

## *The Body Problem*

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Is the mind physical? Are mental properties, such as the property of *being in pain* or *thinking about the higher orders of infinity*, actually physical properties? Certainly many philosophers think that they are. For no matter how strange and remarkable consciousness and cognition may be, many hold that they are, nevertheless, entirely physical. While some take this view as a starting point in their discussions about the mind, others, well aware that there are dissenters among the ranks, argue for it strenuously. One wonders, however, just what is being assumed, argued for, or denied. In other words, one wonders, Just what does it mean to be physical? This is the question I call, “the body problem.”

As I see it, there is little use in arguing about whether the mind is physical, or whether mental properties are physical properties—questions many take to be central to the mind-body problem—unless we have at least some understanding of what it means to be physical. In other words, it seems that in order to solve the mind-body problem, we must solve the body problem. A satisfactory solution can fall short of being a strict definition. However, it seems to me that the question of what it means to be physical at least ought to be addressed. It strikes me as odd that while bookstores and journals are overflowing with debates about whether consciousness is physical, hardly anyone is concerned with “What counts as physical?”<sup>1</sup> Moreover, it would not be much of an exaggeration to say today, as John Earman did more than twenty years ago, that “attempts to answer this question that have appeared in the philosophical literature are for the most part notable only for their glaring inadequacies.”<sup>2</sup> Clearly something is amiss: if we want to discuss whether the mind is physical, we should say something about what it means to be physical. For unless we do, it seems that not only will all attempted solutions to the mind-body problem be out of focus, but the very problem will be as well.

Some may argue that such clarification is unnecessary. As they see it, understanding the term “physical” is no more difficult than understanding the term

“table.” They may point out that while we cannot provide necessary and sufficient conditions for *tablehood*, we nonetheless understand the concept because we can readily identify things that are clearly tables as well as things that are clearly not. And the same is true, they may argue, of our notion of the physical.<sup>3</sup>

It seems to me, however, that the situations are not analogous. While there appears to be something correct about the claim that we can identify central cases of being physical—what could better exemplify the physical than things like rocks and trees (except, perhaps, quarks and leptons)?—there is an extra wrinkle: rocks and trees (as well as quarks and leptons) are identified as central cases only on the assumption that idealism is false. For there is not much point in arguing about whether the mind is physical if our central examples of physical entities are entities composed entirely of sense-data.<sup>4</sup> (And to say that rocks are a central example of physical objects or that the properties of rocks are central examples of physical properties *only if rocks are physical*, obviously does not provide us with a useful clarification.) Moreover, even ignoring this wrinkle, it seems that one needs to say at least something about how we are to determine what we can place in the category along with rocks and trees.<sup>5</sup> That is, once we have specified that rocks and trees are central examples of physical objects, one needs to say something about how we are supposed to go on from there. Because in certain ways, beliefs and desires *are* like rocks and trees while quarks and leptons are not. For example, talk of beliefs and desires plays a role in our ordinary folk understanding of the world while talk of quarks and leptons does not. Moreover, beliefs and desires seem to be part of the same macro-level causal network as rocks and trees while quarks and leptons do not. But neither the physicalist nor his foes think that the view that quarks and leptons are nonphysical is what we should infer from our central examples of physical objects.<sup>6</sup>

Now, perhaps these problems could be overlooked if we had clear intuitions regarding the nonphysical. However, it is not at all obvious that we do. The stock example of a nonphysical entity is some sort of ghost. For example, Jaegwon Kim defines “ontological physicalism” as the view that “any creature with mentality is wholly constituted by physical parts—ultimately basic physical particles. There are no nonphysical residues (e.g. Cartesian souls, entelechies, and the like).”<sup>7</sup> And Jeffrey Poland states that the physicalist’s bottom line is really: “There are no ghosts!”<sup>8</sup> But, while references in the literature to ghosts as well as spirits, entelechies and angels belie this fact, talk of ghosts must merely be for fun. For as physicalists and nonphysicalists alike must realize, whatever understanding we do have of the notion of a ghost does not lend support to the view that we understand the notion of the nonphysical. For what exactly is it about a ghost that is supposed to be nonphysical? Is it that they can pass through walls without disturbing them? Neutrinos, I am told, can pass right through the earth without disturbing it, yet neutrinos are classified as physical. Is it that they have no mass? Photons have no mass yet are considered physical. Perhaps it is that they supposedly do not take up space. But if taking up no space shows that something is nonphysical, point particles (if they in fact exist) would have to be classified as

nonphysical. Yet physicalists, I take it, would see this as a mistake. So to say that the physical means something like “no spooky stuff” (as my friend Martin Lin once put it) does not help matters in the least.

It might seem, however, that while talk of ghosts is merely for fun, talk of “the ghost in the machine,” the *Cartesian soul*, is not. In other words, it might seem that physicalism at least excludes the view that there is some type of mental substance, a substance completely different in kind from physical substance. But what might such a substance be? Descartes had a beautiful answer to this question: the essence of body is extension—extension in length, breadth, and depth—and anything without extension is completely different in kind from body. To be sure, the question of exactly what Descartes meant by extension is a much discussed topic.<sup>9</sup> Nonetheless, Descartes gave us some sort of purchase on the mind-body problem, and the problem has certainly stuck. But what, today, enables us to distinguish physical substance from nonphysical substance? Not only do we lack a beautiful answer to this question, we seem to lack an answer altogether.<sup>10</sup>

Since most physicalists are happy to admit that there is more than one kind of elementary particle, it is difficult to see what the sense of “nonphysical substance” or “stuff of a different kind” could amount to.<sup>11</sup> Perhaps the idea is that whether or not there is only one basic particle, say, strings, or it turns out that in addition to strings there are also Ferris wheels, physicalism is the view that everything nonbasic is composed of the same kind, or kinds of basic particles. But this cannot be quite right either. For example, some physicists have posited that there are large halos of nonluminous matter surrounding galaxies—the mysterious *dark matter*—and that this matter is composed entirely of axions, hypothetical new elementary particles.<sup>12</sup> But since the fate of physicalism does not ride on whether dark matter is ultimately composed of the same stuff that tables and chairs are ultimately composed of, it seems that the simple intuitive notion of *stuff of a different kind* does not, in fact, provide us with the relevant notion of nonphysical.

This, I think, also indicates a problem with another suggested criterion for being physical, namely, being composed of the same stuff of which ordinary inanimate objects are composed.<sup>13</sup> Imagine that scientists discovered that dark matter was in fact made out of something entirely different from tables and chairs. And imagine that they also discovered that human beings were made out of something entirely different from both dark matter and ordinary furniture. Now, would this be a mark against physicalism? Needless to say, it would be quite astonishing if this were to be discovered. But not all astonishing discoveries are discoveries of nonphysical things. Certainly it would mean that there would be some explaining left to do, and, perhaps, physicists would have to make room in their ever expanding booklet of elementary particles for yet another. But it is not clear that it would mean that human beings are not physical.

Moreover, I believe that most physicalists would take it that panpsychism—the view that mental properties pervade all aspects of the world—is incompatible with physicalism. Yet panpsychism is compatible with the view that people and

tables and chairs are all made up of the same kind of stuff. And so, while physicalists, as much as anyone else, are entitled to choose their own enemies, it seems that physicalists who draw the battle line between those who think that human beings are composed of the same stuff that ordinary inanimate objects are composed of and those that do not, perhaps, ought to reconsider their choice.<sup>14</sup>

Granted, in order to discuss the mind-body problem one needs to make certain assumptions. And it is clear that if we tried to fully explain every technical term—e.g., property, concept, world, etc.—we would never get around to the problem at hand.<sup>15</sup> Nevertheless, sometimes we should question assumptions. And in the context of the mind-body problem, I think that the need to explain what is meant by “physical” instead of merely relying on intuitions is especially exigent. For it may very well be that the intuitive, or at least common way of understanding what it means to be physical is that the physical is whatever is not mental.<sup>16</sup> Yet this is precisely *not* what is meant by those who argue that the mind is physical. But what, then, is?

We need to address the body problem in order to better understand the basic question “What is the relationship between mind and matter?” Moreover, many of the central arguments in philosophy of mind depend on a distinction between physical and nonphysical properties, facts, worlds, things, etc. A clear example is Frank Jackson’s famous “Mary in the black and white room” argument. The story is a familiar one: imprisoned since birth in a black and white room, Mary is supposed to have learned all the physical facts about color vision yet, according to Jackson, when she is released from the room she learns something new. When she is released, she finds out for the first time what it is like to see red, and this, supposedly, is knowledge of a nonphysical fact. Conclusion: the physical facts do not exhaust all the facts.<sup>17</sup> But which exactly are the physical facts? What exactly is it about certain facts, such as facts about what it is like to see red, that makes them nonphysical facts?<sup>18</sup>

The problem of what is meant by “physical” arises just as forcefully in discussions of **inverted spectra and absent qualia arguments**. In one popular version of the inverted spectrum argument, we are asked to imagine two physically identical people whose experiences of color are inverted with respect to one another: when one looks at a fire truck, for example, he has a visual experience of red, while his physical duplicate looking at the same truck experiences green. The absent qualia argument is similar except one experiences red while his physical duplicate, the zombie, experiences nothing at all. Some philosophers believe these situations are coherent, some think they are not, and still others think that inverted qualia are possible while absent qualia are not.<sup>19</sup> But what exactly is supposed to ground our intuitions? How, in fact, can we even have intuitions about these cases unless we know what counts as a physical duplicate?<sup>20</sup>

A final example of the importance of solving the body problem can be found in the debate over mental causation. It is commonly held that there is a problem in explaining how mental causation is possible because if 1) the physical world is

causally closed and 2) there is no causal overdetermination, it seems that despite what we think, it is not literally true that, for example, my belief that there is a glass of water before me, and my desire, to quench my thirst, could (in virtue of being mental phenomena) cause me to reach out for that glass of water.<sup>21</sup> Whether this conclusion follows, however, depends on our conception of “the physical world.” Yet, it is rarely made clear what this conception should be.

Those working on the mind-body problem who do address the topic of what it means to be physical often admit that some work needs to be done in order to clarify the concept. And it is not entirely uncommon for these philosophers to put forth, first, a rough definition of what counts as physical and what counts as nonphysical; second, to admit that their definition is not quite adequate; and third, to point out that, really, their argument does not turn on the adequacy of this exact definition.<sup>22</sup> However, it is always the case that these arguments turn on there being *some* distinction between the physical and the nonphysical. For if there is no distinction, no basis for saying *this* is what it takes for something to be physical, debates over whether the mind is physical will lack philosophical nerve. So, then, what is the distinction?

I think it is safe to say that the most common way for philosophers to answer this question is to defer to the physicists. In its simplest form, the physical is said to be whatever the physicist, or more precisely, the particle physicist, tells us exists (what we might now think of as quarks and leptons, as well as the exchange particles, gluons, gravitons, etc.). And the nonphysical is everything else, if there is anything else.<sup>23</sup> On this view physicalists—that is, those who hold that everything is physical—are committed to the claim that physics provides us with an exhaustive and exclusive line to all of reality.<sup>24</sup> Now, this is a relatively straightforward answer to the body problem. However, as stated, it is a bit too simple since most philosophers take it that things like rocks, tables and chairs are just as physical as quarks, leptons, and gluons.

To be sure, whether it is acceptable to say that the physical is nothing but what the physicists take to be fundamental is partially a terminological issue. I was present at a seminar once where a debate erupted about whether rocks are physical, with the professor insisting that no matter what else is true, rocks are physical, while the student kept replying that rocks are clearly not physical. What was going on, though I’m not sure if either ever made his position clear to the other, was that the student was using the term “physical” to refer to the fundamental entities of physics while the professor was using the term broadly. But there is a substantive issue here as well. While the question of whether to reserve the name “physical” for just the fundamental constituents *is* merely terminological, the question of exactly how many layers of reality to countenance is not. For the most part, physicalists want to allow for not only the smallest stuff, but for the atoms, molecules, rocks, and galaxies as well.<sup>25</sup> So the leave-it-to-the-physicists approach is usually amended to the view that the physical world (or, if you prefer, the material world, or the natural world) is the world of the fundamental particles, forces, laws, etc. *as well as* whatever depends, in some significant sense, upon

this fundamental stuff.<sup>26</sup> As such, we can allow at least for the possibility that rocks are physical.

Over the years there have been many discussions of how, exactly, this significant sense of dependence should be cashed out. Some have thought that the relation between higher level phenomena and lower level phenomena must be explanatory, that everything about the higher level must be entirely explained in terms of lower level phenomena, or that the higher level must in some other strong sense reduce to the lower level.<sup>27</sup> More recently, however, many have expressed misgivings about reducing the mental to the physical and have employed the notion of supervenience in hopes of formulating some type of nonreductive physicalism.<sup>28</sup> **Supervenience** is supposed to capture the notion that all mental phenomena are determined by lower level phenomena, typically expressed with the slogan “No difference without a lower level difference.” To be sure, this slogan needs to be filled in. For example, since nonreductive physicalism is intended to be incompatible with eliminativism, it must be stipulated that the supervenient levels exist (and perhaps, in order to avoid the possibility of a purely mental world in a situation where no minds differ, it should also be stipulated that the subvenient level exists). The domain of comparison needs to be specified (is the difference intended to be between individuals, regions, worlds?), as does the modal status of the claim. Moreover, many have thought that in order to arrive at some sort of nonreductive *physicalism*, one must add that the higher level is constituted by, or composed of (but not identical to) lower level stuff.<sup>29</sup> And specifying what exactly is meant by “constitution” or “composition” is, again, another project entirely.

While much interesting work has been done clarifying these relations, my concern here is not with the relations *per se* but rather with what everything is being related to: all of the proposals for grounding higher level phenomena rely on a notion of a lower level dependence base, what is often referred to as “the microphysical.” I want to know what can be meant in these proposals by “the microphysical.”<sup>30</sup> It is quite natural to think of microphysical phenomena as the phenomena described by the most recent microphysics. But if the physical is defined over current microphysics, and a new particle is discovered next week, the particle will not be physical. And this is a consequence most philosophers want to avoid.<sup>31</sup> But if not current microphysics, what else could the microphysical be?

Almost twenty years ago, Carl Hempel posed a dilemma for those attempting to define the physical in reference to microphysics.<sup>32</sup> On the one hand, it seems that we cannot define the physical in terms of current microphysics since today’s principles of microphysics are, most likely, not correct. Despite some physicists’ heady optimism that the end of physics is just around the corner, history cautions prudence.<sup>33</sup> For the end of physics has been predicted before: toward the end of the nineteenth century, just before the relativity revolution, Lord Kelvin remarked that all that is left for physics is the filling in of the next decimal place;

then, in the early part of this century Max Born supposedly claimed that physics would be over in six months. And, in all likelihood, today's claims that we've (just about) got it right are similarly unrealistic: today's physics is probably neither entirely true (some of our theories may look as wrong-headed to future generations as phlogiston theory looks to us now) nor complete (there is still more to explain).<sup>34</sup> Yet on the other hand, if we take microphysics to be some future unspecified theory, the claim that the mind is physical is extremely vague since we currently have no idea of what that theory is. Geoffrey Hellman sums up this dilemma nicely: "either physicalist principles are based on current physics, in which case there is every reason to think they are false; or else they are not, in which case it is, at best, difficult to interpret them, since they are based on a 'physics' that does not exist."<sup>35</sup> Faced with this dilemma, what is a physicalist to do?

Some try to take the middle road, explaining what they mean by "microphysical" by referring to "something like current microphysics—but just improved."<sup>36</sup> But in what respect is this microphysics like current microphysics? And in what respect is it improved? Since these questions are usually not addressed (save, of course, for the implication that it is similar enough to be intelligible yet different enough to be true) it seems that Hempel's dilemma recurs for these compromise views.<sup>37</sup> For it is very likely that if the theory in question is significantly similar to current physics it will be false; but if we give up on significant similarity, we give up on having a clear notion of the physical.

I think it is more common, however, for physicalists to take one of the more extreme positions. And it seems that most physicalists simply accept the second horn of the dilemma. That is, they define the physical in relation to future microphysics and ignore the unseemly consequence that they cannot specify what they are talking about. However, there are philosophers who see this horn as more treacherous than the first. For example, recently in an intriguing paper Andrew Melnyk has argued that while it is in fact very likely that current physics is both false and incomplete, physicalism should still be formulated in terms of current physics.<sup>38</sup> Physicalism, he thinks, should be formulated in terms of a theory that is more likely false than true. This doesn't, in Melnyk's opinion, preclude one from being a physicalist. Strange as it may sound, according to Melnyk, one can be a physicalist without believing in physicalism.

On the face of it, this is a rather awkward situation; for as G.E. Moore might have put it, there is something paradoxical about saying "everything is physical, but I don't believe it." So it is not surprising that the bulk of Melnyk's paper is about what sort of attitude, if not belief, a physicalist is to take towards the thesis of physicalism. This attitude, he claims, is analogous to the attitude a scientific realist/antirealist takes towards the hypotheses of science. For according to Melnyk, the scientific realist/antirealist need not believe her favorite theories, nor even hold them to be more likely true than false; she need merely take them to be better than current and historical rivals.<sup>39</sup> While Melnyk doesn't argue in much depth for this claim, what he says seems plausible enough.<sup>40</sup> And in any



case, the more pressing issue for our present concerns is whether a physicalist can have the same attitude.

While aligning the attitude of the physicalist with the attitude of the scientist seems to be a good strategy—for in the eyes of the physicalist there is, perhaps, no one more worthy of respect—it is not clear how similar the two really are. That is, can a physicalist actually do without belief? Jeffrey Poland thinks that the answer is definitely “no.” As he puts it, for a physicalist “the basis for all objective fact and truth and of all entities and influences must be real, not just a convenient fiction, and not something about whose existence we need have no beliefs.”<sup>41</sup> Of course, from Melnyk’s point of view, Poland is simply mistaken about what physicalists are committed to. For, as Melnyk says, *all* a physicalist needs to hold is that the thesis of physicalism is better than rival theories, that is, formulated theories that are “sensibly intended to achieve a significant number of [physicalism’s] theoretical goals.”<sup>42</sup> But does this actually commit one to accepting physicalism?

It seems to me, contrary to what Melnyk thinks, that one can believe that a theory is better than its rivals without accepting it at all.<sup>43</sup> For example, someone might be a realist about free will and also think that Humean compatibilism is better than all other theories, both current and historical, in accounting for free will. Yet she might not be a Humean compatibilist. It is merely that she believes that *all* approaches to solving the problem of free will—for example, libertarianism, Humean compatibilism, Davidsonian compatibilism, even Colin McGinn’s theory that we are cognitively closed to the solution of the problem, etc.—are downright failures at explaining free will but that Hume’s approach just has, say, the fewest contradictions. But this does not suffice to make her a Humean compatibilist. A similar point can be made with the attitude one might take towards religion. Someone might have faith in God yet think that no religion captures what he feels must be true about the world. If asked to rank all the religions, he might put Buddhism at the top of the list because it comes closest to capturing his faith even though he does not identify himself as a Buddhist.<sup>44</sup> So as I see it, just as holding that Buddhism is better than its rivals does not make one a Buddhist, holding that physicalism is better than its rivals does not make one a physicalist.

This certainly does seem to be a problem for Melnyk’s view. And it is compounded by the fact that it is not even clear that Melnyk’s version of physicalism actually *is* better than rival theories.<sup>45</sup> Melnyk defines physicalism as the view that everything either is itself or is constituted by the entities or properties mentioned (as such) in current physics. Now, is this our best account of, as it were, *everything*? Some would certainly hold that a preferable theory is the theory that everything either is or is constituted by what microphysics twenty years hence says there is. But since Melnyk holds that rival theories need to be formulated and also holds that theories such as the one just mentioned are not (yet) formulated, he does not take it as a threat to his version of physicalism. However, in making this move (i.e. ruling out theories that are not formulated) Melnyk, rather than arguing for accepting the first horn of Hempel’s dilemma, is, in effect, begging the question in favor of it.<sup>46</sup>



It seems that taking on the first horn of Hempel's dilemma, that is, defining the physical in terms of current microphysics, does not provide us with a very comfortable solution to the body problem (to say the least). But does taking on the second horn fare any better? While defining the physical over a true and complete physics may initially seem less problematic than Melnyk's approach, I think we will see that, in the end, it brings us no closer to our much awaited solution.

Physicalists who take on the second horn want a physicalism they can believe in. And David Armstrong is a clear example. He explicitly tells us that when he says "physical properties" he is not talking about the properties specified by current physics, but rather "whatever set of properties the physicist in the end will appeal to."<sup>47</sup> In a similar vein, Frank Jackson holds that the physical facts encompass "everything in a completed physics, chemistry, and neurophysiology, and all there is to know about the causal and relational facts consequent upon all this."<sup>48</sup> And even if it is not always explicitly stated, it seems that, as Barry Loewer puts it, "what many have on their minds when they speak of fundamental physical properties is that they are the properties expressed by simple predicates of the true comprehensive fundamental physical theory."<sup>49</sup> So for Armstrong, and others as well, it is not today's physics upon which we are to base our notion of the physical, but, rather, a completed physics, a physics in the end. But what is this? The answer, as Hempel has pointed out, is that we have no idea.

Basing one's notion of the physical on an unfathomable theory seems to be a serious problem, and one might think that it is ammunition enough to discourage defining the physical over a final theory. But the truth is, most seem content to ignore this problem and charge ahead to the juicier questions, such as whether knowledge of all the physical facts, (whatever they happen to be) enables Mary to know what it is like to see red. So perhaps we need more ammunition. Besides Hempel's point that relying on a future physics makes physicalism a rather indefinite theory, another consequence of using the notion of "physics in the end" or "a completed physics" to explain the physical is that, at least under a certain interpretation, it seems to trivially exclude the possibility that the mind is not physical. For on one understanding of it, a completed physics amounts to a physics that literally explains everything. And if mentality is a real feature of the world, it follows, on this definition, that a completed physics will explain it too.<sup>50</sup> But neither physicalists nor their foes think that at this time in the debate we already know that the mind is physical simply because this fact follows from the definition of physical. Physicalists think the claim needs to be *argued* for and, as many hold, will ultimately depend on what scientific investigation reveals. And their foes clearly do not think that they are denying what amounts to, more or less, an analytic truth.<sup>51</sup>

It seems, then, that when physicalists who take on the second horn of Hempel's dilemma talk about a true and complete physics, they cannot mean a theory of *everything*. For then their claim that the mind is physical would be trivially true. Or rather, it would be trivially true if such a theory is not an impossibility.<sup>52</sup> We actually know that we cannot describe a theory of, literally, everything: Gödel's

theorem tells us that the set of arithmetic truths cannot be enumerated by any computable procedure. Thus, we simply cannot present a theory of everything including all the arithmetic truths. Perhaps the final theory need not be a formalizable one; and perhaps physicalists can somehow exclude the arithmetic truths from the explanandum. But if so, and a final theory is possible, we would be back with a version of physicalism that appears to be trivially true. In either case, there is reason to think that by “final physics” physicalists do not mean a theory that explains *everything*. Yet, there is also reason to think that they do not simply intend to refer to the temporal end of physics. For this physics might still be inaccurate and incomplete; even worse, for all we know, physics might regress.<sup>53</sup> So it seems that physicalists need another option; but it is not at all apparent what this option should be.

Chomsky has identified a related problem for those who define the physical in terms of a final physics. In Chomsky’s words, there seems to be no principled “delimitation of ‘the physical’ that excludes Fregean ‘thoughts’ in principle, but includes mathematical objects that ‘push each other about,’ massless particles, curved space-time, infinite one-dimensional strings in 10-dimensional space, and whatever will be contrived tomorrow.”<sup>54</sup> Put perhaps a bit more bluntly, Chomsky’s point is that since we cannot predict the course of physics, we cannot even say with certainty that a final physics will not include mental properties, *qua* mental, as a fundamental properties. Yet if this purported final physics takes the mental realm to be fundamental, the significant difference between physicalists (who claim that mental properties will be accounted for in terms of a final physics) and dualists (who claim that the mental properties are fundamental properties) seems to dissolve.

Chomsky’s threat to formulating a notion of the physical has not gone entirely unnoticed. And the standard response is that, just to be safe, physicalists can simply exclude mental properties from the dependence base.<sup>55</sup> This seems to be a fairly straightforward way to stop Chomsky’s slippery slope, but one wonders what grounds there are for this restriction. Surely it is difficult to predict the future: the claim that physics will never incorporate the mind could turn out to be just as mistaken as Leibniz’s claim that physics would never accept action at a distance.<sup>56</sup> That is, physics will proceed as it will proceed regardless of what restrictions philosophers place on its development. However, philosophers can make empirical claims; and perhaps the claim that this true and complete physics will not invoke mental properties is a perfectly acceptable empirical claim. Yet this restriction, alone, still does not make physicalism—that is, physicalism as defined over a final physics—into something other than a trivial truth. For if all we say about this final physics is that it is a physics that explains everything yet does not mention mental properties, *qua* mental properties, then this physics still, by definition, *explains* everything. And as such, there is no room for debate regarding whether it also explains the mind. But what else is there to say?

Steven Weinberg has referred to the final theory as a set of principles that would, if achieved, bring to the end “the ancient search for those principles that

cannot be explained in terms of deeper principles.”<sup>57</sup> Now this certainly has a nice ring to it, but I do not think it can help us formulate the debate over whether the mind is physical. For if we take the final theory to be the theory that will end our search for ultimate principles, and we take the physical to be either whatever is mentioned, as such, in the final theory, or can be explained by it, the mind could not but be physical. Certainly, either the ultimate principles will explain mental phenomena or they will not. And if they do, that means that the mind is something that can be explained in terms of the final theory; but even if they do not, then facts about the mind will themselves be fundamental principles and thus would be part of the final theory. So we are back, once again, to claiming that the mind is physical by definition. And as I’ve said, this is not what is intended by those who are on either side of the debate. I think it is beginning to seem that Hempel’s dilemma is treacherous indeed.

The problem we have found is that defining the physical over current physics shows that the most widely accepted position in the debate over the mind-body problem, that is, the physicalist position, is a view that no one can believe, while defining the physical over future physics shows that it is a view that is either excessively vague or trivially true.<sup>58</sup> It is interesting to note, however, that those who argue for dualism often explain the dividing line between the physical and the nonphysical quite differently than those who argue for physicalism. For example, David Chalmers, while nominally defining the physical in terms of a final and complete physics, has a specific notion of what he takes to count as physics. Taking his point of departure from Russell’s *Analysis of Matter*, Chalmers defines physics as the study of structure and dynamics. From here, it is fairly easy to see how a dualistic view arises: the mental, according to Chalmers, has an intrinsic nature; yet, as he says, all you get from structure and dynamics is more structure and dynamics.<sup>59</sup> Another place the line is sometimes drawn by dualists and those with dualist inclinations is between the subjective and the objective. Cut up this way it is also fairly easy to see how one can be led to dualism, especially if the mind is *defined* as that which is knowable only from a first person point of view.<sup>60</sup> Clearly, there is much more to say about these views. However, since addressing them will lead us into very different terrain, I’d like to put these issues aside, and in the remainder of this paper indicate if not a solution to the body problem, then at least a suggestion for a change of focus on the mind-body problem.

I’ve mentioned a few times in this paper how very difficult it is to say anything at all about what would count as being nonphysical. All of the usual as well as unusual suggestions, such as ghosts, disembodied souls, entelechies, and angels simply do not serve the purpose of providing examples of nonphysical entities or entities that, if they were to exist, would have nonphysical properties. For what we take to exist is in flux: yesterday’s ghostly phenomena, such as massless particles, or curved space-time, can turn out to be central to today’s scientific understanding of the world. And so it seems to me, if it turns out that such things

as ghosts actually *do* exist, that is, really and truly exist, or that mental telepathy is a *real* phenomenon, there would be no need to simply throw up our hands and say, “Oh well, the world is not physical after all.” Rather, as has happened in the past, when phenomena that do not fit neatly into our current view of the world have been discovered, we would work on adapting our view of the world to fit the phenomena. For we do not blame the world when we come across something we cannot understand, claiming that we have discovered something nonphysical. Instead, we blame ourselves: it is merely our *theories* that are at fault, not the world. Or at least, I would like to suggest, this is what we should do. If it turns out that ghosts actually exist, then we should take ghosts to be just as physical anything else. In a sense, then, this indicates an answer to the body problem: something counts as physical if and only if it exists. But, alas, it is not a solution that helps us ground the mind-body problem. For the threat of eliminativism notwithstanding, most of the central concerns about the mind have little to do with whether it exists.

From what we have seen so far, it seems that a solution to the body problem, or at least one that helps us to better understand the mind-body problem, is not forthcoming. And I take it this indicates that, at least for the time being, we should focus on questions other than the question “Is the mind physical?” To this end, I would like to suggest a question that, I think, highlights some of the central concerns of both physicalists and dualists. And this is the question of whether the mental is fundamentally non-mental. For it seems that physicalism is, at least in part, motivated by the belief that the mental is ultimately non-mental, that is, that mental properties are not fundamental properties, while a central tenet of dualism is, precisely, that they are. Of course the notion of the non-mental is also open ended. And, for this reason, it may be just as difficult to see, what sort of considerations are relevant in determining what counts as non-mental as it is to see what sort of considerations could be relevant in determining what counts as physical. But, of course, this is a project for another paper. **One advantage, however, is that, arguably, we do have a grasp of one side of the divide—that is, the mental side. So, perhaps, rather than worrying about whether the mind is fundamentally physical, we should be concerned with whether the mind is fundamentally non-mental. And this, I should mention, is a concern that has little to do with what current physics, future physics, or a final physics says about the world.**<sup>61</sup>

## Notes

<sup>1</sup> Addressing this question is unusual, but not entirely unheard of. See, for example, Meehl and Sellars (1956), Sellars (1981), Hellman (1985), Stroud (1987), Snowdon (1989), Crane and Mellor (1990), Chomsky (1993), Poland (1994), van Fraassen (1996), and Melnyk (1997).

<sup>2</sup> Earman (1975) p.566.

<sup>3</sup> Perhaps the mere ability to identify cases that clearly belong on each side of the divide does not necessarily indicate understanding of a concept, or at least of certain rather odd concepts like *being either an ugly painting or a table*. For one might be able to readily identify cases that clearly fall within the concept (e.g. tables) and cases that clearly fall outside (e.g. ducks, snow, pumpkins etc.).

Yet one might still not understand the concept because one doesn't understand the notion of an ugly painting. However, I take it that with more straightforward concepts, readily identifying cases on each side of the divide often does show we understand the concept. Moreover, with regard to our notion of the physical, Snowdon (1989) has argued that even less is required: that in order to understand what it is to be physical, we need only have a solid grasp of the central cases. This may be so, but the problem is that we seem to not even have that.

<sup>4</sup> Of course, idealists still make a distinction between things like tables and chairs on the one hand and a person's ideas on the other and may still call tables and chairs physical objects. However, physicalists, I take it, wouldn't want anything to do with the idealist's tables and chairs even if they are, for the idealist, physical.

<sup>5</sup> Some might also want to cite brains, along with rocks and trees, as central cases of physical things. Others, however, who hold that brains have mental properties, might be more wary and take brains to be physical only if their properties reduce or are determined by microphysical properties.

<sup>6</sup> Whether one starts off talking about objects, properties, or terms, the problems I discuss remain more or less the same. For an argument that the place to start is with objects, see Snowdon (1989); for an argument that the place to start is with terms, see Poland (1994).

<sup>7</sup> Kim (1997).

<sup>8</sup> Poland (1994, p. 15). He emphasizes this point again later: "ghosts, gods, and the paranormal are genuine threats to physicalism" (p. 228). Contrast this with von Fraassen's claim that "there cannot be such a thing as a true 'science stopper' at all" (van Fraassen 1996, p. 158).

<sup>9</sup> At times, what he says seems to indicate a purely geometric notion, yet he clearly means more than this since he thinks that an absolute vacuum is impossible. See Blackwell (1978) and Garber (1992).

<sup>10</sup> Some dualists may hold that to be physical is to exist in space-time and that the mind is not physical because it exists only in time. This approach at dividing things up, however, has the unhappy consequence that space-time itself, since it does not exist in space-time, is nonphysical, and it also goes against our current understanding of space-time which has it that anything that exists in time, also exists in space. John Foster suggested to me in conversation that the first problem is avoidable by holding that to be physical is either to exist in space-time or to be the whole of space-time (though, to avoid similar objections, we should substitute "any subset of space-time" for "the whole of space-time.") And perhaps we can soften the second problem by alluding to the fact that our current view of space-time is probably not the final word. (Armstrong (1995) thinks that space-time is here to stay. My physicist friends, however, tell me that giving up space-time is not entirely outside the realm of possibility.) But now, it seems to me, for the purposes of grounding the mind/body-problem we have an even worse problem: What side should be given claim to the things or events that are in time but not in space? It seems that if we allow for the possibility that our current scientific theory of space-time might be overthrown and replaced by one that allows for phenomena that are temporal but not spatial, the physicalist will, no doubt, want to claim that these phenomena belong in his domain. Yet the dualist was the one who claimed that the mind was temporal but not spatial.

<sup>11</sup> Strawson (1994, p. 44) remarks on this fact and then adopts a version of monism similar the one I proceed to address.

<sup>12</sup> See Rosenberg (1995).

<sup>13</sup> As stated, this suggested criterion (as well as the previous one) allows for property dualism (the view that there is one kind of stuff with two fundamentally different kinds of properties). So physicalists who adopt it would probably add that the properties of physical things are completely determined by the stuff they are made out of (as well as its relation to other things.)

<sup>14</sup> Some have suggested to me that abstract objects should be taken as central examples of non-physical entities. While physicalism—the view that there are no nonphysical entities or properties—is usually taken to be independent of nominalism—the view that there are no abstract objects—there may be reasons to deny this independence. (See Stroud 1987 and Hale 1993). And if one does, it may seem that a central problem for physicalism is how to account for numbers, properties, and the like. Now, the ontological status of abstract objects raises deep issues (not the least of which is how to

formulate the concrete-abstract distinction itself.) And I cannot hope to do justice to this topic in a paper on the notion of the physical in the mind-body problem, and especially not in a footnote to such a paper. However, I would like to point out some reasons for why taking abstract objects as prototypical nonphysical entities might not be attractive to those working on the mind-body problem. One problem is that if the question “is the mind physical?” is interpreted as something like “is the mind abstract, or relevantly similar to abstracta?” most physicalists, I think, would find the answer just too easy. For I think that most physicalists (as well as dualists) hold that mental phenomena, such as thoughts and experiences of pain, have at least temporal duration and are thus not abstract. Yet most take it that this alone does not make these phenomena physical. At the same time, if we take abstracta as our central example of nonphysical objects, those physicalists who take the *mind as program* analogy absolutely seriously would, it appears, actually not be physicalists (this doesn’t apply to those who argue that the mind is like an *instantiated* program). Finally, there is at least some reason to think that at the quantum level, the world *is* fundamentally mathematical. And if it is, it seems that it should be consistent with physicalism. It certainly may be difficult to intuitively grasp how reality at some level could be purely abstract, but it may be that at this level intuitions just do not apply.

<sup>15</sup> Strawson (1994) expresses a similar view and gives it as a reason for not spending much time in his book explaining the notion of the physical. However, in Strawson (forthcoming) he devotes considerable, and as I see it, very worthwhile, time explaining the notion.

<sup>16</sup> Rorty (1979) p.20 argues for this point.

<sup>17</sup> Braddon-Mitchell and Jackson (1996) make it clear that while Jackson still sees no fault in his argument, he is now inclined to think that somehow or other the mind must be physical (pp.134–35 and 143).

<sup>18</sup> One might try to avoid this problem for Jackson’s argument by simply substituting “scientific” for “physical”. This suggestion, certainly, has some *prima facie* appeal, for our notion of the scientific does, at least, get more of a purchase from ordinary language than does our notion of the physical. However, as I hope to elucidate in my discussion of Hempel’s dilemma, it is not clear that our notion of the scientific ultimately provides Jackson with what he needs.

<sup>19</sup> Inverted qualia arguments are most commonly put forth against functional accounts of qualia. See, for example, Horgan (1984). However, Chalmers (1996) argues that it is conceptually coherent for there to be physical duplicates with inverted spectrum, and moreover, that this possibility follows from the possibility of inversion for functional duplicates.

<sup>20</sup> This isn’t to deny that people do have strong intuitions about whether zombies are possible; for people certainly do. Moreover, this isn’t to say that we need to come up with a strict definition of the physical before we can start doing such thought experiments; for definitions and intuitions can work hand in hand. However, it does seem that we need at least some grasp on the concept before we engage in thought experiments intended to fine-tune it. If we have no grasp, our thought experiments may be as useless as the thought experiments of a five-year-old who is asked to imagine space and time as inseparable.

<sup>21</sup> The principle of physical causal closure is, as Kim (forthcoming) puts it, the principle that “no causal chain will ever cross the boundary between the physical and the non-physical.” A notion of the physical or at least microphysical seems to be very important for discussions about mental causation since, typically, those who think that there is a difficulty in accounting for mental causation do not find the same difficulty in accounting for causation at, say, the chemical, or neurological level. This, they argue, is because, the chemical and neurological are reducible to the microphysical yet the mental is not. But what is the microphysical? As we will see, it is not at all easy say. Clearly much more could be said about this topic. See, for example Kim (1993b) and (forthcoming) and Block (1990) for some insightful thoughts on the matter.

<sup>22</sup> For two clear examples of this see Davidson (1991) and Kim (1993b).

<sup>23</sup> At times, I will specifically use the term “microphysics” rather than physics. However, as is common in the literature, I will also use “physics” in lieu of “microphysics”, though strictly speaking, I will mean the latter.

<sup>24</sup> Jackson (1993) refers to this view as the “nothing butery” view (i.e. nothing *but* fundamental particles).

<sup>25</sup> See Kim (forthcoming) for a succinct description of what he calls the multilayered view. And for more detailed accounts see Wimsatt (1976) and (1994). In conversation Wimsatt has suggested that perhaps the physical ought to be defined relative to a level of organization. This suggestion certainly has some merit since what might be an acceptable property at, say, the subatomic level, such as, not having a specific spatial location, might be unacceptable at the macro level. However, it also leaves a number of open questions. For example, what, in fact, *is* acceptable relative to a level? And at what level does the mind reside? Moreover, if mentality does exist and is thus at some level or other, it seems that neither physicalists nor dualists would find anything at all unacceptable about mentality at its own level.

<sup>26</sup> For some, the term “natural” is used to refer to anything in the domain of the natural sciences while the term “physical” is used to refer only to what is in the domain of physics and the term “material” to refer to the view that all is matter. However, on my use of the term “physical”, the terms “natural” and “material” can be taken as terminological variants.

<sup>27</sup> There is also the view that mental phenomena should be explained away. This does not mean that nothing exists save the lowest level since proponents of this view usually take it that the neurological level exists (though, it is not always clear why they choose not to apply their explaining away strategy all the way down.) It is worthwhile to note that arguments for eliminativism also usually rely in part on some notion of the physical: mental properties do not really exist, it is argued, because there is no way for them to fit into the physical world.

<sup>28</sup> However, Kim has recently been arguing that it may be time for the pendulum to swing back. See, for example, Kim (1993a). For a survey of the history of the notion of supervenience see Horgan (1993).

<sup>29</sup> Haugeland (1998), however, argues that supervenience gives physicalists all they need. He realizes that supervenience is compatible with such views as parallelism and epiphenomenalism, but does away with this problem by invoking the maxim: “Don’t get weird beyond necessity” (p.119). With this maxim, however, one wonders why the physicalist needs supervenience at all.

<sup>30</sup> According to Poland (1994), the problem of identifying the dependence bases is “one of the deepest foundational issues facing physicalists.”

<sup>31</sup> Melnyk (1997), however, adopts a version of physicalism that does have this consequence. (See, specifically, his footnote 21.)

<sup>32</sup> See Hempel (1980) as well as (1969). I am using different terminology from Hempel, and my emphasis is on the question of whether the mind is physical rather than the question of physicalism in general, but the point is essentially the same.

<sup>33</sup> See Hawking (1980) for an example of heady optimism, and Redhead (1993, chapter 4) for a more sober view on the prospects for the end of physics.

<sup>34</sup> Even worse, it seems likely that current physics is inconsistent (and therefore complete for the unsatisfactory reason that from a contradiction, one can prove anything.)

<sup>35</sup> In Hellman (1985).

<sup>36</sup> See for example, David Lewis (1983) and Robert Kirk (1994).

<sup>37</sup> Hellman (1985) points this out.

<sup>38</sup> He follows Hellman (1985) who also explicitly takes on the first horn of Hempel’s dilemma. Smart (1978) also defines the physical over current physics, but does not think that this probably makes physicalism false. He argues that for the purposes of the mind-body problem, current physics is good enough since the principles relevant to understanding the mind are principles of “ordinary matter” (for example, principles relevant to understanding neurons) and that these principles will most likely not be overthrown. This suggestion does, I think, present a relatively clear position, however it does not provide us with an understanding of the physical that all physicalists would find tenable. For not all physicalists agree that the relevant level of understanding the mind is at the level of “ordinary matter.” And in this sense, Smart’s proposal does not fulfill David Lewis’ requirement that physicalism should be a view that motivates the various physicalist theories about the mind rather



than a specific theory itself. (See Lewis 1983, p. 361.) Nevertheless, Smart's position may indicate that questions about the mind will be clearer if they are formulated in more specific terms.

<sup>39</sup> A theory's rivals, he says, must 1) intend to achieve a significant number of the goals of the theory, 2) not supervene on the theory nor should the theory on it, and 3) be formulated.

<sup>40</sup> What he does say is that it is clearly not necessary to believe a theory in order to rely on it for practical purposes. Certainly this is correct: one might find it easier, for example, to use the ideal gas laws in one's predictions about the volume of a gas sample even though one does not believe the ideal gas laws and in fact knows that they are ultimately false. Of course, since this can be done without being a realist, one wants to know what further requirements realism imposes on the scientific attitude. All Melnyk says is that realism implies "that the theories of science are true or false in virtue of the way the mind independent world is." In other words, realism implies a correspondence theory of truth. And if this is all Melnyk means by scientific realism, it is not at all difficult to see why realism does not require belief.

<sup>41</sup> Poland (1994).

<sup>42</sup> Melnyk (1997) p.626.

<sup>43</sup> In a footnote Melnyk addresses this sort of objection, saying that he doubts that it describes any actual situations (p. 631, fn. 17).

<sup>44</sup> Buddhism may not be the best example here. A Buddhist friend of mine has told me that, actually, everyone is a Buddhist whether they know it or not. If this is correct, please substitute "Calvinism" for "Buddhism" in the above.

<sup>45</sup> Melnyk, of course, thinks that his version of physicalism is better than rival theories (see p.632–37).

<sup>46</sup> Another problem arises for Melnyk's view if we take Wigner's hypothesis as a theory of current physics. Wigner's hypothesis holds that acts of "pure consciousness" are required to explain the collapse of the wave function. That is, Wigner holds that the consciousness of an observer interacts with the system being measured (which the Schrödinger equation tells us must be in a superposition of states) in such a way as to cause it to collapse into one definite state. Now, since according to Melnyk, anything "mentioned as such in the laws and theories of [current physics]" is physical, it follows directly that mental properties are physical (that is, if we take Wigner's hypothesis as a theory of current physics). Of course, Melnyk might accept this consequence. However, Wigner's hypothesis is usually dubbed "dualistic." Similarly, if we take the dependence base to be all branches of today's physics, not just microphysics, some interpretations of the anthropic principle may lead to the same conclusion.

<sup>47</sup> Armstrong (1991) p. 186. Of course, not all properties the physicist appeals to are relevant: when a physicist is explaining a proposed budget in a grant application or explaining to her supervisor why she was late to work, she may be appealing to very different properties than when she is applying her mathematical skills in computing a wave function. But perhaps this distinction is intuitive enough.

<sup>48</sup> Jackson (1991) p. 291.

<sup>49</sup> Loewer (1996) p. 103.

<sup>50</sup> Of course, if a definition is justified, truth by definition is not necessarily a fault.

<sup>51</sup> And, of course, it is of no use for the physicalists who defines the physical in terms of a final physics to respond that the type of theory he has in mind is not a theory of literally everything but just a theory of everything physical.

<sup>52</sup> See Redhead (1995) and Weinberg (1992) for interesting discussions of the possibility of a final theory.

<sup>53</sup> For example, imagine if MacIntyre's "disquieting suggestion" came true. See MacIntyre (1984).

<sup>54</sup> Chomsky (1995). Also see Chomsky (1993).

<sup>55</sup> See Kirk (1994) p. 78–79 and Papineau (1993) p. 29–32.

<sup>56</sup> See Poland (1994) p. 330.

<sup>57</sup> See Weinberg (1992).

<sup>58</sup> While the focus of my argument has been on the difficulty of formulating a notion of the physical which is capable of grounding the mind-body problem, I think that some of what I have said

may be applicable to questions about physicalism and naturalism outside the scope of philosophy of mind as well. For example, both Mackie (1977) and Harman (1977) have argued for anti-realist conceptions of ethics because, as they see it, moral facts simply would not fit into the natural world as science has revealed it. But unless we have an understanding of what the natural world is, it is difficult to grasp the full import of their arguments.

<sup>59</sup> Chalmers (1996), especially pp. 153 and 163.

<sup>60</sup> See Nagel (1974) and (1986), Swinburne (1994) and Taliaferro (1994).

<sup>61</sup> I would like to thank Michael Forster, Joel Hamkins, Peter Kung, Martin Lin, Mark Moyer, Robert Richards, Gabriela Sakamoto, Marya Schechtman, Peter Unger, William Wimsatt, Andrea Woody, and Rachel Zuckert for their comments and suggestions.

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