

Experience, Metaphysics, and Cognitive Science

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This chapter presents an opinionated account of how to understand the contributions of experience, especially with respect to the role of cognitive science, in developing and assessing metaphysical theories of reality. Below, I will develop a methodological basis for the idea that, independently of work in experimental philosophy focused on explications of concepts, contemporary metaphysical theories with a role for experiential evidence can be fruitfully connected to empirical work in psychology, especially cognitive science. My argument is not that cognitive science should *replace* the metaphysician's use of a priori theorizing and ordinary experience as a guide to metaphysical reality. Rather, we should *enrich* our perspective on a priori theorizing and ordinary experience as a guide to metaphysical reality by drawing on any relevant work in cognitive science. Compare: natural science should not *replace* a priori theorizing and ordinary experience as a guide to metaphysical reality. Rather, metaphysicians should use natural science to *enrich* their perspective on whether and how a priori reflection and ordinary experience can be used as a guide to metaphysical reality.¹ My methodological account of the role of experience in metaphysical theorizing is intended to delineate the way that cognitive science, like natural science, needs to be understood and interpreted by the metaphysician when developing metaphysical theories.

Most contemporary metaphysicians will grant that metaphysics, as a study of reality, has obvious connections to natural science, for example, when our metaphysical account of the nature of time connects to our scientific understanding of the nature of time. They might also grant that metaphysics, as a study of concepts, has obvious connections to empirical

¹ I am grateful to Elizabeth Barnes, Ross Cameron, Laura Gow, Christoph Hoerl, Dan Korman, Alyssa Ney, Ian Phillips, Simon Prosser, Jonathan Schaffer, John Schwenkler, Susanna Siegel, Ted Sider, and an anonymous referee for discussion.

psychology, for example, when experimental philosophers investigate our ordinary concept of time by experimentally evaluating our “folk” temporal concepts.

But the relationship of cognitive science to metaphysics as a study of reality is less well-understood. It is widely granted that metaphysics, as a study of reality, draws on ordinary experience as a guide to the nature of reality. If so, this suggests that there is an important role for cognitive science. If we use ordinary experience to fashion, evaluate or constrain our metaphysical theories about reality, we need to understand the deep connections between the nature of our cognitive response to the world, as discovered and developed by empirical work in psychology and cognitive science, and our use of experience to develop metaphysical theories of reality. These connections can be used to enrich and motivate a developed metaphysical theory of the intrinsic nature of reality, one that can fit an account of the metaphysical features of the world with our cognitive response to the world.

To understand how cognitive science and metaphysics can be related in this way, we need to think in methodological terms. Since metaphysics can be defined and pursued in many different ways, we also need to be selective in our focus. I'll focus on work in contemporary metaphysics that has the ultimate goal of developing theories of the nature of reality (where central concepts may be developed along the way). Broadly speaking, this approach to metaphysics can be thought of as the study of the nature of the world and the development of associated philosophical concepts we need to make sense of it. As part of this study, metaphysicians often seek to discover deep, general truths about the world, to discover facts about the world's fundamental nature or structure, and to explore features of the world and associated concepts that natural science either does not or cannot explore empirically. Contemporary work on causation, time, grounding, fundamentality, composition, symmetry, monism, modality, and many other topics is very naturally framed in this way, and there is—or should be—an affinity between the study of reality from this metaphysical point of view and the study of the world from the perspective of science. Each perspective can usefully inform the other.

Using this way of characterizing metaphysical theorizing, take a metaphysical theory of some part of the world to be a model of the nature of that part of the world. What do we draw on to develop our model? One thing we can draw on, when developing models, are a priori reflections. Such reflections may include reflection on language and concepts, both ordinary and philosophical, and our ordinary beliefs about the world, or what some term “common sense.” When skeptical scenarios of the brain in a vat sort are set aside, conclusions drawn from what seem to be ordinary Moorean truths about our ordinary experience can play an important role in shaping a metaphysical model. And often, metaphysicians draw on natural science, particularly physics, as well as the philosophy of physics, when information from natural science connects to the parts of reality that the metaphysician is theorizing about. As Tim Maudlin puts it, “contemporary metaphysics starts with the manifest image—the world as it appears to us—as the basis for its account of the nature of reality, and then refines that account in response to empirical scientific pressures as well as various theoretical pressures.”²

Some metaphysics involves theorizing about entities that seem less connected to experience and science, such as numbers, grounding, possibilities, and the like. There is a correspondingly larger role for a priori conceptual analysis when constructing such accounts. But some metaphysical theories involve models of entities that seem to connect strongly to what we think we (defeasibly) know from ordinary experience, such as theories of causation and time.³

Often, what we know from ordinary experience plays a significant role in how we develop and assess our metaphysical theories of these parts of reality.

But how? Well, as Maudlin notes, we start with the manifest image and refine it.⁴ But what, exactly, do we start with? Ideally, we'd start with our experience, understood as the ordinary truths we infer from what it's like to experience the entities we are theorizing about. Such ordinary truths are drawn from what we count as observational evidence for the nature of these entities. For example, when theorizing about causation, we might start with the commonplace observation that causation seems to involve making things happen, and note some paradigmatic instances of causation, such as Suzy's throwing a rock and shattering a window, or a cue ball knocking an eight ball into a corner pocket. Or, when theorizing about time, we might start with the observation that objects change as time passes, and that the present is experienced as being special or distinctively different from the past and the future. These experiences are manifest features that a good metaphysical theory should be able to make sense of. In other words, a good metaphysical theory of a feature of the world should be able to explain how that theory fits with our manifest evidence about that worldly feature, since our manifest evidence is a kind of observational evidence concerning that feature.

I. Moorean facts and manifest evidence

How we understand the role of manifest evidence in the evaluation of metaphysical theories is philosophically subtle and potentially controversial. The basic question for the metaphysician, and one that we'll get to after we get clearer on what we are supposed to be taking as observational evidence, is this: even if we (defeasibly) assume we are veridically perceiving when we experience the manifest, how is the character of our ordinary experience affected by contingent features of our cognitive processing and representation, and when does such processing and representation affect our judgment about the evidence that experience seems to provide?

As I suggested above, I'll frame this question in terms of our grasp of certain Moorean facts. While there are different ways to flesh out the connection between cognitive science and metaphysics, one way to understand the methodological issue concerns the evaluation of Moorean facts about the manifest.⁵ Moorean facts are hard to define precisely, but they are supposed to be ordinary atheoretical facts, accessible via common sense, that are somehow easily grasped or well known. David Lewis takes an especially strong stance: Moorean facts are *better* known than any metaphysical theory could be.

"We know a lot...We have all sorts of everyday knowledge, and we have it in abundance. To doubt that would be absurd...It is a Moorean fact that we know a lot. It is one of those things that we know better than we know the premises of any philosophical argument to the contrary."⁶

We may take Lewis to be emphasizing the importance of recognizing such facts, and accommodating them in one's metaphysics. We should also take on some reflections from Kit Fine:

"It may perhaps be conceded that the arguments of the skeptic appear to be utterly compelling; but the Mooreans among us will hold that the very plausibility of our ordinary beliefs is reason enough for supposing that there must be something wrong in the skeptic's arguments, even if we are unable to say what it is... Is there room for another form of

antirealism—and another account of philosophy's pretensions—that does not put them in conflict with received opinion? If there is, then it requires that we be able consistently to affirm that something is the case and yet deny that it is really the case. It requires, in other words, a *metaphysical* conception of reality, one that enables us to distinguish, within the sphere of what is the case, between what is really the case and what is only apparently the case. ”⁷

My concern here is with Moorean facts about experience, in particular, with features of the manifest image that are drawn from ordinary experience, which I'll describe as “Moorean observational evidence” or “Moorean observational facts,” and when context permits, simply as “Moorean facts.” So my concern is not with, say, the Moorean fact that I have two hands, with esoteric Moorean facts that we may somehow grasp independently of experience, or even with Moorean facts that do not directly concern experience.⁸ The Moorean facts that count as observational evidence are facts about the manifest image, that is, about how the world manifestly appears to species-typical individuals, and we attend to them when we construct our philosophical theories. This is so even if, ultimately, our metaphysical conception of reality implies that these Moorean facts are only *apparent* facts about reality, that is, in some sense, they are *merely* experiential.

For these reasons, I take Moorean observational facts to simply present themselves to us, and hold that any good metaphysical theory that draws on—or contradicts—our ordinary experience of the world must account for the Moorean observational facts concerning that experience. We can grant that such presentations occur even while endorsing a metaphysical or scientific theory that holds that such ordinary experiences are illusory or are otherwise in error with regard to certain sorts of inferences about the intrinsic nature of reality.

Obviously, care must be taken to determine, exactly, for any particular feature of experiential reality, what Moorean observational facts we are supposed to be grasping. But even once these Moorean facts have been identified, further questions arise about how they are to be interpreted in our metaphysical theories.

One way to interpret claims about Moorean observational facts is that they concern a kind of coarse-grained phenomenological character concerning what we take the worldly feature to be like, given our experience of the manifest. This is how I understand the way we are to draw on the manifest as evidence for a particular metaphysical theory of the nature of the world. My approach is in sympathy with the approach taken by Horgan and Timmons (2011) in their characterization of the coarse-grained phenomenology of free will, that is, of one's experience as of being the source of choice and action. Such coarse-grained phenomenological facts are Moorean facts: to associate more fine-grained facts with them requires further philosophical interpretation and argument.⁹

One way we might characterize our assessments of Moorean facts concerning manifest features is to think in terms of ascribing contents to our experiences. As Susanna Siegel writes, “the central motivation for [ascribing contents to our experience] is phenomenological. When you see things, they look to you to be a certain way. And when they look to you to be a certain way, they look to have certain properties... the key transition ... moves from ‘X looks to have property F’ to ‘The experience of X's having F is accurate only if X has F’.”¹⁰

If we like this approach, we can characterize our assessment of the coarse-grained phenomenological character concerning what we take the worldly feature to be like by ascribing coarse-grained contents to our experiences. But we must be careful not to build in tendentious metaphysical theses from the outset. For example, when considering the nature of our temporal experience, we might agree that we have experiences *as of* time's passing, and that we should take the content of our experience as of time's passing to be accurate only if it is, phenomenologically, as if time passes. Such an approach to the contents of experience assigns contents that reflect the coarse-grained phenomenological nature of the experience. For example, in the temporal case, the content reflects the coarse-grained phenomenological character of the experience as of time's passing.¹¹

Contrast this to a stronger interpretation of the metaphysical contents we could ascribe to experience. In particular, one might argue, for some particular experience, that recognition and description of the manifest feature involves the ascription of fine-grained accuracy conditions or fine-grained philosophical contents to our experience. One could then defend stronger metaphysical theses about the contents of an experience based on the nature of that experience. So a metaphysician might argue that we should ascribe rich philosophical contents to an experience, such that the relevant experience can only be accurate given certain strong metaphysical theses about the world. In other words, we can describe an experience in terms of its coarse-grained phenomenological character and ascribe a correspondingly coarse-grained content to it, or we can make a richer and more fine-grained philosophical claim about that experience and assign a richer philosophical content to it.

For example, an A-theorist about time may make the uncontroversial claim that we have experiences *as of* time's passing, and that the experience as of time's passing *is* or *looks to be* an experience as of time's passing. From this point, the A-theorist could insist on understanding such claims in a fine-grained, perceptually factive way, as an experience *of* time's passing, and then defend her view of the nature of time as A-theoretic by arguing for the stronger, fine-grained claim that the experience as of time's passing is accurate only if *time passes*. But such an argument is not licensed simply by the recognition of coarse-grained Moorean facts about our experience as of time's passing: it requires further argument and defense.

Similarly, Horgan and Timmons (2011) defend a coarse grained characterization of the phenomenology of agency as of representing one's own self as the source of one's choices and actions and as one's having the ability to do otherwise, but contrast this with a more fine-grained, richer philosophical interpretation of the phenomenology. The fine-grained, richer interpretation that they reject is one that takes the experience to have libertarian contents involving the falsity of determinism. As they point out, it is not part of grasping the Moorean observational fact about free will that, say, we grasp some sort of philosophical content about the libertarian nature of the world. If our Moorean evidence consists only of coarse-grained Moorean observational facts, the fine-grained, richer interpretation of our experience involves a philosophical injection into the phenomenology, one which requires further metaphysical argument.

"...[T]heory-ladenness might intrude itself not in the use of the phenomenological descriptions themselves, and not in the aptness of these descriptions in characterizing the phenomenology of freedom, but rather in one's construal of the intentional content of the pertinent phenomenology as described—its satisfaction conditions... [and] such

interpretations might misconstrue the intentional content of the phenomenology, its representational import.”¹²

So we must be clear that the ascription of fine-grained philosophical contents to experience, such as the ascription of incompatibilist contents to experience as of free action or the ascription of temporal passage contents to experience as of change, requires more than mere Moorean observational evidence. Such ascriptions will require additional evidence or additional philosophical argument and interpretation. In general, by itself, Moorean observational evidence is usually insufficient to support claims about the metaphysical contents of experiences that go beyond the coarse-grained phenomenology.¹³

The Moorean observational facts then, concern certain (philosophically underspecified) phenomenological characters that our experience consists in. Recognition of these facts, when enriched with additional evidence and further philosophical interpretation, can be taken to support particular philosophical theories, and views that suggest such experience is illusory or wrong in some way become a kind of error theory about the features of reality that these experiences purport to represent. What matters here is that the metaphysical error theory still needs to provide an adequate explanation for why we make the error, for an explanation is needed to show why our Moorean observational evidence cannot support further metaphysical inferences about the nature of reality.

An error theory about such features which gives no explanation for why the world appears the way it does leaves an explanatory gap. Compare a simple error theory about our natural, spontaneous deontological moral judgments that provides no explanation for why we are in error, to a developed error theory that explains how such deontological judgments can stem from adaptive human evolutionary behavior.¹⁴ Or compare simple error theories about our natural judgments about change or free action to more developed views that give alternative, scientifically justified accounts of how such errors arise. Developed explanations provide much stronger support for error-theoretic interpretations.

There is a different approach one could take. One might adopt a more deflationary realism, taking metaphysical reality to consist merely in what is required for the accuracy of the coarser-grained experience, and thus restricting our claims about metaphysical reality to what we can glean from the coarse-grained phenomenology of experience. For example, one might hold that time is, metaphysically, simply whatever it is in reality that makes our experience as of time’s passing accurate, or that the causal relation is simply the feature of reality that satisfies the accuracy condition for our experience as of one thing productively producing another.¹⁵ This approach takes our recognition of Moorean observational facts to commit us to a certain sort of minimal metaphysical realism. I’ll set the deflationary approach aside in what follows.

2. Case study: time and temporal experience

To explore this new way of understanding how metaphysics can connect to cognitive science through the role of experience, it will be helpful to look at a particular example. There is not yet an established consensus regarding the role of Moorean observational evidence—much less the role of cognitive science—in the assessment of metaphysical theories of reality. However, an examination of the emerging debate over how temporal experience relates to the nature of time will help to delineate the central approach.

Debates about the metaphysics of time often focus on the metaphysical nature of the present and of temporal passage, that is, on the nature of dynamic, intrinsic temporal change. Our experience of the present may suggest that the present has a special ontological status as compared to the past or the future. Temporal passage also seems to be connected to our experience, for in some sense, time seems to pass, and it seems to pass at a certain rate and in a certain direction.

Few would deny the existence of Moorean observational facts as of dynamic change and temporal direction. It seems to us as though the world changes all around us, in many ways, and in a directed fashion, and detecting this change involves our experience as of the dynamic world around us. Green leaves turn red and then brown. Evenings darken into night. Children grow up and have children in turn. As with the phenomenology of agency, we can grasp the Moorean observational fact that we experience the world as changing. This fact about change concerns our temporal phenomenology, and embedded in this experience as of change is an experience that can be described as an experience as of time's passing.

Some describe their Moorean observational evidence in terms of temporal order and the direction of change. For example, Hugh Mellor says: "First, we observe temporal relations between events, e.g., that one is more or less later than another. This is not in general a matter of theory, let alone of a theory of tense. Nothing is more observable than temporal order. We see it for example when we see something move. Suppose I see the second hand of a watch going round clockwise. This means that I see that the event of it passing the numeral '1' occur just earlier, not just later, than the event of it passing the numeral '2.'"¹⁶

Many A-theorists have argued that temporal passage is necessary for any sort of real change. The A-theorist often builds a theory of time that is centered on an ontologically fundamental property of temporal passage, and argues that only the A-theory captures real change. Opposed to the A-theory is the B-theorist, who argues that there is no ontological property of temporal passage, and that it is not necessary for time to pass to have real change. An important part of this dispute centers on the nature of temporal experience: does our experience as of change give us a grasp on the nature and existence of real change, and by extension, on temporal passage?

Of course, grasping the Moorean observational fact that the world changes does not entail that we grasp some sort of detailed A-theoretic proposition about temporal passage, such as the proposition that there exists dynamic temporal passage. Nor does accepting that we have experiences as of time's passing entail the claim that our experience as of time's passing is accurate only if time passes. This is just to emphasize what should be obvious, given our discussion above, that recognizing Moorean observational facts concerning change and temporal passage does not commit one to accepting the A-theory or rejecting the B-theory right out of the gate. Instead, the situation is dialectically more complex: we need to develop a philosophical theory of time that, in addition to giving us a metaphysical account of the nature of time, accommodates and explains these Moorean observational facts about our temporal experience.

The debate over the ontology of time addresses the question of whether such facts have implications for a metaphysics of time. Many A-theorists argue, either implicitly or explicitly, that the Moorean observational facts provide some observational evidence for the truth of a range of views about the nature of time, such as the view that there exists dynamic temporal

passage, and the stronger view that takes such passage to be metaphysically and physically fundamental. B-theorists usually defend an error theory of temporal passage, arguing that real change is simply the replacement of properties at different times, and suggesting, either explicitly or implicitly, that our experiences as of temporal passage and as of dynamic change are not due to grasping some sort of ontological property of temporal passage.¹⁷

When describing the debate between A-theorists and B-theorists, I used the phrase “either explicitly or implicitly” because, historically, the precise role and interpretation of Moorean observational evidence has been poorly understood in these discussions. While the importance of experience in assessing intuitions is clearly recognized in the debate over the nature of time (much as it is recognized in the debate over the nature of causation), the particular details concerning the contributions of such intuitions has only recently begun to receive scrutiny. There is controversy about what, precisely, arguments that draw on temporal experience bring to the discussion concerning the metaphysical nature of time.

In particular, there are deep and interesting philosophical issues here with regard to the nature and structure of the metaphysics of temporal experience. For example, recent and forthcoming work brings out how important and difficult it is to work out just what our phenomenology as of nowness and change involves, and which substantive philosophical propositions about the metaphysics of time such experience can support. Questions about what, exactly, our experience as of passage is supposed to involve, about what the ontology of temporal passage is supposed to be, whether it is possible to have experiences that support any interesting varieties of A-theoretic ontologies, whether our experience as of passage has a structure that provides support to a metaphysics of time centered on the existence of dynamic temporal passage, and other examinations of the nature and structure of temporal experience are part of a thriving debate.¹⁸

Work that explores connections between cognitive science, temporal experience, and temporal metaphysics, and that is directly relevant to developing metaphysical perspectives on temporal experience includes Grush (2007, 2009), Callender (Forthcoming), Paul (2010, 2014), Merino-Rajme (2015), Balashov (2005), and Lee (2013, 2014a, 2014b). Discussions in the cognitive science literature that may be relevant to philosophical concerns involving duration judgments, the continuity of temporal experience, temporal illusions and the underlying neurobiological mechanisms involved in temporal processing and assessment include Allman et al. (2014), Eagleman (2008), Andrews and Perves (2005), VanRullen and Kock (2003), Arstila & Lloyd, eds. (2014).¹⁹

3. Undercutting

Once we have established what the Moorean observational facts are and the way we wish to interpret them, how are we to regard their methodological significance for metaphysical theorizing? The significance derives from the subtleties concerning the way our experience is constructed, even after we grant that appearance and reality can come apart. The subtleties affect the way that metaphysicians should draw on experience as a guide to reality. As Alvin Goldman points out:

“Like other types of philosophers, metaphysicians appeal extensively to intuition, experience, and commonsense belief to guide their path in metaphysical theorizing. Most cognitive scientists, however, contend that intuitions are massively influenced by our cognitive system—or “cognitive engine,” as I shall call it. They are the products of complex

computational operations, or neural circuits, which have formed over eons of evolutionary time. The cognitive outputs are rarely if ever simple read-outs of sensory inputs. Instead, they tend to be artifacts of "biases" or "constraints" wired into our cognitive equipment. In seeking to characterize the world itself, therefore, we had better not ignore the features of the complex systems that mold and shape our perceptual and cognitive experience."²⁰

So metaphysicians must attend to the unobvious ways that facts about cognitive processing should affect how we interpret our experience, and thus, to what we can regard as experience-based evidence. The issue concerns the level of evidential support that Moorean observational evidence should be thought to provide to our metaphysical theories about reality.

In particular, because this observational evidence might be *undercut* by better evidence, we must attend to whether and how Moorean observational evidence for a metaphysical theory about the world could be undercut by empirical and theoretical work in the psychological sciences. If the observational evidence is in fact undercut, then it is outweighed by better evidence.

An example drawn from more familiar reflections on the importance of natural science might help. Few would deny that observational evidence drawn from ordinary experience can be undercut by physics-based evidence: you watch the pool shark hit the cue ball, which knocks the eight ball into the corner pocket. This provides Moorean observational evidence that hitting the cue ball caused the eight ball to roll into the corner pocket. But, unbeknownst to you, physicists determine that unseen physical forces stopped the cue ball from actually transmitting momentum to the eight ball. Moreover, these forces pulled the eight ball into the corner pocket. Once you discover from the physicists that these unseen physical forces caused the eight ball to roll into the corner pocket, then, even though it seemed to you as though the cue ball hitting the eight ball was what caused the eight ball to roll into the corner pocket, you now know that you need to pay less attention to this evidence. In this way, evidence for a claim was undercut by evidence that supports an alternative possibility: your Moorean observational evidence that the cue ball knocked the eight ball into the corner pocket was undercut by your scientific evidence about the real cause of the event.

The point is that exactly the same possibility can arise with cognitive science: Moorean observational evidence can be undercut by cognitive science-based evidence. So we need to consider the relevant cognitive science when we evaluate the quality of our Moorean observational evidence, because the science may undercut it. Assessments of various metaphysical hypotheses about reality and the overall merits of competing metaphysical theories need to reflect these possibilities.

A simple example: you watch the pool shark hit the cue ball, which knocks the eight ball into the corner pocket. This provides Moorean observational evidence that hitting the cue ball causally produced the eight ball's rolling into the corner pocket. But in the world of this example, cognitive scientists have determined that all of our experiences as of causal production are illusory: our experiences as of causal production are not generated (in the correct, "non-deviant" sense) by detecting the causal relation or its associated properties. Instead, our experiences as of causal production are always illusions; mere byproducts or spandrels of cognitive processing.²¹

Once your local cognitive scientist fills you in on these facts about how we experience the causal launching of the eight ball, then your Moorean observational evidence for the claim that the cue ball *causally produced* something, namely, that it causally produced the event of the eight ball rolling into the corner pocket, seems to have been undercut by your psychological evidence that you are experiencing an illusion.²²

Now, the example is simplistic, since it is simply a toy model of the way that cognitive science can play a role in metaphysical theorizing. Whether your observational evidence actually *is* undercut will depend on whether you have some other good source of evidence for the existence of causal production in this case. For example, you might have good evidence that the illusions in this case can be reliably correlated with the existence of the right sorts of causal properties or causal productivity, perhaps because your experience of causal launching is correlated with the existence of the causal relation via a cause they have in common. Or perhaps you have some completely independent source of evidence that supports your Moorean observations. Or you might have a metaphysical thesis that challenges the psychological evidence in a way that blocks its ability to undercut your observational evidence. Whether your particular observations and your metaphysical theory of causation as a whole are threatened will depend on how such competing claims on evidence are adjudicated, whether you have other sources of evidence, on your particular metaphysical views, and on a holistic assessment of the merits and demerits of competing metaphysical theories, including the ways that your competitors might also be undercut by the psychology. But none of this downgrades the importance of knowing the science, both natural and cognitive, behind your Moorean observational evidence.

Similarly, Moorean observational evidence for the philosophical claim that time passes might be undercut by alternative theses about the source of our experiences as of directed motion and change. The A-theorist who draws on Moorean observational facts about our experience as of dynamic change as evidence, in support of the view that primitive dynamic change or passage is part of the temporal ontology, may have his evidence undercut. One way this could happen is when a B-theorist supplies a cognitively rich alternative explanation for the phenomenal character of our experiences as of passage, such as an explanation that shows how such experiences should be interpreted as straightforwardly illusory, or an explanation that gives a plausible account of how such experiences could arise in the absence of primitive passage.²³ Other ways to challenge the A-theorist involve endorsing metaphysical theses that do not rely on support from experience or rejecting the idea that the observational facts are relevant.²⁴

The reason that undercutting is such a salient possibility for the metaphysician is because ordinary experience is not just a collection of raw, unadulterated appearances that we have in response to the world—they are not to be understood, at least not without a good deal of high-level theorizing, as perceptions that are had in some direct or unprocessed way. Experience is constructed, and some of the highly constructed features of our experience are not a priori detectable as such, much less obviously recognizable as constructed. Since our experiences may embed persistent modular illusions, can stem from certain kinds of cognitive bias, and in general may arise from sources that do not support the inferences we'd like to draw from our discovery of Moorean observational facts, we need to understand how such experiences are constructed in order to understand the range of possible sources of our experiences and whether or not these Moorean facts give us observational evidence about the

nature of reality. In short: we need to know whether the existence and character of such facts should be regarded as anything more than a mere byproduct of cognitive processing.

4. Related approaches

Others have been developing ideas along similar lines. In her work on essentialism, Sarah-Jane Leslie frames the issue in terms of cognitive bias. She argues that, in fact, work in cognitive science on psychological essentialism suggests that the intuitive power of Kripke and Putnam-style examples supporting essentialism about natural kinds is due to a deep-seated, early-developed and, on her view, misleading cognitive bias. If such intuitions are supported by a misleading cognitive bias, then we should not uncritically treat them as a source of evidence about the ontology of essence. Instead, we need to look for independent evidence in support of these ontological views.

“It is common practice in philosophy to ‘rely on intuitions’ in the course of an argument, or sometimes simply to establish a conclusion. One question that is therefore important to settle is: what is the source of these intuitions? Correspondingly: what is their epistemological status? Philosophical discussion often proceeds as though these intuitions stem from insight into the nature of things—as though they are born of rational reflection and judicious discernment. If these intuitions do not have some such status, then their role in philosophical theorizing rapidly becomes suspect. We would not, for example, wish to place philosophical weight on intuitions that are in effect the unreflective articulation of inchoate cognitive biases.”²⁵

Tying Leslie’s approach to my own, we can see how to understand this in terms of undercutting. Research in developmental psychology on psychological essentialism may give us evidence that our intuitions about natural kind essences are merely the result of cognitive bias. If so, this undercuts the evidence for natural kind essentialism that such intuitions can be thought to provide. The evidence that is undercut is whatever evidence it was (Moorean, perhaps?) that the intuitive power of the Kripke and Putnam-style examples seemed to provide.

Alvin Goldman (forthcoming) also raises these issues with regard to the general methodological issue of the role of cognitive science in our evaluation of metaphysical theories about reality. “In seeking to characterize the world itself ... we had better not ignore the features of the complex systems that mold and shape our perceptual and cognitive experience. This means paying attention to the deliverances of cognitive science, our best if not exclusive source of information about the underlying systems.”

His point, in broad outline, is very much in the spirit of the undercutting approach. We differ in our framing, since, while I do it in terms of Moorean observational evidence and undercutting, he frames the methodological question in terms of a Bayesian template for updating our subjective probabilities attached to metaphysical hypotheses. But the general idea is the same.

For Goldman, if we think of our experience of the world as supplying us with a subjective prior for some metaphysical hypothesis, we can then use findings from cognitive science as well as other sources to evaluate the evidence we have for updating our prior probability for the truth of the metaphysical hypothesis to some posterior probability. Here, instead of considering the possibility that evidence from cognitive science might undercut our Moorean

observational evidence, we take the Moorean observational evidence to be part of what we draw on when we assign our prior probability to the metaphysical hypothesis.

Goldman is clear that drawing on cognitive science is not supposed to give us some sort of straightforward debunking argument. Instead, the idea is that we must consider total evidence: "I do not mean to ... suggest that such findings would be decisive for settling the metaphysical dispute. I only suggest that suitable cognitive scientific findings can force a rational metaphysician to adjust his/her credences in light of those findings. Such findings will be relevant evidence for credal adjustments vis-a-vis the metaphysical hypotheses in question."²⁶

5. The metaphysics behind the appearances

Given the role of experience in the development of metaphysical theories, cognitive science, like natural science, can be deeply relevant to metaphysical theorizing about the world. Just as metaphysicians have realized that physics and other natural sciences give us information about reality that we should attend to, metaphysicians must realize that cognitive science can give us information about reality that we should attend to.

Obviously, *some* of our ordinary experience, naively interpreted, gives us evidence for our metaphysical theories of the world. The question that we need to attend to, however, when considering metaphysical debates, is which features of our experience of the world provide evidence for which metaphysical theories.²⁷ Matters here are subtle, and I have tried to represent this with my characterization of the methodological issue in terms of Moorean observational evidence and the role of cognitive science in weighing total evidence and the overall merits of competing theories.

It is also important to see that we should not take the relationship between cognitive science and metaphysics to be one-way. As I make clear at the start of this essay, our understanding of the ramifications of cognitive science for metaphysics will rely, in part, on metaphysical (and epistemological) interpretation.²⁸ The process of philosophically engaging with science is a two-way process, where philosophers interpret what the best science, including the science of experience, tells us, and then critically engage with that science to fashion fully informed philosophical positions.²⁹

When we make inferences about the mind-independent nature of the world after inspecting our experience, or when we perform the Maudlin task of refining and interpreting the manifest image while drawing on our best science, we should not assume an uncritical grasp on reality that we don't have. What we should do is recognize what our Moorean evidence is, critically accept it as *mere* Moorean evidence, and then assess this evidence within the context of suitably scientifically informed metaphysical judgments about the world.

For example, as I discussed above, different metaphysical theories about time involve the interpretation of Moorean facts about temporal experience in variously different, metaphysically sophisticated, ways. A-theorists about time may argue for an interpretation of our Moorean evidence about change that supports the thesis that only dynamic passage can give us real change. This requires the metaphysical claim that real change must be intrinsically dynamic, and that the B-theoretic account of change is mere temporal variation. That is, the A-theorist argues for the metaphysical claim that X's being (tenselessly) P at t_1 and X's being (tenselessly) Q at t_2 , is not real change, but merely variation across temporal

location, analogous to mere spatial variation, which is simply X's being P at s₁ and X's being Q at s₂: for example, a poker's being hot at one and cold at another. Or, defenders of productive theories of causation may argue for an interpretation of our Moorean evidence that supports the view that, in reality, causation requires the exchange of conserved quantities like momentum, which makes use of the metaphysical thesis that causation is a productive, physical relation between spatiotemporally located events.

Such metaphysical views are only fully developed once all of the relevant evidence has been assessed. If we, as metaphysicians, ignore relevant evidence from cognitive science, we risk leaving ourselves open to the possibility that our evidential support for a claim about the nature of a feature of reality F, drawn from observational evidence that seems to involve appearances involving F, can be undercut by alternative explanations of the source of our experience.

The idea is not that simply bringing in facts about the science of the production and nature of cognitive processes, or about the process-dependence of our experiences, is enough to debunk a metaphysical theory. That would be far too strong.³⁰ Rather, because experience is the product of a significant amount of cognitive processing, we must know as much as we can about that processing in order to accommodate these facts in our overall interpretation of our observational evidence for a particular metaphysical theory of reality. Belief and theory formation should be sensitive to the truth, and the truth may be that certain features of experience are mere spandrels. Our metaphysical theories must be fully cognizant of such possibilities—or they risk being undercut. Just as the metaphysician must attend to our best natural science in order to be clear on how known physical facts can bear on our theories of metaphysical reality, she must attend to our best cognitive science in order to be clear on how known experiential facts can bear on our theories of metaphysical reality.

¹ Of course, sometimes natural science will tell us something about metaphysical reality that trumps a priori reflection and ordinary experience. And sometimes cognitive science will too. See Paul (2012) for a more nuanced discussion of the relationship between metaphysics and natural science.

² Maudlin (2007, 127).

³ Interesting divisions come up here in some debates. For example, Korman (2014) argues that some of our reasons for believing in composite objects come from experience, while others would argue that our reasons are purely a priori. Similar issues come up in debates about the nature of time, about essence, and could probably be raised in many other places. All of this serves to highlight the fact that there is an interesting and sometimes tendentious role for experience in metaphysical theorizing.

⁴ Maudlin (2007).

⁵ It can be useful to frame the point in other ways. Paul (2010b) discusses the methodological issue in terms of inference to the best explanation. Goldman (2015) explains the idea in terms of credences based on evidence from ordinary experiences, beliefs and judgments about the external world, and Leslie (2013) presents the idea in terms of our ordinary intuitions about the nature of things. Paul (2014) uses undercutting and talks of phenomenological inferences rather than Moorean observational evidence. In all of these discussions, in essentials, the importance of

ordinary experience to metaphysical theorizing is the target, and the methodological claim that this establishes a role for cognitive science is the same.

⁶ Lewis (1999, 418).

⁷ Fine (2001, 3).

⁸ Can there be non-observational Moorean evidence? I'm open to this. Some might think that we have non-observational Moorean evidence for the existence of numbers or perhaps even composite objects. (Thanks to Elizabeth Barnes for discussion.)

⁹ Paul (2010b, 2014) takes a similar approach.

¹⁰ Siegel (2014, 61). For discussion and defense of the content view see Siegel (2010 Chapter 2).

¹¹ Another way we might approach the issue would be to distinguish between different ways of talking about experience. So we could distinguish talk about an experience *as of time's passing* from talk about an experience *of time's passing* and hold that the former carries with it no commitment to the veridicality of the experience whereas the latter does. (I'm indebted to Christoph Hoerl for this suggestion.)

¹² Horgan and Timmons (2011, 188). Also see Horgan (Forthcoming).

¹³ I do not endorse controversial claims involving the ascription of fine-grained philosophical contents of presentness or passage to experience. Skow (forthcoming, chapter 11) criticizes arguments that take our experience to have the content that there is "robust" passage: I find his arguments interesting but I doubt that anyone actually holds the views he is criticizing. Cameron (forthcoming, chapter 1) has an excellent discussion of the debate over the relation between consciousness and temporal experience.

¹⁴ See Street (2006) and Joyce (2007).

¹⁵ See, for example, Pautz REF?. Thanks to Ian Phillips and Laura Gow for discussion here. I see several ways someone could endorse this approach: for example, you might have very limited metaphysical aspirations, seeking only to develop a metaphysics of experience. Or you could be focused on exploring ways to extend the content view to a range of metaphysical perceptions.

¹⁶ Mellor (1985, 27).

¹⁷ See, for example, Prosser (2012).

¹⁸ See, for example, Dainton (2010, 2012), Cameron (forthcoming), Hoerl, C. (2009, 2014), Lee (2013), Le Poidevin (2007), Phillips (2014), Merino-Rajme (2014), Prosser (2012), and Skow (forthcoming).

¹⁹ Recent work by Danks and Rose (2012, 2013) do an exceptionally nice job of clarifying possible connections between metaphysics and cognitive science.

²⁰ Goldman (2015). A different, but related issue concerns our evidential assessment of our experience. Schwitzgebel and Cushman (draft) brings out how important it is to be aware of possible evaluative bias (for example, framing effects and presentation order of cases might affect judgments), highlighting the need for care in determining what counts as Moorean evidence and what doesn't.

²¹ Siegel (2009) argues that in launching cases like these our visual experience represents causal relations between events, where this means that our visual experience represents that there is causation between these events. For Siegel, such an

experience has certain accuracy conditions. However, this is a much stronger thesis than what the metaphysician should start with, which is just the claim that you have an experience as of the cue ball causally producing the eight ball's rolling into the corner pocket. The latter claim only relies on having a coarse-grained phenomenology "as of" causation, which is the Moorean fact metaphysicians can agree on. Whether our visual experience also represents *that there is causation* will require further discussion.

²² In particular, the *launching* illusion discovered by Michotte (1963), and exploited by video games, films, etc. Note, however, that the issue concerns the illusion of *causal production*, not causation *simpliciter*. Causation can be understood as a refined sort of counterfactual dependence, or in other, "nonproductive" ways. The launching illusion gives us an experience as of a type of causation, productive causation, hence the description in terms of "launching." For an excellent discussion of the illusion and its role in developing our concept of actual causation, see Danks (2013).

²³ I discuss these issues in detail and sketch possible alternative explanations in Paul (2010b, 2014).

²⁴ See Prosser (2012), Hoerl (2009, 2014), Cameron (forthcoming), Skow (forthcoming), and Merino-Rajme (2014).

²⁵ Leslie (2013, 1).

²⁶ Goldman (2015).

²⁷ See Korman (2014).

²⁸ I've argued for this in Paul (2010a, 2012, and 2014). Schaffer (forthcoming) argues for a similar view. Schaffer and I differ somewhat on how heavily one should weigh cognitive science vis-a-vis metaphysics, especially with regard to particular cases, but we are in broad agreement regarding the methodological point that metaphysical assessment of the cognitive science is an important part of the overall interpretative process.

²⁹ Paul (2012).

³⁰ For debates about the role of debunking in explanations, see, for example, Street (2006), White (2010) and Korman (2014).

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