

Physicalism

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Physicalism, as some see it, takes the fun out of life. In their eyes, if physicalism is true, the pleasure of a great bottle of wine, the euphoria of that first kiss, the thrill of a hole in one and so much more are nothing but the workings of the brain. At the same time, physicalism is probably the most widely held general philosophical theory of the nature of the world, and many of those philosophers who think that physicalism takes the fun out of life still defend it tooth and nail. But what exactly is the theory of physicalism? Here I hope to make some headway towards understanding physicalism, the theory that many philosophers both love and hate. In particular, I aim to arrive at an understanding of the thesis of physicalism that captures its essence and at the same time can be used to ground the contemporary debate over whether it is true. Physicalism is a view about the ultimate nature of the world along the lines of Thales's view that all is water or Democritus' view that all is atoms in the void. But rather than pronouncing all is water or all is atoms in a void, physicalism pronounces that all is physical, or as it is usually phrased, 'everything is physical'. Of course, this isn't very informative unless you know what it is to be physical. Indeed, each term – 'everything', 'is', and 'physical' – is open to various interpretations. In what follows, I examine each of these components in turn.

The Domain of Physicalism

Ontology is the very general study of reality. And physicalism is typically thought of as an ontological theory: it tells us that everything is physical. But 'everything' is not always taken to mean literally everything. But if it doesn't, just how much of reality is supposed to be captured by the physicalist's net? (Here and throughout I use the term 'physical' broadly to cover not only physical entities and properties at the fundamental level, but also physical phenomena, such as rocks, trees and chairs.)

How one restricts the scope of physicalism depends on one's purposes. And since the central physicalist target is typically the mental, it is not unusual for physicalists and their foes to simply focus on the question of whether the mental is physical. Indeed, some may even simply refer to the theory that the mental is physical as 'physicalism'. It may be that this is simply intended as shorthand for the view that everything (or some significant subset of everything) is physical. Yet this shorthand can be confusing when a more encompassing type of physicalism is evoked to justify physicalism with respect to the mental, such as when physicalists argue that the mental is very likely to be physical because everything else is physical. Obviously, here the scope of 'everything else' is not just the mental. So what, then, is supposed to count as 'everything else'?

Some understand physicalism in the broadest sense possible. It is theory about everything whatsoever, a theory that says that *all* reality is physical. On this inclusive conception, physicalism implies not only that people, animals, rocks, trees, and all other concrete objects are physical, but also that abstract objects – which on some accounts include numbers, properties, classes, relations, and propositions – are all physical. Even God, if she exists, would need to be deemed physical given the truth of this conception of physicalism.

Others think that physicalism ought to have a more restricted scope. For example, some understand it as a theory about only the concrete world, that is, roughly about phenomena in space or time. Physicalism, then, is true if and only if all phenomena in space or time are physical. This understanding of physicalism ensures that the status of the mental is relevant to the truth of physicalism, since, whatever else they are, mental processes do seem to occur over time. However, the existence of abstract numbers (regardless of what they are like in other respects) would not refute such a physicalism. Jeffrey Poland can be seen as defending this conception of the scope of physicalism (if we assume, as many do, that the abstract world has no causal influence on us) when he claims that 'physicalists are (or should be) concerned with what exists in nature – that is, with what can be spatially and temporally related to us, with that with which we can interact and by which we can be influenced, and with that of which we and the things around us are made' (Poland, 2001, p. 228).

A related approach to defining the scope of physicalism is to think of physicalism as a theory about the empirical world,

that is, about the phenomena that we come to know via our senses, or to put it more carefully, about phenomena that are such that our knowledge of them must be justified via our sense experience. If, as is often thought, our senses do not justify knowledge of abstracta, this restriction allows for the existence of non-physical abstract entities to be consistent with physicalism. However, if abstracta are known via our senses, then, the truth of physicalism, on this interpretation, implies that abstracta are physical.

A more encompassing view, such as Andrew Melnyk's, takes physicalism to be a theory about the contingent and/or causal world (Melnyk, 2003). If abstracta are not causal or if they exist necessarily, this restriction comes close to the previous restrictions. However, on this view, the truth of physicalism implies that anything that has causal powers is physical. So, for example, if abstract numbers have causal powers, then, on this version of physicalism, numbers would need to be physical in order for physicalism to be true. Moreover, on this understanding of physicalism, even something that has no causal affect on us, as long as it is contingent, would need to be physical if physicalism were true.

Should physicalism have a restricted scope? If we were to restrict physicalism to only the concrete world we would not be able to make sense of what might be called 'physicalist structuralism'. Physicalist structuralists, such as James Ladyman, hold that the fundamental properties of physics are purely structural, revealing only the relationships between things and nothing of the things themselves (Ladyman et al., 2007). Thus, the fundamental physical world on his view is entirely abstract. Moreover, Ladyman holds that since the fundamental physical world determines everything, there is nothing else besides structure, or as the title of his book declares, 'everything must go'. If we were to hold that physicalism is a theory of only the concrete world, Ladyman's view would be physicalistic in only a trivial sense.

Melnyk's restriction, however, accommodates the physicalist structuralist (assuming that the fundamental properties of physics are either contingent or causal). His restriction also accounts for the intuition that if our world had undetectable contingently existing spirits cohabitating happily among themselves, physicalism would be false. But what would the status of physicalism be if there were a necessarily existing God who had no causal influence on us or the world as we know it? On Melnyk's view, the existence of such a God is compatible with physicalism. But it is not clear that it should be.

Physicalists are drawn to restricted versions of physicalism as they are easier to defend; Occam's razor notwithstanding, it is very difficult to argue for the view that, say, no undetectable spirits exist. Nevertheless, it seems to me that an argument for physicalism in a non-restricted sense would still count as successful even if it does not rule out impossible-to-rule-out situations, as no theories can do that. In all theories outside philosophy, and most theories in philosophy, save for in the domain of skepticism, one need not present a theory as applicable to only the knowable world. So I think physicalists as well need not say that the scope of physicalism is only that of which we can in principle have knowledge. If it is false about that, it is still good enough. Of course, restricting the scope of physicalism so that the existence of abstracta, no matter what their nature, could not refute physicalism is a different issue. It seems that physicalists who take this route have the sense that abstracta are not a threat to physicalism. However, I think that a better way to accommodate this intuition is, as I shall describe in section three, to merely count them as physical. I propose, then, that we understand 'everything' in the most inclusive way possible:

Physicalism: Everything, whatsoever, is physical.

The relation between mountains and molecules

When the physicalist claims everything is physical, what is being said about everything? Typically physicalists deem something physical if its existence depends in the right way on basic or fundamental physical properties.¹ And typically the fundamental physical properties they have in mind are the micro-physical properties countenanced by physics, such as the property of having a charge, of being a quark, and so forth. In the third section I shall question this conception of the fundamental physical properties. Here, however, I want to ask, what exactly is the relation between the fundamental physical properties and higher-level properties, such as mental properties, which is thought to make the higher-level properties count as physical? In other words, when physicalists say that everything is physical, just what is meant by 'is'?

Some hold that the relation between higher-level physical properties and fundamental physical properties is that of explanation (Jackson, 2006; Witmer, 2006). On this view it is thought that physicalism is true if and only if everything is either a fundamental physical property or law, or can be explained in terms of such properties and laws. As such, physicalism is an epistemic thesis about what we can explain. It may have ontological implications since typically we think that a good indication of whether the fundamental nature of r is p is the fact that we can explain r in terms of p . Nonetheless, such a view is primarily an epistemic thesis.

Many philosophers, however, see physicalism as an ontological thesis, a thesis that tells us about what the world is like, whether or not we can understand how it could be like this. Physicalism, many think, could still be true even if we never arrive at a physical explanation of, say, pain, as long as pain is an entirely physical phenomenon. As Joseph Levine puts it, 'I am prepared to maintain that materialism must be true, though for the life of me I don't see how' (Levine, 1998, p. 475). And some philosophers such as Brain Loar (1990) and Colin McGinn (1989) have proposed theories about why we cannot understand physicalism could be true of the mind, even though they think that physicalism might very well be true.

To make sense of positions such as these, physicalistic dependence relations cannot be formulated in terms of explanation. Of course, most advocates of thinking about physicalism in terms of explanation do not mean that we can provide a physicalistic explanation of pain now, nor even sometime in the future. Rather, they think that for physicalism to be true, such an explanation must be in principle possible. But it is usually not clear what principle is at use here. The idea that there is an explanation that the human mind can grasp might seem too restrictive. Why should there not be phenomena that are beyond the grasp of human intelligence? However it is difficult to grasp what it would mean for an explanation to be possible for an ideal mind, a mind that is capable of knowing everything.

In any event, many formulations of physicalism employ an ontological relation between lower-level physical properties and higher-level properties that is supposed to capture the idea that higher-level properties are 'nothing over and above' lower level properties. For example, it is supposed to capture the idea that a mountain's height is nothing over and above the cumulative height of the rocks, pebbles and earth that compose the mountain, and that the rocks, pebbles and earth are nothing over and above the molecules out of which they are composed, and that the molecules are nothing over and above the atoms out of which they are composed, and so on.

Already, however, we run into difficulties, for aren't there properties of, say, Mt. Fuji that are not dependent on the properties of the dirt that composes it? For example, Mt. Fuji has the property of being revered in Japanese society, yet it is not clear that the rocks and pebbles have this property or have any other properties that would imply that the mountain should have this property.

Physicalists address this type of worry by broadening the 'dependence base' for the physical world. Perhaps all the properties of Mt. Fuji do not depend entirely on the properties of its parts, but they nonetheless do, says the physicalist, depend on fundamental physical properties. If we set all the fundamental physical properties of the world, we will have set Mt. Fuji's property of being revered in Japanese society since, according to the physicalist, we will have set the Japanese people's reverence of it as well.

But what exactly is the relationship between the properties of Mt. Fuji and the properties of molecules? Though there is considerable disagreement over how physicalists should explain the relationship between Mt. Fuji's properties, or other higher-level properties, and the fundamental physical properties, many think that the relationship involves, at a minimum, 'upward determination', or what is also called supervenience. Upward determination is typically expressed as the view that any world that duplicates all the fundamental physical properties and laws of our world also duplicates all properties of our world. So it implies that any world that duplicates the microphysical properties of our world would duplicate Mt. Fuji, as well as all other higher-level features of our world, including minds.

The relation of upward determination, or supervenience, is sometimes explained metaphorically as the view that all God had to do in order to create the world was to create the fundamental properties of physics. After this she could rest, as everything else came along for free.

How close does upward determination take us to physicalism? Upward determination states that any world that duplicates all the fundamental physical properties and laws of our world also duplicates all properties of our world. But now imagine a necessarily existing God. A world that duplicates all the fundamental physical properties of our world would also duplicate such a God. Yet, intuitively, the existence of God refutes physicalism. If this is correct, then upward determination is not a sufficient condition for physicalism.

To be sure, if this necessary God interferes freely with the workings of the world, a fundamental physical duplicate of our world might not duplicate all aspects of our world, for God might arrange things so that in the duplicate world, although all the fundamental features of the world are the same, I prefer coffee to tea. As such, upward determination would fail. However if the role of God were merely to set the fundamental nature of the world, merely to be the hand behind the big bang, as it were, then a necessarily existing God would be consistent with upward determination.

If you accept Hume's view that there are no necessary connections between distinct entities, then such a God cannot exist.³ Such a God is distinct from the rest of the world, yet her existence is necessary, given the world. Alternatively, one could restrict the scope of physicalism so that such a God would be consistent with the truth of physicalism. But if you reject

Hume's view and also think that the existence of God is incompatible with physicalism, you are led to reject upward determination as perhaps a necessary condition for physicalism, but not a sufficient one.

The desire to find both a necessary and sufficient condition for physicalism has led some philosophers to hold that explanation plays a role in our understanding of physicalism after all.⁴ Physicalism, as they see it, is not just the view that everything is determined by fundamental physical properties, but that everything is determined and ultimately explained by the fundamental physical properties. Such a view presumably rules out a necessarily existing God from counting as physical. And if it doesn't, such a God would seem to be physical.

But many are content with a mere necessary condition since much of the action in the literature on physicalism involves various arguments against physicalism, all of which purport to show that upward determination, which is taken to be a necessary condition for physicalism, fails to hold. For example, the zombie argument against physicalism is intended to show that the possibility of zombies – not the lumbering Hollywood variety, but creatures that duplicate our microphysical structure yet lack consciousness – implies that consciousness is not physical.

Is there a way to satisfy the desire that physicalism should be both an ontological thesis and incompatible with a necessarily existing God? Here's a try:

Physicalism: Any world that duplicates all the fundamental physical properties and laws of our world (and contains no other fundamental properties) also duplicates all properties of our world and everything in our world is ultimately constituted by fundamental physical entities.

Assuming that both immaterial souls and a necessarily existing God have nonphysical fundamental properties, this view implies that their existence is incompatible with physicalism, which is just what we want.

The Physical

Now we must address the question, 'what is the physical?' When we say, for example, that everything is determined by fundamental physical phenomena, what are these fundamental physical phenomena? Most define the fundamental physical properties in terms of the entities and properties and perhaps laws posited by microphysics: the fundamental physical phenomena are those entities and properties mentioned in the theories of microphysics. But what is meant by microphysics? Is it current microphysics? This would provide a relatively clear position: physicalism would then be the view that all of the fundamental properties are properties of microphysics. Unfortunately, this is a theory that is rather difficult to accept since we know that current microphysics is most likely neither entirely true nor complete and thus we now know that it is most likely not true that all higher level properties are determined by the properties of microphysics.

A more common understanding of what counts as the fundamental physical properties in the thesis of physicalism is that they are the properties posited by an ideal physics, a true and complete physics, or a physics 'in the end'. Can we formulate physicalism in terms of a true and complete physics? Of course, we do not currently know what future physics will be like, and therefore we cannot now determine whether physicalism is true. But perhaps physicalism can be seen as a hypothesis that awaits scientific confirmation (or, for that matter, refutation). Physicalists, on this understanding, are betting that it is correct, but do not claim to be able to now determine that it is correct.⁵

I see no problem with making physicalism a thesis that awaits empirical support. However, it seems that far from turning physicalism into a thesis whose truth awaits empirical support, defining the physical in terms of a true and complete physics actually seems to turn physicalism into a trivial truth. For what is a true and complete physics, save for one that accounts for the fundamental nature of everything? If free floating souls exist in our world, a completed physics will, by definition, account for the most fundamental nature of these souls. Yet neither physicalists nor their foes think that at this time in the debate physicalism is true merely as a matter of definition. Physicalists think the thesis needs to be *argued* for and, as many hold, will ultimately depend on what scientific investigation reveals. And their foes clearly do not think that they are denying what amounts to, more or less, an analytic truth. It seems, then, that physicalists who define physicalism over a true and complete physics cannot simply mean by this a theory of everything since then their claim that the mind is physical is trivially true. Yet, there is also reason to think that they do not simply intend to refer to the temporal end of physics. For this physics might still be inaccurate and incomplete; even worse, for all we know, physics might regress. We need, then, another route to defining the physical.⁶

Some argue that there are phenomena that physics and perhaps scientific investigation in its entirety does not aim to cover. Rather, physicists, they argue, in their role as physicists, are only concerned to account for a certain class of phenomena and souls and spirits are not in this class. As such, the truth of physicalism becomes open to debate. The question, then, is: Are there no other fundamental properties than those that are under the hegemony of a true and

complete physics, where what counts as being an object of study for physics is restricted in certain ways?

This makes physicalism admirably more risky, but should we assert that physics has identifiable limits (besides, of course, that which is by definition unknowable)? As I see it, it makes good methodological sense to hold that scientific inquiry should not accept a priori barriers. Certainly, it would be reasonable to say that as things stand, government grant money ought not to fund physics research into the properties of souls. This research would seem to be currently hopeless. However, the claim that physics should never investigate the nature of souls – even if in some currently unfathomable way a physics lab reveals signs of souls – is a much stronger claim. And, indeed, it seems that such barriers could hinder progress. In other words, it seems that a good approach to scientific investigation is that when you discover territory that does not conform to your map, change the map, not the territory. Such changes might involve not only expanding our scientific ontology, but changing our scientific method as well. For example, if standard controlled experiments fail to reveal phenomena that we nonetheless think exist – as some have claimed could be the case with parapsychological phenomena – we should try to find a way to change the control. If we were somehow convinced that there was a spiritual realm that was causally isolated from our world, let us try to understand it.

Where does this leave us? I think that it indicates that, despite the consonance of the two terms, the physical should actually not be defined over physics. Physics is the study of the fundamental nature of the world, whatever that nature may be. But physicalism is more discriminating about what is to count as fundamentally physical. Even if fundamental acts of pure consciousness were part of the domain of physics (as the physicist Eugene Wigner claimed were required to explain the collapse of the wave function) they should not count as physical. But if physics is not our guide to what counts as physical, what, then, is?

Physicalism is an ontological thesis, but it is an ontological thesis that is supposed to capture the sentiments of those who call themselves physicalists while presenting a thesis that those who think of themselves as opposing physicalism will reject. And thus we are looking for an understanding of physicalism that classifies free floating minds, a God that is not determined by anything other than God, and fundamental, irreducible norms all as nonphysical.⁷ I think that we can achieve this if we merely define the fundamental, physical properties negatively, that is, in terms of the types of properties it excludes. The fundamental physical properties, then are the fundamental non-mental, non-divine and non-normative properties.

But why should those and only those be excluded on a physicalistic conception of the world? While most philosophers would agree that physicalism does indeed exclude those sorts of properties, what exactly it ought to exclude is somewhat of an open question. For example, some but not all see vitalism as anti-physicalistic as it posits a fundamental life force. But in any event, as long as one makes it clear at the outset what types of fundamental properties are to count as non-physical, we have a framework around which debates over the truth of physicalism can proceed. Filling the framework in, here is the theory of physicalism we have arrived at:

Any world that duplicates all the fundamental non-mental, non-normative and non-divine properties and laws of our world (and contains no other fundamental properties) also duplicates all properties of our world, and everything in our world is ultimately constituted by fundamental non-mental, non-normative and non-divine entities.

This way of understanding physicalism may be somewhat of a mouthful, but it seems to capture the spirit of physicalism since it is inconsistent with the existence of such things as immaterial souls and mental properties that are over and above the physical (even if their existence follows from necessity given the physical domain.) Or rather, it is inconsistent with such things as long as they count as fundamental. If, however, they are determined by (but do not determine) non-mental, non-celestial and non-normative properties, they count as physical, as they should.

But doesn't this leave us with just a disparate list of properties that are to count as non-physical? Physicalism, according to Frank Jackson, is 'the very opposite of "big list" metaphysics'. Rather he sees physicalism as 'highly discriminatory, operating in terms of a small set of favoured properties and relations' (Jackson, 1998, p. 5). To be sure, the list of properties excluded by *via negativa* is a list, yet it is hardly a big list, yet one might still want to know what unifies the nonphysical properties besides the fact that there are a number of people who call themselves physicalists who simply don't like them. Why is it that physicalists do not like these properties?

Why should certain properties, such as fundamental properties that are mental, count as non-physical? I think that certain properties have been deemed physically unacceptable because they hint at a world that was created with us in mind. If mental phenomena were fundamental, being, for example, part of the original brew that was set in motion in the big bang or as emerging as something extra along the way, mentality would have a place of prominence in the world. And this, I think, for many, suggests the existence of a God who was looking out for us. This hint, however, is not an implication, and anti-physicalists can be atheists. However, I think that non-physical properties have gotten their 'bad' reputation because on many accounts of God, these are the sorts of properties that would exist, if God were to exist. And the reputation remains, even when its origin is forgotten.

As should be the case, if you are a theist, you will reject physicalism, as defined. However, this physicalism does not seem to take all the fun out of life. If physicalism is true, the pleasure of a great glass of wine need not be merely something going on in your brain. Rather, if physicalism is true, such pleasure is determined by neural properties and ultimately fundamental non-mental properties, but it is as real as anything. But is physicalism true? This question, alas, I shall need to save for another discussion.