

Why property dualists must reject substance physicalism

Susan Schneider

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Abstract I argue that property dualists cannot hold that minds are physical substances. The focus of my discussion is a property dualism that takes qualia to be sui generis features of reality.

Keywords Property dualism · David Chalmers · Jaegwon Kim · Qualia · Substance dualism · Substance · Mind · Non-reductive physicalism · Consciousness · Bundle theory · Substratum theory · Physicalism · Materialism

Consider an ontological scheme that features qualia as irreducible properties of the universe, alongside the usual inventory of sparse physical properties identified by a completed physics. We have property dualism: both mental and physical properties are sui generis. And we think we know where in philosophical space to locate such a view: it is distinct from substance dualism. For after all, there are well-known contemporary property dualists who reject substance dualism, claiming instead that while mental and physical properties are distinct, all substances are nonetheless physical.¹ That is, they hold both:

¹ E.g., Kim (2005) and Jackson (1982). Chalmers had previously underscored that his property dualism does not require substance dualism, and expressed a doubt regarding Cartesian substance dualism (1997, pp. 124–125). But he is currently “reasonably sympathetic but agnostic” about substance dualism (email of Aug., 2009). It is important to bear in mind that his (1997) does not claim that substance physicalism is correct; nor does it deny it. In any case, this paper explores the plausibility of a (PD) that accepts substance physicalism, a view that many who find Naturalistic Dualism compelling are sympathetic to.

S. Schneider (✉)

Department of Philosophy, University of Pennsylvania, Philadelphia, PA, USA
e-mail: sls@sas.upenn.edu

(SP) Substance Physicalism: all substances are physical.

And,

(PD) Property Dualism: mental and physical properties are distinct.

Indeed, substance physicalism has been characterized as the default position in philosophy of mind, being “a starting point for discussion rather than a conclusion in need of defense” (Kim 2006, p. 274). And this is all well and good, says the canon, since contemporary philosophy of mind sees the question of the nature of substance as being settled in favor of the physicalist (Crane 2003; Kim 2006; Kreigel 2007). Dualism about properties, in contrast, is regarded as being a live option. As Jaegwon Kim writes in a recent textbook: “...the fact is that substance dualism has played a very small role in contemporary discussions of philosophy of mind....Dualism is no longer a dualism of two sorts of substances; it is now a dualism of two sorts of properties, mental and physical” (2006, p. 51).²

Kim’s statement aptly characterizes the state of play in the field. But today I argue that the field is mapping philosophical space incorrectly: the issue of substance physicalism is hardly settled. Insofar as property dualism appeals to (SP), it faces deep difficulties. If either of the currently leading conceptions of substance are in force, (PD) cannot uphold substance physicalism; rather, (PD) leads to substance dualism. I also offer general considerations for the conclusion that (PD) leads to substance dualism that apply to any theory of substance whatsoever. In essence, the problem I put to the property dualist is this: if your property dualism is to be a *bone fide* physicalist position, as many of you would like it to be, you must explain how your substances turn out to be genuinely physical. This demands some metaphysical soul searching, rather than a crude appeal to the doctrine that all substances are physical. Such soul searching is well worth doing—the view that qualia are fundamental elements of reality is an insightful perspective, at least if you ask me. And it is currently influential, being associated with the “Naturalistic Dualism” developed by (inter alia) David Chalmers and more recently, with the modest physicalism of Jaegwon Kim, who moves to the view that qualia are fundamental in his recent *Physicalism, or Something Near Enough* (2005). But today I urge that, as matters stand, (PD) does not lend itself to any physicalism worth having. It is nowhere near it.³

² Of course, there are substance dualists out there, e.g., John Foster, E.J. Lowe and Dean Zimmerman; but substance dualism is all too often dismissed as “fringe” by mainstream philosophy of mind. There is a presumption in favor of substance physicalism.

³ A note on terminology. By “substance” I do not mean “substratum” but the entire object, broadly construed to include both physical and non-physical substances. Some use the two expressions interchangeably. By “property dualism” I have in mind positions that take experiential properties to be ontologically basic, although they may lawfully depend upon physical properties. There is a weaker view that some call “property dualism” that is associated with non-reductive physicalism in which mental properties do not reduce to physical ones. Unlike the stronger form of property dualism, non-reductive physicalists can accept token identity and logical/metaphysical supervenience. Although the stronger form of property dualism is my focus, much of what I argue in this paper applies to the weaker form as well. I extend the argument of this paper to the case of non-reductive physicalism in Schneider (ms., in progress) and Schneider (forthcoming).

Here is how our discussion shall proceed. Section 1 observes that a trope version of property dualism commits to *sui generis* mental particulars. This is just an initial observation to whet the appetite: for it means that even from the very outset, the property dualist who is a trope theorist must reject the view that all *particulars* are physical. The point here is that substance dualism is hardly a great intellectual leap, if one has already rejected physicalism about particularity. Then, Sect. 2 turns to the main focus of the paper, which concerns the category of substance, rather than particularity in general. Concentrating on one of two leading contemporary theories of substance—the bundle theory—I argue that regardless of whether (PD) is framed in terms of tropes or universals, and insofar as property dualism appeals to a bundle theory of substance, an appeal to (SP) is implausible. The property dualist is instead left with either a form of Cartesian substance dualism or the position that the mind is a “hybrid” substance, that is, a substance that is both physical and non-physical. I urge that this too is a form of substance dualism, although of a non-Cartesian variety. Then, Sect. 3 argues that the property dualist actually regards minds and brains as having distinct modal properties. (This point does not require a bundle theory of substance but is intended to apply to any conception of substance the property dualist appeals to.) Section 4 responds to objections to the earlier sections. Then, Sect. 5 contends that should the property dualist turn to the substratum view of substance instead, a similar fate ensues: she cannot appeal to (SP). The overall challenge to the property dualist who aspires to (SP) is to develop a plausible account of substance that sanctions her appeal to substance physicalism. Alternately, insofar as property dualism is still appealing to the property dualist who originally aimed to uphold (SP)—and at this point it may no longer be—she could instead develop her theory in the context of substance dualism. In this vein, in Sect. 6, I briefly suggest that the property dualist consider appealing to the hybrid view.

1 An initial observation

We can begin to sever the tie between (PD) and (SP). The property dualist’s universe is populated by properties—the mass of a neutrino, the flavor of a Chianti, the rich hues of a sunset. Question: what are property natures? One popular answer is universals, but this is by no means the only answer. Proponents of tropes take properties to be ontologically basic, yet properties, qua tropes, are not repeatables. There is only the particular brownness of the tree, the particular mass of the neutrino, and so on (Campbell 1981; Martin 1980; Williams 1966). Tropes are an important and influential alternative to universals; as Armstrong says, tropes “ride high” over orthodox Nominalisms (1989a, p. 125). Indeed, Armstrong himself remarks in the concluding paragraphs of his *Universals* that tropes and universals may be in a dialectical stalemate, “running parallel in many respects”, perhaps being “alternative languages” (1989a, p. 139).

Unfortunately, we do not have time to assess the relative strengths and weaknesses of tropes versus universals. But a quick and uncontroversial observation is all that we need: insofar as properties turn out to be tropes the property dualist *cannot* hold that all particulars are physical. For in this case reality contains

irreducibly mental tropes. Mental particulars are thereby added to the property dualist's basic ontology.

Of course, “substance” is a term of art. You may be disinclined to call a single trope a substance, although it is a particular. *Prima facie*, there is conceptual space for the trope theory to accept *substance* physicalism while accepting a dualism about *particularity*. For instance, perhaps you believe that it is only when tropes are bundled with certain other tropes or are instantiated by a substratum that they qualify as substances. And suppose you insist that these substances are somehow physical. I will soon urge that neither of these routes will lead to (SP), but for now, let me simply note that dualism about particularity is closely akin to substance dualism, for both positions hold that the inventory of particulars consists in more than that which physics delivers up: mental particulars exist as well.⁴ If this is one's point of departure then substance dualism is no great ontological leap.

Given that the property dualist who appeals to tropes holds that phenomenal properties are non-physical particulars, it is natural to suspect that (DP) and (SP) form a disagreeable marriage, at least insofar as properties are construed as tropes. Indeed, we shall now turn to the category of substance; I shall illustrate that the property dualist cannot accept (SP). These observations will hold irrespective of whether (PD) is framed in terms of an ontology of tropes or universals.

2 Substances as bundles of universals or tropes

For much of this section we will not need to specify whether the property dualist's properties are universals or tropes. What is important is that the property dualist holds that at least certain mental properties—paradigmatically phenomenal properties but perhaps intentional ones as well—are metaphysically basic.⁵ Now, let us ask: how are we to understand the relationship between a thing (e.g., the brain) and its properties (e.g., the experience of seeing the sunset)? This leads one to inquire into the nature of substance. Armstrong says that here, “two different models compete for allegiance of philosophers”, referring to the bundle and substratum views (1989b, p. 59). Notice that both conceptions of substance are *reductive*: substances, even microphysical ones, reduce to (inter alia) properties. Let us consider each view in turn, beginning with the bundle theory, which is the focus of this section.

When we conceive of an object what comes to mind are its features. Indeed, it is difficult to think of what would be left over if we tried to conceive of an object without any of its features. In keeping with this observation, the Bundle Theory holds that a substance just is a bundle of properties. Of course, not every bundle of

⁴ Indeed, even the proponent of immanent universals will appeal to non-physical particulars to the extent that she holds the commonly held view that events are property instantiations.

⁵ Like many, I believe the strongest case for property dualism stems from the phenomenon of consciousness. Chalmers' case for property dualism is very influential; I shall make heavy use of his view. For an interesting case for a property dualism involving intentional properties see Plantinga (2006). Maybe a dualism about one would amount to a dualism about the other—i.e., some have questioned the common view that intentional and phenomenal states are truly separable (Graham et al. 2009).

properties is an object, so we should ask: what unites bundles that are *bona fide* substances? Bertrand Russell's influential suggestion was an unanalyzable relation of compresence: a relation that obtains between any two properties that are properties of the same object (1948, 312). A complex of compresence is a class of properties each of which stands in the compresence relation to each member. A given particular is a complete complex of compresence—a complex in which no further universals can be added because any further universal would not be compresent with at least one member of the group. A further feature of the theory is worth noting as well: according to a crude version of the bundle theory, all of a substance's properties are included in the nature of the bundle. But surely this cannot be right; otherwise, substances would not persist over time. Some properties of a given bundle must be accidental, while others are essential.

Let us now ask: Is the conjunction of property dualism and the bundle theory even compatible with substance physicalism? The following problem concerns me: according to the bundle theory, substances are just bundles of the properties they possess. So why is your mind, which is constituted by irreducible non-physical properties, really a *physical* substance at all? An example will help illustrate the problem. Suppose you are walking along a beach. As you experience the rich hues of the ocean and sky, and feel the warmth of the sun on your face, why is the mind—i.e., the substance that has the experiential properties—a physical thing? Why is it that a physical bundle instantiates the experiential properties, since, according to the conjunction we are considering, there would be a bundle that has irreducible phenomenal properties as constituents? Of course, if you reject property dualism for the type identity theory, you will not find this matter compelling: the same substance has both kinds of features because mental properties *just are* physical ones. But we are assuming a property dualist conception; and on this conception there is a categorical divide between mental and physical properties, and when substances are bundles, it is important to ask: Given that non-physical properties are constituents of the bundle, why would the bundle be physical? Why is the mind not, instead, a “hybrid” substance—one which consists in both physical and qualitative properties? Or why are there not two bundles instead: a physical one (the brain) and a non-physical one (the mind), each being composed of their physical and mental properties respectively?

We are now ready to frame the initial challenge of this section: in order to uphold substance physicalism the property dualist must explain why the presence of irreducible qualia is compatible with the mind's being a physical substance (i.e., being identical to the brain), given that the bundle theory holds that a substance's properties are individuative. While some may find it just obvious that the mind is the brain—after all, substance dualism has notorious problems with mental causation—the point here is that the property dualist cannot simply appeal to substance physicalism, gesturing at how unattractive substance dualism is. That is, she cannot do so unless she can deliver an independently plausible theory of substance such that, when (PD) is in force, the mind turns out to be physical.

In response to this challenge, the property dualist may simply ask: “What is the harm in simply accepting that minds are hybrids substances, having both physical and mental properties? Because minds have physical properties, they are physical

entities.” That hybrid substances are physical substances is something that the property dualist needs to establish, however. Remember, in the context of the bundle theory, non-physical properties are *individuating*, so the nature of mind is, at least in part, non-physical. Further, consider that another, related position that holds that the self is a hybrid substance is standardly viewed as being a form of substance dualism. Here, I have in mind the “Non-Cartesian substance dualism” of E.J. Lowe, a position that holds, with Descartes, that the self is distinct from the body. But in contrast to Cartesian dualism, Lowe’s dualism (in Lowe’s own words): “...does not insist either that the self is separable from anything bodily or that it is spatially unextended. It allows, that is, that the self may not be able to exist without a body and that it may be extended in space, thus possessing spatial properties such as shape, size, and spatial location” (2006, p. 8). Lowe’s self is thereby a *hybrid* substance.

Here, you may ask: why is Lowe’s self non-physical, given that, unlike Cartesian dualism, it bears physical properties? Lowe’s self is non-physical because, according to Lowe, selves and their bodies have different persistence conditions. For instance, Lowe claims that one can gradually exchange each of the neurons in one’s brain for silicon based artificial neurons; eventually, the same person has an artificial brain that is computationally isomorphic to the original (Lowe 2006, p. 9). Lowe then asks: doesn’t the self survive, despite the gradual switch to an entirely different kind of physical substrate? Lowe’s intuition is that the self does survive; a position that I suspect many philosophers of mind who appeal to functionalism, including property dualists who think the mind supervenes on one’s computational configuration, may find surprisingly friendly.⁶ But now, if the self is capable of survival across different kinds of physical substrates, doesn’t it have different persistence conditions than the body, or any other kind of physical substance that underlies it? To be sure, Lowe’s position is quite controversial, as all views on the persistence of the mind, self or person clearly are. But you do not need to share Lowe’s intuitions about the thought experiment. My point is simply that this type of position is commonly considered to be a substance dualist position: while selves are naturalizable, being part of the world that science investigates, they are non-physical. Mutatis mutandis, hybrid substances involve a singular substance instantiating both physical and irreducibly non-physical properties; in being such, hybrids contrast with the world of physical substances.⁷

At this point, the property dualist may object that she is not suggesting that the mind and brain differ in their persistence conditions, so the conclusion that the mind

⁶ In a similar vein see David Chalmers “fading qualia” thought experiment (Chalmers 1997) and Alvin Plantinga’s “Replacement Argument” against materialism (Plantinga 2006).

⁷ Lowe’s own approach to substance is neo-Aristotelian. On this view substances are *sui generis* and are typed by certain universals (for a survey of this type of position see Loux 2002). The reader may naturally ask why I do not discuss this conception alongside the bundle and substratum views. First, notice that the main arguments of the paper seem to apply to it; insofar as minds are typed by their qualitative properties they would be non-physical, although, as per Aristotle’s position, they would be part of the natural world. Second, the neo-Aristotelian view simply doesn’t strike me as a genuinely physicalist one in any case. After all, Lowe himself is offering it in the context of substance dualism. For it takes the mind, self or person to be *sui generis* and distinct from the body. Even setting aside the arguments of this paper, the proponent of (SP) would not want to appeal to this sort of position.

and brain are distinct substances does not follow. However, I suspect that the property dualist will find it difficult to deny that minds and brains have different modal properties. Section 3 shall pursue this matter.

3 Mind and brain as distinct substances

Consider: (1) Property dualism holds that mental properties nomologically supervene on physical properties. But property dualism rejects supervenience in worlds that are physical duplicates of ours where our psychophysical laws fail to hold. For consider zombie worlds: a zombie is a system that is "...physically identical to a conscious being, but that lacks at least some of that being's conscious states" (Chalmers 2002). Zombies have *brains*, but, ex hypothesi, they are incapable of having phenomenal properties. Question: do zombies have *minds*? I doubt the property dualist will want to say that they do: remember, for the property dualist, consciousness is the mark of the mental. But now, consider: brains have different modal properties than minds do, for brains can exist even if they are incapable of having phenomenal properties—or so the property dualist contends. But not so with minds. Brains do not have phenomenal consciousness essentially; minds plausibly do. But if the property dualist allows that minds and brains differ in this way, surely they cannot be identical.

(2) Another way to see the property dualist's hidden commitment to substance dualism is to ask whether minds are something "over and above" brains. Question: what does God need to do to ensure that our world has physical bundles? Answer: God must specify the mosaic of sparse physical properties, the compresence relation and (perhaps) spacetime. Next question: but what does God need to do to make it the case that our world has *minds*? Property dualist answer: God must make it the case that the world has irreducible qualia.⁸ After all, according to property dualism, *consciousness is the mark of the mental if anything is*. If anything is to characterize the nature of mind, wouldn't it be phenomenal properties? This latter point is in fact the very kernel of property dualism. For according to the property dualist, in order to explain the fundamental nature of mind we must posit consciousness as a basic ingredient of the universe, alongside the fundamental physical properties. But no genuine substance physicalist can venture this answer. If God needs to add mental properties to the world to create minds, minds are surely not physical substances.

Three features of these arguments are worth underscoring. (i), First, unlike the argumentation of Sect. 2, which is limited to the context of the bundle theory, (1) and (2) are not just arguments against the conjunction of a substance physicalist property dualism and the bundle theory. Mutatis mutandis they can be raised in the context of any theory of substance. (ii), Further, both arguments apply in the case of hybrid substances; against this backdrop, the arguments urge that insofar as minds have irreducible mental properties which are essential features of them, even if they are instantiated alongside certain physical properties, minds are not identical with

⁸ E.g., see Chalmers discussion of a similar example in his 1997, p. 124.

brains. So, to recur to the critic's objection at the end of the previous section, this confirms our suspicion that the hybrid conception is indeed a form of substance dualism. (iii), Finally, the two arguments apply in the context of a Cartesian conception of substance in which the mind and body are entirely unlike one another with respect to the types of properties possessed. On this view, the mind is a wholly immaterial substance, being unfit to bear any physical characteristics whatsoever, including spatial properties. And any physical substance is unable instantiate mental properties.

Indeed, the question, "What would decide between the Cartesian and hybrid conception?" is an intriguing one, and, if the arguments of this paper are correct, it is one that the property dualist will need to address. So let us consider this matter in the context of the bundle theory. As Jaegwon Kim has pointed out to me, a proponent of either view of substance must show that that the relevant bundle of properties is capable of being a genuine substance. That is, the Cartesian dualist/bundle theorist needs to illustrate that a bundle that consists exclusively of mental properties cannot admit a physical property as an additional member.⁹ To recur to our example of walking on the beach, the question is: why aren't certain states of your brain that are nomologically correlated with your experience of seeing the ocean also part of the same bundle as your non-physical, experiential properties? That is, why should one believe that at least some physical properties are not compresent with the mental properties? Relatedly, can a purely non-physical bundle serve as a complete or maximal bundle? Or are the qualia, in and of themselves, merely like the colors of an image taken alone, without, for instance, the mass and shape of the image. Without a plausible answer to these questions, one cannot conclude that the putative mental bundle is a *bone fide* substance.

And the proponent of the hybrid conception needs to establish that hybrid mental/physical substances qualify as genuine substances as well. For why is it that physical and mental properties can be compresent with one another? After all, not every property can be compresent in the same bundle as every other. Consider any property and its negation, or consider properties that cannot be coinstantiated as a matter of law (e.g., a particle's both having mass and traveling at the speed of light). Of course, Descartes famously claimed that mental and physical properties cannot be coinstantiated, for they characterize distinct kinds of substances. While many reject Descartes' bifurcation, the property dualist who defends hybrid substances should at least explain why hybrid mental/physical substances of this sort are truly possible. Indeed, hybrid substances seem particularly puzzling in the context of a trope property dualism. For why can entities that are distinct kinds of particulars nonetheless form a singular substance? Why are there not distinct mental and physical substances if there are already mental and physical particulars that are ontologically basic? It is hard to see how a unified substance lies behind such a motley lot of tropes.

⁹ Of course Descartes was not a bundle theorist. But if the reader will bear with me, I shall still call this bundle view "Cartesian" to underscore that it holds that the mind, self or person is wholly immaterial, and is unable to bear any physical properties. And physical substances are unfit to bear mental properties.

Note the interplay between the explanatory tasks that the hybrid and Cartesian substance dualist approaches face. Assuming that both the bundle theory and (PD) are correct, and assuming that the argument of this section is apt, if it turns out that there is good reason to believe that mental and physical properties cannot be compresent in the same bundle, then the case for Cartesian substance dualism is strengthened. On the other hand, if there is reason to believe that mental and physical properties can be compresent, this presents a challenge to the Cartesian substance dualist. For why are her putative mental substances not really hybrid ones? Here, it is important that the property dualist provide solid reason to choose between hybrid and Cartesian dualism; otherwise, (PD) is open to the charge that it leaves substance natures indeterminate.

Now let me summarize the results of the present section. We've noted that irrespective of the particular theory of substance the property dualist appeals to, (PD) seems to hold that minds and brains have different persistence conditions. Further, insofar as the property dualist wishes to develop her view in the context of substance dualism, she must explain why her substances are genuine, ruling out the competing dualist conception.

This all is rather bad news for the proponent of (PD), I imagine. I can at least offer one consolation to her in the context of the bundle theory: there is a sense in which in the case of the bundle theory substance dualism is only as ontologically costly as property dualism itself. Substances are not basic: they are just metaphysical constructs of universals or tropes. Now, does this mean that there are no metaphysically fundamental mental particulars in the property dualist's ontological scheme? We've already noted that this depends on whether the property dualist adopts an ontology of universals or tropes. With an ontology of universals the property dualist who appeals to the bundle theory gets off scot-free, for substances are a reductive category and her properties are universals, not tropes. If she is a trope theorist however, qualia, being tropes, are particulars—so her universe contains both physical and mental particulars.

4 Responses¹⁰

It is now time to consider some responses to the arguments of the previous two sections. First, let us recur to Sect. 2, which claimed that (PD), when combined with the bundle theory of substance, is incompatible with substance physicalism. In response to this, the property dualist might claim that phenomenal properties are not constitutive of *any* bundle, being instead accidental properties of physical substances (i.e., the mind/brain).¹¹ It is difficult to see how the property dualist, of all people, can say this, however: property dualism says that qualia are ontologically fundamental, alongside the sparse physical properties. The sparse physical properties type

¹⁰ I am grateful to David Chalmers for suggesting the second and third property dualist responses to me.

¹¹ To keep things simple, I'll speak of the physical substance in question as being the brain. Of course if the mind is extended then the physical substance in question goes beyond the brain as well.

individuate the fundamental particles; yet on this view, qualia do not type individuate anything, being merely accidental properties of the mind/brain. Phenomenal properties get lofty credentials, but no office. This is not to assume that every property is type individuating; it is just to say that it is odd that the property dualist is saying that mental properties are ontologically basic—otherwise the mind is not explainable—yet they do not type individuate the mind/brain. Only physical properties do. If this is the case then zombies should have minds. And God shouldn't have to do anything extra to brains to add mentality to the world. But the property dualist would reject these claims. So: where is the argument for the view that phenomenal properties are not type individuating?

Second, in response to the argumentation of both Sects. 2 and 3, the property dualist may venture the following: minds are not ontologically serious entities, being instead shorthand for talk of mental properties. It is odd that a property dualist, of all people, would adopt such a deflationary view of minds. But in any case, let us ask: on this view, what is the bearer of the mental properties? Persons? Selves? Here, the same issues seem to arise: why isn't the bundle that is the person or self, being individuated by irreducible qualia, non-physical? Perhaps the property dualist would take a deflationary view of persons and selves as well, saying that brains are the bearers of the mental properties. But then if so, why are brains physical if they instantiate qualia? Such would be part of their nature. Further, notice that on the bundle theory substances *are* certain bundles of properties. The deflationary approach begs the question: why are minds not substances then?

Third, the property dualist could observe that the argument of the second section merely discussed the case of macroscopic physical substances (i.e., brains); *prima facie*, it does not seem that the argument applies to a panpsychist property dualism that purports to be physicalist about substance. On this view mental properties are instantiated by fundamental physical entities such as particles or loops. In response, notice that bundle and (as we shall see) substratum theorists will look to their theories to explain the nature of fundamental substances. So particles and strings, if they indeed have fundamental mental properties, will be individuated by their mental properties. So my argument applies; the panpsychist cannot appeal to SP.

Finally, consider the following retort:

At the end of the previous section you console the property dualist, remarking: 'There is a sense in which in the context of the bundle theory, substance dualism is only as ontologically costly as property dualism itself.' But this point threatens to undermine the significance of your conclusion. If property dualism leads to an innocent brand of substance dualism, the property dualist interested in (SP) can shrug: if that's all substance dualism amounts to, so be it.

Bundle theories are, in a deep sense, ontologies of universals or tropes. Still, minds are just as real as their metaphysical constituents. Non-reductive physicalists do not defend eliminativism about minds. So learning that the property dualist's position on the nature of mind is not a physicalist position constitutes substantial progress towards understanding the stance that property dualism takes on the mind–body problem. This is important news; after all, property dualism is currently a leading answer to it.

Now let us pause and sum up the dialectic of the paper thus far: Sect. 1 argued that a trope property dualism commits to an ontology of both mental and physical particulars. Further, Sect. 2 argued that irrespective of the view of properties that the property dualist accepts, if the bundle theory of substance is in force then the property dualist cannot be a substance physicalist. Then, Sect. 3 offered general considerations suggesting that property dualism must reject substance physicalism for substance dualism that do not rely on a specific view of substance. The present section entertained objections. In what follows, we shall turn to the other leading theory of substance, the substratum view, illustrating that the conjunction of (PD), (SP) and a substratum theory of substance is unworkable.

5 Substance as propertied substrata

It is instructive to see why one would turn away from the bundle theory to the substratum view. Consider a bundle theory of *universals*. It has the following unintuitive consequence: according to the Identity of Indiscernibles, if *a* and *b* have all and only the same universals they are the very same object. But consider two fundamental particles having all and only the same universals. According to the bundle theory, they will be the very same object. Of course if one is a genuine bundle theorist she will bite the bullet, for the bundle view is saying that substances are metaphysically composed of all and only properties, together with a bundling relation, so if her properties and relations are repeatables, so too are her objects.¹² So the objection only goes so far, crystallizing the real commitment of the bundle theorist. Unpalatable to some, the idea is that substances *are a species of repeatable*.

But this objection does not apply to the trope version of the bundle theory.¹³ Still, both the trope and universals version of the theory face the following worry: bearing in mind that not any collection of properties is an object, why would adding a relation like compresence, which is just another universal or trope, turn the collection of universals or tropes into an object? (Martin 1980). A consideration like this will not bother the bundle theorist, but it is decisive for some.

Thus bare substrata are invited onto the scene. According to the substratum theory, a substance is a bundle of properties, together with its substratum. Substrata are summoned to play two crucial roles. (i), The properties are instantiated by the substratum and in this way are bound together into a single particular. So we now have genuine particulars.¹⁴ And (ii), by virtue of the uniqueness of each substratum, substrata serve to distinguish indiscernible objects, a virtue for those who appeal to universals.

Yet substrata are obscure, being, as Locke himself remarked, “I know not what”.¹⁵ We cannot sense substrata directly—if they exist they are always united

¹² John Hawthorne suggests biting the bullet in O’Leary-Hawthorne (1995).

¹³ Although it is more common for trope theorists to accept the bundle theory C.B. Martin held a substratum theory of tropes (1980).

¹⁴ On this view the substratum, not the object directly, instantiates the properties.

¹⁵ See Locke 1689, II, xxiii, Sect. 2.

with properties. D.M. Armstrong, who holds this view, suggests that a substratum (which he calls a “thin particular”) can be thought of separately, in abstraction from the thing’s properties. I take it that he means that we can conceptualize a metaphysical category that plays roles (i) and (ii) while substrata themselves are always bound to properties in the world. Despite this obscurity, advocates of the substratum view contend that substrata are necessary to understand particularity. Maybe so.

In any case, let us suppose that property dualism joins forces with the substratum view. Now, given the considerations raised in the context of the bundle theory, let us ask: why is a substance that tokens phenomenal properties truly physical? Our earlier problem seems to arise: given that substances are individuated by (inter alia) their properties, why isn’t the mind a “hybrid” substance, being collocated where the brain is? Or why isn’t there both a purely non-physical mind, lacking any physical properties, and a brain? In either case, (SP) is false.

Can the property dualist deny that the mental properties individuate any substance, saying instead that they are accidental features of the brain? This move seemed unmotivated in the context of the bundle theory. However, the property dualist now has an additional dialectical move at her disposal: she could urge that only physical properties individuate the substance (together with the substratum) because *the substratum itself is physical*. This move is controversial. For instance, C.B. Martin observes that “... substrata qua substrata do not and cannot divide into kinds at all. If a set of properties is specified making up a kind and it is attributed to a substratum, then the resultant is an object of a kind” (Martin 1980, p. 7). But let us pursue it nonetheless.

We’ve observed that substrata are mysterious. Can one say more about their nature above and beyond that they serve to individuate the object and are the bearers of properties? One cannot say much; but Armstrong at least distinguishes two ways of saying little: (i), *Strong Haecceitism* “...holds that *a* and *b* each have a unique inner essence, a metaphysical signature tune as it were, something apart from their repeatable properties...which distinguishes them” (1989b, p. 59). (ii), “Weak haecceitism”, in contrast, denies that substrata have inner essences of this sort; instead, substrata differ *solo numero*. Armstrong writes, “There is certainly no call to think of haecceity as a unique inner nature or essence possessed by each particular, something property-like, although a property necessarily limited to one thing...When we have said that different particulars are numerically different, then we appear to have said all that can be said about the nature of particularity (1997, p. 108).”

Would either (i) or (ii) deliver substance physicalism to the property dualist, supporting a position in which the substrata themselves are physical? Let us consider each option, beginning with the second. (ii), If substrata differ *solo numero* then it seems that to the extent that objects can have a physical or non-physical character at all it is determined by what properties they possess. Otherwise, the substrata would not merely differ numerically. Then, as before, irreducible qualia would seem to call for an ontological commitment to mental substances.

(i), If substrata have unique inner natures it is also difficult to say how the substratum itself (rather than the properties or substance as a whole) can be physical

or non-physical to begin with. For a substratum's being physical or non-physical would seem to involve its having features that different substrata can share, and substrata natures are not supposed to be properties. Is there some other sense in which substrata could have unique natures that are physical? One cannot merely assert they are physical because they are spatiotemporal, for various putative non-physical substances (e.g., ghosts and more soberly, Lowe and Strawson's persons) have been said to nonetheless exist in spacetime. Another sense in which something is said to be physical is when it is named in the vocabulary of a current or future physics itself. But physics does not talk of substrata or haecceities. Although if substrata exist physicists may unwittingly refer to such, we cannot look to physics for an identification of these entities as being within the domain of the physical the way that we can for an identification of what the sparse physical properties are. It is thereby difficult to avoid seeing a substratum as physical or non-physical only in a derivative sense. Substrata are such by virtue of the properties they instantiate. Alas, it appears that Martin's suspicion was right on target. And this brings us full circle to the puzzle we began with: why are substances instantiating qualitative properties *physical*?

We have already entertained objections to the basic argument of this section in the context of the bundle theory; because both theories of substance take properties to be individuating, *mutatis mutandis*, the same landscape of criticisms and responses emerges. But let me close by outlining one issue that is less than obvious. As with the bundle theory, the property dualist who accepts the substratum theory will need to show that his proprietary substances are genuine. The issue does not concern the phenomenon of compresence, however—the substratum theorist does not need compresence, for the substratum itself is supposed to bind together the various properties into a singular substance. But similar issues emerge nonetheless. For the Cartesian dualist needs to show that when one has a conscious experience, only mental properties are bound together by the substratum. For why do certain physical properties not come along for the ride, turning the putative mental substance into a hybrid one? And for its part, the hybrid theory needs to show that tropes or universals of mixed ancestry can be instantiated by a single substratum and that it is not the case, instead, that there are distinct Cartesian substances.

This concludes my attack on the conjunction of (PD) and (SP). Although many contemporary property dualists aspire to uphold (SP), today I have urged that they have little justification for doing so. At this point, the property dualist who espoused (SP) might choose to repudiate (PD) because he regards substance dualism as being too implausible. Still, insofar as he *is* willing to accept (PD), I suggest that he look towards the hybrid view as it is the lesser of the two evils; for unlike Cartesian minds, hybrid minds are part of the spatiotemporal world. In what follows, I briefly explore this issue.

6 Naturalistic Substance Dualism

Just as property dualism forms an unnatural marriage with substance physicalism, there are reasons to suspect that it forms a natural alliance with substance dualism,

at least in its hybrid incarnation. Allow me to examine this natural fit in a bit more detail; I'd like to sketch the barest outline of a bundle version of a "Naturalistic Substance Dualism." So let us ask: How would the mental and physical substances relate?

Recall that the naturalistic property dualist holds that to explain consciousness one must posit basic psychophysical laws. Now, as per the bundle theory, the mental and physical properties figuring in the laws are constituents of the hybrid and physical bundles, respectively. This leaves us with nomologically necessary relations of dependency between the mind and the brain.¹⁶ That is, corresponding to each non-physical mind there is a brain, a complex physical substance ultimately made up of fundamental microphysical entities (e.g., strings). The presence of the brain—that is, the presence of a physical substance in a highly sophisticated neural configuration—is nomologically sufficient for a mind.¹⁷

It is easy in the current physicalistic climate to dismiss a view when one suspects it to be a substance dualist one. But we should ask: Is Naturalistic Substance Dualism (NSD) really so implausible? Leaving on hold the aforementioned question arising for the hybrid conception of whether both physical and mental properties can be compresent in a singular substance, recall that traditionally, the chief drawback of substance dualism is that it has an inadequate account of mental causation. If the mind is non-physical, it lacks a position in physical space. So how can it interact with physical substances? But notice that this problem does not arise for the property dualist who believes substances are hybrids, for such are within the spacetime manifold.¹⁸ Indeed, upon reflection, with NSD psychophysical causation is no more problematic than it was under property dualism proper. (Caveat: Mental causation is *highly* problematic for property dualism. Qualia look to be epiphenomenal. I am merely saying NSD doesn't add any additional problems with mental causation to the mix). Here is why. Assuming that Naturalistic Substance Dualism does not introduce a form of substance causation—that is, assuming it maintains that causation is a relation among events (where events are construed as property instances, as they generally are)—the problem of how mental substances enter into the causal nexus is upon reflection just the standard problem of how *mental properties* can be genuinely causal given that all the real causal work appears to be done in the microphysical realm. Now, the naturalistic property dualist currently rejects the view that phenomenal states are not instantiated in the spacetime manifold; phenomenal properties are instantiated where the brain is. So the mind (the non-physical bundle), having phenomenal state tokenings as constituents, while being distinct from the brain, spatiotemporally coincides with it. You may dislike NSD for other reasons, but as far as I can tell, there is no new

¹⁶ In the case of the hybrid view, the mind has certain physical properties; but I am assuming that the naturalistic substance dualist would want her psychophysical laws to link properties of the mind and the *brain*, rather than linking qualia to physical properties of the *mind*. For in this former case, there would be psychophysical relations linking the two substances that hold with nomological necessity.

¹⁷ This is a kind of "emergent substance dualism," I suppose.

¹⁸ Those familiar with Kim's discussion of the pairing problem may note that that the pairing problem does not arise either: unlike Cartesian minds, hybrid minds are in spacetime (Kim 2005).

problem of mental causation here, at least insofar as hybrid substances are appealed to. For such, unlike Cartesian minds, are part of the world of spacetime.

I have ventured this modest suggestion in effort to make the marriage between (PD) and hybrid substances more palatable. But like any forced marriage, this may strike the unwilling fiancée with distaste. If so, it is all the more urgent that the proponent of (PD) respond to the main thrust of this paper, locating a theory of substance compatible with her appeal to physicalism.

7 Conclusion

Here is where we have arrived: substance physicalism is generally regarded as the default position in philosophy of mind (Kim 2006, p. 274). Yet I have urged that it is a mistake to view substance physicalism as a taken-for-granted physicalist backdrop that all currently viable theories of the mind–body problem must adopt. For property dualism—by anyone’s lights a leading theory of the nature of mental properties—cannot uphold (SP). Physicalism about substances, like physicalism about properties, is up for grabs. Should the property dualist wish to continue to accept physicalism in the face of this challenge, she must turn her attention to the category of substance. And unless she can illustrate that her theory is truly compatible with substance physicalism, she will need to reorient her philosophical landscape, developing property dualism in the context of substance dualism. This leaves us with the conclusion that one currently popular answer to the mind–body problem, a property dualist position that takes physical substances to be the bearer of mental properties, is not well-founded.

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