even clearer with regard to •wax in general.) This wax that is perceived by the mind alone is, of course, the same wax that I see, touch, and picture in my imagination—in short the same wax I thought it to be from the start. But although my perception of it seemed to be a case of vision and touch and imagination, it isn't so and it never was. Rather, it is purely a scrutiny by the mind alone—formerly an imperfect and confused one, but now vivid and clear because I am now concentrating carefully on what the wax consists in.

What is Descartes' point in this passage? The key question is this: How does Descartes know about the nature of the wax—and, in particular, that it is the same piece of wax before and after it melts? He considers two possibilities. The one he ends up accepting—on which more in a moment—is that the wax “is perceived by the mind alone”. This stands in contrast to the alternative option that the nature of the wax is perceived via the “imagination”. To see why Descartes doesn't take this option, we need to know what he means by the imagination.

Descartes actually explained his theory of the imagination a bit earlier in Meditation Two (p.2):

Suppose then that I am dreaming—it isn't true that I, with my eyes open, am moving my head and stretching out my hands. Suppose, indeed that I don't even have hands or any body at all. Still, it has to be admitted that the visions that come in sleep are like paintings: they must have been made as copies of real things; so at least these general kinds of things— eyes, head, hands and the body as a whole—must be real and not imaginary. For even when painters try to depict sirens and satyrs with the most extraordinary bodies, they simply jumble up the limbs of different kinds of real animals, rather than inventing natures that are entirely new. If they do succeed in thinking up something completely fictitious and unreal—not remotely like anything ever seen before—at least the colours used in the picture must be real. Similarly, although these general kinds of things— eyes, head, hands and so on— could be imaginary, there is no denying that certain even simpler and more universal kinds of things are real. These are the elements out of which we make all our mental images of things—the true and also the false ones.

According to Descartes, to imagine is to rearrange the raw inputs of the senses. The imagination, then, is where we process and manipulate sensory information. And so, in opposing “the mind alone” and “the imagination”, Descartes is pitting the senses against the intellect, and arguing that it is our intellects that give us true knowledge, not our senses. His argument is pretty simple: although our senses can tell us various things about how the wax appears at particular moments, nothing in our sensory experience can tell us that it is the same wax from one moment to the next. All our senses tell us is that there is some hard wax followed by some melted wax; they don't tell us that it is the same wax. So how could we know that? According to Descartes, knowing anything of that kind requires relying on the mind alone, since it is not the sort of information that we can get from the senses.

Likewise, Descartes points out that nothing in our sensory experience tells us that other people have minds of their own. We must infer this using our “faculty of judgment” (p.7):

If I look out of the window and see men crossing the square, as I have just done, I say that I see the men themselves, just as I say that I see the wax; yet do I see any more than hats and coats that could conceal robots? I *judge* that they are men. Something that I thought I saw with my eyes,

therefore, was really grasped solely by my mind's faculty of judgment [= 'ability or capacity to make judgments'].

The point here, I take it, is not that we don't get *any* of our knowledge by using our senses. Rather, Descartes' point is that the information that comes in through our senses would be worthless if we didn't already have lots of antecedent knowledge which we then use to organize and process sensory inputs. Without this antecedent knowledge, which comes from the mind alone, all we could get from our senses would be disorganized noise that we wouldn't know what to do with.

Descartes' point, then, is that we need some antecedent, sense-independent knowledge before we can use the senses to get further knowledge. This antecedent knowledge is therefore more fundamental than our sensory knowledge. This makes Descartes a rationalist by the definition I gave last week:

According to foundationalists, our knowledge has a hierarchical structure. The justification for everything we know can ultimately be traced to our most fundamental pieces of knowledge, which cannot be justified any further. There is a further question about what this fundamental knowledge consists in, of course. A foundationalist is an *empiricist* to the extent that they take our knowledge to rest on a foundation that arises from our sense experience. A foundationalist is a *rationalist* to the extent that they think that our knowledge rests on a foundation that is somehow independent of what we get from the senses. There is a spectrum of foundationalist positions in between, depending on what mixture of sensory and non-sensory knowledge is taken to make up our most basic, foundational knowledge. As we'll see, Descartes is a foundationalist who occupies a position closer to the rationalist end of the spectrum. He thinks that our most basic knowledge is not sensory knowledge.

2 Plato's Rationalism

About 2000 years before Descartes, Plato defended an extreme form of rationalism. He did this in the form of dialogues in which he used Socrates, his former philosophical mentor, as a mouthpiece. (It is not totally clear what Socrates himself thought, though the various sources we have suggest that he had a much less elaborate system of thought than Plato came to have.) Plato's dialogues usually take the form of

Socrates engaging in conversation with a fellow Athenian in a public place. He runs argumentative circles around them, and sometimes proceeds to tell them what he (i.e., Plato) really thinks about the philosophical matter in question.

Socrates' central thesis in his dialogue with Meno is that much or all of our knowledge—he focuses on mathematical knowledge—is innate, and is therefore not justified by sensory evidence. Socrates demonstrates this to Meno by talking with a slave boy who has never been taught mathematics, and leading him through the process of reasoning his way to a geometrical theorem. According to Socrates, he has not taught the slave boy the answer, but has merely prompted him to figure it out for himself. But how can we explain the fact that someone who is untrained in mathematics can discover mathematical truths with little prompting? Socrates' answer is that the slave boy, like everyone else, knew the mathematical truth all along, but has just temporarily forgotten it. What Socrates did was to jog his memory, prompting him to “recollect” his mathematical knowledge. Since the boy seemingly didn't get his knowledge of mathematics from his senses, this is Socrates' best explanation of where he did get it.

So, Plato has Socrates defend the idea that our mathematical knowledge is innate, though it may require some experiential triggering event to become active and available to us. This is a rationalist idea, since it would follow that all of this knowledge is not justified by means of our senses. Mathematical knowledge is a traditional example of knowledge that seems to meet these criteria. There are several reasons that people have thought so.

First, each of us seems to be able to discover new mathematical truths without using our senses. For example: what is $(2148 + 69048) \times 789$? You have almost certainly never thought about the answer to this question before, and yet you can probably discover the answer in a minute or two, just by thinking through the problem, and without looking the answer up in a book or on the internet. As Descartes would say, you can use “your mind alone” to discover it.

You might be tempted to object that, at least sometimes, we *do* learn mathematical truths by using our senses. In the *Meno*, for example, Socrates draws a diagram to help the slave boy to figure out the geometric puzzle. Doesn't the slave boy learn the new geometric truth by looking at the diagram?

The answer is “no”, and the reason why this is the case brings us to a second reason why many have adopted rationalism about mathematics. Mathematical truths—truths of geometry, or arithmetic, or set theory, etc.—are not truths about particular physical objects, such as diagrams. Rather, they are truths about abstract, mathe-

mathematical objects, which physical objects can only loosely resemble. For example, the slave boy comes to know the following geometric principle: for any square A whose area is x , a square with area $x/2$ will have sides of exactly the same length as A 's diagonal. In coming to know this, the slave boy is not coming to know anything about the particular square that Socrates has drawn in the dirt. Indeed, Socrates is not capable of drawing a perfect square—his drawing presumably has wobbly lines and not-quite 90° angles—and so this geometric principle is not even true of his drawing. The same goes for any physical representation of a square. None is as perfect as the objects we study in geometry class. So, in coming to know geometric principles, the things we are learning about cannot be physical objects at all, but must be abstract things, of which physical objects are only imperfect representations. And, the rationalist will tell us, our senses can only tell us about physical things in our physical environment; they can't tell us about abstract things. And so, although Socrates' diagram may help to prompt the slave boy to recognize a truth about abstract geometric figures, it would be wrong to say that the slave boy learns this truth by observing the very thing that he is learning about. Rather, the diagram seemingly just helps him to better understand something that he could never see.

So, I've just given two reasons to be a rationalist about our mathematical knowledge—that is, to think that this knowledge does not depend for its justification on anything we learn through the senses:

- We seem to be able to recognize new mathematical truths without learning anything new via the senses.
- Mathematical knowledge is knowledge of abstract, mathematical objects, rather than physical objects, and our senses can only tell us about physical objects.

Many philosophers accept some version of these arguments. And many philosophers and psychologists have given similar arguments about our knowledge of other domains, including some of our knowledge of language, our knowledge of how to interpret human behavior, and so on. Consider an example, which is described by the eminent psychologist, Susan Carey, in her book, *The Origin of Concepts* (Oxford University Press, 2009, pp.39–40). In the following passage, she describes a series of experiments that seem to show that we are born with knowledge of how to integrate information that we get from different sensory modalities (e.g., touch and sight):

Andrew Meltzoff and his colleagues allowed neonates to suck on a strangely shaped pacifier—either a smooth cube or a sphere with bumps all over

it. These babies were only a few days old and had never had anything in their mouths other than nipples and their own hands. The babies were not allowed to see the pacifier. At the same time (or later in some experiments), the infants were shown two pictures—one of a cube and the other of a sphere with bumps. The babies preferentially attended to the picture that matched the pacifier on which they sucked. Thus, the infants innately recognized the correspondence between the visually and tactually specified shapes/textures A second example also comes from Meltzoff's laboratory. He and Keith Moore showed that neonates would imitate the facial gestures of an experimenter (mouth opening, tongue protrusion). ...[This] is enough to show innate representations of the correspondence between what another's face looks like and the actions and feel of their own face....

In other words: these newborn babies' behavior shows that they already know how to recognize something visually based on what they have felt with their tongue, and they already know how to use their sense of their own facial expression to match something they have seen visually. Since the babies haven't had time to learn much of anything with their senses yet, it seems to follow that we don't use our senses to get these kinds of knowledge.

One final question you might have is about Socrates' explanation of *how* we get our innate knowledge. He suggests that we "recollect" it from before we were born (*Meno*, p.114):

Given, then, that the soul is immortal and has been incarnated many times, and has therefore seen things here on earth and things in the underworld too—everything, in fact—there's nothing that it hasn't learnt. Hence it isn't at all surprising that it should be possible for the soul to recall what, after all, it also knew before about excellence and about everything else. For since all nature is akin* and the soul has learnt everything, there's nothing to stop a man recovering everything else by himself, once he has remembered—or 'learnt', in common parlance—just one thing; all he needs is the fortitude not to give up the search. The point is that the search, the process of learning, is in fact nothing but recollection.

Modern humans tend not to believe in the underworld, reincarnation, or immortal souls that can remember things from past lives. (And, if you think about it, Socrates'

argument doesn't make that much sense: if I can recollect mathematical knowledge from a past life, why can't I recollect what my name was back then, where I lived, and so on? There seems to be no good way of answering this question.) So, many people balk at this part of Socrates' explanation of how we know about mathematics.

At this point, it's good to remember that Plato was writing more than 2360 years ago. We now have some better ideas about how humans could be born knowing certain things, even if we don't have immortal souls that can recollect things from the underworld. Namely: it could be that we have evolved, by a process of Darwinian natural selection, to be the sorts of creatures whose brains have certain knowledge pre-programmed into them. On this view, when a philosopher or a psychologist discovers that we have a certain kind of knowledge innately, what they have discovered is that this knowledge is written into our genes—our biological inheritance—and that possession of this knowledge is part of the normal process of human development, just like our abilities to cry, to suck, and (later) to walk.

3 Hume's Empiricism

So much for rationalism. What about empiricism?

The 18th-Century Scottish philosopher David Hume is probably the most influential empiricist who has ever lived. According to Hume, the vast majority of what we know we get through the senses, and the vast majority of our beliefs that cannot be justified via the senses should not be thought of as knowledge, but as mere opinion, the product of unjustified habits of mind.

Of course, Hume recognizes that many of our beliefs, if they were justified at all, would have to be justified by something other than sensory evidence. On this, Hume agrees with rationalists like Plato and Descartes. But Hume disagrees about what conclusion we should draw from this fact. Plato and Descartes conclude that many of our beliefs that aren't justified by sensory evidence are justified in some other way, and so still count as knowledge. But Hume is an empiricist: he argues that the majority of our beliefs that aren't justified by sense evidence therefore aren't justified at all.

Hume recognizes that we have a tendency to believe many things that are not directly supported by sensory evidence. For example, Hume points out that although we often witness one event preceding another and conclude that the latter was caused by the former—i.e., that the former *made* the latter happen—our senses do not grant us access to facts about causation itself. One of his examples is billiard

balls (which are similar to pool balls). When we see one ball strike another, and then the second ball moving away, we conclude that the first ball caused the second ball to move. But all we can *see* is one event (the movement of the first ball) followed by another event (the movement of the second ball). We can't *see* the connection between these two events. Rather, we *infer* that there is some connection. But why do we infer it, and what justifies the inference?

This line of thought is quite similar to Descartes' thought about the wax: although our senses reveal hard wax, followed by melted wax, they can't tell us about the connection between these two things. We must *infer* this connection. In other words: our belief that it is the same wax that continues to exist in its solid and liquid forms is not justified by sensory evidence alone. So, what justifies our inference? The answer, according to Descartes, is that the mind alone allows us to infer the identity of the wax over time.

But this answer doesn't satisfy Hume. He agrees that nothing in our sensory experience could justify the belief that one billiard ball causes the other to move, as well as our belief that one and the same piece of wax changes states. But he does not think that our justification for these beliefs therefore comes from the mind alone. Rather, he thinks that these beliefs may not be justified at all. They could turn out to be the result of mere habits of mind—or, as Hume puts it, “customs”—which we ultimately have no good reason to rely on.

Here is a key passage in which Hume makes this point (from pp.12–13 of the assigned reading):

I venture to assert, as true without exception, that knowledge about causes is never acquired through a priori reasoning, and always comes from our experience of finding that particular objects are constantly associated with one other. [When Hume is discussing cause and effect, his word 'object' often covers events as well as things.] Present an object to a man whose skill and intelligence are as great as you like; if the object is of a kind that is entirely new to him, no amount of studying of its perceptible qualities will enable him to discover any of its causes or effects. Adam, even if his reasoning abilities were perfect from the start, couldn't have inferred from the fluidity and transparency of water that it could drown him, or from the light and warmth of fire that it could burn him. The qualities of an object that appear to the senses never reveal the causes that produced the object or the effects that it will have;

nor can our reason, unaided by experience, ever draw any conclusion about real existence and matters of fact.

The proposition that *causes and effects are discoverable not by reason but by experience* will be freely granted (1) with regard to objects that we remember having once been altogether unknown to us; for in those cases we remember the time when we were quite unable to tell what would arise from those objects. Present two smooth pieces of marble to a man who has no knowledge of physics—he will not be able to work out that they will stick together in such a way that it takes great force to separate them by pulling them directly away from one another, while it will be easy to slide them apart. (2) Events that aren't much like the common course of nature are also readily agreed to be known only by experience; and nobody thinks that the explosion of gunpowder, or the attraction of a magnet, could ever be discovered by arguments *a priori*—i.e. by simply thinking about gunpowder and magnets, without bringing in anything known from experience. (3) Similarly, when an effect is thought to depend on an intricate machinery or secret structure of parts, we don't hesitate to attribute all our knowledge of it to experience. No-one would assert that he can give the ultimate reason why milk or bread is nourishing for a man but not for a lion or a tiger.

But this same proposition—that causes and effects cannot be discovered by reason—may seem less obvious when it is applied to events of kinds (1) that we have been familiar with all our lives, (2) that are very like the whole course of nature, and (3) that are supposed to depend on the simple perceptible qualities of objects and not on any secret structure of parts. We are apt to imagine that we could discover these effects purely through reason, without experience. We fancy that if we had been suddenly brought into this world, we could have known straight off that when one billiard ball strikes another it will make it move—knowing this for certain, without having to try it out on billiard balls. Custom has such a great influence! At its strongest it not only hides our natural ignorance but even conceals *itself*: just because custom is so strongly at work, we aren't aware of its being at work at all.

This chain of thought has struck many philosophers as eminently reasonable. Given that our “faculty of judgment” can't discover a thing's causal powers without systematically investigating those powers by means of sensory experience, it can't be that

we have innate knowledge of such things. And so it must be the experience of one type of event constantly following another—what Hume calls “constant conjunction”—that leads us to infer that there is a causal connection between events of these two kinds.

Does this show that we *can* have knowledge about how events cause other events, but that we just need to have a *lot* of experience in order to do so? Hume does not think so. Ultimately, he argues that we are unjustified in all of our beliefs about cause-and-effect, like our beliefs about the future, and, indeed, all of our beliefs about things that we can’t directly experience. All of these beliefs, Hume argues, depend on habits of mind (or “customs”) which aren’t justified or justifiable.

This is a form of philosophical skepticism that is very different from the kind that Descartes gave us. Descartes tried to show—if only temporarily—that we can’t trust any of our beliefs that are based on sensory evidence. Hume accepts that we can have knowledge based on direct sensory evidence, but argues that our other beliefs about matters of fact (i.e., about the outside world) are unjustified. And for Hume, this is not merely a temporary kind of skepticism; it is his final position on the matter.

Your task for this week is to summarize Hume’s argument for this skeptical conclusion—a very famous argument that philosophers usually call “the problem of induction”. To do this, you will have to carefully read the assigned excerpt of Hume’s *Enquiry into Human Understanding*, paying special attention to Section 4, “Sceptical doubts about the operations of the understanding” and Section 5, “Sceptical Solution to these Doubts”. This is a complex argument, and it will be difficult for you to understand and summarize it. You may have to read the text more than once. (You may also want to read Jeff Speaks’ commentary on the text, which I think is helpful.) But your struggle with the text will be worth it: Hume’s argument is one of the most powerful in the history of Western thought, and the skepticism to which it gives rise is one of the most difficult to defeat that we know of.