

Defending Phenomenalism*

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Abstract

According to phenomenalism, physical things are what J.S. Mill calls permanent (or certified, or guaranteed) possibilities of sensation. This paper clarifies the phenomenalist position, and addresses some main objections to it. The goal is to show that phenomenalism is a live option, meriting a place alongside dualism and materialism in contemporary metaphysical debate.

1 The Millian picture

We all have perceptual experiences, which, taken together, present a subjective appearance of objects and events existing in a common time and space. In Leibniz's famous image, our experiences are like different perspective-drawings of the same landscape. They are, John Foster puts it, world-suggestive.¹

Ordinarily, we attribute the world-suggestiveness of our experiences to the fact that we all inhabit the same world, encounter objects in a common space, and witness events in a common time.

J.S. Mill thought that this way of thinking, while correct as far as it goes, misses out on a deeper truth. Yes, we have bodies with such-and-such physical features, embedded in such-and-such physical environments, and, yes, there's an explanation for the regularities in our experience to be found in all that. But, at a more basic level, the world we perceive doesn't *explain* the world-suggestive quality of our experiences: it *is* the world-suggestive quality of our experiences, or rather: it's the tendency for experiences to occur in a world-suggestive way, given that they occur at all. In Mill's view, physical things are (as he rather loosely puts it) "permanent possibilities of sensation."²

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¹See (Foster, 2000, 250-55) and (Foster, 2008, 107-113). For Leibniz's image, see (Leibniz, 1712/1989, 199); also (Leibniz, 1712/2007, 249, 257) and (Leibniz, 1714/1989, 220).

²See (Mill, 1865/1889, 187-264). Mill's view comes with a distinctive account of perception, by which a veridical experience isn't one that's caused in the right way, but one that relates to the

Define the *mental* features of the world as those that are completely describable in phenomenal and topic-neutral terms, where phenomenal terms are terms for phenomenal properties (of the sort we ascribe to minds, experiences, and streams of consciousness) and topic-neutral terms include anything that's fair game for use both in a materialist analysis of the mental and in a phenomenalist (or idealist) analysis of the physical: logical and mathematical terms, terms for various relations of dependence (e.g., causal, counterfactual, and probabilistic), and terms for various modalities (powers, potentials, possibilities, etc). Then we can define phenomenalism as the conjunction of three tenets.

First: conscious experience is irreducible to anything more basic. In this paper, I assume without argument that this tenet is correct.³

Second: the physical features of our world supervene on its mental features, in the sense that any possible world indistinguishable from ours in its mental features has all the physical features that our world has. This claim, which I'll call *empirical supervenience*, plays the same role in phenomenalism as psychophysical supervenience plays in materialism.⁴

Third: the mental features on which our world's physical features supervene are pure potentials for conscious experience—pure, in the sense that they aren't metaphysically grounded in anything, and they require no explanation in terms of anything except possibly further potentials for experience. This tenet, which I'll call *Mill's Thesis*, distinguishes phenomenalism from traditional idealist theories, which locate potentials for experience in the computational architecture or causal powers of some further underlying feature of the world (such as Leibnizian monads, a Berkeleyan God, or Kantian noumena).⁵

totality of all potential experiences in the right way. A discussion of the phenomenalist theory of perception is beyond the scope of this paper, but see (Yetter-Chappell, 2017) for a closely related idealist account of perception.

³The arguments against reductionism about consciousness are well-known: see (Campbell, 1970), (Kirk, 1974), (Chalmers, 1996), (Broad, 1925), (Robinson, 1982), (Jackson, 1982), and the large literature surrounding these.

⁴The word "empirical" comes from the Greek for experience (*ἐμπειρία*). An uglier but more revealing label for empirical supervenience might be "physicopsychical supervenience."

⁵Arguably, Mill's Thesis entails the first tenet of phenomenalism: if potentials for experience are ungrounded—that is, if nothing both logically entails and explains their existence—it's hard to see how anything could ground actual experiences, and hence how conscious experience could reduce to anything more basic. To err on the side of caution, I've stated these two tenets separately.

Phenomenalism = { Consciousness Antireductionism
+
Empirical Supervenience
+
Mill's Thesis

So much for what phenomenism is. Why would anyone want to be a phenomenalist?

Because phenomenism has a highly desirable pair of virtues that no other theory can claim: it's monistic, and it's consistent with a certain sober intuition.

Mind-Body Monism: the mental and physical features of our world aren't mutually irreducible.

Sober Intuition: it's possible for a world physically identical to ours to contain no conscious experience.

Many people would like to accept both Mind-Body Monism and Sober Intuition, but few do, since Sober Intuition conflicts with the only kind of monism that most people consider worthy of serious consideration: materialism, the view that the mental features of our world reduce to various physical features of it.

Materialism isn't the only kind of Mind-Body Monism, though, and recent years have seen an uptick of interest in two types of what we might call "mind first" monism: panpsychism, and traditional idealism.⁶

Traditional idealists propose to reduce the physical to the mental by identifying physical phenomena with suitable combinations of conscious experiences: an apple, for instance, consists of the sort of experiences one typically has when one perceives (sees, smells, feels, tastes, etc.) an apple.

Panpsychists also identify all physical phenomena with experiences, but, unlike traditional idealists, they take the further step of identifying all experiences with physical phenomena: according to panpsychists, physical states of affairs and phenomenal states of affairs are just the same states of affairs by different names. Like traditional idealists, panpsychists hold that apples are made of experiences, but here the experiences aren't the sort we have when perceiving apples. Rather, apples are made of the experiences that panpsychists identify with the apples' constituent atoms.⁷

Panpsychism and traditional idealism are monistic, but they're not consistent with Sober Intuition. If the apples in our world are made of experiences, then it's impossible for a world physically identical to ours not to contain any experience. After all, any world physically identical to ours contains all the apples that our

⁶See, e.g., (Anthony Freeman, 2006) (an anthology devoted to contemporary panpsychism) and (Goldschmidt & Kenneth L. Pearce, 2017) (devoted to contemporary idealism). The classic source for traditional idealism is (Berkeley, 1710/1982), and for panpsychism (Eddington, 1929).

⁷One could argue that panpsychism is a kind of materialism (since it equates all mental entities with physical entities) as well as a kind of idealism (since it equates all physical entities with mental entities); see (Strawson, 2006). Be that as it may, panpsychism differs importantly both from traditional materialism (according to which most physical entities aren't mental) and from traditional idealism (according to which many mental entities, such as itches, hallucinations, and dreams, aren't physical things).

world contains. So, if the apples of our world are combinations of conscious experiences, any world physically identical to ours must contain conscious experiences—contrary to Sober Intuition.

Enter phenomenalism.

Like other mind-first metaphysics, phenomenalism proposes to reduce the physical to the mental. However, instead of identifying physical things with experiences, phenomenologists identify them with *potentials* for experience. Potentials for experience aren't experiences, but they still count as mental, provided that we can understand them in purely mental and topic-neutral terms, as phenomenologists hold we can. So, phenomenalism is a kind of Mind-Body Monism.

Most potentials for experience go unrealized in our world, and there is a possible world identical to ours in its potentials for experience, but in which *no* potential for experience gets realized. According to phenomenalism, such a world is physically identical to ours, despite containing no conscious experience. So, phenomenalism is consistent with Sober Intuition.

In short, phenomenalism promises to deliver the Holy Grail of metaphysics: monism without the modal malaise. The goal of this paper is to show that phenomenalism is in a better position to fulfill this promise than people currently realize.

The next section explains how phenomenologists commit themselves to empirical supervenience by identifying physical phenomena with potentials for experience. §3 defends phenomenalism from conceivability arguments analogous to those raised against materialism. §4 elucidates the concept of a pure potential for experience, and explains how such potentials figure in phenomenologist accounts of causation and scientific explanation. §5 defends Mill's Thesis against the objection that ungrounded modalities are ontologically suspect. §6 concludes the paper.

2 Empirical supervenience

Phenomenalism is best understood as an identity theory. In this respect, it's analogous to central state materialism (also known as the mind-brain identity theory). This analogy is actually rather instructive; let's look into it further.

Central state materialists hold that the reason why the mental features of our world supervene on its physical features (as they believe) is that the mental features of our world just *are* certain physical features of it, namely brain-states. Central state materialism doesn't identify mental states with isolated brain-states, however. Although materialists sometimes say things like, "pains are stimulated C-fibers," they're fully aware that if you put some C-fibers in a petri dish and stimulate them, no pain will result. What pain really is, according to

central state materialists, is stimulated C-fibers *suitably integrated with a whole brain*, or at least enough of a brain to support the stimulus-response patterns that materialists consider definitive of pain. Central state materialists see mental states as undetached parts of larger functional wholes.

Analogously, phenomenologists see physical states as undetached parts of larger *mental* wholes. Phenomenologists don't identify physical things with isolated potentials for experience: they're fully aware that a potential for dreaming of a gold brick is insufficient for the existence of a gold brick. What a gold brick really is, according to a phenomenologist, is a potential for experiences as of a gold brick *that cohere with the totality of all potential experiences*.⁸

What does "cohere" mean, in this context? For an experience to cohere with the totality of all potential experiences is for it to relate to that totality in the way that your present experiences relate to the totality of all the other experiences you've had, as opposed to the way that the experiences you've had in dreams or hallucinations have related to the remainder of your experiences.⁹

The physical states that central state materialists identify with mental states are supposed to be categorical features of the world: brain-states, taken as irreducibly non-modal entities. This is the main difference between central state materialism and behaviorism, which identifies mental states with dispositions to respond to stimuli in various ways, and regards the brain-states that underlie such dispositions as explaining, but not being identical with, the mental states.

In this respect, phenomenology is more similar to behaviorism than to central state materialism. Unlike Berkeley, who identifies physical objects with combinations of actual conscious experiences, a phenomenologist identifies them with *potentials* for conscious experiences. Phenomenology is still an identity theory, since it identifies the world's physical features with certain of its mental features. It's just that the mental terms of the phenomenologist identities are potentials for experience, rather than actual experiences.

According to central state materialism, conscious states just are certain physical states; consequently, central state materialism implies that any possible world physically identical to ours contains all the consciousness that our world contains. This is psychophysical supervenience.

⁸Here's a statement of the phenomenologist identity theory that brings out the holistic character of the identifications it proposes: every possible world that's mentally indistinguishable from ours is such that (1) it has all the physical features that our world has, and, (2) each of its physical features is identical with some potential for experience. This entails that each physical feature of *our* world is identical with some potential for experience, but the identity is between physical entities and potentials for experience *qua* parts of the totality of all potentials for experience, just as in the mind-brain identity theory, mental states are identified with physical entities (brain states) *qua* parts of totalities of physical states (whole brains).

⁹A full development of phenomenology would replace this working definition of coherence with something more precise; for the purposes of this paper, the working definition should do.

According to phenomenalism, physical phenomena just are certain potentials for experience; consequently, phenomenalism implies that any possible world mentally identical to ours contains all the physical phenomena that our world contains. This is empirical supervenience.

A major objection to materialism is that there are modal counterexamples to psychophysical supervenience. It seems to me that these counterexamples are genuine, and grounds for rejecting materialism. The question naturally arises whether phenomenalism is vulnerable to analogous counterexamples to empirical supervenience. In the next section, I argue that it is not.

3 Conceivability arguments against phenomenalism

In this section, we consider three conceivability arguments against empirical supervenience. The first involves a possible world in which all experiences result from interactions between a computer and some envatted brains; I call this the *Matrix Argument*. The second offers our own world as a counterexample to empirical supervenience, on the grounds that the mental facts underdetermine our world's unobservable physical features; this is the *Argument from Unobservables*. The third considers a hypothetical scenario in which all potential for experience has its basis in disembodied minds; I call this argument (cousin of the Zombie Argument against materialism) the *Ghost Argument*.

The Matrix Argument

The first conceivability argument against empirical supervenience is as follows:

We can conceive of a world in which there hold all the mental facts that hold in our world, but in which those facts hold only because of the operations of a supercomputer connected to some envatted brains; call this possible world *Matrix*. Any experience or combination of experiences that occurs in our world also occurs in *Matrix*, and any experience or combination of experiences for which there is a potential in our world is an experience or combination for which there's a potential in *Matrix*. However, we can conceive of *Matrix* as being physically very different from our world. For example, we can conceive of it as containing no trees. This gives us a compelling reason to deny that the mental facts about our world (the actual world) logically entail the physical facts about our world.

My response to this argument is to grant the whole thing.

Empirical supervenience says that any possible world that is mentally indistinguishable from ours has all the physical features that our world has. This

is different from saying that the mental facts about our world logically entail the physical facts about it. The entailment claim is stronger than the supervenience claim. To show that the entailment claim is false, it's enough to show that there's a possible world that has all our world's mental features, but lacks some of its physical features. To show that the supervenience claim is false, you have to show that there's a possible world that has all *and only* the mental features of our world, but lacks some of our world's physical features.

To see that *Matrix* is not such a world, recall that the mental facts are those that are completely describable using only phenomenal and topic-neutral terms, where topic-neutral terms include any that can legitimately occur both in a materialist analysis of the mental and a phenomenalist (or idealist) analysis of the physical. Although *Matrix* is indistinguishable from our world with respect to the experiences that occur in it, it differs from our world in other mental respects. In *Matrix*, there's a way for there to be experiences as of envatted brains that fails to exist in our world, namely by someone perceiving the brains-in-a-vat setup. This is sufficient for a mental difference between our world and *Matrix*: the idea of "a way for there to be" is sufficiently portable to count as topic-neutral. (A materialist could equally describe pain as a way for there to be a system satisfying certain functional conditions.)

We might sum the situation up by saying that in *Matrix*, there are potentials for experience that do not exist in our world: potentials for experiences as of a certain computer-and-envatted-brains setup. Like the idea of a way for there to be something, the idea of a potential is topic-neutral: a materialist may equally speak of a potential for radioactive decay, or a gravitational potential. I'll have more to say about phenomenal potential in §4; for now, the important point is that in *Matrix*, there are potentials for experience that do not exist in our world (we assume), and that this is a mental difference between our world and *Matrix*.

Can we get around this by modifying the example? Suppose you stipulate a world identical to *Matrix*, except that the supercomputer, vats, and related paraphernalia are for some reason imperceptible—maybe they are shielded from perception by some kind of cloaking device (which also cloaks itself), or maybe it's simply a law of nature, or a consequence of natural laws, that nothing perceives the computer, vats, and so on. Call this scenario *Stealth Matrix*, and the corresponding argument the Stealth Matrix Argument.

Let's concede that there's a sense in which the vat setup is perceptible in *Matrix* but not in *Stealth Matrix*. Still, like *Matrix*, *Stealth Matrix* differs from our world mentally (assuming that we don't live in *Stealth Matrix* ourselves). If what prevents anyone from perceiving the vats in *Stealth Matrix* is a cloaking device, there's still a way for experiences as of vats to occur in *Stealth Matrix* that doesn't exist in our world; namely, through a break-down of the device. If what prevents anyone from perceiving the vats is a natural law, there's still a

way for experiences as of vats to occur in *Stealth Matrix* that doesn't exist in our world; namely, through violation of a certain natural law. We might put this by saying that in *Stealth Matrix*, there are second-order potentials for experience that are absent from our world.

It might sound odd to say that there's a way for perceptions of envatted brains to occur in a world in which the laws of nature prevent such perceptions. The important point is that there is a mental *fact*—describe it however you want—that holds in *Stealth Matrix* but not (we assume) in our world: the fact that certain experiences that might otherwise have occurred fail to occur, due to the existence of a certain natural law. In *Stealth Matrix*, there are certain experiences (as of envatted brains) that would occur but for certain natural laws; in our world, this is not the case. This is a mental difference between the two worlds: a difference in a state of affairs fully describable in phenomenal and topic-neutral terms (“experience as of envatted brains,” “natural law,” etc).

The basic challenge for proponents of Matrix-style arguments against empirical supervenience is to describe a Matrix scenario in such a way that we can grasp it without thinking of it as differing from the actual world in any mental respect. Rising to the challenge would mean doing what opponents of psychophysical supervenience do when they describe a world physically indistinguishable from ours, but devoid of consciousness. Here, we know what we're being asked to imagine.¹⁰

By contrast, it's unclear what we're supposed to do, if asked to imagine a world mentally indistinguishable from ours but devoid of trees. When we try, we end up imagining a world that differs from ours in some mental respect, if only by containing potentials for experience that our world doesn't contain.

The first step to mounting a successful conceivability argument is to form a clear conception of a *prima facie* modal counterexample to the target of your argument. The Matrix arguments fail at step one.

The Argument from Unobservables

The second conceivability argument against empirical supervenience that I want to consider goes like this:

We can imagine a world observationally indistinguishable from ours, but without any unobservable features. Call it WYSIWYG (“what-you-see-is-what-you-get”) World. If there's a potential in our world for certain observations, there's a potential in WYSIWYG World for phenomenally indistinguishable observations, and vice

¹⁰If you have trouble imagining a zombie world, imagine instead a physical duplicate of our world in which everyone's color experiences are inverted relative to ours, and in which there consequently fail to occur the phenomenally red experiences we have when viewing ripe tomatoes.

versa. When people in WYSIWYG World visit the WYSIWYG counterpart of Niagara Falls, they have the same experiences we have when visiting the actual Niagara Falls; it's just that in WYSIWYG World, the cascading water doesn't consist of H₂O molecules or any other microstructure (it's "Edenic water"). We can stipulate that WYSIWYG World is also indistinguishable from ours in terms of what experiences actually occur in it, as well as in terms of potentials for non-observational experiences (dreams, hallucinations, etc). Still, since WYSIWYG World lacks the unobservable things that exist in our world (H₂O molecules and such), it doesn't have *all* of our world's physical features. The conceivability of WYSIWYG World gives us a compelling reason to deny that the physical features of our world supervene on its mental features.¹¹

To clarify, WYSIWYG World isn't supposed to be a sort of *Truman Show* writ large, in which devious agents mislead people into thinking that their world has microstructural features that it does not in fact have, by feeding them various deceptive experiences. A world like that differs mentally from (what we assume is) our world. For example, unlike our world, a *Truman Show* world includes various TV producers' behind-the-curtains experiences of the deceptive arrangement, as well as potentials for experiences of escaping from the show's set to discover that it's all an elaborate ruse, etc.

Unlike *The Truman Show*, WYSIWYG World is supposed to have all and only the mental features that our world has. Scientists in WYSIWYG World have experiences indistinguishable from those that actual scientists have, and potentially have the same experiences that actual scientists potentially have. For example, they have the same experiences that actual scientists have when using microscopes, cathode ray tubes, Geiger counters, cloud chambers, electrolysis rigs, etc.

Since scientists in WYSIWYG World have experiences indistinguishable from actual scientists' experiences, they have the same reasons as actual scientists to believe that the stuff cascading down Niagara Falls consists of H₂O molecules. The idea behind the argument from unobservables is that in spite of all this, WYSIWYG World lacks the unobservable physical entities that actual scientists posit on the strength of their experiences. In WYSIWYG World, scientists' evidence leads them to posit physical entities that don't really exist: it's the world itself, rather than some nefarious agent, that deceives them.

The problem with the WYSIWYG argument is essentially the same as the one raised earlier for the Matrix arguments: assuming that the watery stuff that exists in our world does, in fact, consist of H₂O molecules, we have no way to

¹¹The notion of an Edenic phenomenon comes from (Chalmers, 2010b).

conceive of a world that contains no H₂O molecules but duplicates our world in all mental respects.

Suppose you want to imagine a world *W* in which there are no H₂O molecules, but in which people nonetheless have exactly the same experiences that actual people (people in our world) have. How do you do it? You could imagine

- (1) that there is some deceiving agent or device in *W* that gives the inhabitants of *W* experiences that suggest to them that the watery stuff in their world consists of H₂O molecules, even though it's really Edenic water that has no physical microstructure; or,
- (2) that there are natural laws in *W* that play the role of the deceiving agent or device described in (1); or,
- (3) that even though the watery stuff in *W* doesn't consist of H₂O molecules, by a colossal freak-accident people's experiences in *W* suggest otherwise: scientists always just happen to make certain errors in their calculations, lab equipment always just happens to malfunction in certain ways, etc.

As far as I can tell, these are the only ways to conceive of a world as containing no H₂O molecules despite duplicating our world in terms of what experiences occur in it: by design, by natural law, or by chance. But—and this is the key point—in order to imagine any of these things, we have to imagine a world that differs mentally from ours by containing potentials for experience that our world does not.

In order to imagine the first situation, we have to imagine that certain experiences that don't take place would, were it not for a certain agent or mechanism. In order to imagine the second situation, we have to imagine that certain experiences that don't take place would, were it not for certain natural laws. In order to imagine the third situation, we have to imagine that certain experiences that don't take place would, were it not for a certain statistical fluke. To imagine any such situation is to imagine a world that differs mentally from ours: that is, differs from ours in some phenomenal-cum-topic-neutral respect. At least, this is true assuming that there is no such agent, device, law, or fluke in our own world (if this assumption is false, then *W* might just *be* our world, in which case it can't serve as a modal counterexample to empirical supervenience).

Since the only way to conceive of a world that contains no H₂O is by conceiving of one of the three scenarios described above, and since each of those scenarios involves phenomenal potentials that don't exist in our world, it's impossible to conceive of a world, such as WYSIWYG World was supposed to be, that duplicates our world in all mental respects, but fails to contain H₂O.

Before moving on to the next conceivability argument, let's briefly consider a different attempt to use unobservables against empirical supervenience.

Suppose we know that one of two empirically equivalent theories is correct, but we don't know which. (By calling the theories "empirically equivalent," I mean that it's logically impossible for any observation to have different implications for the two theories—e.g., to conflict with one but not the other.) But suppose that despite their empirical equivalence, the theories posit different physical ontologies: one posits zeta particles but no omega waves, the other omega waves but no zeta particles. Then either there's a possible world, Zeta, just like ours except that it contains zeta particles instead of omega waves, or there's a possible world, Omega, just like ours except that it contains omega waves instead of zeta particles. Since the aforesaid theories are empirically equivalent, both Zeta and Omega are mentally indistinguishable from our world. Thus the possibility of either is enough to refute empirical supervenience.

The phenomenalist's best response to this is that empirically equivalent scientific theories are also equivalent in the physical ontologies they posit.

This response conforms to mainstream thinking about how to distinguish between the ontologically significant and the ontologically insignificant differences between different scientific theories. For example, when von Neumann proved that Heisenberg's matrix mechanics was empirically equivalent to Schrödinger's wave mechanics, scientists stopped arguing about which theory was right: they took von Neumann to have shown that matrix and wave mechanics were just different ways of representing the same physical reality.

The underlying idea here is that empirically equivalent scientific theories are like the maps in Fig. 1: they convey the same information in different ways. Naively, one might think that these maps represent different distributions of land

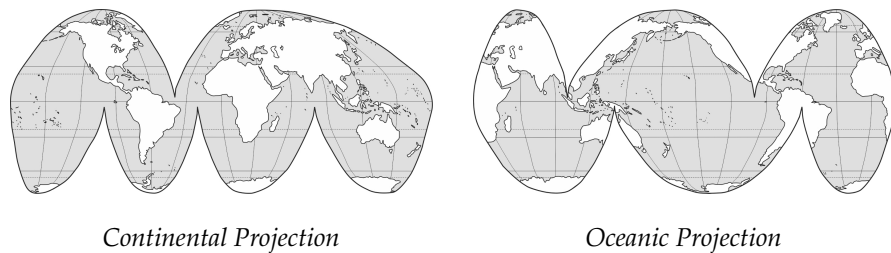


Figure 1: Information-equivalent projections of the Earth's surface.

and water, but they don't: even though the oceanic projection represents North America with two non-contiguous shapes, the oceanic projection doesn't say anything about North America that the continental projection doesn't also say (and vice versa). For some applications, the oceanic projection might be more

convenient, for others, the continental projection, but the differences between the two maps are geologically insignificant.

In the same way, the differences between empirically equivalent scientific theories are ontologically insignificant. Like equally accurate projections of the Earth's surface, empirically equivalent theories have the same information value: they differ not in what they say about the physical world, but only in how they say it. Such, at any rate, is the phenomenalist's most natural response to the argument from empirically equivalent theories.¹²

I've argued that we can't conceive of a world that omits some of our world's unobservable physical features without conceiving of a world that differs from ours mentally, at least with respect to the potentials for experience that exist in it. That's not the same as showing that we can reduce unobservable physical phenomena to potentials for experience. A fully-developed phenomenism would have to carry out such a reduction, at least for all physical unobservables that we have compelling reasons to believe in. Such a reduction is beyond the scope of the present discussion, however, where I've been concerned only to defend phenomenism against the charge that the existence of unobservable physical things entails a failure of empirical supervenience.¹³

The Ghost Argument

So far, the conceivability arguments we've considered have all failed, because the hypothetical scenarios on which they relied differed from the actual world mentally, to the extent that they were conceivable at all. The last conceivability argument I want to consider doesn't suffer from this shortcoming. Here it is:

We can conceive of a world consisting of a multitude of disembodied minds. The minds are capable of interaction, and disposed to have various experiences when they interact. All experiences in this Ghost World arise from such interactions, but not all possible interactions actually take place, so the experiences that occur in Ghost World

¹²The principle that empirically equivalent theories have identical ontic import is also known as "Leibniz equivalence." In addition to guiding actual scientific practice (as in the case of matrix and wave mechanics), this principle plays a key role in the so-called Hole Argument against spacetime substantivalism: see (Earman & Norton, 1987) and (Norton, 1992, 227-30).

¹³It may be that phenomenism works best in tandem with a limited form of scientific antirealism: it wouldn't be very surprising to learn that the point at which it becomes impossible to phenomenize a scientific posit coincides with the point at which it becomes reasonable to doubt the posit's reality (though not necessarily its conceptual expedience). However, if phenomenists do end up embracing some version of scientific antirealism, it's unlikely to be a version as strong as the one that van Fraassen defends in (van Fraassen, 1980). According to van Fraassen, we should be agnostic about what hasn't been actually observed by us, whereas the most that a phenomenist would likely have to advocate would be agnosticism about what we can't conceive of being observed by anybody.

are only a small subset of those that have the potential to occur there. The experiences that do occur in Ghost World are the same as those that occur in ours, and those that have the unrealized potential to occur in Ghost World are the same as those for which there is unrealized potential in our world. Ghost World is therefore mentally indistinguishable from ours. But there are no physical objects in Ghost World: it's all just ghostly minds and their experiences. The conceivability of Ghost World gives us a compelling reason to reject empirical supervenience.

My response to this is that there is no physical difference between Ghost World and our world. (So, I agree with the argument up to the part that says that there are no physical objects in Ghost World.)

If there are no physical things in Ghost World, it's not because Ghost World differs from our world mentally; *ex hypothesi*, Ghost World is mentally indistinguishable from ours. So, if you think that Ghost World lacks physical things, it can only be because its fundamental constituents are disembodied minds, rather than whatever it is you take to be the fundamental constituents of our world.

But why should the existence of physical things in a world depend on that world's fundamental constituents having a particular intrinsic nature, or on their *not* having an intrinsically mental nature?

Consider an analogy with the history of science. People's beliefs about the ultimate constitution of macroscopic physical objects have changed dramatically over the years, from combinations of the Four Elements, to geometric configurations of Democritean atoms, to dynamical systems of Newtonian bodies, to excitation states of quantum fields. Yet, throughout these changes, people's beliefs about the world's macroscopic physical contents have remained highly stable. The ancient Greeks, the natural philosophers of the Enlightenment, and scientists of the 21st century would all agree that the world contains trees, despite having markedly different beliefs about the underlying nature of trees.

Just as different phases in the history of science represent different views about the nature, rather than the existence, of macroscopic physical objects, different phases in the history of metaphysics represent different views about the nature, but not the existence, of all physical things. A metaphysics that, like panpsychism or Berkeleyan idealism, takes mental entities of some sort as the world's fundamental constituents does not thereby deny the existence of trees or the particles that constitute them. It just offers an unexpected account of their nature.¹⁴

¹⁴Chalmers defends this position in (Chalmers, 2010a).

You might raise a semantic objection to the claim that Ghost World contains the same physical objects as our world. You might say that if the experiences and phenomenal potentials that exist in a given world are grounded in some underlying feature of that world, that feature is a reference magnet for the terms that the inhabitants of that world use. In that case, when someone in Ghost World speaks of a tree or a mountain, he refers to something different from anything that we refer to in our world: he refers to disembodied minds (or features thereof), whereas we refer to whatever feature of our world grounds potentials for coherent experiences of mountains and trees.

Phenomenalists allow that something explains why various potentials for experience exist in our world: namely, other potentials for experience. But phenomenalists deny that anything *grounds* any potential for experience. (I take it that *A grounds B* only if the existence of *A* both explains and metaphysically necessitates the existence of *B*.) One potential or combination of potentials might explain another—more on this in the next section—but the explaining potentials don't metaphysically necessitate the potentials they explain.

The phenomenalist isn't being eccentric here. Anyone who rejects reductionism about consciousness will deny that conscious experiences, or potentials for conscious experience, have metaphysical grounds. Only if consciousness reduced to something more basic could there plausibly be a situation in which something both explained and metaphysically necessitated some experience or potential for experience.

Given that potentials for experience have no metaphysical grounds, there are no such grounds for our words to refer to. Rather, our words refer to the potentials themselves, which exist in Ghost World as well as our own. The difference between our world and Ghost World isn't that our world but not Ghost World contains physical things. The difference is that the existence of physical things has an explanation in Ghost World that it doesn't have in ours: an explanation in terms of a population of disembodied minds.

Why conceivability arguments against phenomenalism fail

In this section, I've defended phenomenalism from conceivability arguments against empirical supervenience. If successful, the defense gives phenomenalism an important advantage over materialism, which is notoriously vulnerable to parallel arguments.

The crucial difference between conceivability arguments against empirical supervenience and conceivability arguments against psychophysical supervenience is that the former, but not the latter, rely on demonstrably faulty conceivability claims.

At first, it seems possible to conceive of an object's constituent molecules having high kinetic energy without being hot: just imagine that you have cool

sensations when touching an object with high molecular energy. On further consideration, however, we realize that what we've actually conceived of is a hot object that *feels* cool to the touch, i.e. causes phenomenally cool experiences in those who touch it. That's not the same as conceiving of high molecular energy in the absence of heat.¹⁵

Similarly, it might seem possible at first to conceive of a world that has all our world's mental features, but lacks some of our world's physical features: just imagine some brains in a vat hooked up to a suitably programmed computer, or an Edenic world that has all our world's macrophysical features but none of its microphysical features, or a population of interactive disembodied minds. On further consideration, however, we realize that what we've actually conceived of in the first two cases are worlds that duplicate ours at the level of realized experience, but differ from ours in other mental respects (such as by including potentials for experience that don't exist in our world), and, in the third case, a world that differs from ours only in what explains its physical contents, and not in the physical contents themselves.

By contrast, when we conceive of a world physically identical to ours but lacking some of the conscious experiences that exist in our world, we don't seem to be making the mistake of those who take themselves to conceive of high molecular kinetic energy in the absence of heat. We can, it seems, conceive of people physically just like us who have no experience, or whose visual experiences are color-inverted relative to ours, and our confidence that we can do so doesn't seem to depend on our overlooking some subtle physical respect in which we've tacitly assumed the imagined people to differ from us.

Conceivability arguments against phenomenalism fail, because they're like conceivability arguments against identifying heat with molecular kinetic energy, and not like conceivability arguments against identifying conscious states with brain states.

4 Mill's Thesis

In his original exposition of phenomenalism, Mill introduces the idea of a certain kind of possibility for sensory experience:

The conception I form of the world existing at a given moment, comprises, along with the sensations I am feeling, a countless variety of possibilities of sensation: namely, the whole of those which past observation tells me that I could, under any supposable circumstances, experience at this moment, together with an indefinite and illimitable multitude of others which though I do not know that I could, yet it is possible that I might,

¹⁵The point is Kripke's: see (Kripke, 1980, 97-155).

experience in circumstances not known to me. These various possibilities are the important thing to me in the world.¹⁶

All physical things are possibilities of sensation, according to Mill, but not all possibilities of sensation are physical things. Define the *phenomenal field* of our world as the hypothetical sum-total of phenomenology that would exist, if all the world's phenomenal potential were realized. In order to count as a physical thing, a possibility of sensation must be a possibility for an experience or combination of experiences that coheres with the other experiences in the phenomenal field, in the sense of "cohere" explained earlier. If I dream of surfing a mile-high wave, my dream realizes a certain potential for experience, but there is no mile-high wave corresponding to that potential, since my dream experience fails to cohere with the rest of the phenomenal field.

Mill calls the experiential possibilities that form the basis of his metaphysics "permanent possibilities of sensation," "certified possibilities of sensation," and "guaranteed possibilities of sensation." I'll call them *potentials for experience* or "phenomenal potentials," for short.

Mill never defines phenomenal potential, although he says enough to make it clear that a potential for experience is more than a mere logical or metaphysical possibility for experience. It's also clear from Mill's remarks that potentials for experience are supposed to be fundamental features of our world, irreducible to anything more basic. Without some further explication, however, the notion of a potential for experience is apt to retain an aura of mystery. Let me say something to dispel this aura.

Take an ordinary example of a potential: a wine glass's potential to shatter. The glass's potential to shatter—its fragility—is grounded in the configuration of the glass's constituent silicon atoms. Fragility is therefore not the kind of potential that phenomenologists are talking about, when they talk about potentials for experience. *Those* potentials aren't supposed to be grounded in anything.

So take a different example: an atom's potential to decay. As far as we know, nothing grounds or explains this potential: its existence is just a basic fact about the atom (or atoms of this kind). This is the kind of potential that Mill's permanent or certified possibilities of sensation are supposed to be. The right model for phenomenalism is not fragility, but radioactivity.

What is it, for there to be a potential for radioactive decay? A sufficient condition seems to be the existence of a non-zero probability for the occurrence of at least one particle-decay event. But this isn't a necessary condition, or at least it doesn't have to be. Alan Hájek discusses the example of an infinitely fine dart thrown at a dartboard with a continuous surface: the dart has the potential to strike the board at a certain point *P*, but the probability that it does strike *P* is

¹⁶(Mill, 1865/1889, 228).

zero (one-out-of-infinity). For a more realistic example, if space is continuous, then the probability that a given electron will move to a given point of space at a given moment is likewise zero, even though each point of space is such that the electron has the potential to move there. Likewise, if time is continuous, we can imagine particles with a potential to decay, but whose probability of decaying at any given moment is the same as the probability of Hájek's dart hitting a given point of the dartboard.¹⁷

Imagine a world of physical objects similar to those that we're familiar with. The objects exist largely in darkness, but some occasionally "light up," partly or entirely, as if illuminated by an internal or external light-source. We can imagine that when this happens, there is no light source additional to the illuminated object: the object just spontaneously gives off light with the same qualities that would characterize the light that the object would reflect or emit, if an external light source shined on the object from a certain angle, or if a certain part of the object were to start glowing.

Suppose that every object in the imagined world has a potential to light up, though few ever do. Sometimes more than one part of an object lights up at the same time; sometimes a whole object lights up. Some objects are more likely to light up than others, and for some, the probability is zero (like in the dart case). We can also imagine that in some cases, the probability that a certain object will light up in a certain way is tied to the probability that certain other objects will light up in certain ways. Nothing explains why objects have this potential to light up: it's not due to something about their internal structure or anything like that. Illuminability in the imagined world is like radioactivity in ours.

Now replace the illumination events in this example with corresponding experiences—experiences as of viewing variously luminous or illuminated objects—and replace the potentials for illumination events with corresponding potentials for experience. Finally, suppose that all that the world contains are these experiences and potentials for experience.

This is how phenomenalism asks us to think of *our* world. There is a vast, possibly an infinite, number of potentials for experience, some of which get realized, most of which do not. The probability of certain potentials being realized is tied to the probabilities of certain other potentials being realized. Some of the potentials might have only a vanishingly small probability of being realized. The potentials for experience aren't grounded in anything, and, as far as we have any reason to think, the only thing that ever explains why a potential for experience exists is the existence of some other other potential (or potentials) for experience.

¹⁷For Hájek's discussion, see (Hájek, 2003).

Phenomenalists see no reason to think that the phenomenal potentials of our world have any categorical explanation; that is, any explanation in terms of irreducibly non-modal entities (like monads, God, noumena, or ostensibly categorical physical entities). But phenomenalists allow that phenomenal potentials, or at least many of them, have *some* explanation: after all, according to phenomenalists, physical things are phenomenal potentials, and physical things have explanations (at least, many of them do).

Take an ordinary physical thing, like the delta located at the mouth of the Mississippi River. The delta is the result of thousands of years of silt- and sand-deposits occurring where the river slows as it enters the Gulf of Mexico. Like anyone else, a phenomenalist recognizes that the delta is a natural consequence of these hydrological processes. It's just that a phenomenalist sees both the delta and the processes that created it as potentials for experience.

The motions of water and sediment reduce to certain phenomenal potentials, the delta reduces to certain other phenomenal potentials, and the existence of the latter potentials is a non-metaphysical (causal, natural, or nomological) consequence of the existence of the former. The phenomenal potentials that constitute the hydrological processes naturally necessitate the phenomenal potentials that constitute the delta.¹⁸

In short, phenomenalists hold that many (perhaps all) potentials for experience have non-reductive explanations *in terms of other potentials for experience*. If there's an established scientific explanation for why a certain potential for experience exists, we phenomenalists can happily accept it. We merely add that the terms of the scientific explanation are amenable to a certain kind of reduction: a reduction to potentials for experience.¹⁹

This includes scientific explanations related to brains and brain-activity. Phenomenalism treats brains the same way it treats other physical things: as potentials for experience. Your brain, for example, is a potential for experiences like those that we'd have if we were observing your brain (while performing surgery on you, or studying you with an MRI scanner, or whatever). Phenomenalism accounts for the physical effects of brains the same way it

¹⁸As Mill puts it, "Whether we are asleep or awake the fire goes out, and puts an end to one particular possibility of warmth and light. Whether we are present or absent the corn ripens, and brings a new possibility of food. Hence we speedily learn to think of Nature as made up solely of these groups of possibilities, and the active force of Nature as manifested in the modification of some of these by others." (Mill, 1865/1889, 230) See also (Ayer, 1940, 229-31) and (Ayer, 1946-1947, 146-50).

¹⁹Phenomenalism is neutral on whether every potential for experience has an explanation (in the form of further potentials for experience). In this, phenomenalism is no different from materialism, which is neutral on whether every physical state has an explanation (in terms of further physical states). Just as materialism is compatible with the existence of inexplicable physical states, phenomenalism is compatible with the existence of inexplicable potentials for experience.

accounts for the physical effects of other things: the relationship between your brain-activity and your motor behavior is the same as that between the motions of water-borne sediment and the delta.

However, brains don't have only physical effects: brain-activity also causes, or at least correlates with, the experiences that make up conscious mental lives. How does phenomenalism account for this?

Suppose we're playing catch with a baseball. As we play, there's a correlation between your visual experiences and mine: as my visual impressions of the ball shrink (occupy less of my visual field), your visual impressions of the ball correspondingly grow, and vice versa. If a phenomenalist were to hold that all mental facts are fundamental and inexplicable, he'd have to say that it's a fundamental, inexplicable fact that the phenomenal size of my baseball impressions varies inversely with the phenomenal size of your baseball impressions.

But a phenomenalist believes, like everyone else, that the correlation between our experiences *does* have an explanation. A baseball is moving back and forth between two hominids, each equipped with eyes and brains that function in certain ways. The amount of each hominid's retinal surface that's stimulated by light reflected from the ball is proportional to the distance between the ball and his eyes; since this distance is inversely correlated for each hominid (when the ball is near you, it's far from me, and vice versa), the amounts of retinal stimulation are also inversely correlated. Due to the way our brains are organized and connected to our eyes, the inversely-sized retinal stimulations cause the visual centers of our brains to go into neural states that are also inversely correlated in terms of some relevant magnitude (e.g., the number of neurons activated in our visual cortices' retinotopic maps). Since there is a lawlike correlation between the occurrence of such neural states and visual experiences of baseballs—that is, since those brain states are the neural correlates of such experiences—your baseball-impressions grow as mine shrink, and vice versa.

A phenomenalist can accept this explanation. *Of course* we have bodies; *of course* there's a baseball moving back and forth between them; *of course* light from the ball is interacting with our eyes in various ways, resulting in various patterns of brain activity which take place when, and only when, visual impressions of baseballs occur. Phenomenalism is compatible with all of this. It's just that, according to the phenomenalist, facts about bodies, balls, light, etc. reduce to mental facts—facts about phenomenal potentials.

The correlation between our visual experiences is a mental fact that has an explanation that invokes various physical conditions (involving our bodies, light, and the ball), together with an empirical principle to the effect that certain kinds of brain-activity correlate with certain forms of experience. This

is not a reductive explanation, of course; for a phenomenalist, as for anyone who opposes reductionism about consciousness, a reductive explanation of correlations among different subjects' conscious experiences is as impossible as a reductive explanation of consciousness itself. But it is an explanation, and one entirely consistent with the phenomenalist position—provided that we understand the physical conditions as potentials for experience.

What is the status of the empirical principle that certain kinds of brain-activity correlate with certain forms of experience? According to phenomenologists, this correlation is not a case of identity. Like others who reject materialism, phenomenologists consider it possible for a world physically indistinguishable from ours to lack any conscious experience. So, whatever phenomenal potentials constitute the neural correlates of my present visual experience, it must be possible (according to phenomenologists) for those potentials to exist in a world in which there is no visual experience.

An implication of this is that phenomenologists, like dualists, are under some pressure to deny that conscious experiences cause bodily behavior. Given that we can already account for our behavior as arising from purely physical causes, it's not easy to see how consciousness, taken as something non-physical, could plausibly influence our behavior.

Does this mean that phenomenism works only in conjunction with epiphenomenalism? Maybe. But three qualifications are in order.

First, any move that a dualist can make to avoid epiphenomenalism is also available to a phenomenologist. For example, if, as some dualists argue, an overdeterministic version of interactionism is defensible, an epiphenomenalist can subscribe to that kind of interactionism.²⁰

Second, any move that a dualist can make to render epiphenomenalism tolerable is also available to a phenomenologist. For example, phenomenologists, like dualists, can point out that all of the observed correlations between mental events and physical events are compatible with a causal story on which conscious experiences have physical causes but no physical effects. Phenomenologists can also avail themselves of the accounts that dualists have devised to explain how we can know about our own conscious states, despite those states being physically inefficacious.²¹

Third, whereas epiphenomenalist dualism makes conscious experience completely irrelevant to the physical world, this isn't true of epiphenomenalist phenomenism: here, conscious experience *is* relevant, as the realizer of (some of) what constitutes physical reality. Let me expand on this.

²⁰For a defense of overdeterministic interactionism, see (Mills, 1996).

²¹For dualist defenses of epiphenomenalism, see (Jackson, 1982) and (Chalmers, 1996, 172-209).

In the dualist view, there's no deep metaphysical connection between consciousness and the physical world. Dualists recognize that there are detailed correlations between the physical states and processes that occur in our brains, and the conscious states and processes that occur in our minds. But that's the whole extent of the connection between mind and matter, according to dualism. Dualists can posit natural laws that require certain brain states to occur when and only when certain conscious mental states occur, but the existence of such laws is no less surprising or inexplicable than the existence of consciousness itself. From the dualist standpoint, nothing about the physical world gives us any reason to expect there to be any conscious experience at all: consciousness enters the picture as something completely new and unexpected.

With phenomenalism, the situation is different. According to phenomenologists, the physical world is constituted by potentials for conscious experience. Admittedly, the existence of these potentials doesn't guarantee that there is any actual experience; in this sense, consciousness remains a mystery. However, if physical things are potentials for experience, then the actual occurrence of conscious experiences is less surprising than it otherwise would be, since all it requires is for some of those potentials to be realized. This establishes a metaphysical connection between the physical and phenomenal features of our world that's missing from the dualist picture. From the phenomenalist standpoint, there *is* something about the physical world that gives us a reason to expect there to be conscious experience. Consciousness enters the picture as something new, yes, and even to some extent unexpected, but not *as* unexpected as in the dualist scheme of things.²²

5 Phenomenalism vs. the Armstrong Doctrine

The idea that the physical world is phenomenal potentials all the way down conflicts with an influential doctrine of late 20th century metaphysics. David Armstrong was probably the doctrine's leading proponent, insisting throughout his long career that you can't just have free-floating powers or potentials: something must *have* the powers or potentials, and this something can't just be more powers or potentials. More generally, Armstrong held that there is no such thing as primitive modality: any powers, potentials, dispositions, or possibilities that exist in our world must exist by virtue of our world's having some non-modal features. Call this the *Armstrong Doctrine*.²³

²²It's true that not all experiences realize potentials that partly constitute physical things, according to phenomenalism: the experiences we have in dreams, hallucinations and the like do not. Still, even these experiences are realizations of the *kind* of thing that constitutes physical reality.

²³See (Armstrong, 1961, 56-58) and (Armstrong, 1993, 187); also (Lewis, 1966, 20), (Lewis, 1992, 218-19), and (Lewis, 1998).

The Armstrong Doctrine is incompatible with Mill's Thesis. Consequently, if the doctrine were true, we'd have to abandon phenomenalism. Fortunately for phenomenalists, the debate over whether powers, potentials, and similar modalities require categorical grounds has gone rather strongly against the Armstrong Doctrine in recent decades.

Consider radioactivity again. Specifically, consider radon atoms. These have a potential to undergo radioactive decay: there's about a 50% chance that a radon atom decays within a four day period.²⁴

Presumably, about 50% of the radon atoms that come into existence in our world decay within four days. But we can imagine a world categorically indistinguishable from ours, in which there's a 90% chance that a radon atom decays within four days. We need only imagine that due to a colossal statistical fluke, about 50% of the radon atoms in this other possible world decay within four days, despite there being a 90% chance of any given radon atom decaying within four days. In this other world, there exist potentials for radioactive decay that do not exist in our world, despite the other world's being categorically indistinguishable from ours (duplicating our world with respect to its non-modal features). It follows that the potentials for radon decay that exist in our world don't exist due to our world's having some categorical feature or features.²⁵

Furthermore, it is, as far as we know, a physically fundamental fact about radon atoms that they have about a 50% chance of decaying within a four day period. We have no reason to think that this fact has an explanation in terms of some non-modal feature of radon atoms. If you like, you can say that the potential for decay inheres in the atoms, but the potential that thus inheres is, as far as we know, irreducibly modal. This is so, even if we assume that atoms themselves are categorical features of our world, and not ungrounded potentials of some sort. On that assumption, the fragility of a wine glass—its potential to shatter—arguably does reduce to certain categorical features of the glass (atoms arranged in a certain shape, and held together by certain bonds). But a radon atom's potential to decay isn't like this, at least not according to our best science.²⁶

So, not only is it metaphysically possible for a potential to exist without any categorical basis: we also have reason to believe, or at least not to disbelieve, that many of the potentials that actually exist have no categorical basis. It follows that when phenomenalists say that potentials for experience lack any basis (i.e.,

²⁴More accurately, there's about a 50% chance that the quantum tunneling involved in the decay of a radon-222 atom occurs within four days of the atom's coming into existence.

²⁵This is the central argument of (McKittrick, 2003), as I understand it. The focus of McKittrick's discussion is dispositions, but the points she makes also apply to potentials.

²⁶The argument here is basically the one that Stephen Mumford gives for the reality of ungrounded dispositions: see (Mumford, 2006).

that they aren't grounded in anything, categorical or otherwise), no one can accuse them of positing a kind of thing that we would otherwise have no reason to admit into our ontology.

Phenomenalists deny that potentials for experience are grounded in or reducible to anything, and they affirm that many (possibly all) phenomenal potentials are explained by other phenomenal potentials. But phenomenalists need neither affirm nor deny that phenomenal potentials have an explanation in terms of entities that aren't phenomenal potentials (such as monads, God, or noumena). It's hard to see what could justify positing such entities, but phenomenalists can be agnostic on this point. They only insist that if the phenomenal potentials of our world have some explanation in terms of entities that are not themselves phenomenal potentials, physical things are to be identified not with those entities, but with the phenomenal potentials whose existence they explain.

According to phenomenalists, the Great Sphinx of Giza is an ungrounded potential for experience, or an assemblage of such potentials. Modally, the Sphinx goes wherever the potentials go. If the potentials go to a world where their existence has some deeper explanation (in terms of a population of disembodied minds, say) the Sphinx goes there too. If the potentials go to a world in which their existence has no deeper explanation, the Sphinx follows. But a phenomenalist doesn't think that the potentials that constitute the Sphinx have to go anywhere in order to exist in a world in which their existence has no deeper explanation—no explanation, that is, in terms of anything but further potentials for experience. As far as we know, they exist in such a world already.

Since phenomenalists don't ground potentials for experience in actual experiences, one might wonder whether phenomenalism is really a kind of monism, as advertised. It's true that phenomenalists posit two, mutually irreducible features of the world: experiences, and potentials for experience. But this doesn't make phenomenalism into a kind of dualism. Materialists who recognize an irreducible distinction between physical events and certain potentials for physical events, such as potentials for radioactive decay, are not on that account classified as dualists. No more should we classify phenomenalists as dualists for recognizing an irreducible distinction between experiences and potentials for experience.

6 Conclusion

A lot has happened in metaphysics since phenomenalism last had serious defenders. Among other things, we now have a better understanding of how to evaluate identity and necessity claims, and a more complete picture of the nature of powers, dispositions, and related modalities. Since these developments are

directly relevant to phenomenalism, it has seemed prudent to consider whether they have altered its prospects in any way.²⁷

In this paper, I've argued that they've brightened its prospects considerably: empirical supervenience turns out to be immune to the sort of modal counterexamples that beleaguer psychophysical supervenience, and the most influential challenge to Mill's Thesis—the Armstrong Doctrine—is now considered doubtful at best.

One would have to say much more to restore phenomenalism to the prominence it once enjoyed, if such a restoration is even possible, or desirable. The goal of this paper has been the more modest one of defending phenomenalism against some of the more important and influential objections to it. The hope is that by overcoming those objections, we can return phenomenalism, if not to its former glory, at least to the metaphysics syllabus.

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²⁷Fumerton dates phenomenalism's demise to (Chisholm, 1948), which argues, in effect, that Mill's Thesis is incompatible with empirical supervenience: according to Chisholm, no proposition asserting the existence of a potential for experience is equivalent to any proposition asserting the existence of a physical state of affairs. (For Fumerton's discussion, see [Fumerton, 1985, 141-45].) Chisholm's target was the claim that physical facts reduce to facts expressible by conditionals of the form: "If such-and-such phenomenal conditions were satisfied, such-and-such other phenomenal conditions would be satisfied." This claim is central to the phenomenalism of (Lewis, 1946, 203-53) and (Ayer, 1946-1947), which are the focus of Chisholm's discussion. The phenomenalist theory I've defended here doesn't rely on this claim, and is therefore immune to Chisholm's criticism.

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