



Questions and Answers: Metaphysical Explanation and the Structure of Reality

ABSTRACT: *This paper develops an account of metaphysical explanation according to which metaphysical explanations are answers to what-makes-it-the-case-that questions. On this view, metaphysical explanations are not to be considered entirely objective, but are subject to epistemic constraints imposed by the context in which a relevant question is asked. The resultant account of metaphysical explanation is developed independently of any particular views about grounding. Toward the end of the paper an application of the view is proposed that takes metaphysical explanations conceived in this way to characterize reality's structure. According to this proposal, reality's structure is partly constituted by a projection of our explanatory practices onto reality.*

KEYWORDS: Metaphysical explanation, structure, antirealism, grounding

It seems to us as though reality has a *structure*: some things, facts, or properties seem to depend on or to be explained by other things or facts or properties. It has recently become common to cash out this idea by appeal to a particular kind of noncausal relation of dependence called *grounding*. Grounding theorists often claim that when some x grounds y , x *metaphysically explains* y . Getting clear on what is meant by this is no easy matter as the literature on metaphysical explanation is relatively underdeveloped, and the notion is not usually discussed except in the course of a discussion of grounding. My aim in this paper is to develop a new, stand-alone account of metaphysical explanation and to explain how that account of metaphysical explanation can be applied to give a novel characterization of the structure of reality.

I begin in [section 1](#) by introducing the notion of grounding and its role in debates about reality's structure, and by discussing the relationship between grounding and metaphysical explanation. [Section 2](#) explores the extent to which we should consider metaphysical explanation an epistemic affair, and in [section 3](#) I outline my preferred account of metaphysical explanation. In [section 4](#) I explain how the account can be applied to give a characterization of the structure of reality such that structure is in part a projection of our explanation practices onto reality, and I describe some

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advantages of that characterization. (I am not able here to consider other approaches to limning the structure of reality, such as those developed by Chalmers [2012], Lewis [1983, 1984, 1986], Rosen [2015], or Sider [2011]. I am also not able to consider alternatives to my preferred way of thinking about metaphysical explanation in any detail.)

1. Grounding and explanation

Grounding is taken to be a relation of metaphysical dependence, usually thought of as a metaphysical primitive (it cannot be analyzed in other terms). Friends of grounding try to elucidate the notion by citing the logical and structural properties of grounding, by connecting grounding to other, more familiar notions, and by appeal to a range of paradigm examples (see e.g., Audi 2012; Fine 2012; Schaffer 2009, 2016; Raven 2015; Rosen 2010; Trogdon 2013).

Grounding relations are usually taken to be transitive (if x grounds y , and y grounds z , then x grounds z), irreflexive (nothing grounds itself), asymmetric (if x grounds y , y does not also ground x), nonmonotonic (it does not follow from the fact that x grounds z that x and y together ground z) and hyperintensional (in a grounding sentence ‘ x grounds y ’, substitution of cointensional expressions for variables does not always preserve truth. (The bearers of hyperintensionality are positions in sentences, and so strictly speaking it is a mistake to say that the grounding *relation* is hyperintensional.) It is important for our purposes to note that these properties of grounding are usually also thought to be properties of explanation. Indeed, friends of grounding often insist that grounding has these properties precisely because they are properties of explanation, and grounding is an explanatory relation (see Raven 2015: 327). Paradigm examples of grounding are often expressed using explanatory locutions and are designed to appeal to our intuitions about explanations of a particular kind (e.g., Fine 2012).

Not only are the logical and structural features of grounding shared with explanation, but grounding itself is thought to be an explanatory relation. This could mean one of two things; either grounding *just is* a kind of (metaphysical) explanation, or grounding *backs* metaphysical explanations. Raven (2015: 326) calls friends of the former conception *unionists* (these include Dasgupta [2014] and Raven [2012, 2010]) and friends of the latter conception *separatists* (separatists include Audi [2012], Koslicki [2012], Maurin [2018], Schaffer [2012], and Trogdon [2013]).

Friends of the separatist conception of metaphysical explanation often draw on an analogy between causation and causal explanation to introduce their view: just as instances of the worldly relation of causation are to be distinguished from the causal explanations that track those relations, metaphysical explanations are to be distinguished from the grounding relations that back them (e.g., Schaffer 2012: 124). In the literature, this backing model of metaphysical explanation dominates.

The unionist alternative is the view that grounding relations are explanatory by their very nature; grounding is synonymous with metaphysical explanation. This has often been interpreted as the view that grounding relations themselves have a particular kind of explanatory power. As grounding is (almost) universally

considered objective, mind-independent, and insensitive to considerations about context and understanding, one interpretation of this unionist view seems to require that we adopt a particular view of metaphysical explanation whereby metaphysical explanation does not exhibit any of the ‘epistemic’ features we commonly associate with the everyday notion of explanation, such as elements of context sensitivity and a connection to understanding. (I will discuss these features further in the next section.) A different way to understand the unionist view is as the contention that there is no explanation-making fact (i.e., a fact about a robust grounding relation) underlying the metaphysical explanation facts (see Kovacs 2016). The former presentation of the view seems to build in some assumptions about the nature of grounding that are lacking in the latter. The latter is clearly consistent with a deflationary account of grounding such as the one presented by Dasgupta (2017), who takes the word ‘grounding’ to be a label for constitutive or metaphysical explanation, which does useful work in limning issues of metaphysical interest.

In this paper I give an account of metaphysical explanation, and I take no stand on whether or not we should use ‘grounding’ as a word for this kind of explanation. I also leave open whether we might recognize the presence of an underlying grounding relation of the kind favored by separatists. (Below I will use the term ‘grounding’ in this robust sense; it should be clear from the context how I intend it to be interpreted there.) In this sense, the account of metaphysical explanation I develop is not tied up with accounts of grounding. My reasons for this approach are threefold.

First, I take it that as a general principle, it is better to develop independent theories of things and then see how they fit together than it is to take as a starting point that things are connected in a certain way. The latter strategy is likely to lead to ‘throwing the baby out with the bathwater’ in the event of a revision, and the former makes fewer assumptions and reduces bias. Theorizing about grounding is in constant flux, and theorizing about an independent notion of metaphysical explanation might be more stable. Moreover, it seems we do have an independent grip on metaphysical explanation, and so we should be capable of theorizing about it (Dasgupta 2017: 75).

Second, the notion of metaphysical explanation plausibly reaches beyond that of grounding. If some version of separatism holds, other kinds of metaphysical production or dependence relations might also be suited to backing explanations. If we had an independently motivated view of explanation whereby explanations require worldly backers working in a certain way, we would then be in a good position to see what kind of relations might play the relevant role. This is an important disanalogy between metaphysical and causal explanations: where a backing model of causal explanation must cite causal relations, it is conceivable that a variety of relations might be involved in metaphysical explanation.

Finally, any account that understands the notion of metaphysical explanation in terms of grounding runs into a problem given that, as we saw above, friends of grounding are keen to talk in terms of metaphysical explanation because talking in terms of explanation can help elucidate the notion of grounding. Take the separatist view first and assume (as I will argue in the next section) that metaphysical explanation is constrained, at least to some extent, by pragmatic or

epistemic factors. An advantage of separatism is that the separatist can recognize this pragmatic dimension to metaphysical explanation, but can maintain that grounding itself, which merely backs metaphysical explanations, remains untainted by such considerations. But this is problematic insofar as appeals to explanation are made in the elucidation of grounding because it is unclear how to separate the features of the more familiar notion of explanation from those of the opaque notion of grounding on which appeals to explanation were supposed to shed light.

It might seem as though the unionist has an excellent reason not to develop an account of metaphysical explanation independently of that of grounding: her position is that grounding *is* an explanatory relation! But the unionist's claim is more persuasive and more interesting if she can tell us what it is for a relation to be explanatory, especially when we are interested in a distinctive, metaphysical variety of explanation. This is motivation to develop an independent account of metaphysical explanation before connecting it with grounding. Moreover, if we grant that metaphysical explanation has a pragmatic dimension and maintain that grounding does not, the unionist has an obvious problem (Thompson 2016). The unionist might here point out that *some* kind of worldly explanation is given by citing what grounds what (just as some kind of worldly explanation is given by citing what causes what) and that this kind of explanation is unconstrained by considerations of pragmatics, context, and the like (Raven 2015: 326). But now the unionist has all the more reason to develop an independent account of metaphysical explanation that allows her to make these distinctions.

Of course, it might be that there is much to learn about grounding from consideration of metaphysical explanation and vice versa. But for the reasons described above, this comparison should not mark the starting point of our inquiry. In what follows, I will argue that we can appeal to the notion of metaphysical explanation (rather than to grounding) to give an account of reality's structure. First, we will consider what kind of thing a metaphysical explanation is.

2. What is a metaphysical explanation?

Above I claimed that explanation, including metaphysical explanation, is to some extent a pragmatic or epistemic affair, but what precisely this means was left somewhat vague. In this section, I will explore this issue further.

A first thing to note is the ambiguity in the expression 'explanation'. When we talk about an 'explanation for *P*' (where *P* is some fact or event to be explained), we might have in mind:

- (i) The act of providing an explanation (i.e., when *S* explains *P* to *U*)
- (ii) The thing that is communicated in an act of explanation (i.e., the sentence or proposition reporting some fact that serves as an explanans for *P*)
- (iii) The fact that serves as an explanans for *P*

A further ambiguity concerns whether there are epistemic constraints on speech acts, propositions, or facts *qualifying as an explanation*, or whether speech acts,

propositions, or facts are *themselves* epistemically constrained. While it might be very plausible to suppose that there are epistemic constraints on my explaining to my partner that his mug is broken because the kitten knocked it off the desk, it is much less plausible to think that there are epistemic constraints on the *fact* that the kitten knocked the mug off the desk. It *is* at least plausible to think that whether the fact that the kitten knocked the mug off the desk (or the proposition representing that fact) *qualifies as an explanation* is epistemically constrained, and I take it that this is where the interesting questions arise.

There are good reasons to think that what qualifies as an explanation will depend on factors such as the background beliefs and theoretical commitments of the explanation seeker (and perhaps also the explanation giver). This is explicit in the work of pragmatic theorists like van Fraassen (1980), but it seems also to be present in the work of those who take a less obviously pragmatic approach to explanation. For Hempel (1965), for example, explanations take the form of a sound deductive argument, and successful explanations require that *we* are able to deduce the explanandum from the explanans. In his words, ‘the argument shows that, given the particular circumstances and the laws in question, the occurrence of the phenomenon *was to be expected*; and it is in this sense that the explanation enables us to *understand why* the phenomenon occurred’ (Hempel 1965: 337, italics in original).

Hempel clearly thinks explanation and understanding are connected, but there are two ways we might understand this connection. We might take an ‘explanation-first’ view and hold that anybody who ‘grasps’ a correct explanation for some explanandum thereby understands the explanandum (e.g., Strevens 2008, 2013). On this way of thinking, explanation is constitutive of understanding, but we might nevertheless think of explanation itself as an objective affair (this is the kind of approach that might be consistent with unionism). Alternatively, we might take an ‘understanding-first’ view and think that the connection between explanation and understanding is such that for something to count as an explanation it must produce (or be capable of producing) understanding in suitably disposed recipients. This latter conception places an epistemic constraint on explanation.

It seems clear that we could be in possession of many explanatory arguments where we, due to our various cognitive limitations, are incapable of deriving the conclusion of the relevant argument from its premises. In such cases, we are not in a position to expect the explanans or to understand why the relevant phenomenon occurs. On one reading of the Hempel quotation above, this is to preclude our being in possession of an explanation in such cases (and to suggest an ‘understanding-first’ approach to explanation, with all the pragmatic/epistemic constraints that entails).

Suppose we want to maintain that explanation is an objective affair and thus adopt the explanation-first view. Our options are either to say that we do have an explanation in the case where we are incapable of deriving the argument’s conclusion or that we do not. If we do have an explanation, Hempel’s remarks above are quite mysterious (since on such a view, expectation and understanding would be playing no role at all). If we do not, we must explain why not. Perhaps the ability to perform the relevant derivation is what is to count as ‘grasping’ on the explanation-first view, and so the explanatory failure here is to be located in a

failure properly to ‘grasp’ the explanation. But then it seems that epistemic constraints on what counts as an explanation have again made their way into the account, and so explanation can no longer be considered an entirely objective affair. The role of intelligibility and understanding here supports the contention that whether some fact (or proposition reporting that fact) counts as an explanation or not depends on epistemic factors. This is plausibly the case for all three disambiguations of ‘explanation’ mentioned above.

Other suggestive reasons to think that there is at least some epistemic component to explanation include reflection on the intuition that there is more to an explanation than the world being a certain way. Something is required to turn facts about the world (or propositions expressing those facts) into explanations. That something is agent involving. On an uninhabited planet in distant space there are, presumably, causal relations between various particles. But until we consider it from our perspective as enquirers, it would be strange to describe the activities of one particle as *explaining* the activities of another. Or consider a possible world with no agents. It makes sense for us to talk about what explains what at that world (from our perspective as inquirers), but it would be a mistake to say that there are any ready-made explanations *in* that world. Unlike the causal or the metaphysical connections that might contribute to them, explanations are not the sorts of things that are ‘out there’ in the world on their own, waiting to be discovered.

A second reason to think that there is at least some epistemic component to explanation is that it is natural to think that different facts or propositions will qualify as explanations for agents with different cognitive capacities. While the Big Bang certainly *causes* the mug to break, it is tempting to deny that, for creatures like us, it provides any kind of explanation. The causal chain stretching from the Big Bang and terminating in the mug’s breaking is just too complicated for us to understand, and so the fact that the Big Bang occurred does not count as an explanation for the fact that the mug broke. But for a being with alien cognitive capacities it might be correct to say that the breaking of the mug is explained by the Big Bang, perhaps because the alien would be able to predict the mug’s breaking given the occurrence of the Big Bang, or would be able to understand its breaking in terms of the Big Bang. And it seems that whether something qualifies as an explanation varies for agents with different cognitive capacities irrespective of whether the explanation is ever in fact communicated; the agents’ cognitive capacities are built into whether or not something counts as an explanation. This suggests that whether something qualifies as an explanation is constrained by epistemic factors not only on interpretation (i) of ‘explanation’, but also on interpretations (ii) and (iii).

Whether something counts as an explanation or not plausibly depends (in part) on who that explanation is for. In this sense, explanation is an epistemic phenomenon. Since metaphysical explanation is, first and foremost, a form of explanation, there must be a sense in which we think of metaphysical explanation as an epistemic phenomenon (even if it is just that *counting as* a metaphysical explanation is epistemically constrained). The account of metaphysical explanation I develop below takes seriously the idea that metaphysical explanations are inextricably involved with our epistemic lives.

3. Metaphysical explanations: Questions and answers

Like van Fraassen (1980), I think that an explanation is an answer to a question. More precisely, on my view an explanation is a pair made up of a question and an answer (I will often talk of an explanation as an answer to a question, but I take the question itself as playing a substantive role in comprising the explanation). This account of explanation properly respects the epistemic desiderata mentioned earlier and takes seriously the phenomenology of seeking an explanation for something; we ask a question of ourselves or of somebody else, and we look for a satisfactory answer. I will begin by explaining the account in fairly broad terms, making it more precise as we go along.

Metaphysical explanations are answers to *what-makes-it-the-case-that* questions. Answers to what-makes-it-the-case-that questions are to be distinguished from answers to why-questions that will themselves provide different sorts of explanations. Asking what makes it the case that the mug is broken demands an answer that has to do with its parts being disconnected; that is what the mug's being broken consists in. Asking *why* the mug is broken solicits a different kind of explanation (such as that the kitten knocked it off the desk). Asking what makes it the case that Aria performed a wrong action requires an answer such as 'Aria caused somebody pain' or 'Aria acted contrary to the divine law', asking *why* she performed a wrong action demands an explanation like 'she was angry and upset', or 'she didn't know it was wrong'. Because the relevant explanations are metaphysical and it is difficult to uncover metaphysical truths, we can expect disagreement between those who subscribe to different views. (This is no more surprising than when physicists disagree about what explains some new observation.)

Suppose we are looking for a metaphysical explanation of the fact that Aria did something wrong; we are looking for an answer to the question *Q*: 'what makes it the case that Aria did something wrong?' Here are three candidate answers: (a) Aria acted contrary to the divinely prescribed moral law; (b) according to the fiction of morality, Aria did something wrong; (c) Aria's action caused unnecessary pain. (Strictly speaking, these are partial answers. A full answer would include the topic of the question: 'Aria's acting contrary to the divinely prescribed moral law makes it the case that she did something wrong'.) Each candidate answer is a reasonable, proportionate, intelligible, and relevant answer to our what-makes-it-the-case-that question, relative to a given normative theory. Each of these propositions is therefore explanatory with respect to the relevant question. I will call them *candidate metaphysical explanations* of Aria's wrongdoing. These are to be contrasted with other facts about Aria such as (d) Aria likes dogs more than cats, and (e) Aria is 31 years old. Those propositions are not (usually) to be considered answers to *Q* at all and so are not to be considered explanatory with respect to *Q*.

The irrelevance of some proposition to a given question is not the only way in which a proposition can fail to be explanatory with respect to that question. Propositions might also fail to be explanatory by being inappropriate in other ways, such as by being overly complex or by including too much unnecessary or

irrelevant information given the context. This has the consequence that some question-answer pair might be explanatory to agent *A* but not to agent *B*, because *A* and *B* have different cognitive capacities. Given the relationship between explanation and understanding (which I do not have the space to discuss properly here) this seems appropriate. The falsity of some proposition does not preclude its being a candidate metaphysical explanation so long as it meets the above criteria, at least so long as it is not believed to be false by whoever offers it in response to the relevant question. (To offer an answer one believes to be false in response to a what-makes-it-the-case-that question would violate the appropriateness constraint on answers.) The truth of a proposition is thus neither necessary nor sufficient for explanatoriness.

Suppose further that Divine Command Theory is true: when an act is wrong, it is that act's being contrary to the divinely prescribed moral law that makes it the case that the act is wrong. We might then say that the *correct* explanation of Aria's wrongdoing is that she acted contrary to the divinely prescribed moral law. A necessary condition on an explanation's being correct is that it is true, and so while false propositions might sometimes be explanatory, it cannot be the case that a false proposition does explanatory work as part of a correct explanation. Therefore, that a substance contains phlogiston might be a candidate explanation for what makes it the case that it is flammable, but it cannot be a correct explanation. (I thus use the term *correct explanation* to mean what some others mean by *explanation*.)

Truth is not all that distinguishes correct from incorrect candidate explanations. Even if Divine Command Theory is true, Aria's action might nevertheless have caused unnecessary pain. In that case, both (a) and (c) above are appropriate answers to *Q* (and so both are explanatory), and both are true, but only (a) is a *correct* explanation because (according to the divine command theorist) it is not the causing unnecessary pain that makes it the case that Aria's action was wrong, but her contravention of the divinely prescribed moral law. Divine Command Theory is a theory about the connection between an action's moral value and what is prescribed by the gods such that the latter explains or accounts for the former. The correctness or otherwise of a candidate metaphysical explanation is determined by the nature of the metaphysical relation between (the contents of) the explanans and the explanandum.

Various different metaphysical relations might play the relevant role. Perhaps in the case under discussion, the moral facts asymmetrically supervene on the facts about what the gods command. Perhaps the moral facts are realized by the gods' commandments. Perhaps the moral facts are grounded in facts about what the gods command (note that in this latter case, we will have to understand grounding in the robust sense of worldly dependence). In giving an account of what makes it the case that Aria acts wrongly, we are not generally also required to give an account of in virtue of what our explanation is the correct one, though an account of the connection might well form a part of one's moral theory.

I do not propose here to settle exactly which dependence relations might account for the correctness or otherwise of different candidate explanations, but I am inclined to think that any noncausal dependence relation, if it obtains, will render the

corresponding explanation correct. (There is, of course, a difficulty in specifying exactly which relations obtain and where, but that project need not be completed for this account of correctness to stand.) The relevant relations will include (but are not limited to): determinate-determinable relations, constitution, set-membership, property realization. Even relations such as identity that do not have their direction ‘built in’ might license metaphysical explanations in the right context. (For example, to respond to the question ‘what makes it the case that Peter is a bachelor?’ with ‘Peter is an unmarried man eligible for marriage’ in the right circumstances is to give a correct metaphysical explanation where that explanation is rendered correct by the identity between being a bachelor and being an unmarried man eligible for marriage). Symmetric relations in principle license explanations running in either direction, but which question is asked determines which answer or answers are appropriate.

It should not be built into our account of metaphysical explanation that every relevant proposition has a unique correct metaphysical explanation, for two reasons. First, two correct explanations might differ merely in their complexity. (In that case, the simpler one might be the better explanation, but so long as both are above the minimum threshold of simplicity required for explanatoriness, both might count as correct). Second, there might be some cases of overdetermination (just as there are examples of causal overdetermination and hence overdetermination in cases of causal explanation). Take a question like ‘what makes it the case that the leaf is big or green?’ Answers (i) the leaf is big, and (ii) the leaf is green (perhaps along with a proposition about disjunction, such as that a disjunction is true iff one or both of its disjuncts is true) are both satisfactory, correct answers to our question. Thus, both should count as correct metaphysical explanations in this context.

One might object at this point that the only dependence relation one really needs to recognize as accounting for the correctness of metaphysical explanations is grounding, and that what has been offered above is a particular version of a separatist account of the relationship between metaphysical explanation and grounding. I think to take this line would be to weaken the account, but I wish to leave open that grounding might be one among various noncausal dependence relations that give rise to correct metaphysical explanations.

First, I think that for at least most cases of metaphysical explanation we are interested in, we can point to some nongrounding relation that accounts for the correctness of that explanation. Even friends of grounding do not deny that there are, in addition to grounding, part-whole relations, determinate-determinable relations, set-membership relations, realization relations, and so on. There is a strong case to be made that these nongrounding relations alone do the ‘metaphysical heavy lifting’ (see Wilson 2014; Koslicki 2015), and in that case it is these relations we should be interested in. To posit a robust relation of grounding in these cases in addition to other metaphysical dependence relations seems to me to be an avoidable ontological cost, and it would be best if our account of metaphysical explanation was not committed to paying that cost.

Second, very little work has been done on the epistemology of grounding. For many if not all of these other dependence relations, there is a clearer case to be

made for our having knowledge of them than there is in the case of grounding. I think we should be wary about making our account of metaphysical explanation subject to the outcome of debates about the epistemology of grounding. When there is good reason to posit some other dependence relation and to take that relation to give rise to a metaphysical explanation, we should do so.

Finally, it seems that at least some instances of case-making are not plausibly instances of grounding. For example, the fact that rectangle R has four sides of equal length makes it the case that R is a square. A likely candidate dependence relation accounting for the correctness of this explanation is identity: the property of having four sides of equal length is identical with that of being a square. The grounding theorist can individuate facts in a fine-grained way and hold that the fact that R has four sides of equal length grounds the fact that R is a square, but that explanation seems to miss something about what the world is like. To have four sides of equal length *just is* to be a square. We should expect to be able to give the reverse explanation in a different context: what makes it the case that R has four sides of equal length is that R is a square. The grounding theorist (who holds that grounding is asymmetric) seemingly cannot account for these cases of identity explanations.

3.1 Questions

Explanations are pairs of questions and answers, and so which question is asked constrains which responses are appropriate. Van Fraassen's (1980: ch. 5) account of explanations as answers to why-questions takes questions to be context sensitive along three dimensions: the topic of the question, the contrast class, and the relevance relation. The same seems to be true of the questions involved in our theory of metaphysical explanation. The topic of the question is just what is presupposed in the question. To use van Fraassen's example (1980: 141), a question like 'why is this conductor warped?' will presuppose the truth of a proposition about a particular conductor, as specified by the context (i.e., that whatever conductor is proximal is warped). The same sort of context sensitivity might come into play in the metaphysical case (e.g., 'what makes it the case that *this* action is wrong?'). This degree of context sensitivity in particular seems fairly uncontroversial.

The second dimension of context sensitivity van Fraassen identifies concerns the contrast class of alternatives to the topic of the question, a set of propositions that includes the topic. In our example Q 'what makes it the case the Aria did something wrong?' the topic is: Aria did something wrong, and the contrast class would be a set of propositions that might include: Aria did something right; Aria did something morally neutral. But by specifying a different context class we can ask a different question. Suppose we want to know what makes it the case that Aria did something wrong rather than nothing at all. Then the topic of the question is still 'Aria did something wrong', but the contrast class is: Aria did nothing at all. The contrast class focuses the question.

In the above example, the second reading, though legitimate, is somewhat unnatural. Here is a different example. Take the following question S : what makes

it the case that the ball is red? Again, we can here distinguish two different questions on the basis of the contrast class. In both cases, the topic of the question is that the ball is red. The first question (S_1) might have as its contrast class: the ball is green; the ball is blue, etc. Candidate answers to S_1 include: the ball is scarlet; the ball is crimson; the ball is ruby. The second question (S_2) has as its contrast class: the ball merely appears to be colored red. Candidate answers to S_2 include: the ball reflects light with a wavelength in the red spectrum; the ball is disposed to look red to standard perceivers in standard conditions; the ball instantiates the primitive color property *redness*. S_1 and S_2 therefore have different candidate answers. Because the question is part of the explanation, these are two different metaphysical explanations of what makes it the case that the ball is red and not merely differences in what is appropriate to say in a given conversational context. The explanation itself is thus partly determined by the context of the explanation request.

The relevance of candidate answers is the final aspect of the specification of a question. This explanatory relevance determines what will count as a possible explanatory factor, what sort of thing is being requested in an answer. This is not the same as the role of the contrast class in focusing the question because the contrast class specifies alternatives that the questioner does *not* take to be made the case. A given proposition might or might not be relevant to the topic with respect to the particular contrast class.

Take S_1 above. When the relevant audience is a group of philosophers, the candidate answers specified above will count as relevant. But if the question was raised between say, painters, we might expect a different set of relevant answers reflecting the painters' shared color expertise (e.g., the ball is carmine; the ball is Spanish carmine). The sort of thing that is requested in an answer is determined by the presuppositions, interests, and expectations of the explanation seeker at the relevant time.

Together these three aspects of context sensitivity determine a question, which in turn, together with an answer, constitute a metaphysical explanation. Features of the context include the epistemic position, beliefs, assumptions, and commitments of the explanation seeker, and so this context sensitivity of the question places an epistemic constraint on metaphysical explanation. There can be no explanations, according to this view, without a context-saturated question. Because the context includes agential features, explanations are irreducibly agent-involving. There can be no explanations without agents, because an agent is required for the asking of the particular question that is part of each explanation.

3.2 Answers

Answers to what-makes-it-the-case-that questions are propositions that bear the relevance relation to the pair formed of the topic of the question and the contrast class. They tell us what makes it the case that Aria did something wrong, given the contrast class determined by the question, constrained in accordance with relevance. A *full* answer A (a candidate metaphysical explanation) claims that the topic of the question is true, that the other members of the contrast class are not,

and that A bears the relevance relation to the pair made up of the topic and the contrast class (van Fraassen 1980: 143).

Let us think again about our question Q from the previous subsection (what makes it the case that Aria did something wrong?), and propositions (a), (b), and (c). All three of these (though [probably] not (d) and (e)) can form part of a relevant answer to the question. When presented as a full answer (i.e., ‘Aria’s acting contrary to the divinely prescribed moral law makes it the case that Aria acted wrongly’), all of them presuppose that the topic of the question is true and that the contrast class is specified as we would normally expect (Aria did something morally right; Aria did something morally neutral). Therefore, each is a candidate metaphysical explanation.

Deciding between competing candidate answers to the relevant questions will be a matter of deciding between (in this case) competing moral theories. This should come as no surprise. The practice of metaphysically explaining something must draw on what the explanation giver takes to be the best theory of the world, and so arguments about what is the correct metaphysical explanation are to be conducted in terms of which is the best overall theory. That is, they are to be cashed out in terms of familiar philosophical arguments in various different domains of discourse. If our theories hook up with the world in the way that we hope they do, we should expect that our best theory provides a correct metaphysical explanation. (Of course, our best theory may turn out to be false. In that case we are still arguing about which explanation is correct, it is just that none of the candidates is in fact correct.)

4. The structure of reality

Talk of metaphysical explanation is bound up with talk about reality’s structure. In the grounding literature, this is because grounding is the notion taken to limn reality’s structure, and grounding either is or backs metaphysical explanation. In this final section I consider taking metaphysical explanation itself (as described above) to characterize reality’s structure. The resultant picture is an alternative to the robust realism about structure that pervades the contemporary discussion (see Lewis 1983; Sider 2011; Bennett 2017) and has more in common with the ‘internal realism’ of Putnam (1981) or the ‘vegetarian’ approach to joint-carving advanced by Taylor (1993). I will not engage here in arguments for preferring this kind of view over a more robust realism, but it should be clear how such a view might be attractive to one who takes the above approach to metaphysical explanation. The purpose of the discussion is to outline an application of the above account of metaphysical explanation, but it is of course possible to resist what follows while adopting that account.

The basic picture is as follows. Metaphysical explanations are ordered pairs made up of a what-makes-it-the-case-that question and an answer. The topic of a question and answers to the question are propositions, and thus metaphysical explanation is an ordering on propositions. Explanations can chain, such that a question Q can have as its topic a proposition P and an answer R (which must be relevant and appropriate given the question). R might then be the topic of a further question

that has an answer *S*. *S* thus explains *R*, which explains *P*. Explanations are correct when they provide a true, appropriate answer to the relevant question that cites some fact that makes the case the topic of the question in virtue of the obtaining of some metaphysical dependence relation between the two propositions (or their contents). Metaphysical explanation is thus an ordering on propositions that is determined both by the condition the world is in with respect to the relevant relations (parthood, identity, set membership, determinate-determinable, etc.) and by epistemic features of the explanation speaker. As such, reality's structure is access-dependent.

Before getting into the details, let me first preempt an objection. Given what I said above about the correctness of a true, appropriate metaphysical explanation being determined by patterns of the obtaining of metaphysical dependence relations, one might argue that it is these relations that provide reality with all its structure, and that this is independent of anything we might wish to add about metaphysical explanation. Certainly, these dependence relations provide reality with plenty of structure. What they do not provide is the kind of *generic* structure that often seems to be at issue in metaphysics, the structure that limns issues of metaphysical interest (see Dasgupta 2017: 76).

To focus only on the local dependence relations is to allow only for local pockets of structure (determinate-determinable structure; compositional structure; set-theoretic structure; etc.), but there is a sense in which those structures are not commensurable with one another; they do not 'fit together'. We must be pluralists about the structure generated by local dependence relations, and this pluralism (in the absence of a privileged structuring relation—I will come back to this shortly) precludes making the sorts of general claims about how things fit together that we at least sometimes like to make when we do metaphysics. To think of generic structure in terms of metaphysical explanation allows us to abstract away from local dependence and impose a structure on reality, albeit a structure that is partly constituted by those local dependence relations.

A second advantage of taking metaphysical explanation to account for generic structure is that we are able to make claims about metaphysical explanation without knowing *which* dependence relation accounts for the correctness of a given explanation (if indeed it is correct). For example, one might be a committed physicalist of a certain kind and therefore take it to be central to one's overall theory that any moral facts, mental facts, and aesthetic facts depend on physical facts. One might use this in further metaphysical theorizing, to argue with interlocutors, and to inform one's worldview further without having any particular view about which dependence relation or relations account for the correctness of one's claims about metaphysical explanation.

The previous remarks might then call to mind a different line of objection. Generic metaphysical structure is precisely what the grounding relation provides; grounding is the privileged structuring relation. We do not need this complicated machinery of contextually determined questions and answers to license claims about generic metaphysical structure. All we need is to appeal to grounding, the relation that unifies the disparate dependence relations and in terms of which we can talk in order to guide and constrain our metaphysical theorizing. I argued

above that we should not think of grounding as the only relation that licenses metaphysical explanations, that we might think of ‘grounding’ simply as another word for ‘metaphysical explanation’ (rather than for a relation), and I expressed some concerns about appeals to grounding in general. Those arguments also tell against taking grounding to be a privileged structuring relation.

One more thing. At least some of the local dependence relations have different relata and different logical properties to one another and to grounding on its orthodox conception (see Wilson 2014: 568–69; Bennett 2017). This tells against thinking of grounding as a generic structural notion that subsumes the local dependence relations.¹ We might instead think of grounding as a kind of abstraction from these local dependence relations that allows for differences in the logical features of the local dependence relations (Raven 2017: section 2.1), but then grounding seems to be an additional posit over and above the other dependence relations. As I discussed above, this sort of view seems both unparsimonious and epistemically suspect. And it does not seem to me to be warranted. We can, I think, properly respect the sense in which reality has some kind of intrinsic structure and the sense in which metaphysics is about understanding the world by construing generic structure in terms of metaphysical explanation. This is, of course, not an argument against grounding-based formulations of structure, but it should be enough to permit us to proceed with describing some details of an alternative. (Resisting realism about grounding might provide further motivation to give an alternative account of structure; see Miller and Norton [2017], Dasgupta [2017], and Thompson [2018] for arguments against realism about grounding).

4.1 The shape of reality’s structure

Since metaphysical foundationalism is by far the most widely accepted account of the shape of reality’s structure, if an account of structure characterized in terms of metaphysical explanation is to be taken seriously, it must be consistent with metaphysical foundationalism. According to the foundationalist, reality’s structure is built up from a basis that does not itself depend on anything further. For the foundationalist sympathetic to my account of metaphysical explanation, the foundation will comprise propositions for which there are no candidate answers to what-makes-it-the-case-that questions with those propositions as their topic. These are the metaphysically brute facts, the facts about reality that admit of no further explanation.

For comparison, recall the position of the epistemic foundationalist. A natural way for the foundationalist to explain which of her beliefs are to be considered basic is to state that they are those for which requests for further justification just do not seem to make sense. I might justify my belief that the sun is setting with my belief that the sky appears orange to me right now, but if you ask me to justify my

¹ One might insist in response that those local dependence relations that have different properties to grounding are not apt to license claims about metaphysical explanation. I explained above why I think such relations do license the relevant claims.

belief that the sky appears orange to me right now, it seems reasonable enough for me simply to reject the question. There is nothing more I can say. (One way to put this point is to say that *nothing* further justifies my belief.) The metaphysical foundationalist thinks that what-makes-it-the-case-that questions that elicit a similar response have as their topic foundational propositions. One might think, for example, that a question like ‘what makes it the case that an up quark has an elementary charge of $+2/3$?’ has no candidate answers and thus that the proposition that an up quark has an elementary charge of $+2/3$ is foundational. (Alternatively, we might say that the question is defective because *nothing* [further] makes its topic the case).

These foundational propositions will then themselves figure in answers to what-makes-it-the-case-that questions featuring other propositions as their topic. For example, a good candidate answer to the question ‘what makes it the case that a proton has an elementary charge of 1 ?’ is that an up quark has an elementary charge of $+2/3$, a down quark has an elementary charge of $-1/3$, and that a proton is composed of two up quarks and one down quark.

Those who subscribe to different metaphysical theories will give different answers to the relevant what-makes-it-the-case-that questions, but so long as we only look for answers further down the explanatory chain, the answers to those questions nevertheless allow us to discern a hierarchical structure. Different accounts of this structure will be given by those who subscribe to different metaphysical theories, but there is no mystery here (it is exactly analogous to disagreements about what grounds what on a grounding-based account). While correct metaphysical explanations furnish reality with its structure, incorrect explanations also impose a structure on propositions. Accounts of reality’s structure will vary with variation in theories.

On the foundationalist account of metaphysical explanation just outlined, answers to what-makes-it-the-case-that questions are constrained such that they must always be ‘downward’ looking; all candidate answers must themselves either be a metaphysically brute fact or be related in a linear topic-answer chain such that the topic of the question at the end of the chain has no candidate answers (and so is itself a metaphysically brute fact).

There is a common presumption that metaphysical explanations take us from the less fundamental to the more fundamental, ultimately ‘bottoming out’ in some metaphysically brute fact. I will mention three ways we might resist this picture. The first is that if the relations giving rise to the relevant explanation are symmetric (as is, for example, identity) then we should expect to be able to explain each of the relata in terms of the other (see Achinstein 1983: 236). The interdependence between these questions and answers generated by the symmetric relation between, for example, the temperature of a gas and its mean molecular kinetic energy requires that we allow for a nonlinear structure between the relevant propositions. It is conceivable that an agent might seek an explanation for each topic in turn. This picture gives us a tight explanatory circle, albeit an informative one.

A second way to endorse a nonfoundationalist account of reality’s structure is to think of metaphysical explanation as a holistic affair. Local requests for explanation

generally involve only small portions of an entire network of propositions, each entering into question-answer pairs in such a way that for any given proposition in the network that is the topic of some question, we might find that very proposition again when we follow the question-answer chain if we keep asking questions for long enough. This sort of picture might be appealing to those who endorse structuralist positions in the philosophy of mathematics, for example (e.g., Shapiro 1997). The structuralist will say that a partial explanation of what makes it the case that $2 + 2 = 4$ is that $1 + 1 = 2$ and that $1 + 1 + 1 + 1 = 4$. A partial explanation of the fact that $1 + 1 + 1 + 1 = 4$ is that $1 + 1 = 2$ and that $2 + 2 = 4$. A full explanation of either proposition would cite the relationships between all of the positions in the structure.

A third way to resist the foundationalist picture is to endorse an infinitist account according to which there are no propositions not made the case by any other propositions (and so no unanswerable questions).

Once we move away from the foundationalist account, we are able to make sense of a holistic approach to metaphysical explanation. A complete metaphysical explanation of reality might be a complex system arranged such that we can best understand it, where explanations build on each other and lend mutual support to one another. (Note that on this way of thinking about explanation, explanations do not exhibit the properties mentioned in [section 1](#): they are nontransitive, nonsymmetric, and nonreflexive.) Given the role that our epistemic lives play in determining what counts as a metaphysical explanation, the ability to make sense of explanation as a complex holistic system is a desirable feature of our account. In some cases the apparently best explanation cites very general propositions, and in others the candidate explanations are much more fine-grained. But a comprehensive defense of this view is a project for another time. In the next subsection, I discuss the extent to which our account demands that we be realists about metaphysical structure.

4.2 Realism and structure

We cannot make sense of a unified account of reality's structure on this view without the *asking of the relevant questions* (the answers to those questions by themselves are far too disparate to form any kind of structure without the regimentation gained from being part of a question-answer pair, and the potential number of unasked questions far too great to do any useful work). Thus, though there might be unique, correct answers to the relevant questions, we cannot make sense of metaphysical explanation in the absence of the asking of those questions. The way in which context helps to specify the relevant questions (and constrain their answers) is therefore an ineliminable part of the theory of metaphysical explanation, as is the asking of the questions in the first place. This guarantees that explanation is a properly epistemic phenomenon, but it also allows us to highlight that the notion with which structure is to be characterized itself (and not just an interpretation of information about its arrangement) is partially dependent on us.

To suggest that reality's structure is to be characterized by answers to what-makes-it-the-case-that questions is therefore a departure from the standard

view that the structure of reality is determined independently of us. It is to suggest that there is at least an element of *projection* of structure onto reality, and this is a departure from the realist orthodoxy. But it is not as radical a departure as it might seem. Metaphysical explanations are only correct when they track local dependence relations, and so there are significant constraints on what can count as a correct account of reality's structure. On top of this, our interests and our background beliefs play a role in determining what-makes-it-the-case-that questions and hence the structure, but we should expect those things largely to converge. We have largely the same cognitive makeup, scientific evidence, and (in a shared conversation) interests. Where background beliefs fail to converge, that failure will be accounted for in terms of our different theoretical commitments, and we ought to *expect* that those with different theoretical commitments will give different accounts of reality's structure (just as in a grounding framework holding different views about the nature of consciousness leads people to say different things about the grounding relations between the mental and the physical).

Where the approach outlined here departs from the orthodoxy is in allowing for some variety in *correct* accounts of structure, as opposed to merely allowing for variety in candidate accounts. This is not surprising once we take on board the idea that structure is to be understood in terms of explanation; there are many different correct ways to explain some phenomenon, depending on what is salient in the context. To appeal to the old metaphor, to give an account of reality's structure is to 'carve reality at the joints'. The joints, on this view, are there (they are provided by the local dependence relations). But the butcher still has to make some choices; the carving does not happen on its own.

4.3 Structure for antirealists

An account of structure as an ordering on propositions allows us to make sense of structure in domains of discourse about which we are antirealist. Just as we can make sense of metaphysically explaining propositions that are true according to some fiction (what makes it the case that [fictionally] Harry Potter is a wizard is that [fictionally] Harry is a male human able to perform magic), we ought to be able to make sense of, for example, a mathematical fictionalist explaining some mathematical facts in terms of others. In these cases, we cannot distinguish correct from incorrect accounts of structure on the basis of worldly dependence (that is, no account of antirealist structure can be correct), and so all that is at issue is explanatoriness relative to a given theory and to the interests of the relevant agents.

Allowing that domains of discourse about which we are antirealist exhibit metaphysical structure makes for a unified and comprehensive worldview. Reasons to be interested in structure in the first place (accounting for our intuitions about dependence, enabling us to give a certain kind of explanation, characterizing the way in which things fit together, guiding our investigations) apply just as much in domains of discourse about which we are antirealist as they do in domains of discourse about which we are realists. If structure is something to be discovered, it is hard to see how it could obtain in antirealist domains, but if structure is projected we can reap its advantages.

Antirealist systems of explanation do not float free of realist ones. For example, the moral antirealist might maintain that what makes it the case that Bruce did something wrong has to do with our disgust-related attitude to his action, or the mathematical fictionalist might say that what makes it the case that mathematical claims are assertable is that they convey real-world truths. Sometimes we seek a metaphysical explanation of the relationship between the fiction and the access-independent world, and the account of structure under discussion here enables us to describe a structure such that the fiction is supported by the access-independent world. Structure is a matter of a complete world view.

Here is the big picture again. Metaphysical explanations are pairs consisting of contextually determined what-makes-it-the-case-that questions and the answers to those questions. We can appeal to this account of metaphysical explanation to make sense of the intuition that reality has a structure. However, on this account, the structure of reality is not ‘out there’, existing independently of us and waiting for us to discover it. Rather, the structure of reality is generated both by facts about which relations obtain between (the contents of) the relevant propositions, and by our interests, projects, and our theoretical commitments. Reality’s structure is constructed by us and then imposed back onto reality, allowing us to fit things together, to make better sense of the world as we find it. Using this account we can explicate familiar foundationalist accounts of the shape of reality’s structure, but we can also outline alternatives. We can also make sense of structure in domains of discourse about which we are antirealist, allowing for a more unified account of the world.

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References

- Achinstein, P. (1983) *The Nature of Explanation*. Oxford: Oxford University Press.
- Audi, P. (2012) ‘Grounding: Toward a Theory of the In-Virtue-Of Relation’. *Journal of Philosophy*, 109, 685–711.
- Bennett, K. (2017) *Making Things Up*. Oxford: Oxford University Press.
- Chalmers, D. (2012) *Constructing the World*. Oxford: Oxford University Press.
- Dasgupta, S. (2014) ‘On the Plurality of Grounds’. *Philosopher’s Imprint*, 14, 1–28.
- Dasgupta, S. (2017) ‘Constitutive Explanation’. *Philosophical Issues*, 27, 74–97.
- Fine, K. (2012) ‘A Guide to Ground’. In B. Schnieder and F. Correia (eds.), *Metaphysical Grounding: Understanding the Structure of Reality* (Cambridge: Cambridge University Press), 37–80.
- Hempel, C. (1965) *Aspects of Scientific Explanation and Other Essays in Philosophy of Science*. New York: Free Press.
- Koslicki, K. (2012) ‘Varieties of Dependence’. In Fabrice Correia and B. Schnieder (eds.), *Metaphysical Grounding: Understanding the Structure of Reality* (Cambridge: Cambridge University Press), 186–213.
- Koslicki, K. (2015) ‘The Coarse-Grainedness of Grounding’. *Oxford Studies in Metaphysics*, 9, 306–44.
- Kovacs, D. (2016) ‘Grounding and the Argument From Explanatoriness’ *Philosophical Studies*, 174, 2927–52.

- Lewis, D. (1983) 'New Work for a Theory of Universals'. *Australasian Journal of Philosophy*, 61, 343–77.
- Lewis, D. (1984) 'Putnam's Paradox'. *Australasian Journal of Philosophy*, 62, 221–36.
- Lewis, D. (1986) *On The Plurality of Worlds*. Oxford: Blackwell.
- Maurin, A.-S. (2018) 'Grounding and Metaphysical Explanation: It's Complicated'. *Philosophical Studies*, doi: 10.1007/s11098-018-1080-0.
- Miller, C., and J. Norton. (2017) 'Grounding: It's (probably) All in the Head'. *Philosophical Studies*, 174, 3059–81.
- Putnam, H. (1981) *Reason Truth and History*. Cambridge: Cambridge University Press.
- Raven, M. (2012) 'In Defence of Ground'. *Australasian Journal of Philosophy*, 90, 687–701.
- Raven, M. (2015) 'Ground'. *Philosophy Compass*, 10, 322–33.
- Raven, M. (2017) 'New Work for a Theory of Ground'. *Inquiry*, 60, 625–55.
- Rosen, G. (2010) 'Metaphysical Dependence: Grounding and Reduction'. In B. Hale and A. Hoffman (eds.), *Modality: Metaphysics, Logic, and Epistemology* (Oxford: Oxford University Press), 109–36.
- Rosen, G. (2015) 'Real Definition'. *Analytic Philosophy*, 56, 189–209.
- Schaffer, J. (2009) 'On What Grounds What'. In D. Chalmers, D. Manley, and R. Wasserman (eds.), *Metametaphysics: New Essays on the Foundations of Ontology* (Oxford: Oxford University Press), 347–83.
- Schaffer, J. (2012) 'Grounding, Transitivity, and Contrastivity'. In F. Correia and B. Schnieder (eds.), *Metaphysical Grounding: Understanding the Structure of Reality* (Cambridge: Cambridge University Press), 122–38.
- Schaffer, J. (2016) 'Grounding in the Image of Causation'. *Philosophical Studies*, 173, 49–100.
- Shapiro, S. (1997) *Philosophy of Mathematics: Structure and Ontology*. Oxford: Oxford University Press.
- Sider, T. (2011) *Writing the Book of the World*. Oxford: Oxford University Press.
- Strevens, M. (2008) *Depth: An Account of Scientific Explanation*. Cambridge, MA: Harvard University Press.
- Strevens, M. (2013) 'No Understanding Without Explanation'. *Studies in History and Philosophy of Science*, 44, 510–15.
- Taylor, B. (1993) 'On Natural Properties in Metaphysics'. *Mind*, 102, 81–100.
- Thompson, N. (2016) 'Grounding and Metaphysical Explanation'. *Proceedings of the Aristotelian Society*, 116, 395–402.
- Thompson, N. (2018) 'Irrealism about Grounding'. *Royal Institute of Philosophy Supplements*, 82, 23–44.
- Trogon, K. (2013) 'An Introduction to Grounding'. In M. Hoeltje, B. Schnieder, and A. Steinberg (eds.), *Varieties of Dependence* (Munich: Philosophia Verlag), 97–122.
- van Fraassen, B. (1980) *The Scientific Image*. Oxford: Oxford University Press.
- Wilson, J. (2014) 'No Work for a Theory of Grounding'. *Inquiry*, 57, 1–45.