Understanding in Science and Philosophy

Michaela M. McSweeney[1]

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1. Introduction

I'm interested in a certain kind of understanding, which we might call "grasping" or "phenomenal understanding". It's the kind of thing, we might think, that happens to Mary when she steps out of her black and white laboratory and sees a red rose for the first time—she phenomenally understands what it is for a rose to be red in a way she did not before, even if she gains no new propositional knowledge; she grasps redness, or the redness of the rose, for the very first time.[2]

I'm also interested in what we are doing when we do philosophy, and why. I am going to try to suggest that we have multiple distinct aims in doing philosophy, that sometimes they conflict with one another, and that we are typically not clear enough in distinguishing them.

I will first quickly outline what I think grasping is, and suggest that it is both among our basic aims of inquiry and not essentially tied to belief, justification, or knowledge. Then, I will briefly look at some places in the metaphysics of science in which it looks like our aim of grasping and our aim in knowing—or perhaps more specifically in knowing the explanations for things—might seem to conflict. I will use this conflict to support a broader view: sometimes, the thought goes, we might develop philosophical views or theories—and even endorse them—in order to better grasp them, regardless of whether we genuinely believe them, or are justified in so doing. At other times, we may be aiming at propositional knowledge. These aims can come apart, and perhaps even systematically come apart. A pluralism about the value of those aims doesn't entail an "anything goes" attitude with respect to how we think about what philosophical views to put forward, defend, or endorse, however—far from it. Instead, it suggests that what counts as a virtue of a philosophical theory depends on our aims in espousing it. If philosophers have distinct aims at the meta-level, it will be hard for them to engage in joint theory evaluation at the first-order level. At least all three of theoretical virtues, evaluative judgments of philosophical views, and what attitudes we ought to have towards the views we ourselves espouse will vary according to our guiding metaphilosophical aims.

2. Grasping, Understanding That, and Understanding Why

Michael Strevens (2008, 2013), whose view is useful for framing my own discussion here, defends a view of scientific understanding on which it has two components, explanation and grasp (2013: 510): "An individual has scientific understanding of a phenomenon just in case they grasp a correct scientific explanation of that phenomenon." And he has a similar notion of grasping in mind to my own: grasping is something like *direct mental apprehension* or *understanding that* (2013: 511). His view is

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[2] For discussions of this concept of grasp see David Bourget 2017 and my ms. For discussions of various views that don't put things this way but invoke related ways of thinking about the Mary argument, see Nida-Rümelin and O Conaill 2019.

that grasping is something over and above knowing. So it is not sufficient for scientific understanding to know what explains what. In what is to come, I am going to part ways with Strevens, but it is useful to emphasize the way we both think of grasping as similar to *understanding that* (though both of us also think of it as non-factive, and thus perhaps this locution not quite capturing it).

To understand that something obtains is, at least metaphorically, to be able to *see* it for what it is. Consider the proposition <I have a proto-migraine right now>. It is unusually easy (for me—unusually hard for those who haven't experienced proto-migraines!) to grasp this proposition—it is unusually easy for me to phenomenally understand *that* I have a proto-migraine right now—but (perhaps) unusually difficult for me to know *why* I have a proto-migraine right now (scientists don't really know very much about why migraines happen at all, what causes them, what the mechanism behind them even is, etc.; but certainly *I* don't know those things, and my excellent grasp on my own proto-migraine doesn't help me know any of them).

So, pre-theoretically, grasping is something like phenomenal understanding, understanding that, or, as Strevens says, direct mental apprehension. The correct account of what this really is, though, is hard to pin down. David Bourget (2017) argues that grasping must be *phenomenal.* Elsewhere (ms), I argue for an account of grasping on which we grasp through (often iterated) higher-order mental acts of *fulfillment. (*The idea of fulfillment comes from Husserl (e.g. *Logical Investigations* 6); what I mean by it is extremely close to what he does, though our aims are quite different and some of the details about *how* and what we can fulfill are a bit different.) The details aren't important here, so I will just run through the view quickly: there are two kinds of mental experiences we have all the time. First, we've got *presentational* phenomenal experience—by which I just mean experience where something seems to be presented to us. Visually imagining, hallucinating, dreaming, and seeing are all presentational. But so is smelling an apple pie or hearing a piece of music (or olfactorily or auditorily hallucinating or imagining either of those things). But we've also got *thought* that happens roughly propositionally, or abstractly, and, if it intrinsically involves a kind of cognitive phenomenology, it seems, at least to me, to be unique (i.e. it's not *like* sensory phenomenology).

Fulfillment is a higher-order mental state that matches the object of our propositional thought with the object of our presentational experience. Consider trying to make sense of the relative size of the sun and the earth. (This example is partly drawn from Bourget 2017, though I use it slightly differently than he does.) We can think about the mathematical proportions here; but notoriously, the proportions are pretty hard for us to understand without some kind of model. There are different ways we can "create' this model. Some of us might be able to do it via simply being very good at accurate proportional visualization (so someone with an extremely good understanding of large numbers, and also an extraordinary ability to visually imagine, might simply be able to create a model "in her head" to help herself understand what it really is for the sun to be x times larger than the earth). But most of us cannot. What we *can* do is look at a physical to-scale model of the relative size of the sun and the earth. But looking at the model is not enough to grasp the relative size of the sun and the earth; we need to have the information *that the model is modeling the relative size of the sun and the earth.* When we use models, we often have this information explicitly, and so the state of fulfillment is almost *presented* to us. Imagine looking at a model at a science museum with a plaque attached to it that says "this is a to-scale model of the relative size of the sun and the earth". As we read the text, we simultaneously have the phenomenally presentational experience of looking at the model, and we synthesize the two to help us grasp what it really *is* for the sun to be x times larger than the earth. It is that synthesis—which involves "seeing" both our presentational experience and

our propositional thinking experience as having the same object—that is the mental act of fulfillment.

My account of grasping suggests that it has nothing to do with propositional knowledge. First, we can grasp false things. I can think to myself "the sun is twice the size of the earth"; I can construct a visual model, and fulfill my thought with the model (all of imagination, hallucination, and models can serve to fulfill). I'll then come to grasp the claim that the sun is twice the size of the earth. But, second and more importantly, fulfillment is *itself* presentational in its phenomenal character. Rather than arguing for this here I'll just say this: to grasp is to come to understand what it is really *like* for something to obtain. And that's not a matter of believing, or thinking, a bunch of propositions, or of having any propositional attitudes at all; it's a matter of something phenomenally presentational.

While I don't have the space to fully argue for this here, I also believe that grasping is an epistemically valuable end of inquiry that is independent of knowledge. We often seem to aim to grasp things when we already full-throatedly believe them—we want to know what our belief really amounts to. In some sense this isn't a novel thought at all: it is consistent with much of what those who think understanding requires something over and above knowledge, and is valuable for its own sake, think, I just have a particular kind of understanding in mind.[3] And grasping might figure into the structure of our agency in underappreciated ways; sometimes mere belief (plus whatever other states we need to act, e.g. desire) is not enough to move us to action but coming to grasp that belief is. And perhaps grasping is a natural candidate for being the end of certain kinds of humanistic inquiry that is clearly *not* aiming at generating propositional knowledge but that many of us consider to be epistemically valuable.

But instead of arguing for this in any depth here, I am going to try to briefly look at a case in the metaphysics of science—wave function realism—where our aim of grasping comes apart from a different aim, one much more closely related to aiming at knowledge, which is a kind of *thin* notion of understanding why. On the thin notion of understanding why, to understand why something obtains, what we need is to know *the explanation for why it obtains* (and perhaps, that this just amounts to having additional propositional knowledge).

On Strevens' account of scientific understanding, the thin notion of understanding why—simply knowing the explanation, in a simple propositional knowledge kind of way—is coupled with a *grasping* of what that explanation amounts to in cases of genuine scientific understanding. That thin notion of understanding why is very different from *understanding that* something obtains. To understand that something obtains is, at least metaphorically, to be able to *see* it for what it is. But one can know something in this thin sense, to give one of Strevens' own examples (2013: 511), that water is made up of H_2O molecules, without grasping it (for example, without an understanding of how the hydrogen and oxygen are related to each other). In what follows I'm going to use this thin notion of understanding why (or sometimes just more generally thinly knowing) to contrast with understanding that, or grasping. But it doesn't mean that I am entirely unsympathetic to Strevens' idea that there might be a thicker notion of scientific understanding which requires combining the thin notion of understanding why with grasp.

[3] A small sample of those who defend the view that understanding is something over and above, or distinct from, knowledge: Elgin (2006, 2017), Kvanvig (2003), Zagzebski (2001), Hills (2016), Pritchard (2010), Dellsén (2017).

With this distinction on the table, I want to say some things about two aims of inquiry that correspond to understanding why on the one hand, and grasping on the other. Sometimes, I think, these two aims of inquiry conflict. And the norms that govern them (or should govern them) conflict. I will try to suggest that getting clearer about these distinct goals is crucial to understanding what we are doing when we do philosophy.

3. Where does this arise in the metaphysics of science?

One place in which I think there is a conflict between these two aims of inquiry—understanding why (in the thin sense, which I will hereafter just use "understanding why" for) and grasping—is in attempts to theorize about the nature of the wave function.

According to *wave function realism*, the universe is fundamentally *radically* different than the manifest image suggests, and, indeed, is so different that it is hard for us to get a hold on what it means to be this way. Fundamentally, there is an *extremely* high-dimensional space, and a single field, and that's it. Our spatial dimensions don't correspond to any of the dimensions in configuration space; there's a whole different thing going on there.

Nina Emery (2017) argues *against* wave function realism by appealing to what she calls the "minimal divergence norm".

The minimal divergence norm says this:

> The minimal divergence norm (MDN). Insofar as we have two or more empirically adequate scientific theories—two theories that both accurately predict the phenomena that we observe—we ought to choose the one that minimizes the difference between the way the theory says the world is and the way the world appears to be (2017: 565).[4]

I think the MDN is false, but it is not my goal to argue against it here.[5] Obviously, wave function realism violates it. (Readers unfamiliar with the view will have already realized this when they tried, and failed, to imagine what it would be like for wave function realism to be true.) I don't think the MDN is a norm of any kind of inquiry, but examining it might help us see that it has some initial appeal, and might align with theory choice, as a norm about *understanding that,* but not about *understanding why*.

Understanding that and understanding why may be competing aims of inquiry both in science and in the metaphysics of science. When we are aiming at understanding that, or grasping, closeness to the manifest image is at the least helpful, because we are better able to grasp theories that say that the world is close to how we experience the world. But when we are aiming at understanding why, or knowing the explanations for things—holding fixed that we are realists about explanations—there seems to be little reason to abide by this norm.

If we conceive of grasping as an epistemic good, then what is going on here is this: when claims or theories are closer to the manifest image, we are more likely to be able to grasp them, or grasp them to a greater degree than theories that are not. However, even applied to understanding that, the

[4] Emery also gives a related argument for something the MDN within metaphysics (forthcoming).
[5] Though I should note that I don't agree that we can separate the manifest image from our theoretical commitments in the way that Emery seems to think we can; our perception of the world is theory-laden.

MDN isn't quite accurate: that closeness to the manifest image is valuable doesn't necessarily mean that, for two things we grasp, if one is closer to the manifest image, it has a better epistemic status.

To see why, we only need to consider a comparable norm about some slightly different epistemic issue, for example, the *norm of analyticity,* which says that insofar as we have two or more empirically adequate claims that are candidate explanations for why something is true, if one of them is analytically true, we should favor it. Many analytic truths are easier to know than non-analytic truths, but they are also often terrible explanations why. If we grant that knowledge is valuable, analytic bits of knowledge have a kind of epistemic value because they are easy to know, but that epistemic value ought not be invoked in the wrong ways, e.g. as a suggestion that they are *also* better candidate explanations for why something is true. More generally, if things of a type T are valuable, it is not in general true that the easier-to-attain instances of T have some additional value, just in virtue of being easy to attain, than the harder-to-attain ones.

Emery (2017: 565) claims that "as surprising as it may seem, a certain kind of common sense or intuitiveness *is* an important feature governing scientific theory choice". Despite my doubts about the MDN as an actual normative constraint even in the context of aiming at grasping, I do not doubt this as a descriptive matter; when we are aiming at grasping, we are, at least in practice, likely to favor theories that resemble the manifest image enough that we can grasp what they tell us about what the world is like. And one place where it is important to consider the MDN is in cases—and wave function realism might be one of them—where it is not just divergence from the manifest image that is at stake, but instead a theory that it is perhaps *impossible* for creatures like us to grasp. Even if the MDN is wrong, there might be a kind of limiting constraint on our theories if and when we are aiming at grasping—not precisely about their distance from the manifest image, but instead about whether creatures with perceptual capacities like ours are capable of even minimally imagining what it would be like for them to obtain.

How might we diagnose differences between theories that seem to abide by MDN—or at least minimally some constraint like the one I just gestured at—fixed and those that do not? Perhaps we could start like this: our aim of understanding why—of finding deeper and deeper explanations for things--has taken us (far) away from a picture of science that looks like our folk-theoretic picture—on which we can divide the world up into smaller and smaller "thing"-like entities. But that doesn't mean that we ceased wanting to grasp our scientific theories, and the farther away we get from things that are "like" the manifest image—or, at least, like things that we are even capable of presentationally experiencing—the more these two aims conflict.

To better show how understanding why and understanding that may come apart as aims of inquiry, consider two different ways of theorizing about biology. On mechanistic ontologies of biology, we tend to think of biological entities as, basically, machines with causal inputs and outputs. (Typical is to think of this as involving an initial state, termination state, entities involved, and activities that connect the two states and the entities.) So, consider cancer: we think of the initial state as "normal cell, normal DNA" and the termination state as "abnormal cell, abnormal DNA". There are standard "pictures" of mechanistic thinking about various biological entities. The basic unit of biology is an organism taken statically; a stable, not-in-flux time-slice of an organism. On the standard mechanistic picture, processual facts about organisms are explained by underlying stable/static states; and we can think of those processes as collections of steps in time (involving the stable/static causal inputs and outputs of the "machine").

On the process view, the basic unit of biology is instead a process, or "flux", or change; it is the processual facts that must explain why an organism can be in static, stable states. Indeed, on the process view, there *are no stable organisms,* at least, not fundamental ones. Certain questions of biology get flipped on their head; what is the combination of processes by which I appear to be a relatively fixed, non-fuzzy boundaried, large, stable organism right now? Perhaps what will be most compelling to explain process ontology to metaphysicians is this, from John Dupré:

> Before we can understand why what we identify as the stable things change, we need to understand why they ever stayed the same. Stability is always an explanandum (2020: 100)… Seen as a process, an organism is a stable pattern in an intricately orchestrated array of processes at many levels of organization (2020: 103).

Science is often in the business of explaining patterns; indeed, Dupré (2020, 2021) goes to great lengths to emphasize that part of what is distinctive about process ontology is that it tells us to treat organisms (not just snapshots of organisms at a time: the appearance of stable organisms over time) as themselves crying out for explanation *in terms of* underlying flux and change. Before (perhaps not temporally, but conceptually) we can find process explanations for things, we first have to reconceive of stability itself as crying out for explanation in the same way that we do other striking patterns. The problem with this is that we don't see stability as a pattern in the first place*,* or as something that cries out for explanation. Process ontology diverges radically from the manifest image, but it does so *before* we get to the theorizing level: it requires us to shift our understanding of which kinds of things about the manifest image are things that we even grasp to begin with.

Part of why so many of us find the process view hard to understand seems clearly to be that it is extremely hard to model. And that's because of its extreme divergence from the manifest image. We perceptually experience the world as being cut up into relatively stable entities; we experience human beings, trees, worms, and so on as being such stable entities. Mechanistic views in biology take this for granted, and thus are easy to at least partially grasp. We can't *depict* process ontology in a hyper-realist way—in a way where the representation "looks just like" the target phenomenon—because, like wave function realism, to do so would require "seeing" the world from a perspective we seem unable to inhabit, given what kinds of perceptual capacities we have. In the wave function realism case, this is (at least in part) because we can't experience the world as having 10^{80} dimensions. In the process ontology case, we seem unable to experience the world as *not* being cut up into stable entities with stable borders, but instead as being fundamentally in flux and unboundaried.

I think that process ontology is one place in which our dual aims of *understanding that* and *understanding why* conflict; and articulating that conflict may be helpful. Suppose for a moment that a process ontology of biology is systematically correct. If Dupré is right, then we haven't just gotten the scientific explanation for what we are trying to explain wrong when we appealed to mechanistic/thing ontology; we were wrong about the target of explanation in the first place. (For example, with respect to cancer, the question isn't "why do cells become cancerous", the question is "what processes are interacting in such a way that they create a kind of appearance of equilibrium or stability, such that cells appear relatively stable in normal cases", or, put more bluntly, "why don't cells become cancerous".)[6] We already seem to grasp stability in organisms, because it is part of our phenomenal experience of the world. And when we aim at grasping things, we start with our ordinary phenomenal experience of the world. We think about things causally, mechanically, and

[6] See Bertolaso and Dupré (2018) and Valde (2019) for extensive discussion of the cancer case.

compositionally, not processually or holistically. When, as in this case, we end up with a really radical scientific-philosophical view, it upends a certain kind of stability in our dual aims of inquiry working together or being both satisfiable.

And interestingly, this seems precisely to be the case with the very debate over wave function realism that Emery is interested in. Philosophers who are attracted to wave function realism are, at least in part, attracted to it because it provides an underlying explanation for something that seems, to most humans, to *cry out* for explanation: the demonstrated non-locality (or apparent action at a distance) of our ordinary three-dimensional world. Quantum mechanics predicted, and then the Bell tests seemed to squarely confirm, that particles can affect each other at great distances from one another, but instantaneously. Wave function realists say: we need an explanation for this, and moreover we have a good one, which is that fundamentally the world is *radically* different from the world of our ordinary three-dimensional experience—it is nothing like the manifest image.[7] (I won't get into the messy details of the connection between the two different "worlds" but it's easy enough to think about how we could secure at least the general claim that action at a distance is a *distortion* of reality that has to do with the way we experience the world—imagining how we would perceive the ordinary three-dimensional world were we two-dimensional perceivers/creatures helps here (see Abbott 1884/1992).)

So: at least very crudely speaking, we might think of wave function realists as pursuing *understanding why*—why is the three-dimensional world non-local? But in doing so, they are giving up on the possibility of *understanding that,* of grasping or phenomenally understanding their own views. Those who instead embrace non-locality as simply a brute feature of the universe are giving up on *understanding why* (in, recall, the thin sense) in favor of having theories that seem closer to the manifest image. (Even though action at a distance is often described with words like "spooky", and even though it too violates our basic phenomenal understanding of the world, it is clear that we can better grasp the idea that this is a brute feature of the universe than we can wave function realism.) And the wave function realism case involves something that seems absolutely unintelligible from a grasping perspective—creatures like us could simply *never* grasp what wave function realism amounts to. It completely fails us if our end of inquiry is grasping. It does, however, provide us with understanding why (in the thin sense). But the alternatives seem to fail us in a different way, in that they don't provide an underlying explanation for something that seems to us to cry out for explanation, and thus, don't provide us with understanding why.

What's the lesson here? One idea is this: perhaps in the context of science, and the metaphysics of science, once things get reasonably mature, we sometimes cease being able to understand our own theories in a certain way (we cease being able to grasp them), even as they seem to provide better and better explanations in another way (they help us understand why, at least in the thin sense). Maybe we can think of science as starting out in a place where our dual aims of inquiry tended to align in at least this respect: we were always attempting to explain the manifest image in terms of the underlying picture. So our target of understanding-why and understanding-that systematically overlapped. But once our science advances, this often ceases being the case, because we had to explain new things, things that in and of themselves threaten our understanding of the manifest image itself and also of our folk-theoretic notions of what explains what. What we were trying to

[7] These are vast oversimplifications of complex issues. For a helpful overview of issues surrounding wave function realism, see Chen 2019. For further helpful discussion of methodological issues see Ney 2021.

explain is no longer what we experience, and sometimes, we can't even fully grasp—in my sense—what it was we are trying to *explain,* let alone its explanation.

So maybe our two kinds of understanding come apart, eventually, in theory choice, in science, the metaphysics of science, and their intersection (where both the question of process ontology and the question of wave function realism lie).

And, getting back to the MDN, maybe something like the following is going on: sometimes, we are aiming at grasping, or phenomenal understanding. If we do theory choice *based* on that aim, we are going to tend to abide by the MDN, even if, upon careful reflection we wouldn't endorse it as an epistemic norm on grasp. Sometimes, we are aiming at truth, and propositional knowledge. We likely aren't going to abide by the MDN in doing so. If Strevens is right, there is some kind of further all-things-considered notion of scientific understanding that we might need both grasp and knowledge of explanations for. I am somewhat skeptical of that idea, and I am particularly skeptical of it applied to philosophy rather than science. So instead I want to think about where we might arrive if we keep our aims separate, consider a kind of pluralistic inquiry on which each aim is acceptable, and think about what lessons we might learn for philosophy.

If my broader epistemic view is right—the view that both grasping and knowing are basic, non-instrumental aims of inquiry—there is nothing wrong with reaching a point where there is no all-things-considered fact of the matter about how we *should* engage in theory choice. This doesn't mean we should throw up our hands and be naïve pluralists about inquiry, though it does mean we will have to be some kind of pluralist! The lesson—so far at least—is that we should get more clear on distinguishing the two aims, and on how each of our theories does or does not satisfy those aims.

While I have a small sample size, my experience with scientists is that they are often either anti-realists or aren't interested in engaging with questions of realism within science. Instead, the scientists I have spoken to tend to have a sense-making picture of science; when I ask them what they think the purpose of science is, they say things like "it's to make sense of the world"; "it's to make sense of human experience of the world", "it's to build theories that make sense of the world in systematic ways" and so on.

If this is what science is doing, then one might initially think that perhaps we ought to think of grasping as the central aim of science. But this is—perhaps obviously—too quick: both understanding that and understanding why projects can be made sense of in a framework in which the goal of inquiry is sense-making of some kind or another. One way of us sense-making about the world is to *explain it* (even in the thin sense)*;* another is to *have a sense of what it is like.* Wave function realism favors our need for explanations of mysterious phenomena; its rejection, and the embracement of non-locality, favors our need for having a sense—a phenomenal sense!—of what our theories are actually saying.

4. Dual Aims of Inquiry in Philosophy

How do my proposed dual aims of inquiry work in philosophy? Recently (2023) I made a simpler—and I now think slightly wrong—attempt to make sense of metaphysics as basically solely aimed at grasping (I didn't call it that, but that was what I was grasping *for*!) Here I instead want to say some things more generally about aims of inquiry and philosophy, with a special, but not exclusive, focus on metaphysics.

We (I think) don't have tools to settle questions of justification or knowledge when it comes to speculative metaphysics; but we engage in it anyway. Some have used this as a reason to write off these activities as either nonsensical or pointless—as either failing to establish any kind of reference to the real world, or as the fruitless engagement in trying to answer unanswerable questions. But similar objections can be launched against philosophy that more clearly connects to our human interests; for example, there is widespread disagreement, and no clear way to establish facts about justification or knowledge, across much of normative philosophy, and the epistemic challenges in metaethics resemble those in the rest of metaphysics. In normative philosophy, however, we have more options for explaining why we inquire, when it doesn't seem like we will ever secure knowledge; we can appeal to pragmatic ends, for example.

These sorts of challenges to philosophy—which can be extended to the rest of the humanities—often reduce our aims to a false dichotomy, assuming that all inquiry must either be in service of the practical (desire satisfaction, social coordination, and so on) or of knowledge (often reduced to propositional knowledge). But if grasping is a basic epistemic aim, then it is among our ends of inquiry. We don't need the final end of every line of inquiry to be knowledge or some sort of immediate practical end; it might be grasping, which, I've argued, is also not essentially connected to—and thus not essentially *instrumental* to—propositional knowledge. Nancy Bauer (2015, ch 7 and 8) seems to suggest something that can at least be interpreted as in line with this: that we should see part of the role of philosopher as aiming at "getting things right" not by somehow achieving propositional knowledge, but instead, perhaps, by helping us come to grasp features of the world and our own experience—by making things make sense to us.

Here, I want to say two things. First, I want to report my own first-order view about what we *should* be doing when we are doing metaphysics—about why I want to do metaphysics, and think about it, and in some sense normatively impose on others. In my 2023 I argued that metaphysics should be focused on the "understanding that" aim of inquiry more than on the "understanding why" or propositional knowledge of explanations aim of inquiry. Metaphysics, on this view, *should be* a venture that is about creative world-building in the interests of expanding our imaginative capacities and grasping the various possible conceptions of reality. It should be about trying to make sense of ways the world might be that range from "very much just like it appears to be" to "wildly, wildly different from the manifest image". If it were true that that was (descriptively) the goal, then metaphysicians would be engaged in much more "model building" kinds of work (as, I think, they more often used to be). But also—metaphysics would be a lot more like art. Messiness—and metaphor—would be embraced, not rejected—metaphor is part of how we get *onto* things that are hard to understand, in the grasping sense, through modeling them with something else. And metaphor can't bring us propositional knowledge!

On the other side I'd place people like Timothy Williamson (e.g. 2006, 2007, though I note that I actually *agree* with a lot of Williamson's ideas construed very generally, e.g. his rejection of the "linguistic turn", and his clear commitment to systematic world-building, and find his work to sometimes exhibit many of the virtues he claims to not value). Philosophical progress is just simply identified with gaining more propositional knowledge and getting closer to the truth. And, he thinks, certain things follow about what we ought, and ought not, value in philosophy.

> …The fear of boring oneself or one's readers is a great enemy of the truth. Pedantry is a fault on the right side. Precision is often regarded as a hyper-cautious characteristic. It is importantly the opposite. Vague statements are the hardest to convict of error.

> Obscurity is the oracle's self-defense. To be precise is to make it as easy as possible for others to prove one wrong. This is what requires courage.
>
> Would it be a good bargain to sacrifice depth for rigour? That bargain is not on offer in philosophy, any more than it is in mathematics. No doubt, if we aim to be rigorous, we cannot expect to sound like Heraclitus, or even Kant: we have to sacrifice the stereotype of depth. Still, it is rigour, not its absence, that prevents one from sliding over the deepest difficulties, in an agonized rhetoric of profundity. Rigour and depth both matter; but while the conscious and deliberate pursuit of rigour is a good way of achieving it, the conscious and deliberate pursuit of depth (as of happiness) is far more likely to be self-defeating. Better to concentrate on trying to say something true and leave depth to look after itself.
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> Nor are rigour and precision enemies of the imagination, any more than they are in mathematics. Rather, they increase the demands on the imagination, not least by forcing one to imagine examples with exactly the right structure to challenge a generalization; cloudiness will not suffice. They make imagination consequential in a way in which it is not in their absence (2006: 185).

Rigour and precision don't seem to have much to do with grasping, or understanding that, as I've characterized it here. But Williamson is primarily concerned with increasing propositional knowledge—and increasing our propositional knowledge of explanations as well, insofar as that is part of what we are after in philosophy—and not grasping. There are many important senses in which Williamson and I aren't philosophical enemies. But if someone like me thinks that the central goal of doing philosophy is an imaginative, grasping-focused sense-making one, and someone like him thinks that the central goal of doing philosophy is gaining more propositional knowledge (and at least sometimes knowledge of explanations, which is at least nearby our thin notion of understanding why), we are going to have very different views of particular philosophical works, and in particular, the way we evaluate arguments and ideas is going to perhaps essentially involve a kind of talking past one another.

Which brings me to the second thing I want to say. While, zooming into my own views, I am much more interested in the grasping-focused goal of philosophy, and I think at least within the context of metaphysics others should be as well, I can occupy a different perspective, one on which we should let, not a thousand, but some flowers bloom when we do philosophy. Some of us might be aiming at strict incremental progress in terms of relatively thin propositional knowledge; others of us might be aiming at sense-making in the grasping way. And others might be aiming at some other valuable end of inquiry.[8]

As I mentioned earlier, elsewhere (in my ms), I try to defend a picture of epistemology on which grasping and propositional knowledge are dual, equally valuable, and independent epistemic aims, each of which can serve as a final end of inquiry. And here, I've tried to give descriptive accounts of two places in the metaphysics of science where these two aims seem to conflict, and give us different results about what first-order views to favor. Similarly, such an epistemology, applied more broadly

[8] Others have recently discussed understanding (though not typically understood as grasping) as the aim of philosophical inquiry. See Hannon and Nguyen forthcoming, Dellsén, Lawler, and Norton 2022 and 2023, Elgin 2017, and Keren 2023. For a related view about the history of philosophy see Garrett (ms, introduction).

as metaphilosophy, gives us the result that both Williamsonian methodology and my own are reasonable—we are simply disagreeing over which epistemic aim philosophers should have, but if both are perfectly good aims of inquiry more broadly, perhaps both are fine within philosophy—but that they seem to result in an impasse in terms of evaluating first-order views.

This is because it seems that different norms will govern each aim of inquiry. Grasping isn't essentially factive; propositional knowledge is. Grasping requires a kind of phenomenal fleshing out of claims; propositional knowledge doesn't. I couldn't care less about rigor or precision in evaluating philosophy, except insofar as it may sometimes be instrumental to invoking grasp. If what one is after is incremental progress towards a body of propositional knowledge, one could see why they might matter more.

I will end by giving a very brief taste of three further ways I think that occupying these distinct methodological views brings with it a kind of radical, irreconcilable difference in how to evaluate, think about, and do philosophy.

First, theoretical virtues: certain standard theoretical virtues—like unification—might be virtues for both aims; they might simultaneously make us more likely to grasp and to get closer to propositional knowledge. But others will not be shared. For example, a virtuous piece of propositional knowledge-advancing philosophy might be purely negative, essentially an attempt at theory disconfirmation, e.g. raising a single knock-down objection to a commonly held view. For the most part, such things won't count as virtuous if we are aiming at grasping, for they bring us no closer to any kind of new grasp, instead telling us that there is something wrong with the justification for or evidence for some theory we might have believed. But belief, justification, and evidence are inessential to, and often inconsequential, to grasping.

Second, modes of evaluation: when we are evaluating philosophy for whether it brings us closer to having new propositional knowledge, we ask ourselves questions like "does this provide satisfying evidence for or against a view?" or "does this strengthen or weaken my justification for my belief in some claim P?". That doesn't make sense for philosophy that aims at grasping, since evidence and justification aren't relevant to how well we grasp something. Instead, we might ask ourselves whether we have a better picture of what a view amounts to, whether we can better imagine what it would be for it to obtain, and so on. Consider the difference between how you might evaluate someone's testimony if you were trying to decide whether it was true, as opposed to how you might uptake it if you were trying to understand what their phenomenal experience was like. In the latter case, it is counterproductive to ask oneself questions about truth, justification, and evidence. Instead one must suspend those sorts of judgments if one wants to get closer to "what it's like" grasp on someone else's first-personal experience. And grasping theories is sort of like trying to grasp other people's first-personal experience.

Which brings me to the third issue: what kinds of attitudes ought we have towards the philosophical views we ourselves espouse? I will leave it to others to answer this question about philosophical projects that aim at propositional knowledge or thin notions of understanding why. But it seems clear that if our aim is either to grasp an idea for ourselves, or to enable others to grasp it, certain attitudes are definitely *not* required—we need not believe our views, for example; we might simply be exploring them in order to understand them. And perhaps other attitudes, or at least, commitments, might be required—perhaps, for example, we need to be committed to getting things right not by

saying *true* things, nor even things we have some justification for, but by saying things that actually provide a way of phenomenally sense-making the world.

References

Abbott, E. (1992/1884), *Flatland: A Romance of Many Dimensions* (Dover).

Bertolaso, M. and Dupré, J. (2018), 'A Processual Perspective on Cancer'. In J. Nicholson and J. Dupré, eds., *Everything Flows: Towards a Processual Philosophy of Biology* (Oxford University Press), 321-336.

Bauer, N. (2015), *How to Do Things With Pornography* (Harvard University Press).

Bourget, D. (2017), 'The Role of Consciousness in Grasping and Understanding', in *Philosophy and Phenomenological Research* 95/2: 285-318.

Chen, E. (2019), 'Realism about the Wave Function', in *Philosophy Compass* 14/7.

Dellsén, F. (2017), 'Understanding without Justification or Belief', in *Ratio*, 30/3: 239-254.

Dellsén, F., Lawler, I., and Norton, J. (2022), 'Thinking about Progress: From Science to Philosophy', in *Nous,* 56/4: 814-840.

----- (2023). 'Would Disagreement Undermine Progress in Philosophy?', in *Journal of Philosophy* 120/3: 139-172.

Dupré, J. (2020), 'Life as Process'. *Epistemology and Philosophy of Science* 57/2: 96-113.

----- (2021). *The Metaphysics of Biology* Cambridge Elements Series (Cambridge University Press).

Elgin, C. (2006). 'From Knowledge to Understanding,' in S. Hetherington, ed., *Epistemology Futures* (Oxford University Press), 199-215.

----- (2017). *True Enough* (MIT Press).

Emery, N. (2017). 'Against Radical Quantum Ontologies', in *Philosophy and Phenomenological Research* 95/3: 564-591.

----- forthcoming. 'Mooreanism in Metaphysics from Mooreanism in Physics'. *Inquiry.*

Garrett, A. manuscript. *The Devils' Mountain.*

Hannon, M. and Nguyen, J. (2022). 'Understanding Philosophy', in *Inquiry* (online first).

Hills, A. (2016). 'Understanding Why', in *Nous* 49/2: 661-88.

Husserl, E. (1970/1900/01). *Logical Investigations*. J.N. Findlay, trans. (Routledge & Kegan Paul).

Keren, A. (2023). 'Disagreement, Progress, and the Goal of Philosophy', in *Synthese* 201(45) (online first).

Kvanvig, J. (2003). *The Value of Knowledge and the Pursuit of Understanding* (Cambridge University Press).

McSweeney, M. (2023). 'Metaphysics as Essentially Imaginative and Aiming at Understanding', in *American Philosophical Quarterly* 60/1: 83-97.

------ (ms). 'Why Mary Left Her Room'.

Ney, A. (2021). *The World in the Wave Function: A Metaphysics for Quantum Physics* (Oxford University Press).

Nida-Rümelin, M. and O Conaill, D. (2019; Minor Corrections: Fall 2023), "Qualia: The Knowledge Argument", *The Stanford Encyclopedia of Philosophy* Edward N. Zalta & Uri Nodelman (eds).

Pritchard, D. (2010). 'Knowledge and Understanding'. In D. Pritchard, A. Millar, and A. Haddock, eds., *The Nature and Value of Knowledge: Three Investigations* (Oxford University Press).

Strevens, M. (2008). *Depth* (Harvard University Press).

----- (2013). 'No Understanding Without Explanation', in *Studies in History and Philosophy of Science Part A* 44/3: 510-515.

Valde, K. (2019). *Philosophical Perspectives on Time in Biology*. PhD Dissertation, Boston University. https://hdl.handle.net/2144/39587

Williamson, T. (2006). 'Must Do Better', in P. Greenough and M. Lynch, eds., *Truth and Realism* (Oxford University Press), 278-292.

------ (2007). *The Philosophy of Philosophy* (Wiley-Blackwell).

Zagzebski, L. (2001). 'Recovering Understanding', in M. Steup, ed., *Knowledge, Truth, and Duty: Essays on Epistemic Justification, Responsibility, and Virtue* (Oxford University Press).