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up back in a familiar dualism, with our rationality functioning as gatekeeper of our animality. But Schapiro is absolutely convincing in her presentation of the problem of inclination, the sets of questions philosophers need to ask, and the different possible routes for answering them. Her defense of dualism is refreshing in a philosophical climate that sometimes construes dualism as a position to be avoided at all costs. It is a testament to the creativity and ambition of this book that it raises the genuinely challenging questions that get to the heart of our philosophies of agency and moral psychology—which is to say, to the heart of our conception of who and what we are, as rational animals.

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Philosophical Review, Vol. 131, No. 4, 2022 DOI 10.1215/00318108-10136908

David Papineau, *The Metaphysics of Sensory Experience*. Oxford: Oxford University Press, 2021. 176 pp.

What is the nature of conscious sensory experience? In *The Metaphysics of Sensory Experience* David Papineau sets out to answer this question. He argues for the *qualitative view*: conscious sensory experiences are "intrinsic qualitative properties of people that are only contingently representational" (6).

This book is instructive, engaging, original, full of argument, straighttalking, and it defends an interesting view! I enthusiastically recommend it to philosophers of mind and perception.

Papineau's central argument is a *last view standing argument*: wading through the detritus left after his assault on competitor views—naive realism and representationalism—one finds the qualitative view, standing strong. It is "the only option that makes good metaphysical sense" (8). Given this, I focus my critical attention in what follows on Papineau's main negative arguments. First, a brief overview.

The book has an introduction and four chapters. In chapter 1, Papineau argues against naive realism and begins a detailed critical investigation of representationalism. Papineau's discussion of contingent and essential representationalism is particularly important, for it helps him to clarify his own disagreement with representationalism (30–32). Papineau thinks that conscious sensory properties *can* represent, but they need not. He accepts contingent representationalism but rejects essential representationalism—the mainstream position in the philosophy of perception. Consider words written on a page.

In themselves these marks aren't representationally significant. "Their representational power derives from the way they happen to be used by linguistic communities. But just those marks could easily have not been used in this way" (32). Papineau views conscious sensory properties as similar: such properties need not represent at all; they are representational only in the context of contingent external circumstances.

Chapter 2 is where Papineau argues against essential representationalism. This chapter is a real highlight—a deep, original, and rewarding critical discussion. Papineau considers and rejects various ideas that might be used to motivate representationalism (e.g., the argument from the transparency of experience). He also helpfully weaves together themes that we don't always find treated together in discussions of representationalism in the philosophy of perception. For instance, how general theories of *representation* interact with representationalism.

In chapter 3, Papineau clarifies and develops his positive view. Like the previous chapters, this is jam-packed with interesting discussion. I'll mention just two things. First, positioning. Papineau positions his view by aligning it with adverbialism (though *not* adverbialism about our ways of *talking* about sensory experience [83–84]). He also usefully compares his view to *qualia* views: these views typically hold that *some* sensory conscious properties conform to something like the qualitative model, but that these are additional to essentially representational properties. In contrast, Papineau denies that *any* conscious sensory properties are essentially representational (87).

Second, Papineau attempts to explain why the structure and organization of experience can lead one to believe that experience is inherently directed on external items. For instance, elements of experience alter as I move around the external world—just what one would expect if those elements were inherently directed on stable items out there (compare afterimages, which, as it were, move with me). But none of this, Papineau suggests, means that these elements of experience *really are* inherently directed on external items. Here Papineau acknowledges that there is an "intuitive pull" to the idea that experiences somehow involve external items (91). Naive realists and representationalists explain this intuitive pull by claiming that experiences inherently relate one to or represent such external items. They will thus be motivated to question whether Papineau's alternative explanation is adequate. Is this intuitive pull *really* intelligible if conscious sensory properties are purely qualitative, as Papineau suggests? I expect this aspect of the chapter to generate some critical discussion.

Finally, in chapter 4 Papineau develops an account of introspection of sensory experiences, discusses how Jackson's many properties problem for adverbialism (and related problems) don't apply to his view, discusses the link between the qualitative view and the phenomenal concepts strategy against the knowledge argument, and develops new ideas about rich or high-level

experience—among other things! This final chapter explores implications of the qualitative view and makes connections within and outside of the philosophy of perception.

What then of Papineau's negative arguments? (Note that Papineau develops various arguments against his key opponents. Here I have space to focus just on the *main* ones.) Let's start with naive realism. Papineau's main objection is the following.

[Naive realism] posits a kind of conscious difference, between veridical perceptions and matching misperceptions, which even the best-placed introspecting subjects would always be unable to discern.

This radical move threatens to loosen our hold on the very concept of consciousness itself. It is unclear what substance is left to the idea of veridical perceptions and matching misperceptions being *consciously* different, if this difference can *never* be apparent to subjects from the inside. (17)

Papineau seems to be arguing that the naive realist commits to a radical disconnect between consciousness and introspection—pushing our very concept of consciousness to breaking point. This, he suggests, is a consequence of their commitment to conscious differences between veridical perceptions and matching hallucinations. The target here is naive realist *disjunctivism*, which holds that the *conscious character* of a veridical perception of a yellow ball (say) is constituted by acquaintance with aspects of the external world, whereas the conscious character of a subjectively matching hallucination is different—it has a very different nature.

Papineau understands conscious character, standardly enough, in terms of what it is like *for a subject* to undergo an experience (16). We can understand, then, why it would be puzzling to claim that aspects of conscious character could be *in principle* introspectively undetectable. No doubt there is a lot more to say, but let's grant that there cannot be aspects of what it is like for a subject to undergo a sensory experience that are in principle introspectively undetectable.

The question, then, is whether committing to conscious differences between veridical perceptions and matching hallucinations as above entails that there are aspects of conscious character which are in principle introspectively undetectable? I will now argue, applying some ideas from French and Gomes 2019, section 6, that this is doubtful.

Call one's veridical perception of the yellow ball V, and one's matching hallucination H. Now let's invoke a *relational* model of the conscious difference between these experiences: it consists in the relation of being nonidentical that holds between the conscious characters of V and H. Now, suppose that we grant that this difference is introspectively undetectable. This just means that one

cannot know, purely on the basis of introspection, that V and H have nonidentical conscious characters.

However, this does not entail a radical disconnect between consciousness and introspection: it does not entail that there is any aspect of what it is like for one to undergo V, or H, that is not in principle available to introspection. For the relation of nonidentity between the characters of V and H is not an *aspect* of what it is like for one to undergo either H or V. Even if the best-placed introspector is unable to detect that the characters of V and H are nonidentical, they can still introspectively reflect on the character of V and on the character of H.

Suppose instead that we invoke a *difference maker* model of the conscious difference between V and H. Consider here Dretske's (2004: 9–10) discussion of change blindness. Your clean-shaven friend grows a mustache. The mustache *makes for a difference* between your friend at one time and your friend later. Similarly, the conscious character of V constitutively involves acquaintance with a mind-independent yellow ball-shaped object. This *makes for a difference* between V and H. And it *is* an aspect of what it is like for one to undergo V.

But is the conscious difference between V and H, understood in this way, introspectively undetectable? No! Just as you might see a difference maker in seeing your friend's mustache even if you fail to notice that they have changed, one might introspect an aspect of conscious character that makes two experiences consciously different, even if one cannot tell by introspection that these experiences are different.

So, the naive realist can agree with Papineau that we had better not radically disconnect sensory consciousness from introspection. But they can question whether the conscious differences that they admit between veridical and hallucinatory experiences really do amount to such a disconnect.

Consider, then, representationalism. Papineau's main argument here is that conscious sensory properties and representational properties are incommensurable. Now, Papineau understands representationalists to be committed to the idea that when we sensorily represent a yellow ball this involves a mental relation to abstract, uninstantiated yellowness—for how else could a representationalist plausibly understand sensory representation of a yellow ball in a case of hallucination where no yellowness is instantiated? He thus argues as follows.

- (1) Instantiations of conscious sensory properties constitute concrete facts with causes and effects.
- (2) Instantiations of representational properties constitute abstract facts that cannot feature as causes or effects.

Therefore,

(3) Conscious sensory properties are not representational properties.

Papineau defines concrete facts as "constituted by some spatio-temporal particular (or particulars) instantiating some first-order property (or relation).... They are localized in space and time and have causes and effects" (66–67). With this, and assuming that epiphenomenalism is implausible, (1) looks secure. But what about (2)? Papineau says that

relations between human subjects and properties as such, abstracted from their instances, do not amount to concrete facts. If I bear some mental relation to the property of yellowness as such, even though yellowness is not instantiated anywhere nearby, this cannot be the kind of concrete local fact that is capable of entering into causal relations. Since yellowness as such lives in the realm of abstract properties, this relational fact involves me, the abstract property of yellowness, and some mental relation joining the two. This relational fact is by no means hereand-now. (67)

Now, it might be that my sensorily representing a yellow ball is a matter of me, a spatiotemporal particular, instantiating a first-order property or relation—that of *being mentally related to (abstract) yellowness*. But that is not enough to make this fact a concrete fact unless it is in the causal nexus and spatiotemporally local ("here-and-now"). Indeed, Papineau claims that this fact (call it FACT) is an *abstract* fact, not a concrete fact. The question is whether Papineau has done enough to establish this.

My worry is that the main point that Papineau seems to offer for the claim that FACT is abstract is that it involves abstract yellowness. But why should the claim that FACT involves something abstract make FACT itself abstract? Does it make it nonlocal? This is not obvious, since despite involving abstract yellowness, FACT is still a matter of a spatiotemporal subject existing here-and-now instantiating a property here-and-now. Similarly, consider the position of FACT in the causal nexus. It seems perfectly intelligible that certain causes in the subject's environment and brain conjoin to produce an experience that is constitutively a relation between them and abstract yellowness. Similarly, it seems perfectly intelligible that FACT might cause that subject to behave in certain ways (e.g., to say, "Ah, yellowness, how I love thee"). Or, at least, it is not clear why Papineau would find such causal claims problematic. They do not involve, after all, the claim that the mental relation in question is itself a causal relation—which would be problematic on the assumption that uninstantiated yellowness is abstract. Only that the experience, constituted by some sort of relation between a concrete subject and an abstract property, is in the causal nexus.

These critical remarks about Papineau's central arguments are clearly not decisive, but merely invitations for further discussion of the very interesting lines of thought that Papineau explores in this excellent book.

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Thanks to Anil Gomes for discussion.

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Philosophical Review, Vol. 131, No. 4, 2022 DOI 10 1215/00318108-10136921

Alyssa Ney, The World in the Wave Function.

Oxford: Oxford University Press, 2021. 269 pp.

David Lewis famously quipped that he was willing to take metaphysical lessons from quantum mechanics only when it cleaned up its own act by providing interpretations or modifications of the formalism shorn of appeal to consciousness, irreducibly macroscopic notions, or outright instrumentalism. By the first decade of the twenty-first century, multiple approaches to quantum mechanics had been developed to a degree which met Lewis's challenge: dynamical-collapse theories, Bohm-style hidden-variable theories, and Everettstyle many-worlds theories, for all their respective problems and challenges, all offer ways of understanding quantum mechanics that metaphysicians can reasonably engage with. And so the last twenty years have seen a resurgence in the metaphysics of quantum mechanics, the question of what ontology and ideology is appropriate to a quantum universe. The metaphysics of quantum mechanics is not independent of the quantum measurement problem but does not coincide with it, either: there is a widespread view that adopting, say, the Everett interpretation still leaves significant ontological questions undecided, and conversely, a given answer to those questions might answer them for a dynamical-collapse theory too.

Wave function realism has become a leading contender for the metaphysics of quantum mechanics, particularly in the case of dynamical-collapse and Everettian approaches. The starting point is nonrelativistic quantum mechanics expressed in configuration space: mathematically, the subject matter of the theory is a complex function of 3N variables, evolving under the Schrödinger equation (perhaps interrupted by occasional stochastic collapses).