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Thinking about Physicalism

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Physicalism, if it is to be a significant thesis, should differentiate itself from key metaphysical contenders which endorse the existence of platonic entities, emergent properties, Cartesian souls, angels, and God. Physicalism can never be true in worlds where things of these kinds exist. David Papineau, David Spurrett, and Barbara Montero have recently developed and defended two influential conceptions of physicalism. One is derived from a conception of the physical as the non-mentally-and-non-biologically identifiable. The other is derived from a conception of the physical as the non-*sui-generis*-mental. The paper looks at the resources available to those conceptions, but argues that each is insufficient to yield a conception of physicalism that differentiates it from key anti-physicalist positions. According to these conceptions, if we lived in a world full of things that clearly cannot be physical, we would still live in a physical world. Thus, such conceptions of physicalism are of little theoretical interest.

Keywords: Physicalism; Papineau; Consciousness; Mental; Causal Closure

Introduction

Physicalism is the doctrine that everything actual is physical. To make this precise, Jackson (1994) put it thus: any minimal physical duplicate of our world is a duplicate *simpliciter*. This doctrine seems to be flexible in various respects. For example, finding out that anti-matter exists does not refute physicalism. A minimal physical duplicate of our world would contain anti-matter distributed just as it is in our world. Similarly, were we to find out that phlogiston does exist after all or that the world is as Newton theorised, this should not refute physicalism. Rather, it would simply turn out that a minimal physical duplicate of our world would contain phlogiston or have the properties Newtonian physics posits. According to our best current knowledge, of course, a minimal physical duplicate of our world would not contain such items. We can call these things "merely not actually physical". To put it in terms of Jackson's formula, physicalism allows that there are possible minimal physical duplicates of some worlds such that they contain things that are merely not actually physical.

The doctrine of physicalism, however, must have a breaking point, even if this limit is a fuzzy one. Without a border physicalism is completely drained of its theoretical interest. There must be things physicalism cannot allow—things that clearly could not exist in a world where physicalism is true. There must be possible things—we can call these "anti-physical"—that realize conditions under which physicalism would be false. No world in which physicalism is true could contain platonic entities, robustly emergent properties, angels, Cartesian souls, nor God. In Jackson's formula, there is no possible minimal physical duplicate of a world containing anti-physical things. If our world contained these things, then physicalism would be false.

In the ideal case, physicalists are not committed to the existence of anti-physical things. A philosopher might, however, express commitment to physicalism but also express commitment to anti-physical things, like platonic entities and God. Such philosophers hold that except for their selected anti-physical things, physicalism is true, acknowledging (at times tacitly) that were matters to be left without positing this exception, they would be in an unsustainable position.

Ruling out the possibility that any minimal physical duplicate of a world contains an anti-physical thing is thus a necessary condition on any interesting and possibly true conception of physicalism. In this paper, I evaluate David Papineau's (2002), Spurrett and Papineau's (1999), and Montero and Papineau's (2005) conception of physicalism in these terms. I conclude that their accounts are not able to meet this theoretical requirement.

Thought: From the Challenge of Consciousness to the Challenge of Physicalism

One of the central challenges of physicalism is to adequately deal with consciousness. Papineau (2002) sets himself to this task in *Thinking about Consciousness*. The starting point for his inquiry is the proposition which makes use of the causal argument for physicalism. Conscious properties seem to have physical effects. Thus, since every physical effect has a sufficient physical cause, conscious properties must themselves be physical. In the context of the philosophy of mind, one is naturally inclined to ask in response, but what about the "gap"? There would appear to be a gap between conscious properties and physical properties in that, for instance, one seems to be able to know every physical fact about conscious echolocation, but still not know what it is like to have such experiences (Nagel, 1974); or that one may know every physical property of seeing red, but without having seen red for one's self, there seems to be a property of seeing red that one does not know (Jackson, 1986). The apparent gap between physical and conscious properties is bridged by acknowledging that we can think about one and the same worldly phenomenon of consciousness in neither mental nor biological terms. To be physical is to be "identifiable non-mentally-and-non-biologically", which is to have the ability to be referred to "independently of this specifically mental con-

ceptual apparatus" (2002: p. 41). Since conscious properties of the world can be identified in this way, there is no problem with them being physical and causal. The apparent gap is merely a conceptual one because we can refer to everything going on when a bat has experiences characteristic of echolocation and in experiences of seeing red with physical concepts; it is just that experiences can be referred to with mental concepts also. In one stroke Papineau provides solutions to Kim's (2005) two "world-knots" about the mind-body: how conscious properties can be accommodated within a purely physical world and how mental properties can be causal. To put it in terms of Jackson's formula, Papineau's (2002) physicalism is the thesis that any minimal duplicate of the non-mentally-and-non-biologically identifiable entities of our world is a duplicate *simpliciter*.

The problem with this thesis is that it fails to differentiate the metaphysics of physicalism from the metaphysics of relevant contenders. If our world is a world containing anti-physical entities, our world would be, by the standards of the considered conception of physicalism, a physicalist world.

Were platonic entities to exist, they would exist outside space and time (Balaguer, 2009). These objects are taken to exist even if the physical world did not, and are non-physical if anything could be. A world where platonic entities exist, is a world where anti-physical entities exist. Consider the platonic number 5. It can be identified without specifically mental or biological concepts. In fact, *5* is not a specifically mental or biological concept. Alternatively, it can be identified as *the result of* 3 *plus* 2, for example. Notice that there is a sense in which the concept of the number 5 is mental, just like the concept of an electron; but *5* and *electrons* are not mental concepts in the sense relevant here. Mental concepts here are solely those concepts which operate in psychological terms, like *belief*, *sight*, and *understanding*. Because platonic numbers can be identified non-mentally-and-non-biologically, Papineau would say that there is a minimal physical duplicate of a world, which would have platonic entities. Were platonic entities to exist in our world, Papineau would have to say that physicalism is still true.

Secondly, emergent mental and vital properties are anti-physical properties constituting an alternative metaphysics to physicalism (McLaughlin, 1992). Papineau describes them as constituting "non-physical causes of motion" (Papineau, 2002: p. 25). One way of identifying emergent mental properties is as a species of causes which are "not the vectorial 'resultants' of basic physical forces like gravity and impact, but which 'emerged' when matter arranged itself in special ways" (Papineau, 2002: p. 252). But now notice that this way of identifying emergent mental and vital properties does not make use of specifically mental concepts; so by Papineau's standards they would be bona fide physical properties of the world, and there is a minimal physical duplicate of a world which would contain them. As Papineau (2002) agrees however, physicalism, a thesis he endorses, is supposed to be incompatible with emergentism, a thesis he rejects.

Thirdly, consider the possibility that angels exist. Suppose that people, whilst alive, are completely identifiable as the result of certain aggregations of molecules. What happens to people when they physically die is that they become angels, no longer coincident with such aggregations of molecules, but nevertheless up to all sorts of things between Heaven, Hell, and Earth. Then, those angels can be identified non-mentally-and-non-biologically as *the continuants of the results of certain aggregations of molecules*. This non-mental-and-non-biological identification opens the possibility, by the applied standards, for angels to be physical, resulting in the thesis that the existence of angels is compatible with physicalism, and that there is a minimal physical duplicate of a world containing angels. But as everyone knows, if physicalism is a significant metaphysical thesis, it is incompatible with the existence of angels (Chalmers, 1996).

Fourthly, suppose for a moment that Cartesian souls exist. The Cartesian soul is an entity outside of space which is intrinsically ungoverned by the laws of physics and which interacts causally with certain physical particles (coincident with the pineal gland).[1] Then, the Cartesian soul is non-mentally-and-non-biologically identifiable as *one of the things that interact causally with certain physical particles*. Consequently, by Papineau's standards, Cartesian souls would be physical if they existed, and any minimal physical duplicate of that world would have to contain Cartesian souls in order to be a duplicate *simpliciter*. But Cartesian dualism is precisely a core metaphysical position against which physicalism is defined in the relevant debate. It should never be the case that a completely physical world contains Cartesian souls.

Lastly, suppose God sparked the natural universe into existence 15 billion years ago with the Big Bang. Then God would be non-mentally-and-non-biologically identifiable as *the thing that created the natural world* 15 *billion years ago*. Again, by Papineau's standards, God would be physical, and a minimal physical duplicate of a theist world would contain God, which is false (Chalmers, 1996).

No minimal physical duplicate of a world could contain platonic entities, emergent mental and biological properties, angels, Cartesian souls, or God. If our world contained such things, physicalism would be false. But Papineau's theory would fail to make this judgment. Papineau's theory of physicalism wrongly implies that even if platonic entities, emergent mental and biological properties, angels, Cartesian souls, and God existed in our world, physicalism would be true.

A possible reply argues that the mentioned anti-physical things do not exist, and consequently that no identification of them is truly successful because our concepts of these things do not pick anything out. So these things are not identifiable in the first place and are therefore not non-mentally-and-non-biologically identifiable, not physical, and not compatible with physicalism. Things that do exist, however, are identifiable non-mentally-and-non-biologically.

This idea, however, gets matters confused. The concept of the physical plays a distinctively important role in physicalist theory, a theory whose success can be measured by how it interacts with relevant contenders. The concept of the physical is what gives physicalist doctrine its distinctive ontology. If the conception of the physical advocated is one that applies to relevant, possible anti-physical things, even if they do not actu-

[1]As with platonism, I mean to eschew debate here about Descartes', as well as Plato's, historically accurate metaphysical views. There is debate about whether these philosophers correspondingly held what goes by the name of "Cartesian dualism" and "platonism". For example, Yablo (1990) argues that Descartes' relevant conclusions never go beyond asserting non-identity, and this claim is insufficient for the rejection of physicalism, since someone who argues that an aggregate of particles at a particular time constitutes but is not identical with the statue with which it coincides at that time is not committed to the rejection of physicalism. For a modern version of this approach see Pereboom (2002), for example. Rather, I mean to refer to the respective theories "Cartesian dualism" and "Platonism" are typically used to refer to and which I otherwise specify.

ally exist, then the resulting conception of physicalism is trivial because it has no conditions under which it is false. Physicalism should be able to mark out a distinctive metaphysical proposal independently of which is the correct one. Its content should not effectively be to say that the world is the way it is, whatever it is like, and nothing more.

Papineau believes that his proposed conception of the physiccal "generates a conclusion of great philosophical interest: namely, that all mental states, and in particular all conscious states, must be identical with non-mentally identifiable states" (2002: p. 41). However, keeping the mentioned anti-physical things in mind, we see that anything, even a core anti-physical thing, is identical with things that are identifiable in this way. Thus, it cannot be of great philosophical interest that consciousness can also be identified in this way.

At this point, one might wonder whether the very analytical strategy of providing a conception of the physical in terms of a dichotomy in our physical and mental concepts is misguided. Consider how this strategy could be used to analyse our world, not in physical terms, but in mental ones.

George is a panpsychist of the idealist type. The main challenge for him is to account for physical properties, and to meet it he writes a book called *Thinking about the Physical.* George agrees with Papineau that the physical is the non-mentally and non-biologically identifiable. Employing the strategy of his opponent, he holds that the mental is the non-physically identifiable. George holds that everything is mental, and his proof against the physicalist is that anything the physicalist says is physical, the panpsychist can identify mentally (non-physically).

First, George recalls that in Papineau's theory, the physical is that which is non-mentally-and-non-biologically identifiable. Identification, as Papineau agrees, consists in the mental operation of referring with applicable concepts. So Papineau references the physical in mental terms, and thereby shows us that the physical is also mentally identifiable.

Second, another example of how the physical can be non-physically identified can be seen in Papineau's (2002) history of the idea of the completeness of the physical, which makes reference to the principle of conservation of energy. He says, "It took the genius of the young Hermann von Helmholtz (1821-1894) to see the connections" (p. 245) between rational mechanics and Joule's work, which enabled him to make an important discovery. This was the discovery of the principle of conservation of energy. Consequently, one way of identifying the physical property that is the conservation of energy is through the use of specifically mental concepts like *the discovery of a genius.* So, George concludes, everything is mental. Physical properties are non-physically identifiable and are consequently mental.

Of course, the physicalist might object that in contexts such as physics classrooms such non-physical identifications do not satisfy our explanatory needs. George disagrees because quantum mechanics gives him grounds for introducing mental concepts into physics and he points to Mermin (1985) and Stairs (1990) to make the point that there is plenty of talk of observation in physics. But George is wise enough to note that not every explanation with mental terms will satisfy our explanatory needs. Rather, he points out that for settings like psychology classrooms non-mental terms do not satisfy our explanatory needs either, and consequently physical concepts do not have an explanatory edge over mental ones.

The point is not that we cannot refer to the physical using concepts that are not mental; we evidently can. Rather, the point is that Papineau himself provides a general way of referring to physical phenomena in mental terms, and the reason to call the position *physicalist* rather than *panpsychist* becomes mysterious. In fact, we see that this strategy would incorrectly count various other core anti-physical worlds as ones where physicalism is true.

The Physical as the Non-*Sui-Generis*-Mental

Spurrett and Papineau (1999) and Montero and Papineau (2005) propose a more outward-looking conception of the physical: that the physical itself, and physical causes in particular, are not mental, "ending up with physicalism as the thesis that everything that has a non-mental effect must itself be non-mental" (2005: p. 233). This thesis is taken to be supported by physiological and other types of empirical investigation (2005: p. 236). Stoljar (2009) notes the obvious objection that "if a property is mental and physical" given physicalism and the existence of the mental, then this view implies the contradiction that "it will be both mental and non-mental which (of course) it can't be!"

Now I agree that the way proponents of this view of physiccalism formulated it easily misleads upon a quick read. But Montero and Papineau (2005) avoid the inconsistency of identifying the mental with the non-mental, by saying that the "non-mental" is to be interpreted as "non-*sui-generis*-mental" (2005: fn. 1) and that non-*sui-generis*-mental causes are those things which can be "fully accounted for in terms of non-mental causes" (Spurrett & Papineau, 1999: p. 26). Mental causes must consequently be accountable for by individually non-mental realization elements, which add up to those mental causes. One natural way of thinking of a mental property is as one which is realized when certain basic physical properties are combined in a particular way, much like in the way the property of being a triangle is realized when certain basic geometrical properties are put together in a specific way (Jackson, 2006). In the case of geometry, a basic geometrical property such as a line is not triangular, just as, for instance, having a negative charge is not mental. However, one could not consistently claim that a triangle must be identified with the non-triangular, just as one could not consistently claim that the mental must be identified with something non-mental. Rather, a mental property may be identified with a group of basic physical properties assembled in a certain way just as triangles may be identified with groups of lines put together in a particular way. It is logically guaranteed that certain arrangements of lines are triangles. Without contradiction, triangles are in this sense not *sui generis* triangles. Similarly, given physicalism, it is logically guaranteed that certain arrangements of physical properties are mental. What would make them not *sui generis* mental is that they can be fully accounted for in terms of properties which are not by themselves mental. Something would be *sui generis* mental if it was mental and could not be accounted for in this way.

One may wonder whether Papineau and Spurrett's (1999) and Papineau and Montero's (2005) view is compatible with the identity theory (Smart, 1962; Kim, 2005), since certain physical properties would themselves be mental. According to the relevant identity theory, the mental property of being in pain, for instance, would be identical with a property of the brain, like having c-fibres fire. So that property of the brain

would be mental. Nevertheless, if that property of the brain is built up from more basic non-mental properties, there would be no conflict. For instance, having c-fibres fire is built up from the molecules that compose c-fibres, neurotransmitters, and charged elements. Such elements are not themselves mental. Rather, the thing they are organized to compose is.

One way of interpreting the so-called *via negativa* is providing a sufficient condition for being physical. But this interpretation would meet anti-physical things as counterexamples. The platonic number 3 is not *sui generis* mental in that it can be accounted for in completely non-mental terms. Similarly, emergent properties can be fully accounted for in non-mental terms. Emergent plant life certainly has this ability. Emergent mental life is just a non-linear effect of basic physical properties, which after the discovery of the function that relates them, can be used to make normal scientific predictions (Broad, 1925). Though they give rise to the mental, there is nothing here that implies that such basic elements must themselves be mental. Consequently, emergent mental properties are accounted for by the non-mental conditions and the non-linear laws that determine them, and are, consequently, non-*sui-generis*-mental.

The proponents of this view must mean that it is *an aspect* of the physical that it is non-*sui-generis*-mental. Montero and Papineau (2005) indicate that this is what they suggest when they reply to Witmer and Gillet's (2005) objection that this conception is prey to Hempel's dilemma. This dilemma says that there is no question of physicalism because if we understand it as the view that current physics accounts for everything, then given the incompleteness and the existence of errors of current physics, it is false. If the target understanding of physiccalism implies taking ideal physics to account for everything, then it follows that we have no idea what we are asserting because we do not know what ideal physics is like. Given that we have no other conception of the physical, physicalism is either false or trivial. Montero and Papineau (2005) respond that their thesis merely serves to direct attention to the fact that "current⋯research has so far failed to reveal any *sui generis* mental causes, and from this it is reasonable to infer that there aren't any such causes" (p. 236). Similarly, when confronted with my objections, they might argue that they are merely pointing out a contingent empirical fact about the physical.

There are many things that the physical is not, however. It is not *sui generis* Newtonian, nor *sui generis* phlogiston, nor Godly, nor *sui generis* made of ectoplasm, nor *sui generis* physiological either since brains and neurons are not fundamental entities. Generally, it is not very enlightening to be told that the physical is not *sui generis* anything. Papineau and Montero (2005) say that the physical is not *sui generis* mental because they think that the set of statements which characterize the current empirical understanding of the world includes the statement that there are not *sui generis* mental causes. If it is reasonable to say that since physiological research has not found *sui generis* mental causes that, by scientific induction, causes are not *sui generis* mental (p. 235), then it is reasonable to conclude by the same principle that they have the rest of the characters that current physics posits. Rather than assert the relatively uninformative conclusion that the fundamental properties of the universe are probably not mental on the basis of current research, they could assert the likelihood of the positive ontology of current research, which contains many causes whose existence are just as confirmed as the theory that there are no *sui generis* mental things.

The richer ontology of this conception of the physical may sound just like one of the horns of Hempel's dilemma. Montero's and Papineau's response is essentially that they are talking about what science has found (or failed to find) and that the derived understanding is likely to be true. Is the current understanding sufficient to completely account for all effects? Montero and Papineau agree that it is not (p. 235). It is, however, a richer understanding, which considers more than the assertion that the cause is not *sui generis* mental. So if one is willing to bet on scientific grounds that the physical is not *sui generis* mental, one should also be able to bet on similar scientific grounds on the rest of the statements on the list of current understanding. This would yield a more complete account of effects, resulting in a much larger return on the same epistemic investment. To assert that that the list of complete causes will be physical, like any physicalist investment, has its risks and challenges (Cartwright, 2010), but we are assuming here that physicalism has already taken the risks.

This more positive aspect of the so-called *via negativa* is, however, something that we can expect the physicalist theory at issue to endorse because its proponents think that bits of this knowledge can be plugged in to substitute the term "physical" depending on one's purpose. They say:

> We shall make the point that there is more than one way of understanding 'physics'. In particular, we shall identify two plausible completeness theses. Each such thesis can be plugged into the causal argument, and each then generates its own version of 'physicalism'. Which completeness thesis you ought to be interested in depends on the purpose to which you want to put the causal argument (Spurrett & Papineau, 1999: p. 25).

So the *via negativa* is just one of the ways of understanding the "physical", a way characterised by the plugging in the property of lacking a certain property in the physicalist conceptiion. The strategy even allows one to say positive things about the physical, namely that it is quantitative (Spurrett & Papineau, 1999: p. 25). This might be largely true, but it is far from answering Hempel's dilemma.

Further, the fundamental problem for the *via negativa* remains. It fails to provide a conception of physicalism that does not imply that if we lived in a world where core anti-physical things exist, physicalism would still be true. Many possible anti-physical things, like platonic entities, angels, God and/or emergent properties are non-*sui-generis*-mental (and quantitative, since they can be counted). Some minimal non-*sui-generis*-mental duplicates of some worlds would thus contain anti-physical objects. This conception consequently fails to carve out a distinctive metaphysics for physicalism. Thus, both conceptions of physicalism analyzed in this paper are far from yielding the advertised conclusions of great philosophical interest.

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