Introduction

The first thing that usually comes to mind when one thinks of dualism is René Descartes’ (1596-1650) substance dualism. However, there is another form of dualism, quite popular nowadays, which is called property dualism, a position which is sometimes associated with non-reductive physicalism.

Cartesian dualism posits two substances, or fundamental kinds of thing: material substance and immaterial thinking substance. These are two entirely different kinds of entities, although they interact with each other. According to property dualism, on the other hand, there is one fundamental kind of thing in the world—material substance—but it has two essentially different kinds of property: physical properties and mental properties. So for instance, a property dualist might claim that a material thing like a brain can have both physical properties (like weight and mass) and mental properties (such as having a particular belief or feeling a shooting pain), and that these two kinds of properties are entirely different in kind. Some philosophers subscribe to property dualism for all mental properties while others defend it only for
conscious or “phenomenal” properties such as the feeling of pain or the taste of wine.\[1\] These latter properties give rise to what is known as the hard problem of consciousness: How do we explain the existence of consciousness in a material world?

Though these are both dualist views, they differ in fundamental ways. Property dualism was proposed as a position that has a number of advantages over substance dualism. One advantage is that, because it does not posit an immaterial mental substance, it is believed to be more scientific than Cartesian dualism and less religiously motivated. A second advantage is that it seems to avoid the problem of mental causation because it posits only one kind of substance; there is no communication between two different kinds of thing. And a third advantage is that, by maintaining the existence of distinctly mental properties, it does justice to our intuitions about the reality of the mind and its difference from the physical world. But to understand all this we need to take a step back.

Substances and Properties

The notion of a substance has a long history going back to Ancient Greek metaphysics, most prominently to Aristotle, and it has been understood in various ways since then. For present purposes we can say that a substance can be understood as a unified fundamental kind of entity—e.g. a person, or an animal—that can be the bearer of properties. In fact, the etymology of the Latin word substantia is that which lies below, that which exists underneath something else. So, for instance, a zebra can be a substance, which has properties, like a certain color, or a certain number of stripes. But the zebra is independent of its properties; it will continue to exist even if the properties were to change (and, according to some views, even if they ceased to exist altogether).

According to Cartesian dualism there are two kinds of substance: the material substance, which is extended in space and is divisible, and mental substances whose characteristic is thought. So each person is made up of these two substances—matter and mind—that are entirely different in kind and can exist independently of each other. Talking of the mind in terms of substances gives rise to a number of problems (see Chapter 1). To avoid these problems, property dualism argues that mentality should be understood in terms of properties, rather than substances: instead of saying that there are certain kinds of things that are minds, we say that to have a mind is to have certain properties. Properties are characteristics of things; properties are attributed to, and possessed by, substances. So according to property dualism there are different kinds of properties that pertain to the only kind of substance, the material substance: there are physical properties like having a certain color or shape, and there are mental properties like having certain beliefs, desires and perceptions.

Property dualism is contrasted with substance dualism since it posits only one kind of substance, but it is also contrasted with ontological monist views, such as materialism or idealism, according to which everything that exists (including properties) is of one kind. Usually, property dualism is put forward as an alternative to reductive physicalism (the type identity theory) – the view that all properties in the world can, in principle at least, be reduced to, or identified with, physical properties (Chapter 2).

Hilary Putnam’s (1926-2016) multiple realization argument is a main reason why reductive physicalism is rejected by some philosophers, and it provides an argument for property dualism. Although this argument was originally used as an argument for functionalism, since it challenges the identity of mental states with physical states, it was taken up by non-reductive physicalists and property dualists alike. According to the multiple realization argument then, it is implausible to
identify a certain kind of mental state, like pain, with a certain type of physical state since mental states might be implemented ("realized") in creatures (or even non-biological systems) that have a very different physical make up than our own. For instance, an octopus or an alien may very well feel pain but pain might be realized differently in their brains than it is in ours. So it seems that mental states can be “multiply realizable.” This is incompatible with the idea that pain is strictly identical with one physical property, as the identity theory seems to claim. If this is correct, and there is no possibility of reduction of types of mental states to types of physical states, then mental properties and physical properties are distinct, which means that there are two different kinds of properties in the world and, therefore, property dualism is true.

In addition to the multiple realization argument, probably the most famous argument for property dualism is the knowledge argument put forward by Frank Jackson (1982). This argument involves the imaginary example of Mary, a brilliant neuroscientist who was raised in a black and white room. She knows everything there is to know about the physical facts about vision but she has never seen red (or any color for that matter). One day Mary leaves the black and white room sees a red tomato. Jackson claims that Mary learns something new upon seeing the red tomato—she learns what red looks like. Therefore, there must be more to learn about the world than just physical facts, and there are more properties in the world than just physical properties.

Kinds of Property Dualism

Property dualism can be divided into two kinds. The first kind of property dualism says that there are two kinds of properties, mental and physical, but mental properties are dependent on physical properties. This dependence is usually described in terms of the relation of supervenience. The basic idea of supervenience is that a property, A, supervenes on another property, B, if there cannot be a difference in A without a difference in B (though there can be differences in B with no change in A, which allows for the multiple realizability of mental properties). So, for example, if the aesthetic properties of a work of art supervene on its physical properties, there cannot be a change in its aesthetic properties unless there is a change in its physical properties. Or, if I feel fine now but have a headache five minutes from now, there must be a physical difference in my brain in these two moments. Another way of putting the idea that mental properties depend on physical properties is to say that if you duplicate all the physical properties of the world, you will automatically duplicate the mental properties as well—they would come “for free.”

This kind of view is sometimes called non-reductive physicalism, and is often considered to be a form of property dualism, since it holds that there are two kinds of properties. Jaegwon Kim is a prominent supporter of the irreducibility of phenomenal properties (though he resists the term “property dualism” and prefers to call his position “something near enough” physicalism [2005]). Kim holds that intentional properties, like having a belief or hoping for something to happen, can be functionally reduced to physical properties. However, this is not so for phenomenal properties (like tasting a particular taste or experiencing a certain kind of afterimage), which supervene on physical properties but cannot be reduced, functionally or otherwise, to physical properties.

According to Kim, there is a difference between intentional and phenomenal properties: Phenomenal (qualitative) mental states cannot be defined functionally, as intentional states can (or can in principle), and therefore cannot be reduced either. Briefly, the reason is that although phenomenal states can be associated with causal tasks these descriptions do not define or constitute pain. That is, though, pain can be associated with the state that is caused by tissue damage, that induces the belief that something is wrong with one’s body and that results in pain-avoidance behavior, this is not what
pain is. Pain is what it feels like to be in pain, it is a subjective feeling. In contrast, intentional states like beliefs and intentions are anchored to observable behaviour, and this feature makes them amenable to functional analysis. For instance, if a population of creatures interacts with its environment in a similar fashion to us (if those creatures interact with one another as we do, produce similar utterances and so forth), then we would naturally ascribe to these creatures beliefs, desires, and other intentional states, precisely because intentional properties are functional properties.

The second kind of property dualism, which is dualism in a more demanding sense, claims that there are two kinds of properties, physical and mental, and that mental properties are something over and above physical properties. This in turn can be understood in at least two ways. First, being “over and above” can mean that mental properties have independent causal powers, and are responsible for effects in the physical world. This is known as “downward causation.” In this sense, a property dualist of this kind must believe that, say, the mental property of having the desire to get a drink is what actually causes you to get up and walk to the fridge, in contrast to some material property of your brain being the cause, like the firing of certain groups of neurons. Second, being something “over and above” must imply the denial of supervenience. In other words, for mental properties to be genuinely independent of physical properties, they must be able to vary independently of their physical bases. So a property dualist who denies supervenience would be committed to the possibility that two people can be in different mental states, e.g., one might be in pain and the other not, while having the same brain states.

Emergentism is a property dualist view in this more demanding sense. Emergentism first appeared as a systematic theory in the second half of the nineteenth century and the beginning of the twentieth century in the work of the so-called “British Emergentists,” J.S. Mill (1806 –1873), Samuel Alexander (1859 –1938), C. Lloyd Morgan (1852 –1936) and C.D. Broad (1887 –1971). Since then it has been defended (and opposed) by many philosophers and scientists, some of whom understand it in different ways. Still, we can summarize the position by saying that according to emergentism, when a system reaches a certain level of complexity, entirely new properties emerge that are novel, irreducible to, and something “over and above” the lower level from which they emerged (Vintiadis 2013). For example, when a brain, or a nervous system, becomes complex enough new mental properties, like sensations, thoughts and desires, emerge from it in addition to its physical properties. So according to emergentism everything that exists is made up of matter but matter can have different kinds of properties, mental and physical, that are genuinely distinct in one or both of the senses described above: that is, either in the sense that mental properties have novel causal powers that are not to be found in physical properties underlying them or in the sense that mental properties do not supervene on physical properties.

Some philosophers have argued for the kind of demanding property dualism that denies supervenience by appealing to the conceivability of philosophical zombies—an argument most famously developed by David Chalmers. Philosophical zombies are beings that are behaviorally and physically just like us but that have no “inner” experience. If such beings are not only conceivable but also possible (as Chalmers argues), then it seems that there can be mental differences without physical differences (1996). If this argument is correct, then phenomenal properties cannot be explained in terms of physical properties and they are really distinct from physical properties.

Objections to Property Dualism

A main problem for substance dualism was the question of mental causation. Given the view that the mental and the material substance are two discrete kinds of substances the problem that arises is that of their interaction, a problem
posed by Princess Elizabeth of Bohemia (1618-1680) in her correspondence with Descartes. How can two different kinds of things have an effect on one another? It seems from what we know from science that physical effects have physical causes. If this is indeed the case, how is it that I can think of my grandmother and cry, or desire a glass of wine and go over to the fridge to pour myself one? How do the mental and the physical interact? The common consensus that substance dualism cannot satisfactorily answer this problem ultimately led many philosophers to the rejection of Cartesian dualism.

In the attempt to preserve the mental while also preserving a foothold in the physical, dualism of properties was introduced. However, the double requirement of the distinctness of physical properties from mental properties and of the dependence of mental properties on physical properties turns out to be a source of problems for property dualism as well.

This can be seen in the problem of causal exclusion that is analyzed below. This problem arises for property dualism and has been put forward by a number of philosophers over the years, most notably by Kim himself who, due to this problem, concludes that phenomenal properties that are irreducibly mental are also merely epiphenomenal, that is, they have no causal effects on physical events (2005).

According to mind-body supervenience, every time a mental property M is instantiated it supervenes on a physical property P.

\[
M \quad \uparrow \\
\quad P
\]

Now suppose M appears to cause another mental property M',

\[
M \rightarrow M' \\
\uparrow \\
\quad P
\]

the question arises whether the cause of M' is indeed M or whether it is M's subjacent base P' (since according to supervenience M' is instantiated by a physical property P').

\[
M \rightarrow M' \\
\uparrow \\
\quad P \\
\uparrow \\
\quad P'
\]

At this point we need to introduce two principles held by physicalists: First, the principle of causal closure according to which the physical world is causally closed. This means that every physical effect has a sufficient physical cause that brings it about. Note that this in itself does not exclude non-physical causes since such causes could also be part of the causal history of an effect. What does exclude such non-physical causes is a second principle which denies the overdetermination of events. According to this principle an effect cannot have more than one wholly sufficient cause (it cannot be overdetermined) and so this, along with causal closure, leads to the conclusion that when you trace the causes of an effect, all there are are physical causes.
To return to our example, given the denial of causal overdetermination, either M or P¹ is the cause of M¹—it can’t be both—and so, given the supervenience relation, it seems that M¹ occurs because P¹ occurred. Therefore, it seems that M actually causes M¹ by causing the subjacent P¹ (and also that mental to mental, or same level, causation presupposes mental to physical, or downward, causation).

\[
\begin{align*}
M & \rightarrow M¹ \\
\uparrow & \uparrow \\
P & \quad P \quad \uparrow \\
& \quad P¹
\end{align*}
\]

However, given the principle of causal closure P¹ must have a sufficient physical cause P.

\[
\begin{align*}
M & \quad M¹ \\
\uparrow & \uparrow \\
P & \quad \quad \rightarrow \quad P¹
\end{align*}
\]

But given exclusion again, P¹ cannot have two sufficient causes, M and P, and so P is the real cause of P¹ because if M were the real cause, causal closure would be violated again.

So the problem of causal exclusion is that, given supervenience, causal closure and the denial of overdetermination, it is not clear how mental properties can be causally efficacious; mental properties seem to be epiphenomenal, at best. And while epiphenomenalism is compatible with property dualism (since property dualism states that there are two kinds of properties in the world, and epiphenomenalism states that some mental properties are causally inert by-products of physical properties, thus accepting the existence of two properties), its coherence comes at the expense of our common sense intuitions that our mental states affect our physical states and our behavior. It seems then, that, for its critics, as far as mental causation goes, property dualism does not fare much better than substance dualism.

More generally, the question of the causal efficacy of mental properties gives rise to the same kinds of objections that were raised regarding mental causation in substance dualism. For instance, in both cases mental to physical interaction seems to violate the principle of conservation of energy, a principle that is considered to be fundamental to our physical science. That is, the conservation law would be violated if mental to physical causation were possible, since such an interaction would have to introduce energy to the physical world (assuming, that is, that the physical world is causally closed).

It is not in the scope of this discussion to wade into this matter, but it should be noted that this objection is not accepted by everyone; it has been argued that the principle of conservation of energy does not apply universally, for instance by citing examples from general relativity or quantum gravity. Similarly, both the causal closure of the physical and the denial of causal overdetermination have been questioned. Nonetheless, despite these responses, it is fair to say that the question of mental causation still remains one of the major objections to property dualism.

Another objection, this time to some views that are considered property dualist views, can be posed by asking, “In what way is property dualism really dualism?” In our distinction between two kinds of property dualism above, there is a clear sense in which positions of the second kind, like emergentism or views that deny supervenience, are property dualist positions. Since, for such views, mental properties are “something over and above” physical properties; they are distinct from them, irreducible to them and not wholly determined by them. So here we have cases of two genuinely different kinds of properties, and genuine cases of property dualism.
However, it is not equally clear that non-reductive physicalism can properly be called a kind of property dualism. The problem is that if mental properties are not something over and above physical properties then it is hard to see this as a genuine version of property dualism. We can see this if we look more closely into the meaning of physicalism.

Physicalism is the view that what there fundamentally is is what is described by physics. In this sense, mental properties are non-physical properties, since they are not properties to be found in physics. But if non-reductive physicalism claims that there are non-physical properties that are irreducible to physical properties, why should this be considered a case of physicalism? The answer given by the non-reductive physicalist is that this is because such properties are grounded in the physical realm through the relation of supervenience and that, although mental properties might not be identical to physical properties, they need to be at least in principle explainable in terms of physical properties (Horgan 1993).

Indeed, non-reductive physicalism is sometimes called token identity theory because it claims that tokens (instances) of mental states can be identified with tokens of physical states, even if types of mental states are not identical with types of physical states. (An analogy: all instances of the property of being beautiful are physical—all beautiful objects are physical objects—but the property of being beautiful is not a physical property). But now the problem is that, as Tim Crane has argued, if physicalism requires that non-physical properties are explicable (even in principle) in physical terms it is not obvious why this position is a property dualist one, since for there to be genuine property dualism, the ontology of physics should not be enough to explain mental properties (2001). So, according to this objection, it seems that the mere denial of the identity of mental and physical properties is not enough for real property dualism, and also that real property dualists must either believe in downward causation or deny supervenience or both.

To sum up the above discussion, we can say that property dualism is a position that attempts to preserve the reality of mental properties while also giving them a foothold in the physical world. The need for this is evident, given the intractable difficulties presented by substance dualism on the one hand, and the problems faced by the identity theory on the other. However, despite the fact that property dualism enjoys renewed popularity these days, it is open to important objections that, for its critics, have not been adequately addressed and which render the position problematic.

References


Further Reading

1. Examples of non-conscious mental properties include beliefs that most of the time are not conscious, or our attitudes, drives, and motivations.

2. In functional reduction we identify the functional/causal role that the phenomenon we are interested plays and then reduce that role to a physical (token) state that realizes it. To use an example given by Kim in *Physicalism, Or Something Near Enough*, a gene is defined functionally as the mechanism that encodes and transmits genetic information. That is what a gene does. What “realizes” the role of the gene, however, are DNA molecules; genes are functionally reduced to DNA molecules. So a functional reduction identifies a functional/causal role with a physical state that realizes it (makes it happen, so to speak) and offers an explanation of how the physical state realizes the functional state.