

WHAT IS PHYSICALISM?

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Abstract

Although ‘most contemporary analytic philosophers [endorse] a physicalist picture of the world’ (A. Newen; V. Hoffmann; M. Esfeld, ‘Preface to Mental Causation, Externalism and Self-Knowledge’, *Erkenntnis*, 67 (2007), p. 147), it is unclear what exactly the physicalist thesis states. The response that physicalism is the thesis that everything is physical does not solve the problem but is a precise statement of the problem because ‘the claim is hopelessly vague’ (G. Hellman; F. Thompson, ‘Physicalism: Ontology, Determination, and Reduction’, *Journal of Philosophy*, 72 (1975), p. 552). I argue that physicalism in fact should be the thesis that every existing particular essentially exemplifies properties the exemplification of which does not conceptually entail the existence of conscious beings. Physicalism thus is a purely philosophical thesis with no intrinsic relation to physics.¹

1. Physical and Non-Physical Particulars

I distinguish particulars in physical and non-physical particulars. Because it is a *contradictio in adjecto* to assume that a physical particular can exist without exemplifying any physical property, a physical particular of necessity exemplifies at least one physical property in all the possible worlds in which it exists, which means that there is no possible world w in which a physical particular exists while it does not exemplify a physical property in that world. A non-physical particular can exist in a possible world w without exemplifying any physical property in w . The distinction between physical and non-physical particulars is exhaustive although it does not preclude that there are possible worlds in which physical and non-physical particulars exemplify the same physical and non-

¹ I am grateful to Andreas Hüttemann, Klaus Müller, Alexander Norman, Stephen Priest, Oliver R. Scholz and an anonymous *RATIO* referee for their comments on an earlier draft of the paper.

physical properties.² There is no contradiction involved in assuming that a physical particular exemplifies non-physical properties, and neither is there a contradiction involved in the assumption that a non-physical particular exemplifies physical properties.³ Let me clarify some terminological matters: as I deploy the term 'particular', every particular is an object, but not every object is a particular. On my account, objects are composed of particulars. So what about objects composed of several particulars? Assume that x is a composite object which contains a physical and a

² Can there be a particular that, in every possible world in which it exists, exemplifies both physical and non-physical properties? Although I cannot think of any such particular and for the purpose of this essay suppose that there is none, it seems to me that, in general, either there can *not* be any such particular, or that *every* particular has to be such a particular. Roughly, my reason for this is that the only case in which it could happen that a particular, in *every* possible world in which it exists, exemplifies *both* physical and non-physical properties, is when all physical properties are non-physical properties and vice versa, that is, when a monism as regards physical and non-physical properties is true. Ultimately, I think this is false, but for those interested in pursuing the matter, Russell's much ignored neutral monism could be of some help. Assuming that events are the building bricks of reality, Russell's account, as far as I understand it, states that events are available from the non-physical/mental inside and from the physical/structural outside. Insofar as we are acquainted directly with certain events, we are acquainted with the inside, and insofar as we know events by description or inference, we are concerned with the structural outside of the same events. To deploy Russell's analogy, according to neutral monism, the difference between the physical and the non-physical/mental 'is analogous to that between a postman's knowledge of letters and the knowledge of the recipient of letters. The postman knows the movements of many letters, the recipient knows the content of a few. We may regard the light and sound waves that go about the world as letters of which the physicist may know the destination, some few of them are addressed to human beings, and when read give psychological knowledge.' B. Russell, *An Outline of Philosophy* (London: George Allen & Unwin, 1927), p. 300.

³ This point is hardly recognised in physicalist circles. It seems that a lot of physicalists assume that it is no problem for a physical particular to exemplify non-physical properties while at the same time they exclude the possibility that a non-physical particular can exemplify physical properties. In this way Merricks argues that 'only physical objects have physical properties. For to be a physical object just is to be a thing that has physical properties' (T. Merricks, 'Dualism, Physicalism, and the Incarnation', in: *Persons: Human and Divine*, edited by Peter van Inwagen and Dean Zimmerman (Oxford: Oxford University Press, 2007), p. 294). A page later, however, he states that although 'the physicalist says that a human person has physical properties, she does not insist that a human person has only physical properties. Persons also have mental properties' (Merricks, *Dualism*, p. 295). Given his previous statement, if human persons exemplify physical properties, they have to be physical objects which exemplify mental properties (because 'only physical objects have physical properties'). – It seems that the dualist simply could respond as follows: Only mental objects have mental properties. For to be a mental object just is to be a thing that has mental properties. Although the dualist says that a human person has mental properties, she does not insist that a human person has only mental properties. Persons also have physical properties. The physicalist thus needs much more argument in order to justify the claim that non-physical particulars cannot exemplify physical properties, while physical particulars can exemplify non-physical properties.

non-physical particular, y and z , respectively. Since y cannot exist without exemplifying physical properties, then assuming that y is an essential component of x , x cannot exist without exemplifying physical properties. The result seems to be that on my account x should be called a physical object. This, one might object, does not seem right since x has a component that is a non-physical particular. The putative objection is weak as long as it is not clear whether z also is an essential component of x . If z is not an essential part of x , then x can exist without z but not without y . In this case, there is no harm done by calling x a physical object. However, if y and z both are essential components of x , then there is no problem either: x would be a composite object composed of a physical and a non-physical particular, and while x exists if and only if y and z exist composedly, z and y could also exist independently of each other. Of course, we could not *call* x either a physical or a non-physical object, but there is no trouble here as x then is just this: a composite of a physical and a non-physical particular. Thus, *particulars* are either physical or non-physical particulars, but *objects* might be neither physical nor non-physical objects. A well known example for an object which is thought to be neither physical nor non-physical is the human being as conceived of in Cartesian Dualism: according to this kind of dualism the human being is composed of a physical body and a non-physical mind, and thus neither qualifies as a physical nor as a non-physical object.

I take physicalism to be a thesis about particulars because the existence of a non-physical particular clearly is a refutation of physicalism whereas the existence of a non-physical property is not that clearly a refutation: that there is a property not reducible to, and hence not identical with, but otherwise dependent on physical properties is precisely the claim of non-reductive physicalism according to which 'psychological properties depend on, but are irreducible to, physical properties'.⁴ I further take physi-

⁴ See P. Moser; J. D. Trout, 'Physicalism, Supervenience and Dependence', in *Supervenience. New Essays*, edited by E. Savallos and Ü. Yalcin (Cambridge: Cambridge University Press, 1995), p. 187. The irreducibility claim is an ontological assertion. However, whether non-reductive physicalism is ultimately coherent is a question of ongoing debate. In *Physicalism or Something near Enough* (Princeton: Princeton University Press, 2005) Jaegwon Kim, for instance, argues that non-reductive physicalism is unable to account for the reality of mental causation because it violates either the causal closure of the physical realm ('if a physical event has a cause that occurs at t , it has a physical cause that occurs at t ' (p. 43)) or the principle of causal exclusion ('no single event can have more than one sufficient

calism to be the thesis that every particular in the actual world is a physical particular. Neither the thesis that every particular in any possible world, nor the assumption that every particular in some possible world is physical is a plausible candidate for a substantial thesis of physicalism. The only case in which it is true that every particular in any possible world is a physical particular is the case when no non-physical particular could have existed. Because there is no contradiction in the assumption that there is a possible world in which at least one particular is not a physical particular I take it that there is a world in which at least one non-physical particular exists.⁵ Should the physicalist plainly deny the possibility of there being non-physical particulars, then he would beg the question in favour of physicalism. It would be trivially and trivially necessarily true that every particular is a physical particular. In this case, to use a phrase coined by Mellor and Crane, there is no question of physicalism.⁶ However, the physicalist should neither assume that all his thesis comes to is that every particular in some possible world is physical. Because there is no contradiction in the assumption that there is such a world, this thesis is true but not a substantial philosophical claim: it is true even if in the actual world not every particular is physical. One plausible option remains: every particular in the actual world is a physical particular. This respects our intuitions that non-physical particulars could exist, and it is not a trivial claim.⁷

cause occurring at any given time – unless it is a genuine case of causal overdetermination’ (p. 42)). According to Kim, although ‘non-reductive [physicalism] has been motivated by a desire to save mentality as something distinctive and special [...] it loses it by depriving it of causal powers’ (p. 158).

⁵ Could one argue against this that ‘to exist’ means ‘to be a physical particular’? If this is true, then a particular *p* exists in a possible world *w* if and only if *p* exemplifies at least one physical property in *w*. If sound, such an argument would uncover a hidden contradiction in the assumption that there is a possible world in which a non-physical particular exists. In effect, it would be the one and only argument the physicalist needs: that being a physical particular in a certain possible world is both a necessary and a sufficient condition for existing in this world. However, although the literature concerning the interpretation of what it means for something to exist is enormous, to my knowledge, there is no such argument proposed and discussed, and I am quite sure, if only for pragmatic reasons, that if there was such an argument, then it would be in the interest of the physicalist that it is well known.

⁶ See T. Crane; D. H. Mellor, ‘There is no Question of Physicalism’, *Mind*, 99 (1990).

⁷ Cf. B. Göcke, ‘Priest and Nagel on Being Someone: A Refutation of Physicalism’, *The Heythrop Journal*, 49 (2008), for an argument that this thesis of physicalism entails that every minimal physical duplicate of the actual world is a duplicate simpliciter of the actual world.

2. The Minimal Physical Duplicate Thesis

In recent literature we find the thesis that the claim ‘everything is physical’ is fully analysable as the claim that every minimal physical duplicate of the actual world is a duplicate simpliciter of the actual world. Jackson argues this way:

Physicalism is [. . .] the claim that if you duplicate our world in all physical respects and stop right there, you duplicate it in all respects; it says that: [. . .] Any world which is a minimal physical duplicate of our world is a duplicate simpliciter of the actual world; where a minimal physical duplicate is what you get if you ‘stop right there’.⁸

The minimal physical duplicate thesis is consistent with the existence of non-physical particulars in the actual world. No feasible thesis of physicalism is consistent with this. Assume that there are irreducible relations of metaphysical necessity connecting the existence of physical particulars with the existence of non-physical particulars in the actual world.⁹ The minimal physical duplicates of the actual world which you obtain are all worlds in which non-physical particulars exists. If physicalism in fact only were to mean that any minimal physical duplicate of the actual world is a duplicate simpliciter, then it would have no ontological impact. I therefore reject the minimal physical duplicate thesis.

⁸ See F. Jackson, *From Metaphysics to Ethics. A Defence of Conceptual Analysis* (Oxford: Oxford University Press, 1998), p. 12.

⁹ Cf. also B. Loewer, ‘From Physics to Physicalism’, in *Physicalism and its Discontents*, edited by C. Gillett and B. Loewer (Cambridge: Cambridge University Press, 2001) for a similar worry in terms of properties: ‘The worry is that [the minimal physical duplicate thesis] may not exclude the possibility that mental and physical properties are distinct but necessarily connected in a way that neither is more basic than the other. In this case it doesn’t seem correct to say that one kind of property obtains in virtue of the other’s obtaining’ (p. 39). Assuming that metaphysical and logical relations differ, could there also be relations of *logical* necessity which connect the existence of physical particulars with the existence of non-physical particulars? That depends on which kind of logical necessity we have in mind. If by ‘logical necessity’ we mean broadly conceptual necessity, then it seems possible that such relations hold. For instance, if there is sound (Cartesian-like) argument that it is a priori that a human being is composed of a physical body and a non-physical soul, then there are also relations of logical necessity connecting the existence of physical and non-physical particulars. However, there might well be other notions of logical necessity according to which there is no such relation between the existence of physical and non-physical particulars.

3. Physicalism and Prima Facie Non-Physical Particulars

On the elaborated thesis of physicalism, prima facie non-physical particulars have to be nothing but physical particulars. In order to account for the existence of prima facie non-physical particulars our thesis of physicalism needs epistemic extension: every actually existing particular either is *directly identifiable* as a physical particular or else is *indirectly identifiable* as a physical particular. A particular is directly identifiable as a physical particular if we know a priori that, in each world in which it exists, it is an element in the extension of a physical predicate, where I assume that physical predicates denote physical properties. A particular is indirectly identifiable as a physical particular if and only if it is not directly identifiable as a physical particular but there is sound argument according to which we have to identify it as a physical particular after all. The kind of argument needed would have to show that although we cannot know a priori that a certain particular belongs to the extension of a physical predicate in each possible world in which it exists, there is a non-physical predicate to the extension of which the particular belongs such that this predicate in fact denotes a physical property. According to the physicalist, arguments like the causal closure argument show this to a certain extent.¹⁰ Particulars directly identifiable as physical particulars are physical particulars and particulars indirectly identifiable as physical particulars are physical particulars, too. The epistemic extension enables the physicalist to go along and to respect the existence of prima facie non-physical particulars by accepting that they are not directly identifiable as physical particulars.¹¹

4. Physicalism and Physical Properties

We need to understand the exemplification of which properties turns a particular into an essentially physical particular. We need an account of physical properties. If such is at our disposal we can

¹⁰ Cf. B. Göcke 'Physicalism Quaerens Intellectum', *The Philosophical Forum*, 49 (2008) for an analysis of the causal closure argument and why, ultimately, it fails to convince.

¹¹ Of course, this is an epistemic matter and as such it is not required for the truth of physicalism, which is an ontological thesis. However, it is required in order to understand what the thesis of physicalism states, and how it could be true given the existence of prima facie non-physical particulars.

tell whether particulars belong to the class of physical particulars in virtue of the way they exemplify physical properties in possible worlds. If there is a possible world in which a certain particular which also exists in the actual world exists without exemplifying any physical property, then it is not a physical particular in that world and a fortiori not a physical particular in the actual world.

Prima facie there are two ways to elaborate such an account. The first one is called the object-based account according to which

a physical property is a property which either is the sort of property required by a complete account of the intrinsic nature of paradigmatic physical objects and their constituents or else is a property which metaphysically or logically supervenes on the sort of property required by a complete account of the intrinsic nature of paradigmatic physical objects and their constituents.¹²

The second account is called the theory-based account according to which

a physical property is a property which either is the sort of property that physical theory tells us about or else is a property which metaphysically (logically) supervenes on the sort of property that physical theory tells us about.¹³

The theory-based account is preferable to the object-based account. The object-based account arguably is arbitrary or presupposes the theory-based account. Its problem is to name a *paradigmatic* physical object without prior specification of physical properties. Jackson tells us that ‘tables, chairs, mountains, and the like’¹⁴ are paradigmatic physical objects. But why is a mountain a paradigmatic physical object? There is no cogent reason for this. In fact, mountains could as well be classified as paradigmatic geological objects known as orogen, and although geology has much in common with physics, it is a different science. To pick just some object found in one’s environment as a paradigmatic

¹² See D. Stoljar, ‘Two Conceptions of the Physical’, in *Philosophy of Mind. Classical and Contemporary Readings*, edited by David Chalmers (Oxford: Oxford University Press, 2002), p. 313.

¹³ See Stoljar, *Two Conceptions*, p. 313.

¹⁴ See Jackson, *Metaphysics*, p. 7.

physical object is arbitrary in a way not tenable for an account which is *yet* supposed to provide an account of physical properties.¹⁵ However, the assumption that a certain object is a paradigmatic physical object if and only if it is studied exclusively by the science of physics collapses into the theory-based account because it is a function of physical theories which objects they investigate. Therefore, the theory-based account is preferable to the object-based account. But there are problems with this account as well. Problems which eventually lead us to develop a purely philosophical account of physical properties. For a start, we cannot just open up a book of current physical theory and look for an enumeration of physical properties because as Hempel has shown a dilemma obtains: there can be no theory-based account of physical properties which does not turn physicalism either into an empty or into a probably false thesis.¹⁶ The first horn of Hempel's Dilemma is this: If one assumes that physical properties are in fact the properties of current physics, then physicalism is probably false. Based on pessimistic meta-induction it is probable that current physics is not true physics and hence that it is probable that current physics is false. A physicalism which relies on the set of physical properties which a probable false physical theory provides in order to determine a set of physical particulars is itself probably false. One cannot escape this conclusion by assuming that physical properties are those invoked by *true* physics. This way is blocked by the second horn of the dilemma: If by 'physical properties' one means the properties invoked by true physics, then physicalism as a

¹⁵ One might object that because 'physical' [...] is a natural kind term (it is the ultimate natural-kind term) (Galen Strawson, *Mental Reality* (Cambridge, Mass: MIT Press, 1994), p. 1) the object based approach has to be primary: how else could one start? In a certain sense, I agree. It is true that, *historically*, human enquire into the nature of the physical started by taking 'physical' as a very basic although not all-including natural kind term for certain objects in one's environment. However, from a *systematic* point of view, the problem is that we cannot deploy 'physical' as a natural kind term in order to determine a *paradigmatic* physical object the properties of which then we assume to be all the physical properties (as demanded by the object-based approach to physical properties). In the same way in which the natural kind term 'water', deployed too inclusively, runs danger to denote liquids with a different underlying essence, so 'physical' as an ultimate natural kind term runs danger to denote objects which would determine rather different sets of physical properties, i.e. 'physical' as the ultimate natural kind term cannot refer to a paradigmatic physical object.

¹⁶ See C. Hempel, 'Comments on Goodman's "Ways of Worldmaking"', *Synthese*, 45 (1980), pp. 193–199, and C. Hempel, 'Reduction: Ontological and Linguistic Facts', in *Science and Method. Essays in the Honor of Ernest Nagel*, edited by S. Morgenbesser et al. (New York: St. Martin's Press, 1969), pp. 179–199.

metaphysical thesis here and now is vacuous. One does not know precisely which properties true physics will deal with. We cannot enumerate them. Therefore it is vacuous to state that every existing particular is physical.

Let us quickly consider attempts made by Melnyk and Poland to escape the dilemma. Physicalist Melnyk agrees with the first horn. Physicalism is probably false if the physicalist assumes that physical properties are those of current physics:

Past theories in physics, when judged from the standpoint of current physics, have usually turned out to be both false and incomplete; it is therefore very likely (though not, of course, absolutely certain) that current physics is both false and incomplete. But if so, physicalism formulated in terms of current physics assumes the truth [. . .] of current physics, then it is very likely (though not, of course, absolutely certain) that physicalism is false, too – which requires one to cease to be a physicalist.¹⁷

Melnyk challenges the last step: one can remain a physicalist and assume that physical properties are in fact those of current physics although one knows that it is very probably false. Instead, he ‘challenge[s] [. . .] that a physicalist should abandon physicalism just because physicalism is very likely false’.¹⁸ This is an interesting option. Melnyk’s argument is not directed against pessimistic metainduction, but concerns the rationality of upholding certain theses despite their known improbability of being true. According to Melnyk, ‘one can remain a physicalist, just so long as physicalism, though, unlikely, is still more likely, than its relevant rivals’.¹⁹ Melnyk’s argument fails if there is a relevant rival of physicalism which has the same probability of being true. Traditional dualism is a relevant rival. It is the thesis that ‘to put it very crudely, physicalism is true of everything except the mind’.²⁰ Because dualism has to account for physical properties, too, it shares the same fate as physicalism in this matter. If dualism demarcates the set of physical properties in reference to current physics, then ‘to the extent that the history of physical theorizing makes it likely

¹⁷ See A. Melnyk, ‘How to Keep the “Physical” in Physicalism’, *The Journal of Philosophy*, 94 (1997), p. 623/624.

¹⁸ See Melnyk, *Physicalism*, p. 624.

¹⁹ See Melnyk, *Physicalism*, p. 632.

²⁰ See Melnyk, *Physicalism*, p. 634.

that current physics is false, *there is exactly the same evidence against traditional dualism as there is against physicalism*.²¹ This is baffling: if both, dualism and physicalism, rely on current physics, then according to Melnyk physicalism and dualism have the same probability of being true – there is ‘exactly the same evidence’ *against* both theses.²² But recall: one can be a physicalist despite the first horn of Hempel’s dilemma only in case physicalism has a *higher* probability than its relevant rivals. Against his own argument Melnyk states that dualism is a relevant rival and that it has the very same probability of being true as does physicalism. It is entailed in Melnyk that physicalism should be abandoned. Of course, Melnyk could argue that one can remain a physicalist as long as there is no relevant rival which has a higher probability of being true than physicalism. Melnyk’s argument then would show that one can be a physicalist or a dualist with the same rationale; a result each and any physicalist should reject. This apart, there is another relevant rival which has a higher probability than Melnyk’s physicalism. Given that

the history of research in physics in this century continues to be one in which new fundamental entities, such as particles and their associated properties, have been, and continue to be, discovered on a regular basis and added to the ontology of physical theories.²³

it is more probable that a physical theory like current physics but including a yet unknown physical property is true than that current physics is true. There would then be another thesis of physicalism, one that is different in content because, as it would be based on another set of physical properties, it would determine a different set of physical particulars. Actually, for Melnyk, there

²¹ Melnyk, *Physicalism*, p. 634, my italics.

²² Is Melnyk committed to this claim? Could he, for instance, argue that there are independent further factors which lower the probability of dualism to be true? I do not think so. As regards the present point it is irrelevant whether there are further arguments in favour of dualism or physicalism because we are concerned with the task of elaborating an account of physical properties only. As regards physical properties, dualism and physicalism are relevant rivals and on Melnyk’s account have the same probability of being true or false insofar as they both rely on the properties current physics provides.

²³ See S. Crook; C. Gillet, ‘Why Physics alone cannot define the “Physical”: “Materialism, Metaphysics, and the formulation of Physicalism”’, *The Canadian Journal of Philosophy*, 2001, p. 349.

can be no reliable thesis of physicalism until we reached true physics because only when true physics is reached Melnyk can obtain a lasting version of physicalism, which is the apparent problem mentioned in the second horn of the dilemma: that we can only obtain a reliable thesis of physicalism when true physics is reached. Melnyk's attempt to show the first horn to be blunt leads him directly into the second horn of the dilemma.

Let us turn to Poland's argument against the validity of the second horn. Poland recapitulates it thus: 'Since we do not know what future or ideal physics is like, [. . .] physicalism [if based on these] is premised upon an unknown theory and is thus without content'.²⁴ Poland's argument against this horn is based on the idea that although

there is surely a sense in which it is true that we lack knowledge of the details of what the physicalist theses imply if we do not know a true physical theory [it does not follow that] physicalism lacks content.²⁵

Physicalism does not lack content in this case because 'physicalism does not make claims about physics and its actual domain'.²⁶ Instead 'physicalism asserts the privilege of physics in the sense that the objects, attributes, and truths discovered by physicists provide bases for the dependence, supervenience, and realization of all phenomena'.²⁷ Which conception of physics does Poland deploy? It is this:

Physics is the branch of science concerned with identifying a basic class of objects and attributes and a class of principles that are sufficient for an account of space-time and of the composition, dynamics, and interactions of all occupants of space-time.²⁸

On the one hand, Poland's physicalism asserts that (true) physics is sufficient to account for all phenomena in the actual world, on the other hand his (true) physics deals with whatever is sufficient to account for everything in space-time of the actual world. However,

²⁴ See J. Poland, *Physicalism and its Discontents* (Oxford: Clarendon Press, 1994), p. 157.

²⁵ See Poland, *Discontent*, p. 163.

²⁶ See Poland, *Discontent*, p. 164.

²⁷ See Poland, *Discontent*, p. 163.

²⁸ See Poland, *Discontent*, p. 124.

and this is the problem, there is no phenomenon in the actual world which is not by its act of being a phenomenon in the actual world in one way or the other an existent or occupant in the space-time of the actual world, and vice versa. To be a phenomenon in the actual world is to be in the space-time of this world.

Poland's physicalism states that the account of everything in the actual world is privileged precisely in so far as it is an account of everything in the actual world. Not an exciting claim, trivially true and ontologically neutral.²⁹ Poland's account to circumvent the dilemma fails.

5. Physicalism and Physics

The result achieved so far is not that future or complete physics might not include genuine non-physical properties, but that a physicalism which uncritically assumes that physical properties are in fact whatever properties physics deals with, might turn out to be dualism or trivialism. Because the physicalist cannot influence physics as regards which properties it includes into its stock, he is in need of an account of physical properties which is independent of the properties physics deals with. It has to be independent of these in that genuine non-physical properties which might be included into future or complete physical theory have to be excluded from the set of properties relevant for the thesis that every existing particular is a physical one. Otherwise genuine non-physical particulars might turn out to be mistakenly called physical particulars. However, at the same time the account must not restrict the physicalist in such a way that he can only accept properties as physical which are integrated into some physical theory – whether past, present or future. One reason for this is that 'there may be physical phenomena which physics (and any

²⁹ It is trivially true since however (true) physics turns out to be, it is able to provide an account of everything in the actual world, whether everything is physical or not. If Poland's physics does not provide this account, then it could not be what physics according to Poland really is about. It is trivially true to state that *this* account, the account of everything in the actual world, can account for everything in the actual world, which in turn is just Poland's physicalism. Poland's physicalism is ontologically neutral because Poland accepts the possibility that genuine non-physical particulars or non-physical properties may be integrated into the stock of physics: '[I] bite the bullet and allow that it is conceivable that physics might be revised to incorporate mental, and other phenomena, previously identified as non-mental, into the physical basis' (Poland, *Discontent*, p. 331).

non-revolutionary extension of it) cannot describe, and of which it has no inkling'.³⁰ Since I discuss physicalism within the framework of possible worlds, I focus on another reason. The reason I focus on is that there are properties alien to our world, where

a property is alien to a world iff (1) it is not instantiated by any inhabitant of that world, and (2) is not analysable as a conjunction of, or as a structural property constructed out of, natural properties all of which are instantiated by inhabitants of that world.³¹

Not every possible property is exemplified in the actual world, for instance, the property of being the ancient Greek god Zeus: there is no entity which actually exemplifies this property, and it is not a property which is a conjunction of, or a structural property constructed out of natural properties all of which are exemplified in the actual world. In whichever way we combine the properties exemplified in the actual world, we won't obtain the property of being the ancient Greek god Zeus.³² Arguably properties like being the ancient Greek god Zeus are not the only properties which are alien to our world: there are also alien *physical* properties. As Daly argues,

[i]t seems that some possible properties do not exist in the actual world – some properties are merely possible – and that some of these merely possible properties are physical whereas others are not.³³

³⁰ See Galen Strawson, 'Real Materialism', in *Chomsky and his Critics*, edited by Louise M. Antony and Norbert Hornstein (Oxford: Blackwell Publishing, 2003), p. 49.

³¹ See D. Lewis, 'New Work for a Theory of Universals', *Australasian Journal of Philosophy*, 61 (1983), p. 364. Because I take physicalism to be a thesis about particulars existing in the actual world one might *prima facie* be puzzled why alien physical properties are relevant. They are relevant because although physicalism is a thesis about particulars existing in the actual world what it is to be a physical particular in the actual world depends on the particular's behaviour across all the possible worlds in which it exists.

³² As an anonymous referee has pointed out to me, there are reasons why this is true which are irrelevant to the point, e.g. that Zeus is fictional, that to be Zeus an entity has to have existed for a long time already etc.

³³ See C. Daly, 'What are physical properties?', *Pacific Philosophical Quarterly*, 79 (1998), p. 198. These properties are such that if they had been exemplified in the actual world we would classify them rightfully as physical properties although we are unable to construct them out of properties exemplified in the actual world. These properties are abstract entities. However, because physicalism is a thesis about the particulars existing in the actual world, the existence of abstract entities is not *eo ipso* a refutation of physicalism.

For instance, there are possible worlds in which particulars exemplify negative *schmelectrical charge*, a charge which is somehow familiar to our negative electrical charge but in fact irreducible to anything and not analysable as constructed out of anything we are familiar with in the actual world. Any physical theory is silent about schmelectrical charge as its scope is restricted to the actual world only. That is, physics will never take schmelectrical charge into its stock because there is none to be found in the actual world. Because there might be a particular in the actual world which exists also in another possible world without exemplifying in that world any physical property we are familiar with from the actual world but which nevertheless has a certain schmelectrical charge³⁴, that is, a property which we would classify as a physical property if it had been exemplified in the actual world, there might be a particular which in fact is a physical particular although we could not classify it as one if the physicalist's account of physical properties is restricted to a subset of properties physics deals with.³⁵ If the physicalist's account of physical properties could not assume properties to be physical other than the ones physics deals with, then we might judge that physicalism is false although in fact it is true.³⁶

The account of physical properties which we need in order to state a precise physicalist thesis thus has to meet two conditions: it has to enable the physicalist to sort out properties as irrelevant out of the set of properties provided by any physical theory, and it has to enable the physicalist to classify properties as physical which are not dealt with by physics. An account which in the sense specified is independent of physical theory and which may integrate prop-

³⁴ That is, it is part of the extension of the predicate corresponding to schmelectrical charge in that world.

³⁵ Can there be fundamental physical properties which are not exemplified in the actual world? One might argue that schmelectrical charge could be a matter of different kinds of strings which still are 'made of' the same string stuff as our strings, and describable by existing equations although not realized. This is by no means an easy objection. However, it seems to me that it presupposes that the fundamental physical properties of any possible physical world are strings, and it is this assumption which I do not think to be true. There is no contradiction in the assumption that there is a possible world in which there are no strings but another, entirely different kind of fundamental physical property which happens to behave similar to, without being analysable as a 'conjunction of, or as a structural property constructed out of, natural properties all of which are instantiated by inhabitants of [the actual] world' (Lewis, *Universals*, p. 364).

³⁶ Because we would judge that the mentioned particular which exists in a possible world without exemplifying any physical property to be found in the actual world is a non-physical particular, which, in fact it is not: it has a certain schmelectrical charge.

erties physics does not know of is independent of physics tout court. It is an a priori account of physical properties. On the present account the bond between physicalism and physics is cut.

There are two ways to elaborate such an account: either we justify a priori which properties are physical properties, or we justify a priori which properties are no physical properties. In the first case, we provide a positive account of physical properties, in the latter case we provide a negative account. Either way, the set of physical properties will be the same on the assumption that every property either belongs to the set of physical or non-physical properties.³⁷ Because it is more difficult to state in a positive way a priori all the properties acceptable as physical ones, I sketch a negative account of physical properties, and, following common thought, I assume that the relevant set of non-physical properties is the set of mental properties. The negative account of physical properties thus is a positive account of mental properties and vice versa.³⁸

There may be more than one a priori criterion for mental properties, but if adequate, they will demarcate the same set of mental properties. I argue for the following: mental properties are those and only those properties of which we know a priori that their exemplification conceptually entails the existence of a conscious being. Here is an argument to this extent: it is the essential feature of mental properties that they are properties of conscious beings and it is a contradiction in terms that a mental property is exemplified without there being a conscious being whose

³⁷ Otherwise, a property could be classifiable *positively* as a physical property but negatively would belong to the class of non-physical properties. Because we are dealing with a priori justification this would entail a contradiction and one of the proposed justifications would have to be false.

³⁸ Although not all analytic philosophers would agree on a negative way of elaborating an account of physical properties, there are some who do. See for instance, D. Papineau, *Thinking about Consciousness* (Oxford: Oxford University Press, 2002), p. 41, and A. D. Smith, 'Non-Reductive Physicalism?', in *Objections to Physicalism*, edited by Howard Robinson, Oxford: Oxford UP, 1993, p. 44ff. See C. Gillett and D. Witmer, 'A "physical need": physicalism and the via negativa', *Analysis*, 61 (2001), pp. 302–309 and Sara Worley, 'Physicalism and the Via Negativa', *Philosophical Studies*, 131 (2006), pp. 101–126 for a critical discussion of the via negativa. According to Strawson, 'there are two good reasons for taking "mental" as the basic positive term, one terminological, the other philosophical. The terminological reason is simply that we do not have a convenient positive term for the non-mental [. . .]. The philosophical reason is very old: it is that we have direct acquaintance with – know – fundamental features of the mental nature of [. . .] reality just in having experience in the way we do, in a way that has no parallel in the case of any non-mental features of [. . .] reality' Strawson, *Real Materialism*, p. 54.

property it is. As Foster states: 'We must represent each episode of mentality as the event of a subject's being in a certain mental state'.³⁹ That is, mental properties (whether we are aware of them or not) cannot be exemplified while there is no conscious being around whose properties they are (even if we are not aware of all of our mental properties).⁴⁰ There is no thought, no intention (whether conscious or unconscious), no wish, no quale without some conscious being the thought is thought of, the intention (whether conscious or unconscious) is intention of, the wish is wish of, and the quale is quale of. In contrast, properties like having a certain mass, or being constituted of certain molecules in empty space are no mental properties as their exemplification does not conceptually entail the existence of a conscious being: they could be exemplified without there being any conscious being around (even if in the actual world a conscious being just might be the sum of thousands of molecules moving in empty space). The account proposed circumvents Hempel's dilemma and enables the physicalist to state a precise thesis of physicalism here and now. It also does not preclude the possibility to identify mental and physical properties a posteriori, as for instance, standard versions of a posteriori physicalism argue for: that the exemplification of a certain property does not conceptually entail the existence of a conscious being does not preclude the possibility that once we start empirical research this property turns out to be identical with a physical property in the actual world, and a fortiori in every possible world.⁴¹

³⁹ See J. Foster, *The Immaterial Self* (London: Routledge, 1991), p. 205.

⁴⁰ This criterion does not commit us to a particular theory of conscious beings. It is consistent with conscious beings being substances or bundles of mental properties. In the latter case it is even analytic that the exemplification of a mental property entails the existence of a conscious being as in that case conscious beings are bundles of mental properties: if there is a mental property, then there also is a bundle consisting of a mental property.

⁴¹ Within analytic philosophy this characterisation of the physical is not unanimously accepted. I can only very briefly mention what can be called the 'inference-view of the physical' and the 'location view of the physical'. (a) Inference view of the physical: Russell states the following: 'I should define [a physical event] as an event which, if known to occur, is inferred, and which is not known to be mental. And I define a "mental" event [...] as one with which some one is acquainted otherwise than by inference. Thus a "physical" event is one which is either totally unknown, or, if known at all, is not known to anyone except by inference.' (B. Russell, *Human Knowledge: Its Scope and Limits* (London: George Allan & Unwin Ltd., 1976), p. 245). There might be a problem with Russell's account: while on my account subconscious mental properties are plausibly to be classified as mental properties (they conceptually entail the existence of a conscious being) it seems

6. What is Physicalism?

Physicalism is the thesis that every actually existing particular either is directly identifiable as a physical particular or else is indirectly identifiable as a physical particular. A physical particular is a particular essentially exemplifying properties which do not conceptually entail the existence of a conscious being. Physicalism is a purely philosophical thesis with no intrinsic relation to physics.

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to me to be coherent that on Russell's account they turn out to be physical properties: arguably, subconscious properties are those which we do not always know of by direct acquaintance. (b) The location view of the physical: another familiar account of physical properties states that 'roughly, those things are material that occupy or take place in space' (M. Lockwood, *Mind, Brain & the Quantum* (Oxford: Blackwell Publishers, 1989), p. 20. According to this approach, one might say that physical properties are those and only those properties which conceptually entail that their bearer exists in space. However, I am not sure whether this is a good criterion if it entails that mental properties do not conceptually entail that their bearer exists in space. There seem to be mental properties which entail that their bearer exists in space as for instance the mental property of being in a certain visual state. The qualitative state is a mental one, however, it entails that the bearer of this state is located somewhere in space from which he sees what is represented in the visual state.