



Three Critiques of Phenomenalism

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Abstract

According to metaphysical realists, conscious experiences are caused by a world of independently existing physical objects. This physical reality explains all of the facts about conscious experience and the potential for such experience. Pelczar's (2022) phenomenalism is more austere: the world is nothing but experiences and potentials for experiences. Pelczar identifies physical entities with certain of these potentials; for example, a stone is identified with the potential for observers to have various cohering experiences as of a stone. In this paper, I raise three objections to the phenomenalist's account of physical reality. I also respond to certain objections that Pelczar raises against realism.

Keywords Phenomenalism · Realism · Idealism · Consciousness · Perception · Color · Content

1 Introduction

According to metaphysical realists, conscious experiences are caused by a world of independently existing physical objects. This physical reality explains all of the facts about conscious experience and the potential for such experience. Pelczar's (2022) phenomenalism is more austere: the world is nothing but experiences and potentials for experiences.¹ Pelczar identifies physical entities with certain of these potentials; for example, a stone is identified with the potential for observers to have various cohering experiences as of a stone.

It is rewarding to think about phenomenalism because this view challenges certain standard assumptions about the explanatory relation between mind and world. While I am sympathetic to “mind-first metaphysics”, this paper will critique phenomenalism from the realist's perspective. After an overview of phenomenalism in Section 2, I develop three objections to this view:

¹ Throughout this paper, all citations of Pelczar refer to this work.

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Objection 1: phenomenologists cannot adequately explain the coherence exhibited by the experiences of different subjects (Section 3)

Objection 2: given the role of a subject's perceptual system in determining the character of their perceptual experience, potentials for such experience are unsuitable to be identified with objects "out in the world" (Section 4)

Objection 3: phenomenologists cannot provide a suitable account of fundamental physical entities (Section 5)

Each of these objections challenges Pelczar's contention that phenomenism can provide an adequate explanation of physical reality. Throughout this discussion, I also respond to certain objections that Pelczar raises against realism.

2 Background

To introduce phenomenism, Pelczar imagines that our world contains a multitude of *ideal observers*: conscious beings who perceive the world without affecting it (2). Collectively, these observers perceive every physical object and event across history. Pelczar claims that, in this scenario, dependence relations between physical events are mirrored by dependence relations between corresponding experiential events:

An earthquake occurs off the coast of Sumatra, causing a tidal wave in Somalia. The occurrence of the wave event depends on the occurrence of the tectonic event. We might put this by saying that the tectonic event gives a certain probability to the occurrence of the wave event, or that the occurrence of the tidal wave counterfactually depends on the tectonic shift. Given the ubiquity of ideal observers, there are experiences of the earthquake, and experiences of the tidal wave, and the latter depends on the former to the same degree that the occurrence of the tidal wave depends on the occurrence of the earthquake. Likewise for all the events that occur between the earthquake and the tidal wave: as a water-wave propagates through the Indian ocean, an experience-wave propagates through the ideal observers (2)

We arrive at phenomenism by subtracting elements from the world just described. First, we subtract the underlying physical reality. This leaves us with an "ideal world": a vast network of cohering experiences that stand in various dependence relations (3).

But there is no evidence that the world contains so much consciousness. Let us, therefore, subtract the ideal observers and their experiences, leaving everything else as it is. What remains, says Pelczar, are (i) ordinary experiences (of, e.g., humans) and (ii) the world's rich potential for certain experiences to occur conditional on other experiences occurring. According to phenomenists, (ii) is the physical part of reality (2ff).

Rather than deny the existence of physical entities, phenomenists identify them with potentials for experience. Pelczar offers this example:

A group of Bedouin travelers are camped around the Great Sphinx of Giza. ... How do the travelers' visual experiences relate to each other? One aspect of the relationship is qualitative. ... there is some overlap in the spatial quality of the

... experiences, corresponding to the part of the Sphinx both viewers can see... In short, the travelers' experiences fit together, like overlapping regions of the surface of the Sphinx itself. Another aspect of the relationship is modal. It's no accident that the travelers' experiences fit together the way they do... Changes in one Bedouin's experiences are likewise linked to changes in the others': if they're watching the Sphinx as the sun sets, the changes in each traveler's experiences mirror changes in the others'—the experiences phenomenally darken in tandem—in a way that's again not by chance, but supports relevant counterfactual conditionals or conditional probabilities (13)

According to the phenomenalist, the Sphinx has no independent existence. Nonetheless, the world contains the potential for observers to have experiences like those of the Bedouin travelers: experiences that stand in relations of qualitative coherence and modal interdependence. The phenomenalist identifies the Sphinx with this potential for cohering, interdependent “Sphinx-like experiences” (31).

2.1 The Regularity Argument

Pelczar defends phenomenalism with the *regularity argument* (51):

1. The physical world is what explains the regularity of experience.
2. What explains the regularity of experience is that there is a propensity for experiences to occur in certain ways.
3. Therefore, the physical world is a propensity for experiences to occur in certain ways.

To support premise 1, Pelczar observes that, were experience not coherent, it would not occur to us to describe reality in physical terms at all. Thus, says Pelczar, we should regard physical reality as whatever explains this regularity in experience (52).

Pelczar defends premise 2 on grounds of parsimony: phenomenalism can explain and predict to the same extent as its rivals, but it does so with a simpler ontology. Accordingly, phenomenalism provides the best explanation of the regularity of experience.

Here, it is useful to distinguish two types of coherence exhibited in experience. The Sphinx example illustrates *intersubjective coherence*: the experiences of the various Bedouin travelers cohere with each other. The earthquake example illustrates *diachronic coherence*: the experiences of the tectonic event cohere with the experiences of the wave event that follow after it.

For realists, both types of coherence are explained by features of the underlying physical world.² In the Sphinx case, the Bedouin travelers are affected by a common, unified object. Thus, their experiences exhibit a corresponding coherence. In the earthquake case, a tectonic shift causes a tidal wave; because of this order in the underlying physical events, the potential experiences grounded by these events are also ordered.

Phenomenalists dispense with the underlying reality, instead invoking dependence relations between the potentials for experience themselves. In the Sphinx case, there

² See Section 3.2 for discussion.

is no underlying physical unity. Instead, there is just the potential for a bundle of Sphinx experiences; each member of this bundle depends, either counterfactually or probabilistically, on the others. In the earthquake case, phenomenalsists agree with realists that the tectonic shift causes the tidal wave (110). But phenomenalsists interpret these causal relata differently: these events are themselves just potentials for certain groups of experiences (38, 44f).

The next three sections present objections to phenomenalsism. Each objection concerns phenomenalsism's alleged explanatory advantage over realism. I begin in Section 3 by critiquing phenomenalsism's explanation of intersubjective coherence.

3 Objection 1: Intersubjective Coherence

With intersubjective coherence, we are trying to explain why “there are seemingly non-random similarities and correlations across different conscious subjects' mental lives” (62). The phenomenalsist answers: there are dependence relations between these experiences. Pelczar views these dependence relations as probabilistic: the occurrence of certain experiences makes the occurrence of certain other experiences more likely (and vice versa).

However, I will argue that, even if such dependence relations explain correlations in the experiences of distinct subjects, they do not explain why these experiences cohere.

Imagine a world with just three subjects—call them A, B, and C—with very impoverished conscious lives. At any given moment, A experiences nothing but a musical pitch, B experiences nothing but a uniform color, and C experiences nothing but a sensation of warmth. These conscious states, which change periodically, are perfectly correlated. For example, whenever A's pitch rises, there is a corresponding shift in the color experienced by B and the warmth experienced by C.

Now suppose that the only things we know about this world are that A, B, and C have these experiences that stand in these dependence relations. What should we infer from this information? We might posit a mind-independent entity causing the experiences of all three subjects. But, in this particular case, I agree with a complaint that Pelczar lodges against realism in general:

if there's something distinct from all experiences and possibilities for experience that explains why they exist, we can never know anything about it, except possibly (but how?) that it explains why the experiences and possibilities for experiences exist. Positing such an entity is like saying that something causes the tide to rise and fall, adding that the only thing we can ever know about this “something” is that it causes the tide's rise and fall (5)

Indeed, if A, B, and C somehow knew the facts of their own world, the realist explanation might not even occur to them. Phenomenalsism would be the default metaphysical position for such a world.

Then again, it would also probably never occur to A, B, and C to describe their world in physical terms to begin with. This suggests that the ABC case is different from the Sphinx case (see Section 2). The difference is that, while both cases involve intersubjective correlations in experience, only the Sphinx case involves experiences

that cohere in a “world-suggestive” way. (In other words, only in the Sphinx case would we find it natural to interpret the various experiences as different perspectives on some single physical reality.) This contrast shows that, even if positing dependence relations can explain correlations in experience, it does not—by itself—explain intersubjective coherence. After all, the ABC case shows that there can be such dependence without any coherence.

Thus, we can ask the phenomenalist: how is it that, out of all the multitude of ways that experiences might be bundled together via counterfactual or probabilistic dependence relations, our world happens to contain bundles that cohere in world-suggestive ways? Why, for example, does our world contain Sphinx-like bundles rather than the bundles from the ABC case?

Framed differently, phenomenologists are pushing the need for explanation further back. To explain intersubjective coherence, phenomenologists posit dependence relations between possible experiences. But then, out of all the possibilities, why should such dependence relations hold between *these* experiences: the cohering, world-suggestive ones? Is it just a brute fact?

3.1 Possible Responses?

There are two features of phenomenism that may seem to disarm the above objection.

(A) While phenomenologists deny that potentials for experience are explained by some underlying reality, they allow that such potentials may be explained by *other* potentials for experience (110). Some of these explanations are what we might call synchronic grounding explanations. For example, there is a lawlike relationship between possible experiences of objects’ surface geometries and possible experiences of colors; thus, phenomenologists might explain facts about the latter by citing facts about the former (63f). In other cases, the explanations are diachronic causal explanations, such as Pelczar’s tidal wave example (see Section 3.2.1).

Accordingly, there are two senses in which phenomenologists *can* explain why the world contains a Sphinx-like bundle. First, the potential for experiences of the Sphinx is explained by the potential for experiences of the limestone minerals composing it. Second, the potential for experiences of the Sphinx is explained by the potential for experiences of the people carving that limestone.

But there are two reasons why the availability of these potential explanations does not disarm the present objection. First, we can imagine cases where neither such explanation is available. Consider a world that begins at t_0 and that consists of a single fundamental particle. According to phenomenologists, there will be facts about possible experiences of this particle at t_0 that—given the nature of the case—have no causal/grounding explanation. Second, causal/grounding explanations only explain why there are cohering experiences of certain objects conditional on there being cohering experiences of other objects. But the question remains why the world contains cohering experiences of objects at all.

(B) Second, phenomenologists acknowledge a neuroscientific explanation for facts about *actual* (i.e., not merely potential) conscious experience (44f). For example, I am currently perceiving a blue book, which—for phenomenologists—is a potential for

certain experiences. The state of my brain, which is *itself* a potential for certain experience (see next paragraph), explains why one such experience—i.e., my current visual experience—is not merely possible but actual.³ If you perceive the same book (and have a similar visual system), then your brain will be in a similar state. This explains why you have a cohering experience of a blue, book-shaped object. Thus, the phenomenalist can provide a neuroscientific explanation for why the *actual* experiences of different subjects cohere.

But phenomenologists cannot, in general, explain the coherence of possible experiences in this way. Potentials for experience are the basic elements of the phenomenologist's system: they constitutively explain the physical facts. Thus, to explain the coherence of possible experiences (as a general class) in neuroscientific terms would be circular. For example, according to phenomenologists, facts about human brains are determined by facts about possible experiences such as the ones that neuroscientists would have when perceiving brain states (160). But then phenomenologists cannot, without circularity, explain the coherence of the neuroscientists' experiences by citing facts about the neuroscientists' brains.

3.2 Competing Realist Explanations

To explain intersubjective coherence, realists posit an underlying physical object together with a mechanism by which this object grounds possible experiences. This mechanism will take the form of a theory of perception.

Realists have offered competing accounts of both the underlying object and the mechanism. I consider two such accounts below. My aim is not to defend these accounts, but rather to illustrate the explanatory resources available to realists.

3.2.1 Naive Realism

According to *naive realists*, perceptual experience involves a relation of direct acquaintance between conscious subjects and perceived physical objects. The perceived object itself is a constituent of the experience. When I view an apple, the redness figuring in my experience just is the redness of the apple itself.⁴

Thus, naive realists acknowledge a close connection between physical objects and possible experiences of them: objects would *appear* to subjects in certain ways simply because they *are* those ways. More precisely, facts about an object's categorical properties constitutively determine facts about how conscious subjects would experience this object.⁵

For example, according to naive realists, the Sphinx has certain categorical properties: its tan color, its Sphinx-like shape. Now perhaps no subject is actually viewing the Sphinx. But suppose that there was such a subject viewing the Sphinx from, say,

³ This is the basic idea behind the phenomenologist's account of perception; see ch. 9.

⁴ Or, as it is sometimes put, the phenomenal character of my experience (i.e., what it is like to have this experience) is *inherited* from the qualitative character of the perceived object. Cf. Martin (1998, 173–175).

⁵ Caveat: this account must be refined to account for illusions, perceptual variation between subjects, differences in viewing conditions, etc.

the east. Then, given what we know about the Sphinx itself, we know what this experience would be like: it would be the experience as of a tan, Sphinx-shaped object (from a certain perspective).⁶ After all, the Sphinx itself is a direct constituent of this experience.

Given this constitutive connection, naive realists can easily explain intersubjective coherence. It is no surprise that subjects viewing the Sphinx from the east and west have cohering experiences. After all, the same tan, Sphinx-shaped object is a constituent of both experiences.

Naive realism has its problems (see below). Still, this view vividly illustrates realism's potential explanatory advantages. True, naive realism requires additional ontology. But crucially, there is nothing especially surprising about naive realism's fundamental *explanans*. The mind-independent Sphinx happens to be a certain way; all the facts about possible experiences follow transparently.⁷

3.2.2 Standard Realism

Naive realists posit a constitutive relation between objects and possible experiences of them. But most philosophers, denying this tight connection, retreat to what I shall call "standard realism". Standard realists diverge from naive realists on both the character of physical objects and the mechanism by which these objects ground possible experiences.

On the first point, naive realists claim that experience directly reveals the categorical nature of physical objects. But standard realists retreat, to varying degrees, to a causal/structural characterization of physical objects.

For example, experience seems to present simple, vivid colors spread over objects' surfaces. But there are differences in color perception across different groups of subjects.⁸ Then who views the object rightly? Finding no good answer, standard realists conclude that physical objects are not colored in the way that they naively seem to be. Instead, they identify colors with whatever properties (e.g., surface reflectance properties) have the causal role of normally causing our color experiences. This approach has been extended to other features of objects, such as their solidity and shape.⁹

If physical objects are different how they seem in experience, then perceptual experience must not directly "reach out into the world" (as naive realists claim). Instead, standard realists push experience (and the qualitative properties figuring in experience) "upstairs to the mind".¹⁰ Conscious experience is the result of a long causal chain from object to sense organ to brain. Neural states lawfully correlate with conscious experience due to the existence of psychophysical laws. (Materialists and dualists disagree on the modal status of these laws.)

For example, there is a mind-independent Sphinx with certain features. If we know what the Sphinx is like, and we also know the physical laws, then we can know how

⁶ But see the caveat in the previous footnote.

⁷ Of course, naive realists still must explain why only some of these possible experiences are actually realized—see Section 3.3 for related discussion.

⁸ See, e.g., Neitz & Jacobs (1986). Cf. Averill (1992).

⁹ See Chalmers (2012, 7.2) for a structural account of spatial properties.

¹⁰ Cf. Shoemaker (2003, 254)

the Sphinx would affect perceptual systems in different environments. If we also know the psychophysical laws, then we know what the resulting conscious states would be like. These elements—i.e., the Sphinx and the laws—settle everything about potential experiences and the dependence relations between them.

Crucially, there is nothing especially surprising about the standard realist's fundamental *explanans*. The Sphinx and the laws happen to be a certain way; everything else follows transparently from that. (We may wonder why there are laws at all. But given that there are such laws, there is nothing especially surprising about the form they take.) Unlike phenomenalism, this mechanism does not require a large number of elements to exhibit a very particular and surprising pattern.

3.2.3 Pelczar's Objection to Realism

Pelczar argues that realists cannot provide a mechanism by which physical reality grounds experience and, therefore, cannot provide an informative explanation of the coherence of experience:

Well, suppose we do posit an underlying reality... What does this achieve? Nothing, without more details about the nature of the posited reality and the mechanism by which it ostensibly grounds or underlies the phenomenal possibilities that characterize our world. However, if something grounds or underlies the phenomenal possibilities, we can't learn anything about it except through experience. If you try to look behind experience to see where it's coming from, you're just going to have more experience. So, if there's something distinct from all experiences and possibilities for experience that explains why they exist, we can never know anything about it, except possibly (but how?) that it explains why the experiences and possibilities for experience exist. Positing such an entity is like saying that something causes the tide to rise and fall, adding that the only thing we can ever know about this "something" is that it causes the tide's rise and fall.

Of course, realists have attempted to provide such mechanisms (see Section 3.2), so this argument deserves careful scrutiny.

Many realists would agree that, in some sense, we cannot directly "look behind experience" to see its underlying cause: any evidence for such a mechanism must reduce to, or be mediated through, further experience.¹¹ Even so, it at least seems possible to learn something about such a mechanism. Imagine, for example, that telescopes revealed the sentence "I am God; Berkeley's metaphysics was correct" written in the distant stars. We would infer that God is the mechanism underlying our experiences, despite our inability to see him.

Less fancifully, all realists claim that experience at least provides evidence about the *structure* of physical reality.¹² For example, the physical laws describe how certain fundamental entities (e.g., electrons) causally affect one another. But then haven't realists described the underlying mechanism after all?

¹¹ Naive realists, however, will reject this claim as misleading: there isn't anything "behind" experience because the world itself is directly present in experience.

¹² And perhaps more besides: see Section 3.2 for discussion.

To respond, phenomenologists will dispute this interpretation of the physical laws; they will say that these laws describe patterns among potentials for experience, not patterns in some underlying reality. This is because phenomenologists identify physical items—i.e., the items governed by the physical laws—with potentials for experience.

But, even if this interpretation was conceded, it would not establish that we cannot know anything about the realist's underlying mechanism. For example, the realist might claim that we can know about underlying physical structure because it is isomorphic to the structure exhibited by the experiences it causes. And we need to posit this isomorphic structure because it explains intersubjective coherence (if for no other reasons).

3.3 Summary

In summary, realists require, at most¹³, two elements to explain the intersubjective coherence of experience:

- (A) *the underlying physical object*
- (B) *the physical and psychophysical laws*

From these two elements, all facts about potential experiences and their coherence follow.

By dispensing with (A), phenomenologists can claim an advantage in parsimony. But this comes at an explanatory cost: we are left wondering why these diverse possible experiences exhibit such surprising dependence relations. By contrast, there is nothing particularly surprising about the realist's explanatory base. Thus, realists will argue that the extra ontology is worth the cost.

And, stepping back, is it even true that phenomenology's ontology is simpler? Like realists, they require (B).¹⁴ And in the place of (A), they require:

- (A') *a potential for a bundle of cohering, interdependent experiences*

Pelczar identifies one sense in which phenomenology is simpler: while realists hold that the world contains both (A) and (A'), phenomenologists hold that it only contains (A'). On the other hand, we should remember that (A') has a different metaphysical status within these systems. For phenomenologists, (A') is explanatorily fundamental¹⁵, but for realists, (A') is itself transparently explained by (A) and (B).

Accordingly, let us just compare the explanatory bases of these systems. The realist's explanatory base is simple: there is just the one object which the realist will describe in either categorical or structural terms. *Prima facie*, the phenomenologist's base is much

¹³ Strictly speaking, naive realists do not even require the psychophysical laws to explain the coherence of merely possible experiences. But, presumably, they need these laws to explain why certain such experiences are actually realized.

¹⁴ They require physical laws to explain how potentials for experience evolve over time. They require psychophysical laws to explain why certain possible experiences are actually realized.

¹⁵ See Section 3.1 for discussion.

more complex: there are a host of possible experiences of the object in question from every possible perspective.¹⁶

In conclusion, while phenomenism has a simpler ontology in general, realism has a simpler fundamental ontology. Standard realists gain this advantage because they put the psychophysical laws to more efficient use. Having pushed experiences “upstairs to the mind”, standard realists can use psychophysical laws to explain both actual and merely possible experiences. Phenomenalists cannot do the same because, on their view, potentials for experience are already “out in the world”, constituting physical reality. Thus, for phenomenists, psychophysical laws are only able to explain why certain possible experiences are actually realized.

4 Objection 2: The Subjectivity of Experience

I have argued that, by using psychophysical laws to explain possible experiences, standard realists achieve a simpler explanatory base. But there is a second motivation for this maneuver: possible experiences seem more closely connected to the states of subjects’ perceptual system than to the states of perceived objects. This consideration, commonly directed against naive realism, is also a problem for phenomenism.

4.1 A Parallel with Naive Realism

Despite the wide gulf between them, there is an interesting parallel between naive realism and phenomenism: both views recognize a tight connection between objects and possible experiences of them. For naive realists, facts about the physical object’s character constitutively explain facts about possible experiences of that object. For phenomenists, the order of priority is reversed. But both agree that possible experiences of objects are not, in the final analysis, to be explained merely by describing how objects influence perceptual systems in their environment.¹⁷

On this point, both views diverge from standard realism. For standard realists, there are no possible experiences of an object *simpliciter*; there are only possible experiences for subjects of a certain type (e.g., normal human subjects in normal lighting conditions). Objects are associated with such experiences merely because of their capacity to influence perceptual systems in their environments. Indeed, there would be no facts about possible experiences at all were it not for psychophysical laws linking neural states to phenomenal states.

To emphasize this divergence, consider Pelczar’s ideal observer thought experiment (Section 3.2.1). When asked to imagine a world of ideal observers, standard realists will ask: what kind of observers? After all, we cannot know what such observers would experience without first describing their brains. But phenomenists cannot say this. Recall that, for phenomenists, facts about brains are themselves determined by facts about possible experiences (such as, e.g., the ones had by neuroscientists (160)). Thus,

¹⁶ The next two sections reinforce this conclusion. The phenomenist’s base must be made yet more complex in order to account for perceptual variation and fundamental physical entities.

¹⁷ See Section 3.1 for discussion of this point as it relates to phenomenism.

certain facts about possible experiences must already be in place for brains to exist at all.

This divergence may not be readily apparent because of the two features of phenomenalism described in Section 3.1. First, phenomenologists acknowledge neuroscientific explanations of *actual* experiences. Second, phenomenologists explain some potentials for experience in terms of others. Nonetheless, potentials for experience are the basic elements of the phenomenologist's system. Thus, phenomenologists cannot explain facts about possible experiences, as a general class, in neuroscientific terms.

Of course, there are reasons why standard realists have pushed possible experiences "upstairs to the mind". In this section, I argue that certain objections to naive realism apply equally to phenomenalism.

4.2 Idiosyncratic Experiences

Because perceptual experience is the result of a long causal chain from the perceived object to the brain, the features of a subject's perceptual system influence the character of such experiences. For example, we know from vision science that color phenomenology is better correlated with subjects' neurocomputational states than with the physical states of perceived objects.¹⁸

These kinds of empirical results rest uneasily with naive realism. Suppose that a subject has a visual experience E as of a red apple. If the character of E depends so much on the idiosyncrasies of the subject's brain, why should we think that such character is "inherited" from the apple itself? The phenomenologist faces an analogous question: why should we "locate" E within the apple (i.e., within the bundle of experiences for which the apple is a potential) when E 's character is so dependent on the subject's brain?

To accommodate these empirical results, phenomenologists might exclude E from the apple bundle. Indeed, they might exclude *all* experiences of the apple's macroscopic properties (e.g., its red color, its round shape). After these exclusions, various experiences of the apple's microscopic features would remain. According to Pelczar, these include, e.g., the experience E_1 as of viewing the apple under a powerful microscope, the experience E_2 of aliens who can directly perceive microphysical surfaces, etc. (176).

But, at some level of description, E_1 is itself just another visual experience: an experience whose phenomenology depends on the idiosyncrasies of the human brain. Similarly, the phenomenology of E_2 will reflect the idiosyncrasies of the aliens' perceptual system. But then, again, why locate E_1 and E_2 , with their idiosyncratic character, in the apple itself? The point holds generally: for any possible perceptual experience (in our world, at least), the subject contributes. Why build these subjective contributions into the objects themselves? The problem is that phenomenologists individuate the apple using phenomena that seem extrinsic to it (or only contingently associated with it).

¹⁸ See MacAdam (1985, ch. 1); Brouwer and Heeger (2013). Cf. Pautz (2010); Beck (2019).

4.3 A Foundational Disagreement?

A phenomenalist might reply: “This is just a foundational disagreement. On my metaphysics, experiences like E_1 and E_2 do *not* depend on the idiosyncrasies of particular perceptual systems. Prior to any mention of brains or psychophysical laws, experiences like E_1 and E_2 are included among the experiences for which the apple is the potential. Brains only enter the scene later: they explain why certain of these experiences are realized.¹⁹”

But there are difficulties with this reply. First, it reveals a further dimension of complexity in phenomenism’s explanatory base. In Section 3, I discussed how, instead of merely describing the one underlying object, the phenomenist’s explanatory base must describe how that object appears from all possible perspectives. We now see that it must also describe how that object appears to all possible subjects (who are able to perceive the Sphinx at all).

Second, the present discussion scuttles the thought that there is any natural unity to the phenomenist’s bundles. Which is simpler: positing an apple or positing a set S of interdependent experiences of an apple? If S just included familiar human visual experiences of the apple, then these options may seem roughly equivalent. After all, there is a kind of phenomenological unity to these experiences. Correspondingly, it may seem that the phenomenist’s explanatory base could describe S fairly concisely as: “the set of experiences as of an apple with such-and-such shape, color, ...”. But, if S also includes experiences like E_1 and E_2 , then it has no phenomenological unity.²⁰ Nor does it seem possible to describe S in a simple and concise way.

Third, there are specific problems relating to the phenomenon of perceptual variation, which I discuss next.

4.4 Perceptual Variation

Because the perceptual system influences the character of perceptual experience, subjects can have very different experiences of the same object. For example, the Sphinx bundle includes the experiences that typically occur in us when we observe the Sphinx (21). But this bundle must also contain the experiences of non-human subjects. Indeed, it must even include the experiences of merely possible subjects, such as “[aliens] who perceive physical colors by having auditory experiences” (61).

As discussed in Section 3.2.2, perceptual variation is a problem for naive realists, who are pressured to say that all of these seemingly conflicting experiences present genuine properties of the object. Phenomenalism faces an analogous problem, which I illustrate with a simplified example.

¹⁹ Some naive realists have responded similarly. For example, Kalderon (2011) claims that any color “contains within it” various qualitative natures; facts about illumination conditions and visual systems “select” which such nature is perceptually available. Similarly, Genone (2014) denies that experience presents intrinsic colors; rather, it presents a variety of “objective appearances” to different subjects.

²⁰ I discuss this issue further in Section 5.2, where I consider the phenomenist’s treatment of fundamental physical entities. Some of the worries from that section apply here as well, but they become more salient with properties like electromagnetic charge.

Imagine a possible world containing just three uniformly colored objects sitting in the vacuum of space: a sphere, an elongated ovoid, and a cube. To make sense of these objects being visible without external light sources, let's imagine that their surfaces emit photons from the visible spectrum. We also imagine that the psychophysical laws are the same as in the actual world.

For phenomenalists, the sphere is a potential for a certain bundle of experiences B_1 , which includes the experiences that humans typically have when viewing a sphere. But we can also imagine subjects whose experiences are systematically stretched or compressed relative to ours; these subjects will perceive the sphere as of a compressed or elongated ovoid.²¹ Indeed, we can imagine subjects for whom the sphere causes experiences as of a cube, or a pyramid, or a dimpled golf ball. We can imagine these things because the character of conscious experience correlates with the state of the subject's brain. Thus, we have only to imagine perceptual systems where, due to some unusual mechanism, the photons emitted from the sphere generate the types of brain states that occur in humans when viewing these various objects.

This example suggests two related problems. First, it is not clear that phenomenalism can make sense of the sphere having a unique character that distinguishes it from the other two objects. This is because the above remarks apply equally to the ovoid and the cube: we can imagine subjects for whom *these* objects reliably cause the above types of experiences. But if these bundles contain all of the same types of experiences, in what sense can we regard these objects as having different characters?²² The same problem arose for naive realism: if every object has all the properties that it could appear to have, then how can we regard an object as being some specific way at all?

Second, phenomenalism seems to erase certain distinctions that we draw between better and worse perceptions of the sphere. For example, when considering B_1 , the cube experiences seem defective in a way that the sphere experiences do not. Realists can account for this by saying that there is some discrepancy—either qualitative or structural—between these experiences and the sphere itself. This option is unavailable to phenomenalists since the sphere is a potential for both of these experiences.

In response, phenomenalists might try to exclude the cube experiences from B_1 . This could be done if the cube experiences (i) did not appropriately *depend* on, or (ii) did not appropriately *cohere* with, the other experiences in B_1 .²³ Option (i) is unavailable because, in the present case, the cube experiences are lawfully correlated with the sphere experiences.

As for option (ii), we are imagining that the sphere systematically causes a pattern of cohering cube experiences in a certain perceptual system S , just as it systematically

²¹ See Chalmers (2012, 330ff) for discussion.

²² I am not arguing that phenomenalists cannot distinguish the sphere from the cube; perhaps there are experiences that reveal the different spatial locations of these objects. Instead, I am arguing that the experiences associated with these objects are not sufficient to explain why the sphere has one specific character and the cube has another.

²³ To exclude falsidical experiences from object bundles, Pelczar employs both of these strategies. See, e.g., 90ff and ch. 9.

causes a pattern of cohering sphere experiences in some other perceptual system. Thus, the cube experiences at least cohere with each other.²⁴

One might argue that the *general set* of cube experiences fails to cohere with the general set of sphere experiences because of some difference in their structure.²⁵ This point could be disputed.²⁶ Regardless, excluding these experiences brings its own problems. First, phenomenals need to include the experiences of diverse subjects in their object bundles in order to account for phenomena that humans cannot observe (see Section 5.2). Second, it seems like the cube experiences should still count as *some* kind of perception of the sphere, even if they are flawed perceptions.

5 Objection 3: Fundamental Physical Entities

The phenomenalist identifies physical objects with potentials for experiences as of those objects (22). But what about imperceptible entities? Pelczar distinguishes entities that are imperceptible to any conscious subject and entities that are merely imperceptible to humans. For the former, Pelczar defends anti-realism. For the latter, Pelczar invokes the possible experiences of *non-human* subjects. I discuss these positions in Sections 5.1 and 5.2, respectively.

5.1 Imperceptibility in Principle

According to Pelczar, there are three types of evidence that justify belief in an entity X: (i) actually perceiving X, (ii) learning that others perceive X, and (iii) learning that X, though never actually perceived, is the kind of thing that someone could perceive. None of (i)-(iii) are available for entities that are imperceptible in principle (61).

But why think that (i)-(iii) are the only grounds for believing that X exists? The typical arguments for a realist stance towards fundamental physical entities are different. We do not believe that electrons exist because we think that some possible subject could perceive them. We believe that they exist because, by positing a system of these and other particles governed by dynamical laws, we can explain certain phenomena that we *can* perceive, such as the interference patterns in double slit experiments. Indeed, our scientific theories have made successful predictions about this and other novel phenomena. Scientific realists argue that this predictive success would be miraculous

²⁴ One might think that *some* possible experiences supported by *S* will clash with the cube experiences: perhaps experiences of touching the object, or experiences of zooming in to the object. But we can imagine that *S* systematically distorts these further experiences as well.

²⁵ For remarks on this strategy, see Pelczar's discussion of aliens whose experiences lack spatiotemporal structure altogether (141ff).

²⁶ It seems that, at least on some level of description, there is a structural correspondence between these experiences. Hence, we can imagine an algorithm generating images of cubes from images of spheres and vice versa. (This is also why it is not difficult to imagine the sphere systematically causing cube experiences in the first place.) The structural correspondence is even clearer when comparing the sphere and ovoid experiences. Certainly, Pelczar describes cases of perceptual variation with more significant differences in structure—see previous footnote.

if our theories, and their descriptions of subatomic particles, were not approximately true.²⁷

Pelczar might reply that, to the extent that this argument justifies the claim that electrons exist, it equally justifies the claim that they are perceptible. This is because, says Pelczar, “an ability to reveal itself to conscious beings through perceptual experience ... is what distinguishes a real physical thing from a fiction, abstraction, or phantasm” (59). But, in response, any such ability seems irrelevant to our theories’ predictive success. To explain this success, we need only to suppose that certain entities realize the causal structure expressed by our theories. (Their realizing such a structure is also enough to distinguish them from fictions and abstractions.) Our theories do not describe electrons as having any power to reveal themselves to conscious subjects. Thus, there is no reason to suppose that they have such a power.

5.2 Perceiving Theoretical Properties

I now turn to Pelczar’s proposal that fundamental physical entities are not imperceptible in principle but instead can be identified with potentials for certain experiences of possible *non*-human subjects (135). There are various potential objections to this proposal.

First, there are worries relating to quantum mechanics. While the position state of a classical particle is a single point in space, the position state of a quantum particle must instead be expressed as an infinite-dimensional vector with a different magnitude for each possible spatial position. Whether it is intelligible to talk about perceiving a particle in such a state may depend on how one interprets the quantum formalism.²⁸

Aside from quantum mechanics, there are more general worries. Some entities seem too inaccessible to perceive; for example, due to extreme temperature and pressure, there are no nomically possible observations of particles in Jupiter’s core. Other entities may simply be too small to perceive. For example, scanning tunneling microscopes measure variations in current produced by tunneling electrons to provide information about the local density of a surface.²⁹ But the resolution of these images is limited by, among other things, the scale of the particles scanning the surface: one could not use this technique to image an electron itself.³⁰ Similar limitations apply to other imaging techniques. This suggests that it may not be nomically possible for a perceptual system to register the precise spatial features of whatever the smallest physical entities turn out to be.³¹

I set these empirical issues aside in order to focus on a deeper worry: is it even *conceptually* possible for subjects to perceive the theoretical properties that physics

²⁷ See, e.g., Psillos (1999, ch. 4).

²⁸ For Pelczar’s discussion of these issues, see 119ff.

²⁹ Here, I set aside the more fundamental issue of whether such images count as “perceptions” of the surface; see below.

³⁰ Assuming that it is intelligible to speak about imaging electrons at all.

³¹ Phenomenalists might respond by invoking nomically impossible experiences. I worry that there are no determinate facts about such experiences (when considered as a general class), but this issue may deserve further discussion.

ascribes to fundamental entities? For example, what kinds of experiences would count as perceptions of a particle's charge (or as experiences that determine this charge)?

For simplicity, consider a possible world with only two particles. To imagine a perception of charge, we might imagine a possible experience E_1 of particle 1 repelling particle 2 in accord with Coulomb's Law.

But E_1 , by itself, is inadequate for the phenomenalist's purposes. To avoid presupposing physical truths, the phenomenalist must be able to describe E_1 in purely phenomenological terms. But there is nothing internal to the phenomenology of E_1 that makes it a perception of some specific charge; it only counts as such under certain presuppositions about the background physical state of the system (e.g., that no other forces are in play, that certain laws obtain, etc.). Indeed, E_1 "by itself" has nothing to do with charge at all; it is merely the perception of motion. Analogously, when a driver views the fuel gauge, the visual phenomenology itself "says nothing" about fuel. This experience only counts as "seeing that the fuel is low" under background presuppositions about how fuel gauges work.

Crucially, the problem is not solved by describing E_1 as: *an experience as of particle 1 repelling particle 2 with electrostatic force F* . There is nothing internal to E_1 that even *suggests* an electrostatic force F . After all, an experience with the same phenomenology could just as well be an experience as of some other electrostatic force or of no electrostatic force at all.³²

To respond, phenomenologists might try to embed E_1 within a larger stream of experience. For example, to determine if there are any relevant gravitational forces, the phenomenologist might invoke E_2 : *the experience as of a third particle at location L* . But the same problem arises. To indicate anything about gravity, we would have to know the new particle's mass, but there is nothing internal to E_2 's phenomenology that indicates a certain mass.

Indeed, partially because of this fact, there is no determinate possible experience that even answers to the above description. After all, there are many possible particles—particles with different masses, different charges, etc.—that could be located at L . Of course, it is no use to simply stipulate the physical properties of the new particle: the phenomenologist must individuate this possible experience phenomenologically.³³

Similar problems apply to other ways we might imagine perceiving charge, such as experiences involving scientific measurements. To estimate the charge of oil droplets, Millikan suspended them in a uniform electric field generated between two metal plates. But this experience, taken as a phenomenological episode, indicates nothing. It only counts as an experience of a properly functioning capacitor (as opposed to a malfunctioning instrument, or a film prop, etc.) under various non-phenomenal presuppositions (about the conditions of measurement, about the physical laws, etc.).

The above examples are inspired by how scientists investigate charge, but maybe this is the wrong model. Many philosophers identify colors with microphysical reflectance properties. But we do not perceive colors *as* reflectance properties; instead, we perceive

³² Compare to Travis's (2004) arguments against representationalist views of perceptual experience.

³³ One might add more detail, invoking an experience like E : *the experience as of a third particle at location L that moves with trajectory T* . But the same problems arise again. First, this experience only indicates anything about mass or charge once we adopt presuppositions about the system's background physical state. Second, and for the reason just mentioned, E is indeterminate.

them as simple, vivid qualities. Analogously, maybe we can imagine a subject who perceives charge as a simple, vivid, quality—perhaps as a bell tone whose intensity increases the more negatively an object is charged.³⁴ Applying this model to the two-particle example, we might imagine a subject having an experience E_3 as of two tones.

But, against this proposal, what possible connection could there be between a bell tone and electromagnetic charge? At most, the relation seems causal: perhaps charge systematically generates experiences like E_3 in some idiosyncratic perceptual system. But then, to echo the worry from Section 4.2, why analyze charge as the potential for experiences as idiosyncratic as E_3 ?

This proposal is also threatened by the perceptual variation objection (see Section 4.4). For simplicity, imagine a world with a single particle having mass and charge. We can imagine that this charge generates an experience of a bell tone T_1 in a certain perceptual system. But we can equally imagine that it generates other tones T_2, T_3, \dots in other perceptual systems. We can imagine that it generates experiences of clarinets, pineapple tastes, colors, pains, etc. in other perceptual systems. The same goes for the particle's mass: we can imagine that it generates all of the above experiences in suitable perceptual systems. Thus, phenomenologists are pressured towards the view that all fundamental physical quantities are potentials for bundles of all (suitably graded) qualities.

What really distinguishes mass from charge is their different roles within the dynamical laws. Thus, to distinguish a particle's mass from its charge, we need to examine how it interacts with other physical entities. But, once we bring back experiences of interacting particles, the bell tone experiences drop out as explanatorily idle. (And, regardless, I already discussed the problems with the experiences of interacting particles.)

In conclusion, it is difficult to identify any experience that would count as a perception of an entity's charge (or as a perception that determines this charge). Ultimately, this is because terms like 'charge', 'mass', etc. are theoretical terms: terms that are given a determinate sense within the context of a background theory. But this theoretical background is not internal to phenomenology. Thus, it is not possible to analyze these theoretical properties as potentials for certain phenomenal states.

In the same way, one could not analyze a certain surface reflectance property R as a potential for experiences of (say) redness. This remains true even if redness and R stand in a relation of *a posteriori* identity. Suppose that they do. Then we can cite this identity in order to provide a reductive analysis of redness (see Section 3.2.2). But then we cannot also cite this identity in order to reductively analyze R . There must be some prior way of individuating R for it to even make sense to say that R is identical to redness.

5.2.1 Diachronic Coherence

Suppose that the above argument is mistaken and that certain experiences do count as perceptions of charge. Even so, there is an independent problem with identifying

³⁴ Along similar lines, Pelczar argues that, if it is coherent to speak of existence coming in degrees, then we can also imagine subjects who perceive these degrees of existence as, e.g., different degrees of brightness.

charge with the potential for such experiences: such a potential is unsuitable to figure in the physical laws.

Realists appeal to dynamical laws in order to explain physical regularities. This explanation is powerful because the world's apparent complexity is explained with a small set of simple laws. These laws are simple, in turn, because they specify the causal relations between a small number of fundamental properties: charge, spin, mass, and so on.

According to Pelczar (153), phenomenologists agree with realists on which physical laws obtain; they merely offer a rival interpretation of what these laws are about.³⁵ Realists view charge as a certain underlying mind-independent property. Phenomenologists dispense with the underlying unity and simply appeal to dependence relations between various possible experiences of charge (see Section 2).

But there is a potential advantage for the realist's unity. Because they posit this underlying entity, realists are able to view charge as a kind of simple quality: something without any internal complexity. This, in turn, allows realists to view charge as something that is the same, or relevantly similar, across its instances from particle to particle or body to body. This, in turn, allows realists to formulate physical laws invoking charge that are simple despite their unrestricted application.

By contrast, because phenomenologists dispense with the underlying entity, they must view charge as having a certain internal complexity: the complexity of the diverse bundle of experiences associated with charge. Furthermore, the experiential bundle associated with charge will differ across its instances. For example, the set of experiences S_1 indicating the charge of the earth is (presumably) nothing like the set of experiences S_2 indicating the charge of certain electron.

Of course, there is some level of abstraction at which S_1 and S_2 can be regarded as similar: both are such that, once we adopt various theoretical presuppositions about the physical laws, etc.—they can be interpreted as experiences indicating charge. But this similarity is too theoretical and abstract to be suitable for a property that figures in the fundamental laws.

Compare: there is some level of abstraction in which the experiences of a nickel and of a check can be regarded as similar: both are such that, once we adopt various presuppositions about the social role of these items, they can be interpreted as experiences of money. But this kind of property would be unsuitable for figuring in the fundamental laws. I have argued that, for phenomenologists, the property of charge is similarly unsuitable to figure in the dynamical laws.³⁶

6 Conclusion: Competing Systems

To conclude this paper, I will put the above objections together by comparing realism and phenomenism as total metaphysical systems.

³⁵ This is a consequence of the fact that phenomenologists and realists agree about when one physical event causes another: see Section 2.

³⁶ This worry may not apply if charge is identified with the potential for experiences of some simple quality, as in the tone example from Section 5.2. However, I discussed the problems with this proposal above.

For simplicity, let us suppose that the universe has initial conditions and that micro-physical truths explain all other physical truths. With these assumptions, we can identify a specific physical state—the microphysical initial conditions—as part of each system’s explanatory base, so that we can directly compare how these views account for particular physical entities. We can also avoid distractions arising from the fact that phenomenologists explain certain potentials for experience in terms of other such potentials (see Section 3.1).

With these assumptions, the realist’s explanatory base consists of three elements³⁷: (a) truths about the *physical initial conditions*, (b) truths about the *dynamical laws*, and (c) truths about the *psychophysical laws*. From these elements, everything else follows: all remaining physical truths plus truths about actual and potential experiences. The phenomenologist’s base also includes (b) and (c)³⁸, but replaces (a) with (a’): truths about *possible experiences as of the world’s initial conditions*. From these elements, everything else follows: all remaining truths about possible experiences (which, in this system, are the physical truths) plus truths about actual experiences.

Thus, we can focus attention on (a) vs. (a’). To describe the initial condition of a given particle, realists need to specify a concise set of fundamental properties. By contrast, phenomenologists need to describe a multitude of experiences that cohere in a particle-suggestive way. But, aside from the extra complexity, it seems surprising that experiences would exhibit this coherence. To account for this, phenomenologists invoke dependence relations between the experiences in question. But this just pushes the need for explanation back. Out of all the possibilities, why should such dependence relations hold between *these* experiences: the cohering, world-suggestive ones?

In addition, the experiences in (a’) seem too subjective—too closely linked to the idiosyncrasies of particular perceptual systems—to be suitable for individuating physical objects. Phenomenologists may insist that all of these diverse, idiosyncratic experiences are “in the object”. But this further underscores the complexity of (a’) and subverts any thought that there is any phenomenological unity to these bundles (see Section 4). It also raises problems with perceptual variation.

These difficulties deepen when we consider problems specific to fundamental physical entities. As discussed in Section 5.2, it is doubtful that any experiences could count as genuine perceptions of charge; we interpret certain experiences as indicating charge, but this is an act of theorizing. Moreover, the complexity of the phenomenologist’s bundles makes them unsuitable for figuring in the dynamical laws.

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³⁷ Realists will disagree on the details of this base. For example, Humeans will deny that the base needs to include (b) in addition to (a). Realists will also disagree on what types of physical truths are needed to specify the initial conditions. Still, the above list is adequate for a basic comparison.

³⁸ Phenomenologists need dynamical laws to explain the coherence of experience across time; they need psychophysical laws to explain why certain possible experiences are actually realized.

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