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Physicality for Physicalists

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Abstract How should the "physical" in "physicalism" be understood? I here set out systematic criteria of adequacy, propose an account, and show how the account meets those criteria. The criteria of adequacy focus on the idea of rational management: to vindicate philosophical practice, the account must make it plausible that we can assess various questions about physicalism. The account on offer is dubbed the "Ideal Naturalist Physics" account, according to which the physical is that which appears in an ideal theory that both meets the explanatory goals of physics (understood in terms of explaining all ordinary physical events and all of its own domain) and is naturalist in a sense to be explained. The combination of these two provides a satisfying account of the physical that meets the criteria of adequacy and can be used to predict puzzle cases as well.

Keywords Physicalism · Materialism · Naturalism · Physics · Completeness of physics · Metaphysics · Physicality · Dualism

It is now one quarter of a century since Crane and D. H. Mellor issued the provocative declaration that "There Is No Question of Physicalism" (1990), arguing that there is no way to understand the physical that is "sufficient even to set physicalism up as a serious question" (206). Between then and now the kind of skepticism there expressed has grown so as to delineate a major topic in the literature on physicalism.[1] While the details vary, the common thread in such skepticism is the conclusion that the category of the physical cannot be understood in a way that is consistent with how philosophers typically think about physicalism. Depending on the specific account of physicality under examination, physicalism is alleged to be doomed to one or another of various unhappy fates: being a trivial truth, or an obvious falsehood, or a claim incapable of empirical support, or incapable of generating the mind–body problem, or the like. Looming large here is what is known as "Hempel's Dilemma," a dilemma aimed at attempts to define the physical by reference to theories from physics.[2] The dilemma, in brief, is that we either define the physical by reference to current physical theory, in which case (given the fact that our all current scientific theories are likely in error), the resulting version of physicalism is likely false; or we define it by reference to some future or ideal physical theory, in which case (given that we don't know the actual content of that ideal physical theory) the resulting version of physicalism is a doctrine we don't really understand.

The skeptics are wrong. In this paper I propose and defend a set of criteria of adequacy for an account of the physicality and then introduce a specific account that meets those criteria—an account I dub the "Ideal Naturalist Physics" (INP) account. The proposed account is not one for which I claim any great originality. It is, as the name suggests, a variant of those accounts that appeal to an ideal version of physical theory to define the physical, and it

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[1] Some of the important publications in this debate include (Crane and Mellor 1990; van Fraassen 1996; Melnyk 1997; Daly 1998; Montero 1999; Spurrett and Papineau 1999; Spurrett 2001; Crook and Gillett 2001; Poland 2003; Dowell 2006; Wilson 2006; Ney 2008b; Stoljar 2010). A useful survey can be found in (Ney 2008a).

[2] Relevant discussion in Hempel can be found in his (1966, 1969, 1980).

makes use of some important ideas found elsewhere in the literature, especially work by David Papineau (1993), David Spurrett (2001), and Jessica Wilson (2006). What I claim as new, however, is, first, the way the INP account incorporates a diagnosis of how we think intuitively about naturalism, and second, the way a systematic account of the criteria of adequacy makes plain the virtues of this approach.

In what follows I propose and defend a set of criteria of adequacy (Sect. 1), introduce the proposed INP account (Sect. 2), and review the ways in which the INP account succeeds in meeting those criteria (Sect. 3).

1 Criteria of Adequacy

1.1 The Target Notion

How should the project of defining the physical (and of formulating physicalism) be approached? The most straightforward option is to think of it as on a par with other tasks in conceptual analysis: there is a pre-existing concept, and the burden on the analyst is to find an informative characterization that matches that pre-existing concept. In the present case, however, we should be wary of such an approach.

My reservations here are not driven by any general skepticism about conceptual analysis; they derive rather from the particulars of this case. It is, I argue, only to be expected that there is more than one pre-existing notion of the physical here, and that one of them—the one we want to focus on—is indeterminate to a significant degree.

There is, first, a notion of the physical found outside of discussions of physicalism—and outside of philosophy more generally. Call this the notion of the "ordinary-physical." The ordinary-physical is the notion at work when one asks, in referring to a book, whether, in addition to the electronic copy, there is a "physical copy." It shows up when talk of the physical is treated as interchangeable with talk of things that "one can bump up against." In addition, however, we have the notion of physicalism, and presumably a notion of the physical to go along with it. As has often been observed, the kind of "physical" at play in physicalism seems not to be the same as the ordinary-physical. Many things that are treated as kosher by the physicalist—even when taken as fundamental—are not ordinary-physical. The point is familiar: gravitational forces, electrodynamic fields, and the wave function of quantum mechanics are not ordinary-physical, though the physicalist can accept them among the basic entities in her ontology. So we should distinguish physicality in the ordinary sense from this other sense—as we might call it, physicality for physicalists. That is an oversimple description, though, since it's not as if only advocates of physicalism will care about the notion; rather, anyone interested in assessing physicalism, advocate or opponent or merely curious onlooker, will have this kind of physicality in mind. Perhaps we could call it "physicalism-physical," but that is quite the ugly term and I will instead use "physical" without qualification to mean the notion that is to be plugged into a formulation of physicalism.

So there are at least two notions in play. But the one that is our target—physicality for physicalists—is likely indeterminate in important ways. It is tied to the notion of physicalism, and "physicalism," unlike "physical," is *not* a term found outside of theoretical contexts; it is akin to other bits of jargon in philosophy—such as "naturalism," "realism," "skepticism," "internalism," and so on. It is overly optimistic to suppose of any such term that it definitely picks out one notion in particular; we must allow here a significant amount of indeterminacy. Still, this is far from reason to give up on the idea that a formulation of physicalism has something to answer to. There is a notion to capture, but the project of capturing it ought to recognize that there will be room for stipulation as well.

In light of the above observations, we should draw three conclusions. First, a proposed account of physicality should be such that, when plugged into a formulation of physicalism, results in a proposition that fits our intuitive grip on physicalism, such as it is, and is not required to fit the notion of the ordinary-physical. To put this point to work, we need to have some account of physicalism available that is independent of the specific account of physicality. I will take it as enough for present purposes to take physicalism itself to be the thesis that everything is either physical or nothing over and above the physical.[3]

Second, in assessing a proposed account we must not presume that every implication of the account is answerable to some pre-existing fact of the matter. In trying to ensure that the account is faithful to the pre-existing concept, we must, I take it, see whether the account classifies various possible worlds as physicalist or not in a way that fits our intuitive judgements about such cases. If, as I hold, the target notion is indeterminate in various ways, there will be cases where a determinate proposal will render a verdict that is neither supported nor contradicted by the target notion. Such arbitrary classifications should be accepted as a result of imposing standards of utility that need not have been provided for by the original notion.

The idea that an account of a concept should match our intuitive judgements is, of course, subject to multiple controversies that cannot be engaged here. But in light of

[3] Much more deserves to be said here, both about the "everything" (which should be qualified in some way) and the "nothing over and above" locution (For my own take on these questions, see Witmer 2001). These complexities will not, though, make any difference to the current project of giving an account of physicality.

the point about indeterminacy, I should note that there are at least three ways in which a mismatch between intuitive judgements and the verdict of the proposed account might be deemed acceptable. First there is, as always, the possibility of arguing that a given mismatch is the result of some confusion in the intuitive judgement, e.g., confusing physicalism with some related, similar thesis. Second, as just noted, it may be that the account imposes determinacy where none exists previously. In that case, the proposed account implies a definite verdict as to whether physicalism is true in the world at issue even while, intuitively, we may shrug our shoulders. Third, there is a kind of converse case: if we are inclined to presume that the concept at issue is determinate, we may feel pressured to render an intuitive verdict even when a shrugging of the shoulders is in order, thus resulting in a clash of two determinate judgements.

While these moves are acceptable in general, it is important not to resort to them too casually. In particular, we should not cry "indeterminacy" too readily as a defense. Allowing a degree of arbitrary classification must not become a license to avoid the effort needed to match one's judgement to whatever pre-existing criterion is in fact operative. To justify the claim that a particular case is unsettled by the target concept one should provide a diagnostic theory of how the concept works generally, which account predicts that sort of case. The account I propose includes such diagnostic apparatus. That apparatus has the ability to explain not only why some cases should be treated as indeterminate but also why some intuitive judgements are plausibly the result of confusing physicalism with a different doctrine.

The third conclusion to draw from the above considerations is that a proposed account should make it explicable that the physical and the ordinary-physical share a common name. Doing this would help guard against worries that the account of physicality for physicalists might be gerrymandered in ways unfair to the actual development of the idea of physicalism. In my proposed account the link between the physical and the ordinary-physical will be very easy to discern.

A comment may be in order about the significance of clarifying the target notion. It is, of course, not of great intrinsic interest just what we might have or had in mind when thinking about the physical or physicalism; the important issue is whether some doctrine or other is *true*, whatever its name. That's right—but it is shortsighted to use this as a reason to skip over or be impatient with the project of trying to capture the target notion. Given that philosophers have often found physicalism of great interest even without a more explicit account in hand, diagnosing what they may have been reacting to is useful as a way of bringing to light aspects of the idea that might otherwise be overlooked in the hurry to assess the truth-value of physicalism.

1.2 Content Adequate for Rational Management

The points above are useful criteria of adequacy so far as they go, but our concern here is to rebut a skeptical worry. That aim motives further criteria.

The skeptical worry, again, is that no account of the physical will be consistent with how philosophers generally make use of the notion of physicalism in their work. To fend off this worry, an account of physicality should not only be faithful to the concept at issue but also vindicate the practice of philosophers in dealing with physicalism. That practice, I take it, is largely a matter of subjecting the thesis of physicalism to rational debate. For an account of physicality to fend off the worry, it should make it plausible that we can in fact do things such as judge whether a given scenario is consistent with physicalism, evaluate evidence for and against the doctrine, assess whether it has certain logical implications, and the like. Describe this as "rational management": an account of physicality should enable rational management of the thesis of physicalism.

This may seem an extremely tall order. But in fact rational management is not an all-or-nothing affair. Think of the thesis of anthropogenic climate change: it is certainly possible for us rationally to assess whether there is such change, to debate the speed of change, and so on, but it may be utterly beyond our ken to determine whether a specific event of extreme weather should be attributed to such change. In the same way, some issues about physicalism may be ones we can rationally manage while others are not, and this is something we should not find alarming. To fend off the skepticism about physicalism that prompts our project, what is needed is just to show that *to the extent that philosophical work on physicalism has generally presumed* we can rationally manage the thesis, we *can* so manage it.

In other words, the kinds of questions that philosophers have in fact tried to address—thereby presuming they are in a position to address—should be rationally manageable on a good account of physicality. It is, for instance, normally assumed that we are in a position to assess familiar conceivability arguments about consciousness and physicalism, debates over the significance of empirical science for the plausibility of physicalism, and the relation between panpsychism and physicalism. These sorts of questions—or, at least, a significant majority of them—are the ones that had better turn out not to be utterly beyond our ken. And while there are plenty of these, they form a *limited* domain that may be rationally manageable even while other questions about physicalism might not be.

If the requirement of rendering physicalism rationally manageable is to vindicate philosophical practice, it should be understood as requiring not only that we can indeed answer these questions; it must incorporate as well the requirement that reasonable answers include ones that have often been given by philosophers. If an account of physicality implied that we could, indeed, identify evidence for physicalism, but the evidence thus identified was whatever evidence we could produce for the occurrence of divine interventions, that hardly counts as vindication. So, the rational manageability criterion includes showing that our attempts at such assessments are not entirely off base.

1.3 Competitors, Compatriots, Confirmers, and Counters

It will be useful to have a taxonomy of relevant questions about physicalism that comprise the relevant aspects of rational management. To this end I suggest four C's: *Competitors*, *Compatriots*, *Confirmers*, and *Counters*. Questions about the four C's are questions about:

- those positions that are inconsistent with physicalism (Competitors)
- those positions that are distinct from physicalism but in a significant way "close" to physicalism (Compatriots)
- the sorts of evidence or arguments that seem to confirm or count for the truth of physicalism (Confirmers)
- the sorts of evidence or arguments that seem to disconfirm or count against the truth of physicalism (Counters)

Let's say that a thesis P is a *competitor* to physicalism just in case given intuitions among contemporary metaphysicians, P is logically inconsistent with physicalism. This definition is qualified with "given intuitions among contemporary metaphysicians" instead of an outright appeal to inconsistency because the target concept is, if I am right, not determinate, so there will be theses for which there is no pre-existing fact of the matter about whether they are inconsistent with physicalism. What we can do, nonetheless, is locate some fixed points to which any formulation of physicalism must answer. One criterion, then, is that an account of physicality is adequate only if the resulting thesis of physicalism is logically inconsistent with the competitors as here defined.

Clear cases of competitors include traditional Cartesian substance dualism, property dualism, idealism or phenomenalism, and theism. There are other positions that might seem to be competitors as well, though it is not quite so obvious that they need to count as such. I have in mind positions according to which there are entities of the following sorts: irreducible life forces, primitive normative facts, emergent color properties, or fundamental chemical properties.[4] Very few would-be physicalists find these positions to be serious contenders, but it is not always obvious whether they should be taken as logically incompatible with physicalism.[5]

To introduce the category of "compatriots," consider an example described by Daniel Stoljar:

> THE ATOMIST WORLD: this is a possible world at which every instantiated property is necessitated by some property distinctive of classical atoms. The properties instantiated at this world duplicate whatever properties are instantiated at the actual world, insofar as this is possible (Stoljar 2010: 58).

He clarifies that these "classical atoms" are "the atoms of antiquity, the atoms of Democritus or Lucretius rather than anything that might get called an 'atom' in modern physics." (59). Still, he says, the Atomist World appears to be one in which physicalism is true. That is not so clear to me. But it *is* clear that even if physicalism is not true at the Atomist World, something *close* to physicalism is correct there, some thesis that has some significant kinship with physicalism.

The importance of recognizing some such category has been noted before. Andrew Melnyk, who advocates defining the physical by reference to current physical theory, observes:

> Understanding physicalism by appeal to current physics does have the possibly unsettling consequence that, say, Hobbes was not a physicalist, since he had no notion of current physics. But this consequence is bearable, because, consistently with it, we can still insist that Hobbesian materialism nevertheless has much in common with physicalism (Melnyk 2003: 14).

Melnyk uses "the spirit of physicalism" to label the commonality. That same "spirit" is plainly exhibited by the Atomist World. Can we say more about the relevant commonality? What such examples have in common, I take it, is that a would-be physicalist would, if she were to discover that one of these other positions is correct, still feel herself vindicated in some significant way, that there is some view she held—not identical to her physicalism but

[4] I am treating "irreducible," "primitive," "emergent," and "fundamental" as synonymous here, varying the terms for stylistic reasons.

[5] One position that is rather hard to classify is Russellian monism, the view (as I here use the term) that physical properties are themselves either identical with or wholly grounded in intrinsic properties of a sort that are in some sense not revealed in physical theory. A panpsychist version of Russellian monism identifies those intrinsic properties with mental properties, while a "neutral" version leaves them unidentified. *Pace* Strawson (2006), the panpsychist version seems plainly inconsistent with physicalism, but it is less obvious whether the neutral version should be classified in the same way.

in some important way related to it—that remains true. As a preliminary characterization, let us say that a position P is a compatriot of physicalism just in case, given intuitions among contemporary metaphysicians, P shares that same commonality with physicalism, a commonality that would enable a would-be physicalist to feel importantly vindicated in part by that position. This is admittedly quite rough as a characterization, but a more precise definition will emerge later in the course of developing the proposed account of physicality (see Sect. 3.3).

Note that "competitor" and "compatriot" are not contraries here, since a competitor could be a compatriot as well. Not all competitors will be compatriots, however, and these two requirements—that both competitors and compatriots end up in the right positions vis-a-vis physicalism itself—provide a significant constraint on an adequate account.

The competitor and compatriots requirements are about relations in logical space. The next two are, by contrast, about epistemic space. *Confirmers* are pieces of evidence or kinds of arguments that (again, given intuitions among contemporary metaphysicians) provide some significant support for physicalism; *counters* are pieces of evidence or kinds of argument that (given those intuitions) provide some significant support for the denial of physicalism. Examples of confirmers include arguments from the causal completeness of physics and the history of successful attempts to fit a variety of phenomena into a physicalist world; examples of counters include arguments from the conceivability of zombies, arguments for primitive moral properties, any credible arguments for theism, and so on. As these are relatively familiar, I leave off discussion of such examples for the sake of space.

1.4 Summary Overview

My proposal may be summed up as follows. An account **A** of physicality (for physicalists) is adequate only if three conditions are met.

C1. Physicalism interpreted according to **A** classifies possible worlds as physicalist or not in a way that conforms to our (unconfused) intuitive judgements, at least to the extent that the target notion is determinate.[6]

C2. Physicalism interpreted according to **A** is a thesis that we can plausibly understand well enough to rationally manage in the sense of arriving at reasonable judgements about competitors, compatriots, confirmers and counters that are to a significant degree in accordance with the actual judgements of philosophers thinking about physicalism.

C3. The account **A** makes it explicable that the concept of the ordinary-physical shares a common name with the concept of physicality at issue in physicalism.

The C2 requirement might subsume C1. If the relevant judgements about possible worlds at issue in C1 all fall within the range of rational management, meeting the second condition will require meeting the first. Whether this is so or not, I leave the criteria as two distinct conditions, as the first is a more traditional requirement while the second goes beyond it to include the specific hopes of rebutting the skeptical view about physicality.

Many extant proposals for how to understand the physical can, I believe, be criticized for failing to meet these criteria. My goal here, however, is limited to showing how the account I propose meets these criteria in a satisfying way. The way in which it meets C3 will be obvious, and most of the work here will be focused on showing how it meets C2 and handles the four C's involved in rational management. But our first job is to get the account out on the table.

2 The Ideal Naturalist Physics Account

2.1 Three Key Questions for the Account

My account is the "Ideal Naturalist Physics" (INP) account of physicality. Roughly, to count as physical, an entity must be appropriately related to a certain kind—a "naturalist" kind—of ideal physical theory. To get the account out on the table, three parameters need to be addressed:

- In what sense is the theory *naturalist*?
- In what sense is the theory a *physical* theory?
- In what sense is the theory *ideal*?

All three questions are crucial. In this section, I address each in turn and thereby develop the INP account. Naturalism is addressed in Sect. 2.2, physical theories in Sect. 2.3, and in Sect. 2.4 the sense of "ideal" is specified and the resulting account set out in summary form.

2.2 Metaphysical Naturalism

What does naturalism—that is, metaphysical naturalism, not any epistemic or methodological doctrine—have to do with physicalism? Perhaps everything: after all, consider the following comment from Montero in (1999):

> 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

[6] The "unconfused" qualifier in C1 is needed because some intuitive judgements might be discounted, as discussed earlier, due to confusion of some sort.

> 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 (Montero 1999: 197, n. 26).

While such explicit statements of equivalence are not that common, it is certainly common to find philosophers writing as if such equivalence is being presumed. But this treatment is far from universal, and some philosophers take care to distinguish naturalism from physicalism. If we look at discussions of naturalism going back several decades, it becomes clear that metaphysical naturalism has long been seen both as distinct from physicalism and as liable to be confused with it.[7] Being clear about such naturalism should, then, help us be clear about physicalism. But what is naturalism?

The term has long been the source of frustration among philosophers. In the middle of the last century, for instance, Ernest Nagel described "naturalism" as covering a "miscellaneous.. assortment of not always congruous views" and remarked that "[t]he number of distinguishable doctrines for which the word "naturalism" has been a counter in the history of thought, is notorious" (Nagel 1955: 5). Such complaints have not declined in recent years. Whatever one says about any alleged core notion of metaphysical naturalism, it must be allowed to admit of a wide variety of specific interpretations. There is, I think, a relatively simple way to make sense of that notion, one that fits how philosophers have thought about metaphysical naturalism for the last century. A full defense of that interpretation is beyond the scope of this paper, but I here present the key points.[8]

One can detect three significant trends in the discussions of naturalism from the early 1900s through the present. First, there is an unmistakable admiration for science, and when this admiration is channeled into a metaphysical thesis of some sort it usually takes the form of saying that everything in the world is the sort of thing that can be investigated by science. Whether this says much, though, obviously depends on what is presumed about science (If "science" is understood broadly enough, the claim may well be empty). Often (not always) advocates emphasize the natural sciences, and the distinction between the natural sciences and other disciplines seems important in shaping philosophical intuitions about naturalism.

Second, there is a rejection of "supernatural" entities, where authors often draw from a handful of paradigmatic examples: immaterial minds, souls, vital forces, deities, angels, ghosts, and the like. Of course, it's not entirely clear what "and the like" means here.

Third, there is an emphasis on some kind of "continuity" between different things in the world. When David Chalmers describes the dualism defended in his 1996 *The Conscious Mind* as itself naturalistic, he stresses the *similarities* between phenomenal properties and physical properties on his view. As he puts it there, his dualism "is naturalistic because it posits that everything is a consequence of a network of basic properties and laws" (Chalmers 1996: 128). And going back to 1927, we find John Dewey crediting his naturalism for finding incredible any view that, as he puts it, posits a "gulf… between nature and man," adding that, on his view, 'human affairs… are projections, continuations, complications, of the nature which exists in the physical and pre-human world' (Dewey 1927: 58).

What unifies these features? On what I call the "Nothing Special" account, the core naturalist thought is that humanity and those things humans find of special significance are not anything *special* in reality. The emphasis on natural science gives us a clue: the domains proper to physics, chemistry, biology, geology, astronomy, and so on are understood without reference to human activity or special human interests. These sciences deal with "nature" in the specific sense of the world *apart from humanity*, while the others deal with humanity itself. Metaphysical naturalism is best seen as the view that this division does not reflect any deep differences: humanity, and the things we care about, are *nothing special*, but are just another part of nature.

The Nothing Special account explains why naturalists are united in rejecting certain entities—e.g., ghosts, gods, and immaterial minds. Such entities, if they exist, operate in a way quite foreign to the rest of the "natural" world, at least as we understand that world to operate. But that is not on its own enough to account for their being intuitively supernatural; the discovery of a unique and unanticipated kind of energy would not tempt us to declare naturalism falsified. However, the "supernatural" entities in question have another notable feature: they are akin to human beings in some relevant respect. In particular, they are often understood as *agents*. Crudely put: what makes ghosts objectionably supernatural is not just their being

[7] Consider, for instance, the very interesting "Are Naturalists Materialists?" (1945), by John Dewey, Sidney Hook, and Ernest Nagel, where they argue that naturalism is not committed to materialism. Closer to the present, in his "Naturalism, Materialism and First Philosophy" (1978), David Armstrong defines naturalism as the claim that "[t]he world is nothing but a single spatio-temporal system" (126) and materialism as the thesis that "the world is completely described in terms of (completed) physics" (Armstrong 1978: 126). While these definitions make the doctrines distinct, they seem plainly intended to relate them in a significant way, as it seems likely that the completed physics would only posit entities within a single spatio-temporal system.

[8] The interpretation is presented in Witmer (2012), and a more sustained and careful rendition is in my "Making Sense of 'Naturalism'," still in development.

inexplicable in terms of the existing theories of natural science but, further, their being *people*. If we were to learn that ghosts exists, then we would conclude that there *is* a deep division between humanity, or at least human-like things, and the rest of nature.

Can the Nothing Special interpretation give us a clear metaphysical thesis? It can motivate a general formula that in turn allows us to make sense of different expressions of naturalism. Let us delineate those phenomena that are of special interest to humans—that is, of interest to us in a way that is both intrinsic and isn't just part of a more generalized curiosity about the world. Call those things "Human Interest Phenomena," or the HIP for short.[9] (The acronym is deliberate: in contemporary slang, the "hip" is the "cool" or trendy, that which people celebrate and take special notice of). The HIP are akin to humankind, while the non-HIP are akin to nature: antinaturalism is thus the view that they are deeply different, while naturalism is the denial of such difference.

The core idea of naturalism may thus be expressed with the following formula:

> (MN) The HIP are not fundamentally different from the non-HIP.

I say "formula" instead of "proposition" here because MN is not presumed to express any determinate proposition. There are two places where MN exhibits important variability in its meaning: in what counts as HIP, and in what the relevant sense of "fundamentally different" might be.

The variability in what counts as HIP is due to an ordinary vagueness. Some things are definitely HIP—ourselves, the mental in general, morality; some things are definitely not HIP—rocks, planetary orbits, rates of radioactive decay. But there are cases that seem closer to the borderline. Is life itself HIP? Well, we care about human lives, and perhaps to a degree about the lives of other creatures, though maybe not so much about, say, vegetable life. There are no hard and fast lines dictating what is and isn't of special interest to humanity in general, and this results in some need for stipulation if we're to get from MN to a definite thesis.

The variability in what counts as a fundamental difference is, by contrast, more akin to ambiguity than vagueness. Very different kinds of similarity or difference might be stressed on different occasions, and I suggest that some of the more puzzling variations in which positions have been described as "naturalist" can be explained as due to such differences in what counts as a fundamental difference. When Chalmers describes his dualism as naturalist, as noted above, he appeals to the similarity between phenomenal and other properties with respect to being governed by natural law. It is easy to imagine another philosopher who sees herself as a metaphysical naturalist finding this perplexing, insisting that this is not good enough, as the phenomenal and the other properties are still different in—for her—very salient ways.

There is no need to arrive at a privileged choice for what "fundamentally different" might mean. What is important, rather, is that discussions of naturalism be guided by some clarity on how people might be talking past each other, and one of the advantages of the Nothing Special interpretation is that it offers such guidance: look for what may be assumed here by way of distinct values for what counts as "HIP" and what counts as "fundamentally different," and the underlying cause of clashing intuitions might be identified.

But let us return to physicalism: how is naturalism related to physicalism, supposing the Nothing Special interpretation of the former is correct? Consider the crude formulation of physicalism given before:

> (Physicalism) Everything is either physical or nothing over and the physical.

While there is some question as to how extensive the scope of "everything" should be in physicalism, it seems clear it will encompass the HIP: ourselves, mentality in general, normativity, life, and the like. Further, the physical is the non-HIP *par excellence*. Think of the phrase "merely physical": we have no interest in the physical as such. Insofar as we care about the physical, that is due either to instrumental concerns or to an all-purpose scientific curiosity about the world.

The simple physicalist thesis thus implies that the HIP are either identical with or nothing over and above the non-HIP. While I've stressed the way "not fundamentally different" can take on different meanings in different contexts, one very salient way of being "not fundamentally different" is by being either identical with or nothing over and above the other category of things. Physicalism thus fits happily into place as a kind of metaphysical naturalism.

How important is this result? One point is that intuitively, physicalism appears to a thesis that implies naturalism, though not vice versa. In addition, however, it seems to me that for many would-be physicalists a large part of their motivation for the view is a prior commitment to metaphysical naturalism. It is no surprise that physicalists in general are atheists and great admirers of natural science in general. For many of us, physicalism is a view that appeals in large part—not solely, I'd say, but to a significant degree—because it is a view that fits our general

[9] For convenience, I will often use phrases like "the HIP entities" even though substituting the original "Human Interest Phenomena" in that phrase results in bad English.

conception of the world as one indifferent to our special interests, where we enjoy no special superiority or powers over nature.

Let's now return to our first question about the INP account. In what sense is the relevant physical theory naturalist? The theory should not itself imply naturalism; it is a version of physics, and physics itself will presumably not include such a sweeping idea in its purview. Rather, what is wanted is a theory that makes no appeal to anything HIP; more precisely, it should be one that can be expressed without any HIP terminology; that is, it can be expressed without using mental terms, moral terms, or anything like that—where the "anything like that" is left vague as a consequence of the vagueness of the HIP/non-HIP distinction. For a fully definite account of physicality, the INP requires a bit of stipulation; that is, it must simply draw an arbitrary line somewhere between what exactly counts as HIP and what doesn't. This I take to be entirely acceptable, as it just reflects the lack of a pre-existing boundary in the target concept.

The account of what it is for a theory to be naturalist is understood in terms of how the theory can be expressed, not in terms of what sorts of entities it in fact refers to. The latter option would be unduly restrictive. Suppose a mental property M is identical with some property P that, intuitively, counts as physical because of its appearance in the relevant physical theory. If we defined "naturalist physical theory" as one that did not refer to any HIP entities, that theory would then fail to count as naturalist. Such identities ought to be consistent with the definition of "physical." An alternate account is thus needed of what it is for the relevant theory to be naturalist; the proposal is that a naturalist theory is one that can be expressed without using any HIP terms—or, more precisely, any terms such that grasp of that term enables one to tell a priori that whatever is picked out is among the HIP entities.[10] In taking this tack, I must presume that the kind of "theories" at work here are individuated at a relatively fine grain, since substituting co-referential terms could make for a different theory. Given that physicalists want to allow the possibility of such identities, however, that approach to individuating theories here seems unavoidable.

[10] My thanks to an anonymous referee for pushing the point that led to this paragraph. That referee suggested a different move than the one I make in the text, namely, to say that the physical theory does not have any *fundamental* HIP entities in its ontology. I am hesitant to opt for this, however. Suppose that, as imagined in the main text, the ideal physical theory introduces a property P, and P is identical with some mental property M. Would it be correct to say, in that case, that M is not basic or fundamental, that it is P that fundamental or basic? I would hesitate to do so given the case as described, since that description gives us no reason yet to say that P is basic and M non-basic than to say that M is basic and P non-basic.

2.3 Physical Theories

A naturalist physical theory is one that makes no appeal to HIP entities as such. But what is a *physical* theory in the first place? Since the present strategy is to define the physical by reference to a certain kind of physical theory, we cannot, of course, define "physical theory" as one that deals with the domain of physical entities. Further, since the idea here is define the physical by reference to an *ideal* physical theory, it will not do to pick out the physical theory by ostension; we cannot point to current, existing theories and say that we only mean those.

Instead, we should define "physical theory" by reference to the *aims* of physics; an ideal physical theory is one that succeeds in those aims. So what are those aims?

Here, there is a persistent tendency on the part of some authors to understand the aims of physics in a way that renders the account of physicality in terms of an ideal physics problematic. I have in mind those characterizations that depict physics as having an aim sufficiently ambitious as to render physics essentially monopolistic: it is supposed to explain *everything*. For instance, at one point Barbara Montero declares that "Physics is the study of the fundamental nature of the world, whatever that nature may be" (Montero 2011: 99). Elsewhere she suggests that "at least under a certain interpretation… a completed physics amounts to a physics that literally explains everything" (Montero 1999: 191). In both cases, she rightly points out that if the physical is defined by reference to an ideal physics understood as succeeding in those aims, then physicalism is bound to be true as a matter of definitional fiat—a completely unacceptable consequence.

The problem with understanding physical theory as having such ambitious aims ("explaining everything" or "the fundamental nature of the world") is not just that it causes trouble for someone who wants to define the physical by reference to an ideal physics. The problem is that it's simply not believable in the first place as an account of what physicists are after. If the aim of physics really were so expansive, we would expect to see physicists pursuing as wide a variety of topics as we see philosophers pursue! But we see nothing of the sort. It is not as if you can go into a physics department and find someone busily trying to come up with a theory of moral facts, the rise of political movements, or economic successes. This is not to say that physicists might not introduce those kinds of things into their theorizing if they played an explanatory role. To take an infamous example, according to the Von Neumann–Wigner hypothesis, consciousness is needed to make sense of the collapse of the wave function in quantum mechanics. This example does not, however, support the thesis that physicists have as an aim to explain everything, including consciousness. Rather, consciousness is there

invoked as an *explanans* to explain something else—something developed *without* an eye towards "explaining everything."

What, then, are the aims of physics? Consider this suggestion from Jeffrey Poland:

> [P]hysics is the branch of science concerned with identifying a basic class of objects and attributes and a class of principles that are sufficient for an account of space–time and of the composition, dynamics, and interactions of all occupants of space–time. The crucial features of these classes are that they are minimal with respect to the descriptive and explanatory purposes they serve, that the magnitudes are defined for all regions of space–time, and that each occupant of space–time satisfies the principles governing those magnitudes. It is both the types of phenomena they are introduced to explain (i.e. composition, dynamics, interactions) and their complete generality that distinguishes these magnitudes and principles from others, and hence that distinguishes physics from other branches of inquiry (Poland 1994: 124).

From just this characterization, it is not obvious just what *wouldn't* be included in physics, other than things that aren't located in space–time at all. Suppose that there are ghosts, located in space–time but without any effects on any events we intuitively think of as physical. Would the investigation of ghosts and ghostly laws end up as part of physics on Poland's view? After all, presumably we can talk about the composition, dynamics, and interactions of the mental states of those ghosts. But Poland does indicate that physics, as he understands it, is not that undiscriminating in its focus:

> [S]ocial phenomena are not of interest to the physicist as social phenomena, although they are of interest as occupants of space–time (i.e. in so far as they involve causal processes or entities which "take up space") (Poland 1994: 125).

The idea that they are of interest *as* occupants of space–time is the key point here. I take it that Poland's idea is that the composition, dynamics and interactions of interest are *limited to those events that are themselves understood solely in mechanical terms*—movements, collisions, taking up space, persisting through time, and the like.

If I am right in this reading of Poland, his suggestion is similar to one made around the same time by David Papineau when he suggested defining physics as "the science of whatever categories are needed to give full explanations for all physical effects" where he added that we can "postulate some pre-theoretically given class of paradigmatic physical effects, such as stones falling, the matter in our arms moving, and so on." (Papineau 1993: 29–30). Papineau says very little about the characteristics of these "paradigmatic" physical effects, but especially in light of Poland's comments, it is tempting to combine the thoughts in the following way.

I stressed earlier that there is a notion of the ordinary-physical. We want our account of physicality (for physicalists) to make plain some kind of intelligible connection to the notion of the ordinary physical. The Poland and Papineau suggestions about physics provide us with such a connection. Physicality can be defined by reference to an ideal physics, where the aim of physics is itself defined by reference to the domain of the ordinary-physical. The ordinary-physical might not be understood as *exclusively* mechanical, but it might be that in the development of physics that target explananda were understood in that way. In either case, the link is established: the ordinary-physical shapes the aim of physics, which is then to provide a comprehensive framework for providing causal explanations of all mechanical events; the physical-for-physicalists is then whatever appears in the ideal version of that physics—so long as it is naturalist as well.[11]

One aspect of this account of the goal of physics is worth emphasizing. The goal is to develop the apparatus that can explain all mechanical events; but this goal is also understood as aiming at *comprehensiveness* in some sense. Poland gestures towards this with his comments that the relevant magnitudes are "defined for all regions of space–time" and the principles have "complete generality." I suggest that the core notion here is really the same as that which is invoked as the causal completeness of physics. More precisely, I think the goal is best understood as a theory that does both of the following two things: (1) provide complete causal and/or nomological explanations[12] of all ordinary-physical events and (2) provide complete causal explanations of all events understandable in terms of the ontology of that theory itself. If we identify the physical with the ontology of such a theory, and that theory is successful, then every physical event has a complete causal explanation alluding only to physical conditions and laws, at least insofar as the event has any causal explanation. An ideal physical theory of this sort would then vindicate the causal completeness of physics, and an ideal naturalist physical theory would be one that ensures that nothing HIP

[11] For a useful defense of the strategy of appealing to an "ordinary physical" notion to pin down physical theory without running the risk of circularity or making an ideal physical theory too comprehensive, see Spurrett (2001).

[12] I hereafter drop the "and/or nomological," but it should be understood throughout. The kinds of explanations at issue might not be causal exactly, but they are certainly ones that appeal to the laws of nature and the way those laws shape the universe.

is included in those explanatory elements—no minds, or norms, or the like.

2.4 The Ideal Naturalist Physics

Let us now put the pieces together to present the INP account of physicality.

As a first attempt, one might suggest that something is physical if and only if it appears in the ideal naturalist physical theory. But this is problematic, since it is possible that the only theory that is ideal in the sense of meeting the aims of physics is not naturalist. If, for instance, there are brute mental forces needed to explain ordinary-physical events, the ideal physical theory will not be naturalist. Instead, it is better to start by defining "ideal physical theory" in a way that ensures there is a unique, true theory of that sort, later defininining a naturalist version thereof by reference to which physicality is understood.

I here presume that there are facts about what explains what, so that if we are clear about what explanations must be encoded in the theory of interest, we can determine a unique set of true propositions to count as the ideal physical theory. Here is how to determine that ideal theory.

Start with the class of nomologically possible ordinary-physical events and select what serves as a minimally adequate causal explanation. By "adequate" I mean that if that explanation were the only explanation, it would be entirely satisfactory on its own. By "minimally adequate" I mean that it includes only that which is needed to ensure an adequate explanation. If an event has only a partial explanation that is not adequate, that counts as the minimal explanation.

Once the true propositions that provide an explanatory framework for all such explanations are selected, turn to the entities invoked in those explanations and define a class of nomologically possible events that are understood solely in terms of ordinary-physical entities and the entities just now introduced. Repeat the procedure: find minimally adequate explanations for all of those events, and add those propositions to the theory. Then, again, do the same for the events involving any new entities invoked in the explanations. Repeat until there are no new entities invoked in the minimally adequate explanations. The result is the ideal physical theory.

As here defined, the ideal physical theory could turn out to include in its ontology every existent type of entity. But given the actual development of physics, this is not a view that seems especially likely. Expanding to capture all ordinary-physical events and all of its own proprietary events as explanans seems to have resulted thus far in a physics that leaves out many apparently existent things. Of course, the actual developments may be misleading, but the point is that we do have reason to think that the ideal theory defined in this way will not be trivially all encompassing.

As we have seen, however, it seems sensible to restrict the physical entities to the non-HIP entities. So we should define the physical by reference not to the ideal physical theory but to a possibly truncated version—what we can call the "ideal naturalist physical theory." If the ideal physical theory is already free of all HIP entities, then the ideal naturalist physical theory is the ideal physical theory. If it is not, then it is to be identified with the result of removing from the ideal physical theory every proposition the truth of which requires some contingent truth about a HIP entity. If the ideal physical theory includes laws governing brute mental forces that affect the ordinary-physical, those propositions are removed, and the result is that the "ideal naturalist physical theory" does not live up to its name—it's not ideal, but rather a gappy structure that provides only some of the tools needed to explain physical events. This is acceptable, however, for the point of this definition is not to ensure that the theory is in fact ideal but that it provides an appropriate way of defining physicality. It is, after all, possible that the ideal physical theory will require non-physical entities to provide its complete causal explanations, and our account of physicality must make room for this.

As indicated earlier, the notion of naturalism that I have set out is deliberately indeterminate. What exactly counts as HIP and what doesn't is not settled. If precision in our understanding of the physical is needed, some stipulation is called for; we must just decide if such things as color properties, for instance, should be ruled out of order for appearance in the ideal naturalist physical theory. I will leave these questions unsettled here, as I am not presently defending physicalism itself but only the claim that there is a serious question of physicalism to be pursued.

One further point should be made about the definition of the ideal naturalist physical theory, given the way I have defined it so as not to contain any HIP entities (however we decide exactly to understand that extension). By specifying the theory by reference to which "physical" is to be defined as one that is naturalist, I am not in any way imposing any *normative* constraints on physicists. *Pace* Montero (2001: 69–70, 2009: 182–183), there is no tension whatsoever in defining the physical by reference to an naturalist physics in this way and allowing that physicists ought to pursue their aims however they see fit. If I am right about the aims of physical theory, then they will aim at the ideal physical theory. If that theory is naturalist, then the physical is what appears in that theory; if not, then the physical is what appears in the truncated version of that theory devoid of HIP elements.

In neither case is there an a priori restriction on what physicists ought to pursue.[13]

3 The INP Account and the Criteria of Adequacy

3.1 Rational Management under the INP Account

The criteria of adequacy I set out before emphasized that an account should render physicalism a thesis that we can rationally manage, at least to the extent that we have been presuming we can manage it rationally—in particular, that we can be confident about certain logical relations of compatibility and similarity (the Competitor and Compatriot criteria) and that the influential arguments for and against physicalism (Confirmer and Counter criteria) be at least relatively plausible, vindicating our treatment of them. In this last section I will provide a brief review of each of the four C's to show how well the INP account fares with respect to them.

3.2 Competitors

Clear cases of competitors include dualism, idealism, and theism. On the INP account, each of these theses turns out to be incompatible with physicalism. Given that nothing physical is HIP, and nothing is anything over and above the physical, each of these is ruled out as a claim according to which something that most definitely qualifies as HIP (minds, God) exists and is something over and above the physical.

Other positions that are less clearly Competitors include those committed to fundamental entities of these sorts: life forces, normativity, colors, and chemical properties. The first two of these—primitive life, primitive normativity—are relatively easy to adjudicate. Insofar as these seem clearly HIP, they are incompatible with physicalism. If we are inclined to hesitate a bit, I think this is due to the fact that each kind is a bit broader than our usual special interests. In the case of life, it encompasses things that are pretty dissimilar from us—plants, for example—that are less apt to be classified as HIP. In the case of normativity, insofar as a wide variety of things might be subject to normative evaluation, normativity itself may seem less HIP. On my view, as noted above, a bit of stipulation is in order to settle these matters, so long as we can explain why our inclinations to classify such views as either compatible or incompatible can be given an explanation by appeal to the core account; that account provides an explanation in terms of the vagueness of "Human Interest Phenomena."

Primitive color is to be given the same treatment, more or less, though in that case I think it is easier to see it as non-HIP. Color seems especially salient to us in some ways—aesthetically, perhaps—but is also more obviously *ubiquitous* in a way that makes it seem just another "part of nature."[14]

Primitive chemical properties pose a rather different sort of case. It is, I think, clear that chemical phenomena should *not* count as HIP. If primitive chemical properties are inconsistent with physicalism, then, it is not because physicalism rules out primitive HIP entities but rather because the class of physical properties does not include primitive chemical properties. It is, we must admit, epistemically possible that the ideal physical theory will include chemical properties as basic; *if* that is in fact the case, then such properties just *are* physical properties and cannot pose a threat. But if—as seems quite likely—it does

[13] In "Post-Physicalism," Montero (2001) acknowledges that a physicalist may *predict* that the ideal physics is devoid of mentality without *imposing* the requirement that physics proceed without appealing to such mentality. This is evidently alluding to comments I made on her presentation of a draft of that paper at the 2000 Pacific APA meeting. Her published response, however, leaves me puzzled. She writes:

> Naturalists might try to avoid this conflict by claiming that their intent is not to place restrictions on the posits of science but, rather, to make a prediction about its course, namely, that mentality will not show up as a fundamental. But this consistency is purchased at a price. For to adopt a policy of strict noninterference and recede to mere prediction is to step out of the debate between physicalists and dualists (Montero 2001: 70).

I do not understand why she describes this as stepping out of the debate. If I make the prediction that the ideal physics is naturalist, I am of course allowing that I may be wrong, but I am not saying that I have no opinion. I can put forward the prediction and give empirical evidence for it without declaring, in some bizarre fit of philosophical imperialism, that physics are hereby forbidden from using HIP categories.

In fact, it could even turn out to be the case that physicists shouldn't even aim at what I've defined as the "ideal physical theory," since (1) I might be mistaken about the aims of physics and, (2) even if I am right about what those aims have been, it might be that physicists would do better science if they changed those aims. In any case, there is nothing in the account on offer that can be construed as setting down epistemic constraints on how scientists or physicists should proceed.

[14] If one thinks that color is metaphysically dependent on mentality—as on a classical dispositionalist view of color—then color is plainly dependent on something HIP. On that view, it seems the primitiveness of mentality is ensured, so it would be incompatible with physicalism. For a discussion of related points, see (Wilson 2006: 74–77), where she considers the question as to how a variety of distinct threats to physicalism might be handled. She does not consider the case of color but argues that "it is very plausible that moral agency, free will, and aesthetic response are to some degree constituted by mentality" (76), and that this explains why primitive moral agency, free will, etc. are incompatible with physicalism. I am sympathetic with Wilson here, but disagree that focus on the mental can do all the work needed to delineate the proper contours of physicalism.

not include any such things, then chemical properties must, to fit into a physicalist world, be nothing over and above the physical properties that do show up in the ideal physical theory.

Insofar as we have some inclination to think that primitive chemical properties are consistent with physicalism, this can be put down to either of two factors. The first is that just given: recognizing that it *might*, however unlikely, be the case that such properties appear in the ideal physical theory for the actual world. The second is a closely related point: there is a possible world in which the ideal physical theory true in *that* world indeed contains primitive chemical properties. Neither point, however, has the result that we run into indeterminacy in the extension of "physicalism"; the point is, rather, that if the actual world is in fact a certain way, where chemical properties do not appear as such in the ideal physics, then primitive chemical properties are incompatible with physicalism, whereas if it is a different way, where they show up as primitive in the ideal physics, they are compatible with physicalism.[15]

Is this acceptable? Consider an objection: the INP account is meant to ensure that we have enough of a grip on the physical for rational management, including handling the various Competitors, but here is a potential Competitor that we cannot classify definitively as a Competitor or not precisely because the physical is defined by reference to an ideal theory beyond our reach. So the INP account has failed in that goal.

The objection is misguided. The Competitor criterion requires that we be able to tell that clear Competitors are incompatible with physicalism; this is an example of a position that is *not* a clear Competitor but one that we hesitate over.[16] Note that the INP account puts us in a nice position to explain this hesitation as well as offer a way of deciding where our ignorance might matter—namely, in whether chemical properties will be needed to explain ordinary-physical events or other kinds of events invoked in explaining ordinary-physical events.

A final point about Competitors may be in order The idea that the category of the physicality might rule out some kinds of phenomena as by definition not physical has met with the objection that doing so is unsystematic or ad hoc.[17] By seeing physicalism as a kind of naturalism, and adopting the Nothing Special interpretation of naturalism, a satisfying principle of unity is found.

3.3 Compatriots

Let us turn now to Compatriots. Earlier examples includes the "Atomist World" described by Stoljar (where classical atomic theory provides fundamental ontology) and historical versions of materialism (Hobbes' view of the world, for example). The point of the Compatriots criterion is to acknowledge that there are some positions such that, if they turned out to be correct, the physicalist would feel in some way vindicated, even if she acknowledge that physicalism itself had been falsified.

One obvious aspect of similarity between physicalism and those examples lies in their metaphysical naturalism.[18] In each case, the fundamental entities are non-HIP. But why should this count as a relevant similarity for the purpose of understanding the category of Compatriots—or, as Melnyk put it, positions that exhibit the "spirit of physicalism"?

If I am right that the physical—for physicalists—includes a requirement of naturalism, then it would not be surprising that those who find physicalism itself an attractive view may find it such because, in part, of its naturalism. In other words, a philosopher who ends up advocating physicalism may do so in part because he is already a naturalist; if this is right, then giving up physicalism in favor of an alternate view that is still naturalist will not have as much of a sting.

[15] While it is implicit in my discussion throughout, let me make explicit here that the ideal naturalist physical theory by reference to which physicality is to be understood is the theory that is true in the actual world. Stoljar (2010: 74–78) aims to cause trouble for theory-based accounts of physicality by posing a dilemma between using just the physical theory true in the actual world and using any physical theory true in some possible world. However, his argument against using the former turns on counting as physicalist worlds that on my account are best understood as worlds in which a Compatriot of physicalism is true instead.

[16] Note that in *A Physicalist Manifesto* (2003), Andrew Melnyk allows "strongly emergent" properties to count as physical, where he seems to have in mind something similar to primitive chemical properties (see page 16 and the discussion of condensed matter physics). By contrast, Daniel Stoljar confidently takes it that a world with emergent chemical properties must be inconsistent with physicalism (2010: 85).

[17] Consider Barbara Montero's remark:

> [W]e are looking for an understanding of physicalism that classifies free floating minds, a God that is not determined by anything other than God, and fundamental, irreducible norms all as nonphysical. I think we can achieve this if we merely defined the fundamental, physical properties negatively, that is in terms of the types of properties it excludes…. But why should those and only those be excluded on a physicalistic account of the world?… [D]oesn't this leave us with just a disparate list of properties that are to count as non-physical?" (Montero 2011: 100)

See also (Wilson 2006, 74–77) on the worry about her account lacking systematicity.

[18] Another example worth mentioning here is the "Twin Physics" world described by (Stoljar 2010: 77). This is a world he classifies as physicalist, but it should, in my view, be classified as vindicating a Compatriot position but incompatible with physicalism itself, much as I treat his Atomist World from the same work (See also note 15).

I think this is part of what is key to understanding this category, though not all. Two other features are relevant, and both are indicated in Melnyk's discussion of the "spirit of physicalism." He suggests that "the most important commonality" between Hobbesian materialism and contemporary physicalism is "the idea that some science distinct from the bare conjunction of the many sciences is in some metaphysical sense basic" (Melnyk 2003: 14). This is indeed an important commonality, but not enough on its own to explain the sense of kinship with Hobbes—suppose the science in question had been psychology? A second feature Melnyk notes is that the science chosen as basic by Hobbes was in fact the ancestor to current physics. This seems important, but presumably the causal fact of ancestry is not so much to the point as some logical relationship between the science at the time and current physics. That logical relationship might be captured by the controlling aim of the science—and if I am right about physical theories generally, that would be the aim of providing complete causal explanation of all ordinary-physical phenomena as well as anything invoked in the course of providing those explanations.

Three factors are thus in play: metaphysical naturalism, the selection of some specific science as capturing the fundamental entities, and an appropriate logical relation between that science and physics. Let us say that a position is "monopolistic" iff it implies that some specific science (not trivially inclusive of everything) provides a complete fundamental ontology, and let us say that a theory is "proto-physical" iff it is either an actual, non-ideal theory with the same aims as physics or is a merely possible theory (ideal or not) with those aims. Then the extent to which a position seems kin to physicalism will be a function of whether it (1) is a kind of metaphysical naturalism; (2) is monopolistic; and (3) is monopolistic with respect to a proto-physical theory.

Historical versions of physicalism seem to share all three features, differing only in the character of the monopolistic science's details. Interestingly, other kinds of positions that don't meet all three conditions can still trigger, for some philosophers, a sense of kinship, and even be counted as consistent with physicalism, though for those positions, I predict, that reaction will be relatively rare.

The prediction is borne out by at least two examples. Here's one. In her 2006 paper on the nature of the physical, Janice Dowell defines the physical by reference to an ideal physical theory where she refuses to impose any constraint that makes it impossible for fundamental mental properties to count as physical. Her emphasis in the paper is on the nature of rigorous scientific theories generally, and her position is, I think, highly suggestive of the way in which Chalmers counts his dualism as "naturalistic" because of the way it ensures that basic phenomenal properties are subject to scientific laws and explanations in the same way as physical ones. My diagnosis is that the position shares two of those three features: it is naturalistic in one way, in that the HIP are like the non-HIP in being subject to scientific laws and explanations, and it includes a monopolistic science. But that monopolistic science, on her view, has an aim of explaining all empirical phenomena, and is thus does not qualify as a proto-physical theory.

Here's the other example. Montero (2013) argues that physicalism is consistent with the failure of the mental to supervene on the physical; she then asks:

> If the failure of mind–body supervenience does not show that physicalism is false, what else might show this? A possibility is that the relevant physicalist commitment is not to a world stitched together by supervenience, but to a world where mentality and other features of the world fit in, more or less, the way such things as chemical bonding, photosynthesis, and biological fitness fit into the world. One way this could happen would be if all such features of the world were to supervene on the properties, entities, and laws of physics. But another way would be if supervenience failed altogether. This suggests an improved necessary condition for physicalism: mental properties are not uniquely nonsupervenient on (narrowly) physical properties… Perhaps, then, the mere failure of mind–body supervenience does not refute physicalism, but its unique failure does (Montero 2013: 105–106).

Remarkably, in aiming to explain her own intuitions about these cases, Montero ends up focusing on exactly what, according to my account of naturalism, she should if her intuitions were attuned to naturalism and not physicalism. If the mental—a clear example of the HIP—were *uniquely* non-supervenient on the physical, then that would make it different from much of the non-HIP in a way we might count as a significant enough difference to feel compelled to interpret the MN formula in a way that makes it false.

If we turn to the three features I spotlighted—naturalism, a monopolistic science, and a proto-physical theory as that science—what we see in the world Montero imagines is naturalism without a monopolistic science: no particular theory captures a fundamental ontology. As I predict, this will seem not to be terribly close to physicalism to most philosophers, but it could seem close enough to lead a philosopher to describe it as a version thereof.

3.4 Confirmers

Two kinds of Confirmers were mentioned briefly before: arguments from the causal completeness of physics, and

broadly inductive arguments that turn on the track record of success of physicalist treatments of a wide variety of phenomena. The INP account has the resources to make sense of these arguments.

Consider arguments from the causal completeness of physics. On the INP account, the ideal physical theory is bound to be complete in the sense that it succeeds in its aim of providing complete causal explanations both of all ordinary-physical events and of all events definable in terms of its own ontology. But what matters here is the ideal *naturalist* physical theory, which is not guaranteed to be complete. To believe that physics itself is complete in the relevant sense is to believe that the ideal naturalist physical theory is complete, and why should we believe that?

The answer must appeal to actual theory—or, more accurately, the history of actual theorizing as well as the current state of actual theory. If I am right about the goals in fact driving physical theory, then one can point to the facts that (1) physical theory has been remarkably successful as a science and (2) has done so without introducing any HIP elements into its ontology. This is good reason to believe that the *ideal* physical theory—which explains all ordinary-physical events and all events involving its own introduced entities—is indeed naturalistic in the needed sense. So we have good reason to think that the ideal physical theory is the ideal naturalist physics, which means we have good reason to think that physics, as defined by the INP account, is causally complete.

The completeness of physics is not the only issue that needs addressing, however; there is also the claim that everything has an effect on the physical. The "physical" in that context, too, needs to be understood as per the INP account, and one may worry: while it is obvious that, say, my headache has ordinary-physical effects, why think that it has effects that count as physical in the sense defined by the INP? After all, we don't know just what kinds of events will count as physical in that sense; we know some negative things—they aren't HIP events—but more than that is needed to ensure that everything has an effect in the relevant sense of "physical effect."

There is a lot to say about this issue. To cut to the chase, however, the problem may be handled by noting two things. First, our ready confidence that practically everything has physical effects can be seen as confidence that they have effects that are ordinary-physical events. My headache causes the movement of my fist to my forehead, for example, when I try to soothe the pain by putting pressure there. So far, this doesn't make contact with the relevant kind of physicality. But, second, there is excellent reason to think that ordinary-physical events themselves are nothing over and above events that are physical in the relevant INP-account sense. If that is correct, then it seems plausible to suppose that the headache also has effects that are physical in the relevant INP-account sense, since it would be absurd to suppose one could bring about an effect that is itself nothing over and above a certain kind of event without causing one of those latter kinds of events.[19]

What of the other sort of argument—the broadly inductive case turning on successful physicalist accommodations with other phenomena? There is, as before, a lot to say about this question, but I will just draw attention here to one way in which the INP account uncovers an important strand of thought that I think tends to be unacknowledged in the literature. I have in mind the role of naturalism and the conviction that humanity and its interests are 'nothing special.' With this in mind, consider a rough statement of this kind of argument provided by David Armstrong back in 1968:

> It seems increasingly likely that biology is completely reducible to chemistry which is, in its turn, completely reducible to physics. That is to say, it seems increasingly likely that all chemical and biological happenings are explicable in principle as particular applications of the laws of physics that govern nonchemical and non-biological phenomena. Consider what this means for a non-Materialist theory of the mind. It means that the whole world studied by science contains nothing but physical things operating according to the laws of physics *with the exception of the mind* (Armstrong 1968: 49).

I think the emphasis in the last sentence is significant. What I, and others, find especially hard to believe is that there will be exceptions to a general physicalist trend that *just happen* to be confined to phenomena of special interest to us. If, by contrast, the evidence for physicalism were conspicuously lacking for a range of phenomena where only some of the things in that range were HIP and many others were *not*, that evidence would be less powerful. But if the case to be made has gaps only in those parts of the world that already seem dear to us, then, I suspect, many of us would think it unduly self-serving to take seriously the thought that the gaps conceal genuine exceptions, that the HIP are, in fact, special in this way. Such distrust plays, I think, a significant, if unremarked, role in motivating physicalism.

3.5 Counters

What, finally, of those arguments or pieces of evidence that count against physicalism? How does the INP fare? It fares

[19] The worry here is closely related to one raised by Sturgeon in his (1998); the reply I sketch in the main text is presented in my reply to him (Witmer 2000).

very well for any such Counter that can be understood as an argument for thinking that some particular HIP entity is fundamental, since one thing we know about the physical on this account is that nothing HIP is physical. Arguments for theism fit this easily enough, since God is made fundamental, and he is decidedly HIP. But what of more highly influential arguments, such as the argument from the conceivability of zombies? Does the INP account of physicality enable us to vindicate the apparent power of that argument?

According to that argument—I offer a brutally simplified version—we can conceive of creatures physically exactly like ourselves yet which are devoid of consciousness. The conceivability of such "zombies" is then taken to be good evidence that zombies are genuinely possible, and this in turn implies that the physical is not sufficient to make for consciousness, as the zombies share all our physical features yet lack consciousness.

The pertinent question for our purposes concerns the first step of the argument: conceiving of such physical duplicates. Given the INP account, do we know enough to be confident that in these thought experiments, the creatures imagined are in fact *physical* duplicates—physical in the INP sense? If not, then the INP account makes the importance of this Counter a puzzle.

At first glance, one might argue that the INP account fails on this point. Whatever it is we imagine or conceive in the zombie thought experiment, one might say, it is surely not a physical duplicate, simply because we don't know what the physical properties really are on this account. The point is a fair one, but I don't think the force of the thought experiment has anything to do with a positive notion of physicality. It is, I think, entirely based on the fact that we find it hard to see how anything that is fundamentally non-mental in the first place could suffice for consciousness. After all, we don't worry about the contents of blood plasma or the force of magnetic fields impinging on our bodies when we think about zombies; what matters is that we start with things that have no mentality and then try to imagine making the leap to having consciousness.[20]

If I am right about the force of the zombie argument, then all that matters for that argument is the negative characterization of the physical, which of course the INP account ensures. But this does not mean that our account of physicality can be trimmed down to nothing more than a negative account, as the "via negativa" view would have it (see Spurrett and Papineau 1999). The account must also meet the other criteria of adequacy. In particular, the Confirmers requirement strongly suggests that it would be best to tie the notion of physicality to physical theory in some way, though defending this claim is beyond the scope of this paper.[21]

I have only sketched briefly some of the ways in which the INP account meets the criteria of adequacy set out earlier, though I hope it is enough for the reader to see the great potential of that account in making good sense of our intuitive grip on physicalism, such as it is, and in explaining the ways in which that grip is sometimes indeterminate or puzzling. A further project that is certainly desirable at this stage is an examination of other accounts of physicality in view of these criteria. They do not, I think, fare as well as the INP account. But for reasons of space, that review shall be left, as one likes to say, as an exercise for the reader.[22]

[20] Not everyone agrees that the problem with consciousness is based on a gap between the mental and non-mental. In "Panpsychism and panprotopsychism," for instance, Chalmers (2015) argues as follows:

> According to this objection, the epistemic arguments against materialism all turn on there being a fundamental epistemic (and therefore ontological) gap between the non-phenomenal and the phenomenal; there is no a priori entailment from non-phenomenal truths to phenomenal truths…. I do not think this is right, however. The epistemic arguments all turn on a more specific gap between the physical and the phenomenal, ultimately arising from a gap between the structural (or the structural/dynamical) and the phenomenal. We have principled reasons to think that phenomenal truths cannot be wholly grounded in structural truths. But we have no correspondingly good reason to think that phenomenal truths cannot be wholly grounded in nonphenomenal (and nonstructural) truths (260).

This seems to me just mistaken. Nonphenomenal and nonstructural truths are exactly as unlikely to ground the phenomenal as nonphenomenal structural truths. But be that as it may, it's a bit beside the point if the ideal naturalist physical theory is one we can be assured implies that physical truths are not only nonphenomenal but also structural—in whatever sense, exactly, Chalmers has in mind there. While it may turn out that we can't be thus assured, it is at least not immediately obvious that we can't be thus assured, and so at least the prima facie status of this counterevidence is vindicated, on the INP account, as prima facie counterevidence.

[21] In Gillett and Witmer (2001), Carl Gillett and I took a shot at criticizing the "via negativa" on these sorts of grounds. Montero and Papineau (2005) offer a reply. While I do not find the reply satisfactory, I have failed to do my duty and explain yet in print just why. Here's a very compressed summary, for what it is worth. The problem is that Montero and Papineau appeal to a history of failing to find *sui generis* mental causes. To *fail* to find a *sui generis* mental cause, however, when there is a mental cause, requires finding some other kind of cause. And finding some projectible, general way of describing what other kinds of causes are to be found is where the difficulty lies.

[22] An earlier version of this paper was presented at the CUNY Graduate Center in September 2015; thanks to those present for providing feedback, and thanks especially to Barbara Montero for inviting me. Additional thanks are due to Andreas Elpidorou and an anonymous referee for *Topoi* for additional feedback.

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