

Minds and Brains

Learning is ForEver: Winter 2020 Series / Brendan Shea, PhD (Brendan.Shea@rctc.edu)

In this class, we'll be answering the following questions:

1. What exactly is the “philosophy of mind,” and what sorts of issues do philosophers of mind study?
2. What is “dualism,” and what are the major problems with this view?
3. What is “physicalism,” and what are the major problems with this view?
4. What sorts of “intermediate positions” are available between dualism and physicalism?

What is “Philosophy of Mind”?

*“The subject matter is perhaps best characterized as “the subjective quality of experience.” When we perceive, think, and act, there is a whirl of causation and information processing, but this processing does not usually go on in the dark. There is also an internal aspect; there is something it feels like to be a cognitive agent. This internal aspect is conscious experience. Conscious experiences range from vivid color sensations to experiences of the faintest background aromas; from hard-edged pains to the elusive experience of thoughts on the tip of one’s tongue; from mundane sounds and smells to the encompassing grandeur of musical experience; from the triviality of a nagging itch to the weight of a deep existential angst; from the specificity of the taste of peppermint to the generality of one’s experience of selfhood. All these have a distinct experienced quality. All are prominent parts of the inner life of the mind. We can say that a being is conscious if there is something it is like to be that being...” (David Chalmers, *The Conscious Mind: In Search of a Fundamental Theory*)*

Defining **philosophy** is notoriously difficult. It is literally means “the love of wisdom,” but this doesn’t really tell us much about what distinguishes philosophy from any other area of study. In fact, until about 250 years ago, nearly all of what we’d now call “hard science” was generally considered to be “natural philosophy”, while social sciences like economics, psychology, and political science went by the name of “moral philosophy.” However, as philosophers working in these areas made progress toward establishing (more-or-less) secure foundations for further study (in the form of theories, equations, methods for measurement, and so on), they separated from philosophy to form the sorts of distinct scientific disciplines we encounter in high school and college-level education. In these disciplines (unlike philosophy!), new scholars are*not* expected to “start from scratch”—instead, they generally assume the basic correctness of the underlying methods in their area, and then extend the scope of these methods to new phenomenon. Methods change, or course, but these changes are largely gradual, as opposed to radical shifts.

So, where does this leave contemporary philosophy? In general, one might think of philosophers as concerned with the study of problems that we CAN’T solve using the methods currently available to us. In the context of **philosophy of mind**, these problems revolve around our “mental life”: our thoughts, experiences, sensations, feelings, even our very “selves.” So, for example, philosophers of mind study questions such as the following:

1. What is the relationship between the **brain** (the thing in our head, made largely of neurons) and the **mind** (the thing where “pain” and “love” and “the redness of the rose I’m looking at”)? Are these two separate things? Or two ways of describing the same thing?
2. Related to this, what is the relationship between our **conscious experience** of the world and the events that go on in our brain during this experience? (This is Chalmers’s question in the quote above).
3. What makes “me” the person that I am? Am I the same person I was 10 years ago? 10 minutes ago? Could I be the “same person” if I had a different body? How does this relate to my brain? My mind?
4. In what sense is **free will** compatible with contemporary psychology and neuroscience? In particular, how can I be “free” if (a) I do whatever my brain tells me to and (b) what my brain does is determined entirely by physical processes, following purely physical laws?
5. What can the scientific study of the brain tell us about traditional philosophical problems, such as those concerning knowledge (**epistemology**), reasoning (**logic**), or the basic makeup of the world **metaphysics**)?

In this short class, we’ll be focusing mainly on question 1. However, as we do this, I’d encourage you to think about the ramifications for what proposed answers to this question mean for the other questions.

Background: Before the Scientific Revolution

[Anaxagoras] tried to give the reasons for each of my actions by saying, first, that the reason why I’m now sitting here is that my body consists of bones and sinews, and the bones are hard and separated from each other by joints, whereas the sinews,

which can be tightened and relaxed, surround the bones, together with the flesh and the skin that holds them together; so that when the bones are turned in their sockets, the sinews by stretching and tensing enable me somehow to bend my limbs at this moment, and that's the reason why I'm sitting here bent in this way; or again, by mentioning other reasons of the same kind for my talking with you, imputing it to vocal sounds, air currents, auditory sensations, and countless other such things, yet neglecting to mention the true reasons: that Athenians judged it better to condemn me, and therefore I in my turn have judged it better to sit here, and thought it more just to stay behind and submit to such penalty as they may ordain. Because, I dare swear, these sinews and bones would long since have been off in Megara or Boeotia, impelled by their judgement of what was best, had I not thought it more just and honourable not to escape and run away, but to submit to whatever penalty the city might impose. (Plato, Phaedo, 98c)

Debates about the relation between the body (of which the brain is part) and the mind/soul are not new, and precursors to more modern forms of dualism and physicalism (our topics for today) can be found in both Plato and Aristotle. In the quote above, for instance, Plato (through the character of Socrates) is discussing the views of an early Greek philosopher **Anaxagoras** who had apparently claimed that a force called “Mind” was the most fundamental force in the universe, and that the ebb and flow of this force could be used to explain everything from natural events to human action. However, much to the disappointment of Socrates, it turns out the Anaxagoras’s sounds something like a (very early) version of Newtonian mechanics: Mind is just a mechanical force that operates according to some fixed law or other (the details of which Anaxagoras never bothered to provide). So, weirdly enough, Anaxagoras’s theory of Mind looks something like what we would now call **physicalism**.

Socrates’s response to this articulates an early and highly influential argument for dualism: physicalism in this form simply can’t account for why and how humans do the things they do. In particular, Anaxagoras’s primitive theory can’t account for the way that human’s use of *reason* seemingly allows us to do things that overrule our body’s “automatic” reactions. So, for example, Socrates suggests that if we wanted to know *why* Socrates was sitting inside a jail cell, we would have to think about human minds, both in the form of Socrates’ jurors (who decided to sentence him to death) and Socrates himself (who decided to stay, even though it was in his body’s “best interest” to run away). Socrates is perfectly happy to grant that *parts* of our mental life (such as our bodily desires) might be governed by physical laws such as those proposed by Anaxagoras. Socrates goes on to argue that the “higher” part of our soul (which is separate from these desires) is **immortal**. This link—between dualism and potential immortality—has long been part of dualism’s appeal.

Plato’s student, **Aristotle**, quickly noticed a large problem with this account—if the reasoning soul and the body were *entirely* separate (made of different types of stuff, having entirely different type of properties, etc.) then Plato would need to be able to explain how they were able to interact. So, for example, what made my body mine? That is, how did my soul claim this particular body as its own? On Aristotle’s **hylomorphic** account of substance, by contrast, things (including humans) were said to be a certain *combination* of **matter** (the material stuff they were “made of”) and **form** (the way this matter was arranged). So, for example, a table’s matter might be wood, while its form consisted of a “top” arranged on top of “legs.” This applied to living beings, as well. So, for example, a living squirrel involves a certain organization of cells (its matter) into a squirrel-like arrangement (its form). If the squirrel is hit by a car, this disrupts the form, which ends the squirrel. A human’s soul then, is simply the arrangement of its matter.

By the time of the scientific revolution, some 2000 years later, the Aristotelian (or **Scholastic**) account had firmly displaced its Platonic rival, especially in the context of Jewish, Christian, and Islamic thinking. However, the account raised at least two major worries, from very different perspectives. First, if the Aristotelian account was correct, then a human being seemingly could NOT survive the death of their body. While there were various work arounds to this (perhaps resurrection would recreate immortal, perfect physical bodies, or perhaps human bodies contain some incorruptible, undetectable super-substance that are their “souls”), it had been active area of debate among theologians for hundreds of years. Second, Aristotle’s hylomorphism caused problems for the emerging mechanistic science. In particular, on Aristotle’s picture of the world, giving an “explanation” of how something worked would always require considering the complex interplay between matter and form, which would be different for each type of thing. This cut against the aspiration to formulate universal, mechanistic, mathematical laws of nature which applied to *everything*.

Dualism: Neither Here Nor There

“What then is it that I am? A thinking thing. What is a thinking thing? It is a thing that doubts, understands, affirms, denies, wills, abstains from willing, that also can be aware of images and sensations.” (Descartes, Meditations on First Philosophy)

Rene Descartes is often held up as the first “modern philosopher.” While this may be unfair to the (many!) philosophers and scientists on whose work he relies on, his ideas and arguments are nevertheless a good place to start in trying to understand

some of the *differences* in the modern and ancient views of the mind and body. Descartes has at least two motivations: (1) as a devout Christian, he wants to provide a more solid foundation for the existence of the soul than Scholasticism allowed and (2) as an early physicist, he wanted to make plausible the existence of mathematical **laws of nature** that governed all material objects, again in contrast to Scholasticism. These two goals lead to Descartes to propose a version of **substance dualism** (or **Cartesian dualism**) according to which the mind and brain are fundamentally different sorts of things. Unlike Plato's dualism described earlier, Descartes is NOT motivated mainly about worries of explaining observed human behavior (in fact, Descartes seems fairly confident that physics will eventually explain just about anything). Instead, Descartes' arguments for dualism will rely on the ways in which our *experience of* and *knowledge of* mind are fundamentally different than those of body (here, "body" just means all the stuff in the physical world around us, including but not limited our own bodies). So, for Descartes, laws of nature applied to everything physical, with only our minds being excepted.

While Descartes gives a number of arguments for dualism, a good place to start is with his famous *cogito* argument "**I think, therefore I am**". Descartes gives this argument as an answer to a skeptical dilemma he's posed to himself: Is there any belief the truth of which I can absolutely certain of? In particular, this belief needs to be able to survive challenges such as: "Am I sure I'm not dreaming?" or "Can I be sure I'm not being fooled by an evil demon (or that an evil scientist is manipulating my brain, etc.)?" Descartes concludes that there is exactly ONE thing I can be sure of: my own existence. After all, "I" am the one considering all of these questions. He then goes on to argue that "I" must essentially be a thinking thing, as opposed to a material thing. His argument might be (roughly) as follows:

1. Two things are the same if and only if they have all the same properties. (**Leibniz's law**)
2. My body has the following property: "I can imagine that I exist even if it doesn't"
 - a. So, for example, I can imagine that I am an immaterial soul living in heaven, or a brain in a vat, or that I could wake up tomorrow with an entirely different body. I can clearly imagine how "I" would feel in such a case.
3. My mind has the following property: "I can NOT imagine that I exist without my mind."
 - a. I can't really imagine *me* existing without any of *my* thoughts and feelings.
4. So, the mind and the body are not the same, since they have different properties.
5. So, I am my mind and I am NOT my body.

This sort of argument has faced a wide number of objections over the past 400 years. In particular, many critics have objected to the link between what I can "imagine" about minds and bodies and what properties minds and bodies "really" have. Whatever the details of this argument, though, there's a deeper problem for Cartesian dualism.

Objection: The "Ghost in the Machine." The philosopher Gilbert Ryle famously described Descartes' view of the mind as a "ghost in the machine." The idea is basically this: according to Descartes (as well as most of the scientists that came after him), the behavior of the body/brain (the "machine") is *entirely determined by the laws of physics*. If this weren't the case, this would be a huge problem for physics, as we would have physical events without physical causes. However, once we grant this, it's unclear what role our minds are playing, since they don't do anything for us. Moreover, the mystery goes the other way as well—how could physical events in the world (e.g., my stubbing my toe) possibly *cause* an event in my non-physical mind (the experience of "pain")? Descartes suggests that perhaps ethereal spirits of some type flowed back and forth through the pineal gland (it was near the center of the brain, and no one knew what it did), but no one has really taken this suggestion seriously. Moreover, Descartes' own views on the subject are notoriously odd—in particular, he believed that animals did NOT feel pain, since they didn't have souls/minds. He is thus left with a strange view, where "pain" has *literally nothing to do with the physical world of cuts, burns, bee stings, etc.*

Contemporary dualists have proposed a variety of fixes to Cartesian dualism—so, for instance, perhaps God ensures that mental events match up with physical events, or perhaps the human mind somehow influences the behavior of quarks. However, this problem—the problem of the *interaction* between mind and brain—has remained a difficult one for them to solve. It is perhaps because of this that dualism's main rival—physicalism—has become increasingly popular among contemporary scientists and philosophers. Contemporary dualists (such as **David Chalmers**) have tended to defend **property dualism**, according to which there is only one kind of "substance" in the world (against Descartes), but that this stuff does have different properties (some of which are physical properties and some of which are mental properties).

Physicalism: Different Words for the Same Thing

"Yes, we have a soul, but in what sense? In the sense that our brains, unlike the brains even of dogs and cats and chimpanzees and dolphins, our brains have functional structures that give our brains powers that no other brains have - powers of look-ahead, primarily...It's this expandable capacity to represent reasons that we have that gives us a soul. But what's it made of? It's made of neurons. It's made of lots of tiny robots. And we can actually explain the structure and

operation of that kind of soul, whereas an eternal, immortal, immaterial soul is just a metaphysical rug under which you sweep your embarrassment for not having any explanation.” (Daniel Dennett, “The Science Studio”)

In contrast to dualism, **physicalism** (or **materialism**) claims that there is NOT any special mental/spiritual stuff. Instead, everything is, at bottom, physical stuff. This includes minds or souls, if these things do in fact exist. Physicalists can be generally classified as **reductionists** (who want to reduce or explain mental phenomena in terms of physical phenomena), and **eliminativists** (who think that there really *isn't* any mental stuff, despite the way we sometimes talk). Physicalists have a variety of arguments for their view. The most important include the **causal closure principle** (if science is to make any sense at all, physical events need to have only physical causes), and **Occam's razor** (as a general rule, we should only posit as much “stuff” as we absolutely need to).

Here are a few of the most popular varieties of physicalism, along with a description of their problems:

- **Mind-Brain Identity Theory** holds that each and every *type* of mental event (such “being in pain”) is identical with a certain *type* of physical event (such “C-Fibers firing”). The problem? This can't account for the **multiple realizability** of mental events. So, for example, while it might be true *for humans* that being in pain means C-Fibers are firing, this might not be the case for other animals (or aliens, if we find them). Their experience of pain might be manifested differently in their brains. This problem becomes even more difficult when we consider more fine-grained mental events (e.g., thinking about a rainbow, or doing a math problem). We have pretty good evidence here that different individual's brains “process” these problems differently.
- **Behaviorism** holds that mental events just ARE dispositions to behave in a certain way. For example, “being in pain” can be *defined* as the disposition to yell “ouch” or “cry” or say out loud that “I am in pain.” The problem? It sure seems like I can have “hidden” mental events, such as when I am in pain without showing it.
- **Eliminative Materialism** is perhaps the most radical physicalist position, most famously defended by the Canadian philosopher-scientists **Patricia and Paul Churchland**. It holds that, in reality, there aren't any such things as “mental events” (such as *beliefs*, *desires*, or *intensions*). Instead, these terms belong to our naïve, false theory of the mind. This theory, according to eliminative materialists, will (and should!) eventually be replaced by a rapidly advancing neuroscience. So, for example, while we currently talk about the “love we feel” (a mental term) for our children, we'll eventually just talk about the neural activity (and perhaps, the evolutionary history) that motivates parents to care for their offspring. The problem? Many philosophers (including other physicalists) have found it implausible that we'll *abandon* all “mind” talk in this way, or that neuroscience will ever provide an adequate substitute. After, getting rid of love seems like a pretty radical solution!

Functionalism: A Happy Medium?

In response to the well-established problems with dualism and physicalism, many contemporary philosophers have adopted a variety of hybrid views. The most popular family of these views is known as **functionalism**. According to functionalism, we shouldn't try to define minds in terms of what they are “made of,” whether this be “soul stuff” (dualism) or “physical stuff” (physicalism). Instead, we should look at what the mind *does*—that is, we should look at the function that the mind and its properties play in our understanding of our world. So, for example, let's consider a mental event such as “being in pain.” What does this amount to, really?

- Dualism—“being in pain” can be defined as having your mind/soul in a certain “pain” state. It's not clear how this relates to anything that happened (or didn't happen) to your body.
- Physicalism—“being in pain” can be defined as a certain behavior (yelling “ouch”), having specific neurons firing, or something of the sort. If these things don't happen, there is no pain (despite what you might be feeling!).
- Functionalism—“being in pain” is a state that is caused by certain sorts of physical events (such as dropping a hammer on my foot) and which causes certain sorts of other physical events (the yelling, jumping up and down). However, “being in pain” is not identical to these physical events. It's perfectly conceivable that beings very different from humans (such as animals, angels, or even science fiction robots) could experience pain so long as they had a functionally similar sort of internal state (there were things that “hurt” them, to which they responded in some way).

Functionalists often compare the human mind to computer **software** and the human brain to computer **hardware**. So, just as the same software can be installed on very different sorts of underlying hardware, mental events can be multiply realizable, in the sense that my brain's way of processing pain might be very different from the way that yours does. *Problems?* Functionalism clearly allows for the possibility of “artificial intelligence,” at least in theory. (So, there's nothing in the theory that require you think with neurons, as opposed to silicon chips). Many of its proponents see this as a strength. However, its detractors have argued that this means it is clearly “missing something” about what is special about human minds.