

# The Physicalist's Tight Squeeze: A *Posteriori* Physicalism vs. A *Priori* Physicalism

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## Abstract

Both a *priori* physicalism and a *posteriori* physicalism combine a metaphysical and an epistemological thesis. They agree about the metaphysical thesis: our world is wholly physical. Most agree that this requires everything that there is must be necessitated by the sort of truths described by physics. If we call the conjunction of the basic truths of physics P, all physicalists agree that P entails for any truth Q. Where they disagree is whether or not this entailment can be known *a priori*. The *a priori* physicalist says it can, the *a posteriori* physicalist says it cannot. Though a *posteriori* physicalism is probably the dominant view, it is really a surprising and somewhat unlikely stance. In this article, the nature of the view is discussed, and two arguments are presented that should cause us to look again at the potential of a *priori* physicalism.

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Both a *priori* physicalism and a *posteriori* physicalism combine a metaphysical and an epistemological thesis. They agree about the metaphysical thesis: our world is wholly physical. What this apparently simple statement amounts to is a matter of some dispute, but most will agree that for physicalism to be true, everything that there is must be necessitated by the sort of facts described by physics.<sup>1</sup> If we call the conjunction of the basic truths of physics P, all physicalists agree that P entails Q for any truth Q.<sup>2</sup> Where they disagree is whether or not this entailment can be known *a priori*. That is, they disagree over whether or not all truths are *a priori* deducible from the basic truths of physics.

A *priori* physicalism holds that all truths, including all truths about minds, are deducible from the basic physical truths, and a *posteriori* physicalism denies that all truths are deducible from the basic physical truths.<sup>3</sup>

## I

Although a *posteriori* physicalism is probably the dominant position in debates about consciousness, it is really a rather surprising view. It's not, of course, surprising in general when one truth can't be inferred from another. The fact that Alaska is the biggest state in the U.S. can't be inferred from the fact that Rhode Island is the smallest. Though related, these truths are independent in the sense that neither necessitates the other, and facts described by one of these truths don't explain the facts described by the other. But the truths about Alaska and Rhode Island can be inferred from the physical truths about the number of square centimeters within the borders of the various U.S. states. Given that the latter truths, or the facts they describe, necessitate the former truths, and indeed seem to be why the former truths are true, it would seem absurd to deny that one could infer the latter from the former. A *posteriori* sizeism doesn't seem to be a credible option; a *priori* sizeism seems by far the better view.

What is a bit surprising is that a *posteriori* physicalism is rather like a *posteriori* sizeism in that it claims that there are physical truths that cannot be inferred *a priori* from other truths that nonetheless necessitate them. In particular, there are phenomenal truths, Q, that are entailed by

microphysical truths P, but Q is not *a priori* deducible from P, despite the fact that the facts described by P presumably explain why the facts described by Q hold.

To get a sense of how strange it would be for there to be necessitation without deducibility, it is important to get clear on what deducibility involves.<sup>4</sup> The claim that Q is not deducible from P is very strong. It is not the claim that no one currently can deduce Q from P. Nor is it the claim that no human intelligence can deduce Q from P. It is the claim that a godlike ideal reasoner could not deduce Q from P *a priori*. It might seem that this notion is too farfetched to grasp, but it is helpful to keep in mind claims that might be made in mathematics. Suppose a mathematician wonders whether Goldbach's conjecture (G) is deducible from the axioms of arithmetic (A). The mathematician is not asking about the abilities of humans. Suppose someone proved that the steps in such a deduction would have to be so complicated that no naturally evolved life form could ever process it. This would not answer the mathematician's question. It might deter her from trying to derive G from A, but it will not lead her to say G is not deducible from A. Her question is whether the relevant sorts of *a priori* connections are present, not whether anyone could ever determine that they are. It is this notion of *a priori* deducibility that is at work in *a posteriori* and *a priori* physicalism.<sup>5</sup>

Given such a strong notion of deducibility, it can seem a little mysterious how one set of truths can necessitate another and yet the latter is not deducible from the former. Nevertheless, philosophers have been led to posit such necessities as a result of the hard problem of consciousness and the thought experiments that make the problem salient. Famously, it seems that despite the obvious connections between physical states and conscious states, a full grasp of those physical states doesn't seem to tell us everything about phenomenal consciousness. Both the knowledge argument and the conceivability argument are attempts to make this clear.

According to the knowledge argument, we can imagine that a brilliant scientist named Mary has learned all the physical facts while remaining isolated all her life in a black and white room.<sup>6</sup> Despite understanding all of the physical processes involved in seeing red, it seems that until she leaves her room and actually enjoys a red experience there is something she won't know: what it's like to see red. If the truth about what it's like to see red is called R, the knowledge argument holds that from within her room, Mary can know P but not come to know R on that basis. One response to this is to claim that P doesn't in fact necessitate R, that is, it's not the case that P entails R. This option isn't open to the physicalist, however, since it gives up the claim that everything is necessitated by the physical truths. The physicalist thus seems to have two options – either to claim that Mary could deduce R from P or to claim that her inability to do so doesn't indicate that R is not entailed by P. The *a priori* physicalist says the former; the *a posteriori* physicalist says the latter.<sup>7</sup>

According to the conceivability argument, we can conceive of a world that is the physical duplicate of ours but in which the facts about consciousness are different; perhaps there is no consciousness (the zombie hypothesis) or perhaps consciousness is systematically different (the inverted spectrum hypotheses).<sup>8</sup> To say this is just to deny that we can deduce phenomenal truths Q from P. Again, holding onto physicalism requires either that one deny this claim about conceivability or to claim that P&~Q is conceivable but not possible. The *a priori* physicalist says the former; the *a posteriori* physicalist says the latter.

A number of philosophers are inclined to think that truths like Q and R are deducible from P. The appearance to the contrary comes from our not really understanding what P involves or our own inability to perform the deduction.<sup>9</sup> But most philosophers, it seems, embrace this non-deducibility. Physical truths, says this group, tell us about how things unfold across space and time; they tell us about the pushings and pullings at the basis of our world. The idea that one can infer from truths like these that pain feels a certain way or that red looks a certain way is to ignore just

how different phenomenal truths are from physical truths. To think we could somehow know what it's like to feel red from knowing how things are disposed to be located in spacetime is like thinking that if you multiply two by a large enough number you get the color blue. These truths just don't connect in the right way for deducibility to be an option.<sup>10</sup> Nevertheless, says the *a posteriori* physicalist, this shouldn't force us to deny that the truths about redness and pain aren't necessitated by the way things are spread across spacetime. P can necessitate Q without our being able to deduce Q from P.  $P \rightarrow Q$  is an *a posteriori* necessity. Kripke has already convinced many of us that there can be such necessities.<sup>11</sup> It's not *a priori* that if water boils at 100 centigrade, H<sub>2</sub>O boils at 100 centigrade, yet the former truth necessitates the latter. How can this be? Since water just is H<sub>2</sub>O, necessarily whenever water boils H<sub>2</sub>O boils, but it takes a bit of empirical work to see that water is in fact just H<sub>2</sub>O. Perhaps the relationship between P and Q is like this.

The Kripkean model of *a posteriori* necessities provides a way to understand how it could be that one truth necessitates another despite the fact that one can't determine this *a priori*. This can at first seem to fit nicely with the intuitions we have about the relationship between the physical and the phenomenal. There is a real worry, though, that the Kripkean story doesn't apply in this case.

## II

There are two important disanalogies between the traditional Kripkean *a posteriori* necessities and the necessity that is supposed to hold between physical truths and phenomenal truths. There are important differences both in the *scope* of the truth we are inferring from and the *concepts* involved in the inference. Kripke himself focused on the peculiarities of the concepts involved in the inference.<sup>12</sup> Call this *the epistemic disanalogy*:

One cannot *a priori* determine that where there is water there is H<sub>2</sub>O because the way one picks out water can come apart from what water actually is. One's concept of water is *opaque*: it picks out its reference using superficial characteristics—like being wet, potable, the stuff in oceans and lakes—and those characteristics can be realized or explained by water's being any number of molecular structures. One's concept of pain (or other phenomenal states) isn't like this. The concept of pain is *transparent*: one picks out pain by its painfulness and nothing that lacks painfulness can be pain and nothing that has painfulness can fail to be pain.<sup>13</sup> With the concept of pain, and other phenomenal concepts, if one is given a description of something that leaves it open whether or not that thing is painful, the description is either leaving out the essence of what is described, or what is described is not pain. Since physicalism seems to be committed to the idea that the descriptions provided by the physical sciences describe the essence of pain, those descriptions had better not be opaque; they had therefore better not leave it open that what is described is painful. That is, they better not leave it open whether or not what they describe is pain. In other words, the existence of the phenomenal state of pain had better be *a priori* inferable from the physical description of pain.

In addition to this epistemic disanalogy, there is a *scope disanalogy* between traditional *a posteriori* necessities and the necessities involved in physicalism.<sup>14</sup>

In the traditional *a posteriori* necessities, the premise truth—the truth one is inferring from—only describes a portion of reality. In the case at hand, however, the truth one is inferring from is supposed to describe all of reality. The premise truth is, according to the physicalist, exhaustive in that it describes not only the parts of the world that are supposed to be phenomenal states, but the parts of the world that are linguistic states, belief states, quark states, chains of reference, and everything else under, and including, the sun. This is an important disanalogy since it seems plausible that even if two statements

describe the same truth, they might do so because of very different features of the world. There might, for example, be very different causal chains responsible for the reference of co-referential terms. Call this a difference in *referential features*. Part of Kripke's insight is that such referential features aren't necessarily reflected in the meanings of the terms of the truths, and so they wouldn't necessarily be available to someone who used those terms with perfect grasp of their meaning. This lack of *a priori* access to referential features is a large part of what makes some necessities *a posteriori*. But since the premise truth in the phenomenal deduction is supposed to be exhaustive, it must include all truths about referential features.<sup>15</sup> If that were the case, anyone who knew the premise truth would know the referential differences between terms and truths. This leaves it somewhat mysterious how any truth could fail to be *a priori* deducible from the complete physical truth, if physicalism is true. Any potential explanation of the lack of deducibility would itself have to be a truth that would itself have to be grasped by anyone who grasped the premise truth. If that is the case, how can one be left in the dark about what follows from the premise truth? Again, the explanation for typical *a posteriori* necessities doesn't seem to be available for the alleged necessity that holds between the physical and the phenomenal.

These two disanalogies can be turned into arguments against *a posteriori* physicalism. Corresponding to the epistemic disanalogy, we can formulate The Transparency Argument against *a posteriori* physicalism:

*The Transparency Argument*

- (1) *A posteriori* necessities are only possible if the concepts involved aren't transparent.
- (2) The concepts involved in the physical/phenomenal entailment are transparent.<sup>16</sup>

Therefore, the physical/phenomenal entailment cannot be an *a posteriori* necessity.

And, corresponding to the scope disanalogy, we can formulate The Scope Argument against *a posteriori* physicalism:

*The Scope Argument*

- (1) *A posteriori* necessities are only possible when the referential features are not *a priori* deducible from the antecedent of the necessary conditional.
- (2) All referential features are deducible from the antecedent of the necessary conditional in the physical/phenomenal entailment.<sup>17</sup>

Therefore, the physical/phenomenal entailment cannot be an *a posteriori* necessity.

Though these arguments and the disanalogies behind them have a lot of force, they are not conclusive. They assume that the physical/phenomenal entailment is just like the typical *a posteriori* necessities. But just about everyone agrees that there is something special about the phenomenal, and if that's true, perhaps we should expect there to be a disanalogy between physical/phenomenal necessities and other necessities that don't involve the phenomenal. *A posteriori* physicalism depends, it seems, on explaining why, contrary to appearances, phenomenal concepts aren't transparent or why, contrary to what we should expect, the referential details of phenomenal concepts aren't *a priori* derivable from the physical facts. Different views of phenomenal knowledge and phenomenal concepts attempt to provide such an explanation. Candidate explanations involve knowledge by acquaintance and views about phenomenal concepts according to which they are indexical, opaque, or quotational.<sup>18</sup> In the end, and somewhat ironically, providing such an explanation risks giving up what seems to be special about phenomenal knowledge or it risks giving up the explanatory comprehensiveness of the physical picture of the world. For example, one could deny that phenomenal concepts really are transparent, but that would seem to abandon the claim that anything that presents itself as having painfulness must be pain and that any complete account of pain mustn't leave open whether

or not it is painful. Even if there is a clever account of phenomenal concepts or phenomenal knowledge that manages to make this persuasive, however, the second challenge will remain – it must be explained how there can be any truth whatsoever that isn't deducible from an exhaustive premise truth when that truth will have to explain any referential peculiarities that would be able to give rise to *a posteriori* necessities. Answering this second challenge is quite difficult. It is tempting to think an account of phenomenal concepts that isolated them cognitively from other concepts might explain why one can't *a priori* deduce phenomenal truths even from an exhaustive physical truth. But we've already seen that the notion of deducibility at play here is not psychological. The fact that an organism with a certain psychology cannot perform the phenomenal deduction doesn't show that the phenomenal isn't deducible from the physical any more than the fact that the derivation of a mathematical proof is psychologically impossible shows the impossibility of a mathematical proof. Any account of phenomenal knowledge that answers the scope argument had better do more than provide a psychological explanation of why we can't perform the relevant deductions.

### III

It is tempting to think the arguments against *a posteriori* physicalism can be sidestepped if the physical brutally necessitates the phenomenal. To say that P brutally necessitates Q is not simply to say that Q is not deducible from P. That is still an epistemic claim. For P to brutally necessitate Q is for P to necessitate Q but not in virtue of any other (non-modal) fact; in particular, it is not in virtue of facts about the parts of the world represented by P and Q.<sup>19</sup> It is as if there is a primitive natural, but necessary, law connecting the two. In the case of the physical/phenomenal necessitation, this would amount to there being no non-modal features of the physical – no properties or anything else – that would ground the necessitation between the physical and phenomenal. It would be as if God simply set it up so that every time you had P you also had Q.<sup>20</sup> There would just be necessitation, and nothing else could be said. This is really quite unlike Kripkean *a posteriori* necessitation. No one thinks the relation between H<sub>2</sub>O and water is brute in this sense. If that were the case, we would literally have no explanation for why water boiled when certain circumstances are obtained at the molecular level. Obviously we do, which is a large part of the reason we identify H<sub>2</sub>O and water. If P brutally necessitates Q, there will be no explanation in terms of the physical stuff and its properties for why Q is present or is necessitated by it.

It is important to understand that brute necessitation is of no help to the *a posteriori* physicalist. For one thing, it's unclear that this would be a case of physicalism. Numerous philosophers have noted that if there is such a thing as brute necessitation, the necessitation of everything by the physical will no longer be sufficient for physicalism.<sup>21</sup> Otherwise, physicalism would be compatible with any manner of ghosts, souls, qualia, or the most outrageous dualistic phenomena, just so long as the ghostly stuff is brutally necessitated. These philosophers argue, quite rightly, that if the debate about physicalism is to be of any interest, it has better be the case that spiritual entities are not called physical simply by virtue of brute necessitation. So, if 'a posteriori physicalism' is true only because of brute necessitation, it should more accurately be called something like necessary emergentist dualism.<sup>22</sup>

Aside from this, there is good reason to doubt the coherence of brute necessitation.<sup>23</sup> Suppose some property B gives rise to E in every possible world. Can it really be the case that there is nothing further about B and E in virtue of which this is the case? No. Properties are at least in part individuated by what they necessitate. If there is a property B that gives rise to E in every possible world, it is distinguished from otherwise indiscernible property B\* precisely by the fact that it necessitates E. If one studied B and B\* and failed to discover this difference,

one would be missing something about B – that it has the disposition to give rise to E across all possible worlds. As we saw, it is tempting to think one can get a grasp of brute necessities by imagining God setting up every B world to be an E world. But we have to ask of this situation, could God have set things up another way? If the answer is yes, then there really are possible worlds in which B exists without E and B doesn't necessitate E. If the answer is no, then it no longer seems the connection between them is arbitrary or brute. There must be something about the two properties that disallows even God from separating them. There are, in other words, features of B that make it impossible to have it without E.<sup>24</sup>

This problem with brute necessitation makes it so that the *a posteriori* physicalist who tries to save his position by claiming that phenomenal properties are necessitated 'brutely' winds up not being a physicalist after all. The reason is that if genuinely new phenomenal properties are necessitated by the physical base properties, those base properties are 'infected' by the phenomenality. Suppose some microphysical structure S gives rise to pain (P) necessarily, and this necessitation is alleged to be brute; that is, there are no explanatory connections between the microphysical structure and the painfulness of pain. It's just that every S world is a P world. The above argument against brute necessitation suggests that this cannot be all there is to say. In particular, there must be something about S that makes it such that S necessitates P. At the very least, S must have the disposition to give rise to Ps. Is this disposition physical? While that will depend on what it means to be physical – a tricky issue – it's hard to see how it could be. Microphysics certainly won't talk about things like the disposition to give rise to phenomenal states. Such a disposition seems to be wholly unlike the sorts of spatio-temporal dispositions physics describes. This disposition, while not perhaps a phenomenal property itself, is both basic (because it cannot be explained by further features of S) and proto-phenomenal, and if phenomenality or protophenomenality is basic, physicalism is false. So an *a posteriori* physicalism that involves 'brute necessitation' of the phenomenal really isn't physicalism at all.

#### IV

Given the challenges facing *a posteriori* physicalism, the committed physicalist might need to take another look at *a priori* physicalism. This might not involve such a great departure from her *a posteriori* strategies. Given subtle tweaks, a number of the *a posteriori* positions can be altered so that instead of explaining why the phenomenal truth can't be deduced from the physical truth, they explain why this seems to be the case. Views of phenomenal concepts that depend on cognitive isolation, for example, might explain why we can't see how the deduction could occur, even if there are, in fact, *a priori* connections between the physical and the phenomenal.<sup>25</sup> Alternatively, it could be maintained that phenomenal concepts lead us into error by making it seem that the properties picked out are categorical or intrinsic when in fact they have a structure that makes them more amenable to physicalistic explanation.<sup>26</sup> This wouldn't necessarily be eliminativist, since there will still be phenomenal properties, but we would simply be wrong that they are non-structural. Perhaps it can be argued that acquaintance doesn't provide us with new knowledge but instead involves a new relation to the truths that are in fact deducible from the physical truth. Or, perhaps the physical truths involve more than mere pushings and pullings and contain the seeds of phenomenality.<sup>27</sup> While that would involve a liberal conception of the physical, perhaps that's required if we are to make sense of a world made up of one type of stuff.<sup>28</sup> One thing is clear, though: *a posteriori* physicalism is not the easy answer to the hard problem of consciousness that it sometimes seems to be. Between the incoherence facing *a posteriori* physicalism and the intuitive implausibility facing *a priori* physicalism, the physicalist remains in a rather tight squeeze.

## Short Biography

**Robert J. Howell** is the Dedman Family Distinguished Professor and professor of philosophy at Southern Methodist University. He received his PhD from Brown University in 2002 and is the author of *Consciousness and the Limits of Objectivity* (Oxford University Press, 2013) as well as numerous articles on the problem of consciousness, self-knowledge, and the self. With Torin Alter, he co-authored *A Dialogue on Consciousness* (OUP, 2009), *The God Dialogues* (OUP, 2011), and co-edited *Consciousness and the Mind Body Problem: A Reader* (OUP, 2011). His current research focuses on consciousness, self-knowledge, the nature of the self, and neuroethics.

## Notes

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<sup>1</sup> This is too quick. It might be, for example, that the basic truths of physics are grounded in phenomenal properties. Most philosophers tend to count this sort of ‘Russellian Monism’ as non-physicalist. (Though see Strawson (2003).) Since my focus here is on the options for the *a posteriori* physicalist, who wants to defend a physicalism free from fundamental phenomenal (or proto-phenomenal) properties, I will follow the majority in this usage. For an overview of this debate, see Wilson (2006) and (2005), Ney (2008), and Howell (2013), Part I.

<sup>2</sup> This way of setting things up, here and throughout, owes greatly to Chalmers (2003). There are complications that arise in the definition of physicalism, including the fact that the truths in Q, it seems, should be limited to positive truths and that the physicalist need not rule out the possibility of ghosts. For simplicity, I will bypass these complications, but for a full discussion, I refer the reader to Howell (2013), chapter one.

<sup>3</sup> For classic statements of *a posteriori* physicalism, see Block (2006), Loar (1997), and Papineau (2002, 2007). For classic statements of *a priori* physicalism, see Dennett (1991), Dretske (1995), Harman (1990), and Lewis (1990).

<sup>4</sup> Emphasizing these facts about deducibility is equivalent to emphasizing that it is ideal conceivability that is involved in the conceivability arguments. See, for example, Chalmers (2009) pp.143–148.

<sup>5</sup> A referee points out, quite rightly, that the mathematician might be interested in provability and points out that there are incompleteness worries that hold for provability but not necessarily for *a priori* deducibility. This is true enough, and a full discussion of deducibility should discuss this issue, but the main point is that the relations in question are not about psychology but about rational connections between propositions.

<sup>6</sup> Jackson (1982) and (1986)

<sup>7</sup> The *a priori* physicalist can say this too, actually, in response to the typical Mary case because they can deny that Mary has the relevant concepts to perform the deduction. This move is blocked, though, by having Mary try to perform the deduction after she has the concept. See Stoljar (2005) and Montero (2007).

<sup>8</sup> Chalmers (1996) is the classic statement of the contemporary conceivability argument, although Kripke (1980) includes an important version of it. Shoemaker (1982) is a classic discussion of inverted qualia.

<sup>9</sup> Dennett (1991) suggests as much.

<sup>10</sup> These remarks are closely related to the structure and dynamics argument in Chalmers (2002) and elsewhere. The true nature of that argument and its relation to the knowledge and conceivability arguments is complicated. For a full discussion, see Alter (forthcoming).

<sup>11</sup> Kripke (1980)

<sup>12</sup> Kripke (1980)

<sup>13</sup> The terminologies of ‘transparency’ and ‘opacity’ are borrowed from Goff (2011), though Goff’s meaning is slightly different. Gertler (2007).

<sup>14</sup> Jackson (1982), (1986) and especially (2004) can be seen as emphasizing the scope disanalogy.

<sup>15</sup> It is true that as it is usually stated, Mary lacks self-locating information, which might well prevent her from knowing all the truths about how her own words refer. To solve this problem we can simply add (non-phenomenal) self-locating information to Mary’s knowledge and the gap won’t disappear. For a full discussion of the relevance of indexical knowledge to Mary’s ignorance, see Chalmers (2009), Block (2006), and Howell (2013).

<sup>16</sup> One could argue, as Maxwell (1979) did, that the physical terms are not transparent. This is not an option that will appeal to the *a posteriori* physicalist, however, since it will introduce phenomenal (or proto-phenomenal) properties into the

fundamental furniture of the world. The *a posteriori* physicalist is motivated to take that view precisely because he thinks this is not the case.

<sup>17</sup> We are assuming, still, that self-locating facts are in the deductive base. Some philosophers have worries about this sort of ‘scrutability thesis’, claiming that high-level facts – like facts about reference – are in general not deducible from lower level facts. See Block and Stalnaker (1999) and Tye (2009) for instance. The best case for this, however, is the fact that phenomenal truths are not scrutable and high-level facts are couched in phenomenal truths. Since this doesn’t introduce a new inscrutability, it really isn’t an objection to the general thesis the argument depends upon. For a defense of scrutability, see Chalmers (2012).

<sup>18</sup> The phenomenal concepts literature is vast. Alter and Walter (2007) include an excellent sampling of the literature, but the classic starting point is Loar (1997). Indexical accounts can be found in Perry (2001), Tye (1995), and Sainsbury and Tye (2012) and quotational accounts found in Papineau (2002) and Balog (1999). Acquaintance theories of various sorts can be found in Conee (1994), Tye (2009), and Alter and Nagasawa (2012).

<sup>19</sup> Note that the epistemic claim, referencing a priority, is distinct from the claim that one fact grounds another or that one fact obtains in virtue of another. One might hold a thesis that brute necessitation is the same thing as necessitation without *a priori* entailment, but that would require an argument tying the epistemic notion to the notion of grounding. The viability of ‘brute necessitation’ as an alternative response depends on these not amounting to the same thing.

<sup>20</sup> Actually, it would not be brute since it would be explained by God’s decision. But God is just a way to highlight the idea that there is an arbitrary pairing of P and Q. Subtract God and you have a brute necessity Alter and Howell (2015).

<sup>21</sup> Melnyk (2003), Horgan (1993), and Wilson (2005), actually, these philosophers typically argue that necessitation (supervenience) is not sufficient for physicalism because of the possibility of brute necessitation.

<sup>22</sup> Wilson (2005)

<sup>23</sup> This section draws heavily from Alter and Howell (2015), which in turn draws from Howell (2013) and Howell (2009).

<sup>24</sup> For fuller discussion, see Alter and Howell (2015) and Howell (2013).

<sup>25</sup> Papineau (2002) can at times sound like he is endorsing this line.

<sup>26</sup> Pereboom (2011)

<sup>27</sup> This strategy could be panpsychist, protopanpsychist, or Russellian Monist. An excellent survey of this sort of approach can be found in Alter and Howell (2015).

<sup>28</sup> Maxwell (1979) and Strawson (2003)

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