On the Prospects for Naturalism[1]

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Contemporary naturalism has two components. The first is ontological, and says, roughly, that all and only what the sciences say exists, really does exist. The other is methodological, and it says that only scientific explanations are legitimate explanations. Together these commitments promise a coherent picture of the world that is nicely integrated with an attractive epistemology. Despite the obvious appeal of naturalism, I would like to sound a note of caution. First, I would like to argue that naturalism's ontological commitment cannot be vindicated. Not, that is, that it is false; rather, I argue that any attempt to *show* that it is true presupposes that it is not. Second, I argue that methodological naturalism is false. But, again, the problem is not straightforward. I will not claim that there are gaps in the explanations offered by science, such that the scientific project would be incomplete without emendation. Instead I argue that the goodness of an explanation depends, in part, on how the event to be explained is described, and that, some events, under some descriptions, call for non-scientific explanations.

1. Introduction

Contemporary metaphysics, in what is perhaps its most popular form, finds its home in a larger set of views that promises a unified picture of the world and our place in it. Collectively known as 'naturalism', this set of views proceeds from the conviction that empirical science is our only guide to the nature and content of the world. Naturalism has two main components. The first is ontological:[2]

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[1] This paper is forthcoming in Illies and Shaefer eds. *Metaphysics or Modernity?* (Bamberg: Bamberg University Press.)

[2] Despite its presentation here, the precise content of naturalism is controversial. The thesis that I call 'ontological naturalism' is a thesis of intermediate strength, relative to the other "naturalistic" metaphysical theories in the field. Physicalism, for example, is a stronger thesis. As far as I can see, however, none of the plausible ways in which it might be modified would bear on the argument to be developed below.

Ontological Naturalism: The kinds of things that exist are all and only those kinds that play a role in our best sciences, or will play a role in successor sciences that are very similar to those currently in the field.[3]

The second component of naturalism is a thesis about what constitutes a good explanation:

Methodological Naturalism: All legitimate explanations are scientific explanations.

Together the two claims present a coherent whole. We believe in things for explanatory purposes, and if all legitimate explanatory purposes are scientific ones, then all things for which one has legitimate grounds to believe are those necessary for science. If these two commitments are correct, then philosophy and all other branches of inquiry are, to the extent that they are legitimate, branches of the empirical sciences.

Naturalistic philosophy usually proceeds by finding some apparently problematic,

[3] It is worth noting that this is a *distinctively* metaphysical thesis, and not a scientific one. Here is Stroud, on this point: "A positive science of physical nature tells us what the world is like – what qualities objects in the world do, in fact, have. But that physical science alone does not establish [that only physical objects exist]. Physical scientists professionally restrict their attention to the physical aspects of the world that can be captured in their theoretical network. If there is more to the world than that, physical science says nothing about it. The metaphysical theory of atomism or physicalism goes one step further. It says that atoms or the physical qualities of things are all there is." (Barry Stroud, *The Quest for Reality: Subjectivism & The Metaphysics of Color* (Oxford: Oxford University Press), 10.) Moreover, it is not an accident that the sciences remain uncommitted about those things that fall outside of their theoretical network. If there were any such things, there could be, by their very nature, no scientific evidence that would bear on the hypothesis that they exist.

but philosophically significant, subject matter, and providing an account of the nature or functioning of the subject matter in question that appeals only to members of ontological categories that find employment in the sciences. Ultimately, if the philosophical project is successful, the explanations that this account will provide will be scientific explanations. In completing such a project, the naturalistic philosopher helps develop a coherent picture of the world, integrated by scientific principles and commitments.

Despite its obvious attraction, I am pessimistic about the prospects for naturalism. There are two reasons for my pessimism. First, I will argue that there are reasons to believe that a demonstration of the ontological thesis cannot, even in principle, be completed. This is not to say that Ontological Naturalism is false; I do not argue that there *is* something that does not find a place in the scientific picture of the world. Rather, I will argue, the problem for naturalism on the ontological side is that any *demonstration* that it is true requires that one presuppose that it is not.[4]

The other challenge that naturalism faces comes from the methodological direction. The problem, in short, is that explanatory contexts are referentially opaque. So even if there is a scientific explanation of every fact and event, it does not follow that there is a scientific explanation of every fact and event *under every description*. Indeed,

[4] There is a clear affinity between this argument and some of Putnam's arguments. He has, for example, long argued that scientific practice essentially involves appeal to epistemic values, such as coherence and simplicity. He takes this fact as a premise in an argument that there is no sharp dichotomy between facts and values. See Hilary Putnam "Beyond the Fact/Value Dichotomy" in *Realism with a Human Face*, ed. James Conant (Cambridge: Harvard University Press, 1990), especially pp. 138-141, and Hilary Putnam *The Collapse of the Fact/Value Dichotomy, and Other Essays*, (Cambridge: Harvard University Press, 2002), especially chapter 2. I think that the point about scientific practice generalizes: providing *any* argument presupposes that there are, what Putnam would call, "epistemic values". I am, however, less ambitious than Putnam. My contention is only that this fact will allow us to show that Ontological Naturalism cannot be vindicated.

I will suggest that there are some facts, under some descriptions, that call for explanation in terms of categories that cannot be shown to be identical to those familiar from the sciences.[5] If that is so, then the appeal of naturalistic metaphysics will be much weakened, and the plausibility of the picture of inquiry as unified by scientific procedures and explanations much reduced.

2. Naturalizing the Epistemic

Normative facts and properties are the most notable among those that resist integration into a naturalistic world-view. If Ontological Naturalism is to be vindicated, then, either normative facts and properties must be shown, despite initial appearances, to be identical to natural facts and properties, or else it must be shown that they do not exist at all.

Whatever its merits as a means of dealing with other normative kinds,[6] eliminativism about epistemic normativity seems to be ill advised.[7] The problem, in brief, is that any *argument* for epistemic eliminativism would need to provide good reasons to believe that its conclusion is true, but epistemic eliminativism just is, in part, the claim that there are no such things as *good reasons to believe*.[8]

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[5] Again, this is *not* to say that they are not identical to such categories. They may well be. But they cannot be *shown* to be identical to naturalistic categories.

[6] For a discussion of its merits in the moral case, see J.L. Mackie, *Ethics: Inventing Right and Wrong* (New York: Penguin Books, 1977).

[7] And, indeed, epistemic eliminativism has no defenders.

[8] Notice that it would not do simply to note that the fact that there are no epistemic facts is entailed by some other fact *F*, and that *F* is true. For if there are no epistemic facts, then the fact that both a conditional and its antecedent are true provides one with no *reason* to conclude that its consequent is true. Without any epistemic facts, the inference is optional.

More promising than attempting to eliminate the epistemic, however, are attempts to reduce epistemic facts and properties to facts and properties that are employed by the sciences. And, in fact, there have been many attempts to reduce one or another kind of epistemic fact or property. In isolated cases, I do not doubt that this can be done. Vindicating Ontological Naturalism, however, requires not that *some* epistemic facts and properties be reduced to natural ones, but that *all* of them are so reduced. It is this project, that of reducing all epistemic categories, that cannot be completed. And this project cannot be completed not for contingent reasons regarding, for example, its difficulty, or our lack of imagination. I will argue that, even in principle, a wholesale reduction of the epistemic to the natural is not possible.

Though reducing *A*'s to *B*'s involves showing that *A*'s and *B*'s are identical, reductions are typically not reductions without loss. Reducing one thing to another involves re-conceptualizing at least one of the involved facts, properties or objects. In particular, reductions typically involve denying that the kind being reduced has features other than those that are characteristic of the kind to which it is being reduced. For example, a physical reduction of the mind involves not simply saying that the mind and (some favored part of) the body are identical, but that minds are not immaterial. If a reduction was *simply* a matter of finding that the two kinds are identical, the possibility would be open that a successful reduction of the mental to the physical would show that there are immaterial physical objects. But of course nothing of the sort is on offer. A reduction of the mental to the physical crucially requires saying that the mental does not have all of the properties that it was previously thought to have.

A similar impoverishment is characteristic of attempts to provide a naturalistic

reduction of epistemic normativity. As we ordinarily conceive of them, epistemic categories carry deontological significance. One violates a *duty* when one believes without justification; in doing so one behaves *irresponsibly*. In virtue of such facts, epistemic evaluations have an imperatival aspect. To say that one would not be justified in believing that *p* is, in part, to *forbid* one from believing that *p*. Likewise, holding a justified belief is a matter of *acting in accord with one's duty*. And saying that one would be justified in believing that *p* is, in part, to *permit* one to believe that *p*.

But because the natural world contains no deontic facts, naturalistic reductions of epistemic categories are reductions to something that is non-deontic. And in completing a reduction of an epistemic category to a natural category, one thereby finds that the epistemic category in question does not, in fact, possess the deontic characteristics it is usually thought to possess. The most popular, and promising, naturalistic reductions of epistemic categories are the various reliabilist epistemic theories.[9] Though the details are many and varied, the heart of the view is that epistemic properties – like *being justified in believing* – are identical to natural properties concerning the reliability (under some set of conditions or other) of one's belief-forming processes. Such views are naturalistic

[9] Kornblith, who offers a reliabilist account of knowledge, denies that his view is reductionistic: "Epistemic terminology, and, indeed, philosophical terminology in general, must be grounded in the world if it is to be naturalistically legitimate. This does not require that such terminology appear in our physical theories, for naturalists need not accept any sort of reductionism. … Naturalism would only threaten to eliminate epistemic terminology as illegitimate if there were no prospect of discovering theoretically unified epistemic phenomena." (Hilary Kornblith *Knowledge and Its Place in Nature* (Oxford: Oxford University Press, 2002), 25.) The kind of "reductionism" that Kornblith has in mind is a particularly strong variety, one according to which all legitimate explanation is not merely scientific explanation, but explanation at the level of physics. Kornblith is right that naturalists need not accept this extreme view. But they *must* be reductionists in some sense, at least in that they must see (as, indeed, Kornblith does see) epistemic categories as identical to the categories, or at least constructions thereof, recognized by the sciences.

precisely because reliability, understood as a high ratio of true to false beliefs, is no more problematic than belief and truth, both of which naturalistic philosophers have made peace with. These notions, which have a place in a broadly scientific understanding of the world, contrast with that of justification, understood as conformity to one's duty, which does not. So if it has been (or will be) found that, say, *being justified in believing*, is the same property as *being the product of a reliable belief-forming process* (under some set of conditions), it has been, or will be, found that epistemic normativity is radically different than was previously thought.

The difference is even more apparent in the case of *un*justified beliefs. Assume that a belief is unjustified just in case it is not justified,[10] in that case, unjustified beliefs are those that are formed through belief-forming processes that are either not reliable, or not used in the right conditions. If to be unjustified is to be the product of an unreliable process (or a reliable process used in the wrong circumstances), then the imperatival aspect that we find in epistemic evaluations is misplaced. For from the fact that a belief is unlikely to be true, it does not follow that it one is prohibited from holding it, though from the fact that holding the belief requires that one violate one's duty it *does* follow that holding that belief is prohibited. Naturalistic epistemology is a revisionary project.

This is important because vindicating Ontological Naturalism requires an *argument*, one which makes it *rationally mandatory* to hold that the only things that exist are those things that play a role in our best current sciences, or close successors to those sciences. But the natural world contains no facts about what is mandatory. And so it is precisely this aspect of epistemic facts – that they do, or can, concern what is rationally

[10] That is, assume that there are no beliefs that are neither justified nor unjustified.

mandatory – that is not preserved in a naturalistic reduction. That it is not preserved is what allows us to say that a reduction of the epistemic to the natural really is a reduction *of* the epistemic *to* the natural: if the reduction is successful, those aspects of epistemic facts that do not fit nicely into a naturalistic understanding of the world will be discarded.

But this fact is also the reason that Ontological Naturalism cannot be vindicated. If an argument in favor of Ontological Naturalism were successful, it would effect a reduction of the epistemic to the natural. But if that reduction was to go through, it would show that epistemic facts cannot be facts about what is rationally mandatory, as natural facts have no imperatival aspect. They must *merely* be facts about, for example, which beliefs were produced by reliable belief-forming processes. But if the conclusion of the reductive argument is, in part, that epistemic facts are *merely* facts about, say, the reliability of belief-forming processes, then the premises of the argument cannot make its conclusion rationally mandatory. And so, *by its own lights*, we are free to accept the premises of the argument for Ontological Naturalism, without accepting its conclusion.

It is worth emphasizing that the naturalist program requires more than showing that there is a sound argument with Ontological Naturalism as its conclusion. The mere fact that an argument is sound does not, in general, make its conclusion rationally mandatory. Indeed, a sound argument need not make its conclusion rationally mandatory, even if one *knows* that it is sound. Consider: it is necessarily true that the set of real numbers is uncountable. Since it is necessarily true, any argument for the proposition that the set of real numbers is uncountable is valid and, if its premises are true, sound. But few such arguments make the conclusion rationally mandatory. Indeed, imagine that I assure you that the set of real numbers is uncountable. You then *know* that

the argument "grass is green, so the set of real numbers is uncountable" is sound. Nevertheless, it is not the argument that gives you conclusive reason to believe that the set of real numbers is uncountable; your reasons, rather, comes from my testimony. Demonstrating that Ontological Naturalism is true requires a sound argument, which reduces the epistemic to the natural, but which *also* makes believing the conclusion rationally non-optional, given that one believes the premises. And this is what the naturalist cannot have, as admitting that there are natural properties that can make holding some belief *mandatory*, or such that holding that belief is the only way to act in conformity with one's *duty*, would make a mockery of the idea that the epistemic had been *reduced to* the natural.

This fact is obscured in the writings of those working in naturalized epistemology, because the problem would arise only in the attempt to reduce *all* epistemic categories to natural categories. Those who actually attempt a reduction do so one fact or property at a time, and so they are free to make use of unreduced epistemic facts or properties in their reductions. Consider Kornblith's reduction of knowledge to reliably produced true belief. He begins by using pre-theoretic intuitions to roughly specify a property of interest, and then looks to see if empirical inquiry finds anything that can be recognized as relevantly related to the property that was identified pre-theoretically. As empirical inquiry proceeds, its needs take priority over the dictates of pre-theoretic intuition. Kornblith argues that empirical inquiry does, indeed, identify something recognizable as relevantly related to the property pre-theoretically identified as knowledge. In particular, cognitive ethology utilizes something recognizable as knowledge ascriptions in the explanation of animal behavior. Moreover, the knowledge that cognitive ethologists

attribute to the animals that they study can be recognized as a natural kind through the role that it plays in fixing traits through natural selection. Since it is a natural kind, it can be investigated inductively. Ordinary empirical inquiry then proceeds, and in the course of this inquiry one discovers that the property cognitive ethologists need for their evolutionary explanations of trait fixation is merely that of a reliably produced true belief. Hence, Kornblith concludes, knowledge is reliably produced true belief.[11]

Kornblith may well be right about this, and his argument itself may also be successful. But the reason that he does not encounter the problem that I have identified is that he attempts to reduce only one epistemic category, and so he is free to make use of others. The problem arises only with the attempt to reduce all epistemic categories, or the epistemic *as such*, to the natural. Those working in naturalistic epistemology, like Kornblith, achieve the success that they do precisely because they attempt only one reduction at a time. But naturalism is compelling because it promises a unified picture of the world, and in so far as naturalistic epistemology is important, it is so because it contributes to this unified picture.

What I have argued is that this picture cannot be completed. It cannot be completed all at once, nor can it be completed by conjoining local naturalistic projects, like those pursued by Kornblith, or Alvin Goldman. Again, a successful argument is not merely a sound one; it must be such that, if one accepts its premises, then one is *required* to accept its conclusion. So if Kornblith's argument is successful, it must be that *if* the premises are accepted, one is (epistemically) required to accept the conclusion. Otherwise, his audience could, without blame, accept the premises and reject the

[11] This is the central argument of Kornblith's *Knowledge and It's Place in Nature*. His methodology is developed and described on pages 11-63.

conclusion. But any reduction of the epistemic to the natural must relieve the epistemic of its, as it were, imperatival aspect. So Kornblith's reduction of knowledge to reliably produced true belief, presupposes that there is *some* unreduced epistemic property or other. And any argument that attempted to reduce *that* property would, if it was successful, presuppose that there is some *other* unreduced epistemic property. And so on. The problem is not with trying to naturalize epistemic facts or properties, it is with trying to naturalize *all* of them, either all at once, or in succession.

I should be clear about what this argument attempts to prove. Nothing that I have said indicates that there *are* any non-natural epistemic facts or properties. I have also, in the interest of not begging any questions, not claimed that one cannot know that Ontological Naturalism is true. If knowledge really is reliably produced true belief, and if one's belief that Ontological Naturalism is true is both true and reliably produced, then one knows that it is true.[12] I *have* argued, however, that there could not be a successful *argument* for Ontological Naturalism. A reduction of the epistemic to the natural would be an argument that purports to show that, if its premises are accepted, one is rationally required to accept that the facts and properties described in epistemic terms are identical to natural facts and properties. But if this is a reduction *of* the epistemic, *to* the natural, then it would show that epistemic facts and properties do not possess an, as it were, imperatival aspect. But if they do not, then the premises of the reductive argument do not rationally mandate that one accept the conclusion of the argument.

[12] I would like to thank Matthew McCauley for reminding me of this point.

3. Explanation

Perhaps the argument to this point need not be a cause for much concern. Reducing the epistemic to the natural requires supposing that there is an irreducible epistemic property, but if that property plays no role in explaining any facts or events, then the naturalist's methodological commitment remains untouched. And that philosophy ought to be a branch of the sciences is, perhaps, naturalism's most fundamental commitment. So in closing, I would like to briefly discuss why the inability to complete the ontological component of the naturalist's project should undermine our confidence in its methodological component.

The heart of the case against Methodological Naturalism is that explanatory contexts are referentially opaque. Referentially opaque contexts are those in which substitution of co-referring expressions can change the truth value of the sentences in which the substitution occurs. The paradigmatic example of a referentially opaque context is the object position of a propositional attitude ascription, but explanatory contexts function in the same way.

Putnam found a characteristically vivid way to illustrate this point:

> Suppose a professor is found stark-naked in a girl's dormitory room at midnight. His being naked in the room at midnight - ε, where ε is so small that he could neither get out of the room or put his cloths on between midnight - ε and midnight without traveling faster than the speed of light, would be a 'total cause' of his being naked in the girl's room at midnight; but no one would refer to this as the 'cause' of his presence in the room in that state. … In its ordinary sense 'cause' can often be paraphrased by a locution involving *explain* … The forest fire is *explained* (given background knowledge) by the campfire's not having been extinguished; but the professor's state at midnight - ε is not what we consider an *explanation* of the state of affairs at midnight.[13]

[13] Hilary Putnam, "Why There Isn't a Ready-Made World," in *Realism and Reason: Philosophical Papers Volume 3*, (Cambridge: Cambridge University Press, 1983), 213.

Now, there are many ways to describe the situation that Putnam imagines. A description of it, *given purely in the language of physics*, may well call for an explanation in terms of what could or could not happen in an interval of length ε. But a description of the situation given in terms of the professor and his clothes does not. Under such a description, a good explanation of the situation must make reference to, say, the professor's romantic involvement with a student.

The point generalizes. Describing a fact or event in one way rather than another makes some features of the fact or event contextually salient, and these contextually salient properties determine what kind of explanation is called for. A purely physical explanation of the professor's presence in the dorm room will, if the situation is described in those terms, be no good, because from a physical perspective, that the atoms under discussion *comprise* a professor and a dorm room is sheer accident. An explanation in terms of the professor's relationship with the student, however, is a good one, because it is essential to the explanation that the objects under discussion have their contextually salient properties.

This is important, because it means that *even if there is a scientific explanation for every fact and event*, nevertheless, there is room for non-scientific explanations of the very same facts and events, though under other descriptions. Above we saw that Ontological Naturalism cannot be validated, because *arguing* for it presupposes that there is some non-natural property, something like *being rationally mandatory*. I would now like to suggest that this property has a role to play in some explanations, of some phenomena, under some descriptions.

Stroud has long argued that epistemic externalism (like Kornblith's reliability theory) does not answer to our philosophical needs because it does not provide the kind of self-understanding that we seek.[14] The opacity of explanatory contexts allows us to explain Stroud's dissatisfaction. Assume that perception is reliable, and that the fact that human knowledge, in general, is possible, is identical to the fact that a creature with a certain set of cognitive faculties manages to accurately represent its environment. Then it may be that the fact that perception is reliable explains how a creature with a certain set of cognitive faculties manages to represent its environment, without the fact that perception is reliable explaining how human knowledge, in general, is possible. I would like to suggest that Stroud is dissatisfied with externalist explanations, *even if they are correct explanations of the phenomena in question*, because they are not correct explanations of the phenomena *under the description offered*.

Plausibly, the only correct explanation of the phenomena, under the description of interest to the epistemologist, is one given in terms of the irreducible property of *being rationally mandatory*.[15] It would concern the evidence that one has available, and what one is required to believe, given this evidence. Humans, unlike most or all other animals, can recognize that their ordinary beliefs are massively underdetermined by the evidence that they have for them, and can, like Descartes at the beginning of the second meditation, ask what they ought to do about that fact. The under-determination problem is a problem for humans because we are responsive to epistemic reasons in a way that,

[14] See Barry Stroud "Understanding Human Knowledge in General," in *Understanding Human Knowledge* (Oxford: Oxford University Press, 2000), 119-120, as well as Barry Stroud "Scepticism, 'Externalism' and the Goal of Epistemology," in *Understanding Human Knowledge* (Oxford: Oxford University Press, 2000), 147-152.

[15] Although Stroud denies that there is *any* correct explanation. See Stroud "Understanding Human Knowledge", 120-121.

say, spiders, are not. Asking for an explanation of how *human* knowledge is possible, and asking for it in *those* terms, makes human responsiveness to reasons contextually salient.

An explanation of how human knowledge is possible, which was given in terms of the reliability of human cognitive faculties, would not make essential appeal to the contextually salient property of being responsive to reasons, and would, for that reason, be unsatisfactory. But an explanation of how human knowledge is possible, given in terms of what it is rationally mandatory to believe, does make essential appeal to the fact that humans are responsive to reasons. It would tell us that there are, in fact, propositions that we are rationally required to believe, given the evidence that we have. That an explanation given in terms of the reliability of our cognitive faculties would not make essential appeal to the relevant contextually salient properties is, I believe, the deep reason that Stroud finds externalist accounts of human knowledge unsatisfying.

And if the correct explanation of how human knowledge is possible, when described in those terms, makes essential use of the property of *being rationally mandatory*, then the difficulties that we encountered trying to vindicate the ontological half of the naturalist program will turn out to be significant indeed. For we will have found that there is a property, which cannot be naturalized, but which does essential explanatory work. And that finding would undermine the claims to coherence and comprehensiveness that make naturalism's metaphysical/epistemic picture of the world so attractive.

4. Summary

Popular belief, perhaps, to the contrary, ours is not an anti-metaphysical age. But the most popular metaphysical view is a modest one; it is one that takes its lead from the results of scientific investigation. In fact, this metaphysical view comprises one half of an influential line of thought which also includes a conception of the nature of inquiry in general, and the relation of philosophy to science in particular. I have not argued that this metaphysical view is mistaken, but I have argued that it cannot be vindicated. Any argument for it presupposes that it is false. I went on to suggest that this may be a source of some concern for the broader naturalism of which it is a part. The failure of the reductive program, together with the opacity of explanatory contexts, leaves open the possibility that there are legitimate non-scientific explanations. And, plausibly, how human knowledge is possible, when described in those terms, calls for such an explanation.[16]

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