What is wrong with self-grounding

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Abstract: Many philosophers embrace grounding, supposedly a central notion of metaphysics. Grounding is widely assumed to be irreflexive, but recently a number of authors have questioned this assumption: according to them, it is at least possible that some facts ground themselves. The primary purpose of this paper is to problematize the notion of self-grounding through the theoretical roles usually assigned to grounding. The literature typically characterizes grounding as at least playing two central theoretical roles: a structuring role and an explanatory role. Once we carefully spell out what playing these roles includes, however, we find that a non-irreflexive notion of grounding fails to play these roles when they are interpreted narrowly, and is redundant for playing them when they are interpreted more broadly. The upshot is that no useful notion of grounding can allow a fact to ground itself.

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In the last ten years or so, more and more philosophers have become interested in grounding: a distinctively metaphysical notion of determination that can bear an explanatory burden more familiar concepts (especially modal ones) cannot.\(^1\) Grounding is usually thought to be irreflexive.\(^2\) On the face of it the irreflexivity assumption is fairly intuitive and can even be seen as key to the original motivating thought that grounding correlates with a kind of structural and explanatory directedness. Despite this intuitive appeal, a number of authors (Jenkins 2011, Bliss 2014, Correia 2014, J. Wilson 2014, Rodriguez-Pereyra 2015) have argued that there might be genuine cases of self-grounding.\(^3\) This paper argues that contrary to these authors’ view, any useful notion of grounding would have to be irreflexive.

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\(^3\) Note that while Barnes (forthcoming) argues for the possibility of symmetric ontological dependence, she (rightly) takes pains to distinguish this relation from grounding. So, she should not be counted as a denier of the irreflexivity of grounding.
Before getting into further details, some minimal regimentation of the target notion is necessary. Some prefer to stay neutral on the existence of a grounding relation and express grounding connections with the sentential connective ‘because’. Following most of the literature, however, I will treat grounding as a relation between facts. This will make the exposition more accessible, in part because understanding irreflexivity in relational terms is more straightforward, and in part because authors who have questioned the irreflexivity assumption have typically done so in relational terms. As far as I can see, most of the discussion to follow could be recast in line with the connective view.

The literature customarily distinguishes between full and partial grounding. Intuitively speaking, a full ground makes a fact obtain on its own, while a partial ground helps it obtain, possibly along with some other facts. More precisely, we can understand both full and partial grounding as binary relations with a plural argument place for the grounding facts and a singular argument place for the grounded fact. Then partial grounding can be defined in terms of full grounding: \( \psi_1 \ldots \psi_m \) partially ground \( \phi \) iff there are some facts \( \psi_1 \ldots \psi_n \) such that \( \psi_1 \ldots \psi_m \) are among \( \psi_1 \ldots \psi_n \) and \( \psi_1 \ldots \psi_n \) together fully ground \( \phi \). (Note that we allow for degenerate pluralities consisting of only one fact. So when \( \chi \) is a full ground of \( \gamma \) it’s also automatically a partial ground of \( \gamma \).)

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6 This is true even of Fine (2010), who is otherwise a proponent of the connective view. On formulating the irreflexivity requirement for the connective ‘because’, see Schnieder 2010. In his more recent work Fine usually talks about the “non-circularity” of ground, which is very similar to irreflexivity.

7 Dasgupta (2014a) argues that grounding is an irreducibly many-many relation. In what follows I will ignore this possibility, though I suspect that my main points would go through on this conception, too.

8 A similar definition is suggested by Fine (2012a), though he officially treats both full and partial grounding as primitives.
In light of the distinction between full and partial grounding, we can get a better handle on what the rejection of irreflexivity amounts to by distinguishing between two options: (i) some fact \( \varphi \) fully grounds \( \varphi \); (ii) some fact \( \varphi \) partially grounds \( \varphi \). In the sequel I will focus on the second option, and accordingly, by ‘grounding’ I will always mean partial grounding unless indicated otherwise. Since my goal is to problematize self-grounding, this is a legitimate move: by the above definition, if \( \varphi \) fully grounds \( \varphi \) then it also partially grounds \( \varphi \), so any objection to partial self-grounding also spells trouble for full self-grounding. Now we can state a relatively precise target:

\textit{(Self-grounding Thesis)} Possibly, there is a fact \( \varphi \) such that \( \varphi \) partially grounds \( \varphi \).

Before getting into the details of the Self-grounding Thesis, it’s worth looking at two sorts of cases that have been proposed as potential counterexamples to the irreflexivity of grounding. The first one is due to Carrie Jenkins (2011) and goes as follows (Jenkins imposes no restrictions on the grounding relata, so I recast her example in terms of facts). One intuitive umbrella characterization of physicalism is that mental facts are grounded in physical facts. For example, the fact that I’m in a particular brain state grounds the fact that I’m in a particular pain state. Surely, the identity theory of the mind is faithful to the core idea of physicalism. However, this seems difficult to reconcile with the irreflexivity of grounding: the fact that I’m in such and such brain state cannot ground and at the same time be identical to the fact that I’m in such and such pain state. An obvious way out is to give up the irreflexivity assumption: mental facts are grounded in, but also identical to, physical facts. So the fact that I’m in the brain state grounds and is identical to the fact that I’m in the pain state.\(^9\)

\(^9\) Jenkins also gives a second example: perhaps a statue depends on but is also identical to the lump of matter that constitutes it. This example, too, is easily reconstructed in terms of fact-grounding. Philosophers sympathetic to Jenkins’s verdict include Bliss (2014: 253) and J. Wilson (2014: 572).

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The second example comes from an opponent of self-grounding, Kit Fine, who presents it as a **paradox**: Take the fact that something exists. (Here and in what follows, I will follow the convention of representing facts with the ‘[’, ’]’ notation: ‘[S]’ abbreviates ‘the fact that S’.) Plausibly, for any fact \( f \), \( f \) grounds the fact \([f \text{ exists}]\). Substituting \([\text{Something exists}]\) for \( f \), we get that \([\text{Something exists}]\) grounds \([\text{Something exists}]\). On the other hand, it’s also plausible that the existentially quantified fact that *something* exists is partially grounded by each of its instances. So, \([\text{Something exists}]\) exists] grounds \([\text{Something exists}]\). We therefore get that that \([\text{Something exists}]\) and \([\text{Something exists}]\) exists] ground each other. By transitivity \([\text{Something exists}]\) grounds itself, contradicting irreflexivity.\(^{10}\)

In what follows I will discuss the notion of self-grounding in much more detail; these examples serve to give an idea as to what its instances might intuitively look like. There may be further examples, but we already have enough on our plate.\(^11\)

One natural reaction to the counterexamples is to try to explain them away in irreflexivity-friendly ways. Many opponents of self-grounding have pursued this strategy\(^12\), but in what follows I will try something altogether different. Instead of discussing the individual counterexamples, I will argue directly that the Self-grounding Thesis cannot be true of any serviceable notion of grounding. In section 2, I will take a closer look at the theoretical roles assigned to grounding and will distinguish two that are fairly uncontroversial: a structuring and an explanatory role. Then in sections 3 and 4 I will argue that any interesting notion of grounding has to come close enough to playing both of these roles, and that any notion that satisfies this constraint is bound to be irreflexive. In

\(^{10}\) Fine repeats the example with propositions and also with universal instead of existential quantification. I chose to focus on facts because I take grounding to be a relation between facts, and on existential rather than universal facts, because the latter introduce extra complications that are unrelated to the problem at hand.

\(^{11}\) For puzzles similar to Fine’s, see Krämer 2013 and Correia 2014 (only Correia recommends abandoning irreflexivity as a solution). For intuitive examples somewhat similar to Jenkins’s, see Paseau 2010 and Rodriguez-Pereyra 2015.

\(^{12}\) See, for instance, Fine 2010, Krämer 2013, Raven 2013, and Skiles ms.
each section, the basic structure of the argument will be as follows. We can interpret the structuring and explanatory roles in a stringent or in a more liberal manner. On the stringent interpretation a non-irreflexive notion of grounding cannot play the respective role, whereas on the liberal interpretation it is redundant for the role. So, there is no theoretical role for which a non-irreflexive notion of grounding would be useful; any useful notion of grounding is bound to be irreflexive.

My approach is in a sense more and in a sense less ambitious than trying to meet the counterexamples to irreflexivity head-on. On the one hand, it promises to give grounding enthusiasts a completely general reason for taking grounding to be irreflexive. On the other hand, it doesn’t specify where the counterexamples go wrong, and for all it says we might be left with no better choice than to reject the irreflexivity assumption. What I have in mind can be better understood by focusing again on Fine’s earlier mentioned puzzle. As I said, I believe that no useful notion of grounding can fail to be irreflexive. Suppose, however, that the formal principles that generate the puzzle also impose non-negotiable constraints on the target notion. If that is so, Fine-style puzzles show that the standing notion of grounding falls under jointly inconsistent constraints, and that nothing comes close enough to playing the grounding roles.  

It’s crucial to keep in mind this feature of my approach throughout the rest of the paper. I will argue only that any useful notion of grounding is irreflexive, but I won’t try to explain away the apparent counterexamples to irreflexivity. For all I know, those counterexamples successfully show that nothing corresponds to my orthodox, irreflexive notion of grounding – it’s just that in that case, they also show that nothing deserves to be called ‘grounding’. So rather than contributing to the existing literature on the counterexamples to irreflexivity, this paper offers a broader perspective on

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13 Some might be attracted to the stronger claim that competent users of the concept grounding cannot deny that grounding is irreflexive. In that case, Fine-style puzzles would threaten to show that (perhaps similarly to truth) grounding is an inconsistent concept: full competence with it requires us to accept jointly inconsistent governing principles (Ekland 2002, Scharp 2013). I should emphasize, however, that this is an optional extra that doesn’t follow from the view defended in this paper.
what is at stake in these debates. If you are confident that none of the arguments against irreflexivity works, the paper should reaffirm your conviction that grounding is irreflexive. If you find some of those arguments persuasive, you should stop being a grounding enthusiast.

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Above I presented two putative examples of self-grounding. But merely contending that there are counterexamples to irreflexivity doesn’t yet carve out an interesting notion of grounding that fails to be irreflexive. This can be appreciated by noting that there is a fairly standard use of the word ‘grounding’ in which it picks out a non-irreflexive notion: it’s possible to introduce a new expression (say, ‘improper grounding’), stipulate that any fact improperly grounds itself, and distinguish between grounding in the narrow sense (the relation people usually have in mind when talking about grounding) and grounding in a broader sense (proper-or-improper grounding, which allows for self-‘grounding’). There is nothing wrong with recognizing self-grounding in this sense: it may be terminologically and technically convenient to do so, similarly to well-entrenched distinctions between other metaphysical relations and their limiting cases. For example, it is standard to distinguish between proper parthood and parthood in mereology; it is equally harmless to introduce extended notions of constitution, realization, and ontological dependence, according to which every material object constitutes itself, every property realizes itself, and every entity ontologically depends on itself. It is often formally convenient to regard identity as a special case of these relations, even though the philosophical contexts in which they do their work are not the ones in which they collapse into identity.15

14 See Simons (1987), Varzi (2003), and plenty of others.

15 Philosophers who argue that “constitution is identity”, for example Noonan (1993), can be understood as thinking that every material object constitutes itself. For extended (identity-permitting) notions of realization and ontological dependence, see Shoemaker 2007: 23 and Thomasson 1999: 26, respectively.
Grounding is no different in this regard. Many philosophers, whom I shall refer to as “dualists”, have already introduced extended notions of grounding: proper-or-improper grounding (Schaffer 2009), weak ground (Fine 2012a, 2012b), non-strict grounding (Correia 2014), etc. While not all philosophers make use of such a distinction, I know of no one who in principle rejects it. However, while we can extend the use of ‘grounding’ to cover identity, it is hardly news to be told that a fact can ground itself in this broader sense. For the Self-grounding Thesis to be interesting, we need to understand it so as to rule out extended notions of grounding, such as Schaffer’s proper-or-improper grounding or Fine’s weak ground.

This is a crucial point. Self-grounders often lament about grounding theorists’ tendency to uncritically assume that grounding is irreflexive (Jenkins 2011, Bliss 2014, J. Wilson 2014). But dualist approaches are standard fare, and nobody objects to them merely by insisting that grounding is irreflexive. So to make sense of the self-grounders’ complaint, we need to interpret them as saying that the narrow notion of grounding is widely and uncritically assumed to be irreflexive. In what follows, by ‘grounding’ I will always mean this narrow notion unless indicated otherwise. Note that this doesn’t beg any question against self-grounders; on the contrary, to ensure that the dispute isn’t merely verbal we need to understand them as arguing that that notion which dualists think is irreflexive isn’t irreflexive. To substantiate this claim, the self-grounder needs a notion that isn’t irreflexive but can play the grounding roles.

Why are these roles so important? Virtually everyone agrees that we cannot reductively analyze grounding in other terms. However, we can still ask what grounding is good for, what theoretical roles

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16 Note that being an extended notion doesn’t imply being a defined or stipulated notion. For largely technical reasons, Fine (2012a, 2012b) accepts weak ground as a primitive and uses it to define strict ground. This is perfectly compatible with weak ground being an artificial extension of the narrow notion, just like (proper-or-improper) parthood can be accepted as a mereological primitive and nonetheless be seen as a broadening of the ordinary notion of (proper) parthood.

17 DeRosset (2013a) argues that Fine’s notion of weak ground is obscure, but he doesn’t make the same claim about extended notions of grounding in general.
a useful notion of grounding would have to play. While such role-specification won’t suffice for an analysis, it can give us some traction on what a relation has to be like to qualify as a candidate for being grounding. Recently, Dorr and Hawthorne (2013) took a similar approach to the notion of naturalness: debates over the utility of naturalness-talk become more tractable if we move away from the question of whether such talk is in good standing and focus on what could play the commonly accepted naturalness roles. Likewise, we can best approach the question of whether self-grounding is possible by asking whether a non-reflexive notion could play the grounding roles. And since, as I argued above, the self-grounder should be interpreted as offering a revisionary conception of the narrow notion of grounding, what we are looking for is something that is a good candidate for playing the theoretical roles of grounding but is still distinguishable from the broad notions.

What are these theoretical roles? While there is disagreement over questions of detail, two roles stand out as relatively uncontroversial: a structuring and an explanatory role. I will briefly describe these roles below, and in doing so, I will characterize them the way orthodox irreflexivists would. This is fair game. These characterizations are both widely accepted and prima facie plausible; self-grounders should at least strive to capture at least their spirit, to the extent their denial of irreflexivity allows them to. In the sections to follow, we will see a number of (as I will argue, unsuccessful) attempts to weaken these roles. But in the meantime, these initial role-specifications will be useful starting points from which the rest of the discussion can take off.

First, the structuring role. Grounding is often thought to be a relation that “limns the ultimate structure of reality”: grounding imposes metaphysical priority relations, just like causation imposes temporal priority relations.¹⁸ For one, if there is an absolutely fundamental level, it may best be described in terms of grounding: a fact is fundamental iff it’s ungrounded. While the notion of

¹⁸ Both Schaffer (2012: 122) and Sider (2011: 145) (not a grounding theorist himself) use the metaphor of “metaphysical causation”. Schaffer (2016) and A. Wilson (forthcoming) take the analogy very literally and argue that grounding is a kind of causation. See footnote 32 for a possible use of the analogy in defense of the Self-grounding Thesis.
relative fundamentality has no such straightforward analysis in terms of grounding, there is usually thought to be a tight link between the two notions: if \( \varphi \) grounds \( \psi \) then \( \varphi \) is more fundamental than \( \psi \).\(^\text{19}\) This way, grounding can supposedly help us make sense of a layered picture of the world that more familiar concepts like supervenience, entailment or reduction cannot capture.

Second, the explanatory role. Grounding is widely seen as a distinctively metaphysical explanatory notion. This is often summarized by the slogan that grounding underlies ‘in virtue of’ and ‘because’ claims in metaphysical contexts.\(^\text{20}\) However, the precise connection between grounding and explanation remains controversial. The controversy takes place against the backdrop of a widely shared assumption: explanatory realism, the view that explanations are backed by objective structural-determinative connections. As Ruben puts it, “[e]xplanations work, when they do, only in virtue of underlying determinative or dependency structural relations in the world” (1990: 210). Explanatory realism doesn’t settle the exact relation between grounding and metaphysical explanation. One possible view is that grounding just is metaphysical explanation: the fact that \( \varphi \) grounds \( \psi \) is itself an explanation in which \( \varphi \) is the explanans and \( \psi \) the explanandum.\(^\text{21}\) The other option is that grounding “backs” or “underlies” metaphysical explanation but isn’t identical to it.\(^\text{22}\) The chief motivation for this latter view lies in the intuition that explanatoriness has an epistemic aspect that has no place in grounding, a supposedly mind-independent and objective relation. Audi, for example, tentatively suggests that grounding is necessary but not sufficient for metaphysical

\(^{19}\) As Bennett (forthcoming: Ch. 4) points out, a fact may be more fundamental than another fact without grounding it. For discussions of the structuring role, see Schaffer 2009, 2012: 122–123, Rosen 2010: 110–111, 116, Raven 2012: 689; 2013: 193, deRosset 2013b: 5–6, Dasgupta 2014a, and Skiles ms, among others.


explanation: the latter requires an underlying grounding fact *and* that certain pragmatic and epistemic constraints also be in place (2012a: 119–120).

Here’s a way to make sense of this latter idea (my presentation borrows elements of Jenkins 2011, though Jenkins has different goals with the example, and she doesn’t distinguish between grounding and metaphysical explanation). Perhaps ‘grounds’ is referentially transparent, but ‘explains’ isn’t: to get a metaphysical explanation, we also need the grounding fact and the grounded fact to appear under the right conceptual guises. Suppose, for instance, that [Sample S has H and O parts bound in such and such a way] grounds [Sample S is water], and that [Sample S has H and O parts bound in such and such a way] is identical to [Sample S is water]. If ‘explains’ isn’t referentially transparent, then it’s conceivable that (1) is true while (2) is false:

(1) [Sample S has H and O parts bound in such and such a way] explains [S is H₂O]
(2) [Sample S has H and O parts bound in such and such a way] explains [S is water]

You don’t need to accept this particular example to understand the basic idea: metaphysical explanation is a matter of tracing grounding connections *and presenting them in an informative way*. For the time being, I will put this view to the side; it will be relevant again in section 4, where I will sketch a position that allows for self-grounding but not self-explanation.

In this paper, I won’t decide between the “grounding is metaphysical explanation” and the “grounding backs metaphysical explanation” views, since my main argument doesn’t turn on the distinction (the distinction will matter for some possible responses to the argument and will be discussed in due course). I will, however, rule out at the outset a family of views discussed in Jenkins 2011, according to which ‘grounds’ expresses a three- or four-place relation. My reasons for proceeding this way are two. One is that discussing these views in the detail they deserve would
require a paper of its own. The other is that only two-place relations and their instances can be reflexive or irreflexive; so, while the views Jenkins describes are doubtless unorthodox, none of them is a view that makes room for self-grounding.

This closes my discussion of the structuring and explanatory roles. Are there any other theoretical roles for grounding? Some readers might think there are. For example, there is a strand of theorizing about the impure logic of grounding that often takes for granted various principles about what grounds what: disjunctions are supposed to be grounded in their true disjuncts, conjunctions in their conjuncts, existentially quantified facts in their instances, etc. (Correia 2005: Ch. 3, 2010, 2014; Rosen 2010; Fine 2012a). These principles shouldn’t be regarded as theoretical roles, however, since they only inform us about the extent of grounding but are silent on how grounding is related to other metaphysically significant notions.

Other putative connections between grounding and other notions do carve out potential theoretical roles, though none of them is as uncontroversial as the structuring and explanatory roles. For example, some believe that there are tight links between grounding and essence (Fine 2001, 2012a) or grounding and a certain notion of reduction (Rosen 2010). Others think that grounding plays an important explicatory role in helping us analyze other philosophically important notions, such as intrinsicality, truthmaking, and physicalism (see Witmer et al 2005, Rodriguez-Pereyra 2005, and Dasgupta 2014b for respective examples of each). Yet others think that grounding plays a unifying role by serving as the genus that unifies more specific determination relations, for example realization and the determinate-determinable relation (see Audi 2012b and Schaffer 2016). One might contend that even if a non-irreflexive concept cannot play the structuring or explanatory roles, it might be able to play some of these other roles, thereby yielding an interesting and useful notion of grounding.
My response is twofold. The first thing to note is that my argument will assume only that playing both the explanatory and the structuring role is necessary for a notion to qualify as a notion of grounding, not that it’s also sufficient. So, even if there is a non-irreflexive notion in the vicinity that can play sufficiently many other roles to be theoretically useful, the structuring and explanatory roles are so central to grounding that it still wouldn’t be a notion of grounding.

Moreover, I don’t think that these other theoretical roles are specific enough to carve out a narrow notion of grounding. The dualist’s extended notions are just as fit to play them, which renders the supposedly non-irreflexive, narrow notion redundant. I have no space to get into details here; I will just mention two illustrative examples. First, if the unifying role consists in unifying irreflexive relations (proper parthood, proper constitution, etc.), then grounding has to be irreflexive. On the other hand, if the role consists in unifying the extended versions of these relations (proper-or-improper parthood, etc.), then of course the dualists’ broad notions are even better suited for playing it. Second, a closer look at the ways in which grounding has been invoked to play the explication role reveals that the dualist’s notions are at least as fit to play it. Rosen’s grounding-based analysis of intrinsicality, for example, works even better with a non-irreflexive notion of grounding (see Marshall 2015: 9–10).

While I cannot hope to conclusively settle the matter here, I suspect that without the structuring and explanatory roles, we cannot circumscribe a notion of grounding that is sufficiently fine-grained to be distinguishable from the dualist’s broad notions. For this reason, and because I consider the structuring and explanatory roles the two least controversial, core theoretical roles of grounding, in the next two sections I will assess the prospects of the Self-grounding Thesis in light of these two roles.
Is the Self-grounding Thesis compatible with the structuring role? One important consequence of this role, as formulated above, is that a grounding fact is always more fundamental than the fact it grounds. This appears to rule out the Self-grounding Thesis: if $\varphi$ grounds $\psi$ then $\varphi$ is more fundamental than itself, which is impossible.

Presumably, the self-grounder will object that the structuring role has been characterized too narrowly: implying the relation $being$ $more$ $fundamental$ $than$ isn’t the only way of imposing relations of relative fundamentality; implying the relation $being$ $as$ $fundamental$ $as$ is also a way of doing that. Grounding only has to conform to the following principle:

\[(Revised$ $Fundamentality)$ $If$ $\varphi$ $grounds$ $\psi$ $then$ $\varphi$ $is$ $at$ $least$ $as$ $fundamental$ $as$ $\psi\]

Since any fact is exactly as fundamental as itself, a non-reflexive notion of grounding can play the structuring role.

Does Revised Fundamentality get the self-grounder off the hook? I don’t think so. If self-grounding is possible, then it looks like a counterexample to the claim that grounding plays the structuring role as originally understood. Addressing the counterexample requires more than absorbing it into the structuring role’s formulation. Otherwise we end up with a version of the structuring role that is already played by the broad notion of grounding. This would make the narrow notion redundant for playing the structuring role, understood as Revised Fundamentality. While a concept doesn’t need to be uniquely characterized by the theoretical roles it is assigned to, these roles should at least be different from the roles assigned to familiar concepts in its vicinity.
Take the following analogy. It’s common to distinguish between two roles for properties: on a sparse conception, properties are the things that explain similarity in nature and confer causal powers on their bearers, while on an abundant conception properties are the meanings of our predicates (Lewis 1983). Call properties in the first sense ‘universals’ and properties in the second sense ‘concepts’. Suppose that we accept disjunctive concepts, but not disjunctive universals; perhaps we have been convinced by Armstrong’s (1978) arguments against them (call this view “Armstrongianism”). What, then, are we to make of an anti-Armstrongian who insists that there are disjunctive universals? Obviously, we would want him to say more about how disjunctive universals could play the theoretical roles assigned to universals. Consider the following answer: universals explain similarity in nature and bestow causal powers on their bearers, except when they are disjunctive. Disjunctive universals are simply the meanings of our predicates, but they are universals nonetheless. Of course, this is a terrible answer. By giving it, the anti-Armstrongian fails to discharge the burden of explaining how he can weaken the theoretical roles while still offering a revisionary view of properties-quas-universals. If he simply admits these exceptions but adds nothing more to his theory, there will be no theoretical roles left for his properties-quas-universals to play that aren’t already played by the Armstrongian’s properties-quas-concepts. At this point, the Armstrongian may reasonably complain that the anti-Armstrongian hasn’t done enough to articulate a revisionary conception of universals that differs from her very ordinary conception of concepts. Note that this challenge isn’t one that the anti-Armstrongian in principle cannot meet. He may offer a story about how certain disjunctive properties could explain similarity in nature and bestow causal powers on their bearers (see Clapp 2001). But any answer along these lines amounts to the claim that disjunctive properties-quas-universals play some version of the theoretical roles assigned to universals, while the Armstrongian’s properties-quas-concepts cannot.
To some, switching to (Revised Fundamentality) will not look quite as bad as the anti-Armstrongian’s response. But I think this is largely due to the fact that we haven’t entirely gotten used to thinking about the broad notions of grounding yet. Otherwise, there is no philosophically relevant difference between the two responses: they both weaken the theoretical roles initially assigned to a certain notion, but without explaining how this notion differs from other concepts in the vicinity that are just as apt to play the weakened roles. So, the self-grounder has an as of yet undischarged burden that is very similar to the anti-Armstrongian’s: merely by embracing (Revised Fundamentality), she hasn’t given us a revisionary conception of the narrow notion of grounding that plays the structuring role but isn’t irreflexive. There are obvious candidates for playing (Revised Fundamentality), but these are the dualists’ extended notions: weak grounding, proper-or-improper grounding, non-strict grounding, and the like. And as we have seen in section 2, these cannot be what the self-grounder has in mind. But then, merely by giving us (Revised Fundamentality), the self-grounder hasn’t yet provided us with an adequate revisionary conception of grounding.

Note that this challenge, similarly to the one confronting the anti-Armstrongian about disjunctive universals, is not in principle unanswerable. Unfortunately, I cannot provide a sufficient condition for what would count as an interesting narrow notion of grounding that fails to be irreflexive (if I could come up with one, I could probably also cite a genuine case of self-grounding). However, I can give what strikes me as a plausible necessary condition: self-grounders would need to supply us with a version of the structuring role that their non-irreflexive notion of grounding can play but the broad notions cannot. This would go a long way toward carving out an interesting, revisionary conception of the narrow notion.

Anyone who rejects the irreflexivity assumption owes us a partial characterization of grounding that does justice to the spirit of the structuring role but is still an account of the narrow notion. It seems to me that advocates of the Self-grounding Thesis have failed to appreciate the severity of this
problem; they have never explicitly discussed the theoretical roles grounding is supposed to play, let alone how these roles need to be revised in light of the alleged counterexamples to irreflexivity. I’m skeptical about the availability of such a revision, and until one is offered we have no reason to think that there is a non-irreflexive notion that comes close enough to playing the structuring role assigned to the narrow notion of grounding.

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Let’s turn to the explanatory role. It’s a widely shared assumption that both the explanation relation itself and any explanatory relation deserving of the name are irreflexive. However, possibly because it seems so obvious, we are hard-pressed to find anyone in the general literature on explanation arguing for this claim. One might try to base the irreflexivity of explanation on a plausible connection between explanations and arguments. According to the classic D-N model (Hempel 1965), scientific explanations correspond to sound arguments that cite a law of nature. Likewise, one could maintain that grounding explanations correspond to arguments, though plausibly not D-N arguments (deRosset 2013b: 12). This could justify a constraint according to which circular explanations are unacceptable for the same reason circular arguments are: while a circular argument may be sound, it can at best correspond to a completely vacuous explanation, i.e. a non-explanation.23

While the D-N model and argument views of explanation in general have come under criticism, the most common objections to them are powerless against the fairly modest claim that the existence of a sound, non-circular argument is necessary for non-probabilistic (including metaphysical)

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23 Interestingly, Tahko and Lowe (2015: §3) mention the requirement of non-circularity in defense of the “asymmetry” of explanation. I think they mean to defend only the antisymmetry of explanation, given that they only reject distinct states of affairs mutually explaining each other but explicitly allow for self-explanatory states of affairs. It is also not clear that Tahko and Lowe’s self-explanatory states of affairs are of the objectionable sort. Some of their other remarks indicate that by self-explanation they mean something similar to the dualist notions: an extension of explanation as ordinarily understood. This is further buttressed by their sympathy for the idea that “every object x trivially depends for its identity upon itself” (§4.2, their emphasis).
explanation. The most influential objections to argument views usually focus on the much more ambitious claim that arguments with certain features are also sufficient for explanation in general.\textsuperscript{24} So the ban on non-circular arguments may be a good enough reason to insist on the irreflexivity of explanation even if we don’t subscribe to a general argument view of explanation.

There is also a further reason for thinking that explanation is irreflexive. Plausibly, and consistently with the realist view assumed in this paper, there is an epistemic constraint on what can count as an explanation: explanations need to have the potential to increase our overall understanding.\textsuperscript{25} That is, for a statement of the form ‘\(p\) explains \(q\)’ to express a genuine explanation, there should be a possible cognitive state of non-understanding, best expressed by a question of the form ‘Why \(q\)?’, and an answer, ‘\(p\)’, learning of which replaces this state of non-understanding with a state of understanding. To achieve this goal, explanations have to be informative in the sense that the explanans conveys information not provided by the explanandum, or at least conveys information in a way it is not conveyed by the explanandum. Note that this requirement doesn’t mean that the explanans conveys information that the explanandum doesn’t convey in the same way to every audience, only that it’s capable of doing so in the right circumstances.\textsuperscript{26}

Just how weak my informativeness requirement is can be appreciated by considering the wide variety of scientific and metaphysical explanations that satisfy it. If John’s digestion of arsenic causally explains his food poisoning, then learning of his digestion of arsenic can equip us with new information we didn’t have when we asked why he had food poisoning. Similarly, if an action’s failure to maximize utility metaphysically explains the wrongness of that action, then learning of the

\textsuperscript{24} See, for instance, Salmon 1977/1997.

\textsuperscript{25} Note that realism about explanation implies only that the notion of explanation isn’t interest-relative; it doesn’t imply that explanation bears no conceptual ties to psychological notions like understanding and informativeness. See Friedman 1974: 7–8.

\textsuperscript{26} See Achinstein 1983: Ch. 3 for a helpful discussion of explanation, understanding, and ‘why’-questions.
action’s failure to maximize utility can equip us with information that we didn’t have when we asked why the action was wrong. Even the most trivial cases of logical grounding satisfy the informativeness requirement. Suppose conjunctions are explained by their conjuncts. Even if the atomic facts [Grass is green] and [The sky is blue] cannot equip us with information we didn’t have by knowing that grass is green and the sky is blue, at least they convey the same information in a new way: in the form of two distinct atomic facts, as opposed to a single conjunctive one.27

No matter how weak, putative cases of self-explanation do violate the informativeness constraint. This is because no explanans that is identical to the explanandum seems even potentially capable of conveying new information, or of conveying the same information in a new way. Trivially, for any putative explanation of \( p \) in terms of \( p \), \( p \) conveys the same information in the same way as itself. It seems, then, that the informativeness constraint rules out self-explanation. And if that is so, no non-irreflexive notion of grounding can play the explanatory role.

A theoretical option I briefly mentioned in section 2 becomes relevant here. As I noted there, some distinguish metaphysical explanation, a notion with epistemological import, from the purely metaphysical notion of grounding. One way to draw this distinction is to say that metaphysical explanation requires that the grounding and the grounded facts appear under the right conceptual guises, or modes of presentation. The self-grounder might use this idea to argue that a ban on self-explanation doesn’t automatically rule out self-grounding; perhaps all cases of self-grounding are cases in which the relevant epistemic factors that would be needed for an explanation are not in place.

Here’s a way to cash out this idea. There are informative fact identities. Perhaps the terms flanked by such identities can serve as the explanans and explanandum clauses of the same

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27 Evnine (2008: 73–82) argues that the mental state of believing a conjunction is identical to the mental state of believing its individual conjuncts. I’m not sure if this implies that conjunctions and their conjuncts taken together convey the same information in the same way. But if it does, and Evnine turned out to be correct in identifying the two kinds of mental states, I would deny that conjunctions are explained by their conjuncts.
explanation. For example, to tweak our example from section 2, perhaps ‘S is water’ and ‘Sample S has H and O parts bound in such and such a way’ stand for the same fact, yet the sentence ‘The fact that sample S has H and O parts bound in such and such a way explains the fact that S is water’ is true. Following Ruben (1990: 218–222), call cases like this identity explanations. It could be argued that each case of self-grounding corresponds to an identity explanation in which the explanans and explanandum clauses don’t convey the same information in the same way. In an attempt to explain ‘S is water’, citing ‘S is water’ would be completely uninformative, but perhaps citing ‘S has H and O parts bound in such and such a way’ would not be, despite the two sentences describing the same fact. But then, the self-grounder could argue, all we need for self-grounding is an informative identity explanation in which a fact under a mode of presentation explains the same fact under some other mode of presentation. This way, we can leave room for self-grounding without committing ourselves to the possibility of self-explanation. Let’s state the revised explanatory role in line with this conclusion:

\[
\text{(Revised Explanation) If } \varphi \text{ grounds } \psi, \text{ then an explanation sentence of the form } \uparrow \chi \text{ explains } \gamma \text{ is true, where } \chi = \varphi \text{ and } \gamma = \psi
\]

Revised Explanation allows for self-grounding, provided that the following condition is satisfied: there is at least one true explanation sentence whose explanans and explanandum clauses pick out

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28 In its more common and less controversial use, ‘identity explanation’ means an explanation in which the explanans is an identity fact. This is not what I mean, and it’s also not what Ruben has in mind. The idea isn’t that the explanans is an identity fact; rather, there is an explanation whose explanans and explanandum clauses pick out the very same fact.

29 Note that it’s possible to combine the idea that ‘explains’ is not referentially transparent with the view that grounding just is metaphysical explanation. But in that case, there will be no way to drive a wedge between self-explanation and self-grounding. See Rosen 2010 in this connection: while Rosen doesn’t technically deny that ‘grounds’ is referentially transparent, he accepts an extremely fine-grained, conceptual theory of facts according to which a sample being water and the same sample being H₂O are different facts. He does so precisely to avoid violations of irreflexivity.
the same (self-grounding) fact, but these expressions are not *salve veritate* intersubstitutable with necessarily co-referential expressions. With Revised Explanation, the self-grounder may argue, we have an explanatory role that can be played by a non-irreflexive notion of grounding.

Revised Explanation implies that all successful counterexamples to irreflexivity feature facts that are presented by the explanans and explanandum clauses of an explanation in different ways. This proposal doesn’t explain how Fine’s, Krämer’s and Correia’s puzzles, which make no assumption about modes of presentation or conceptual guises, could feature a relation that plays the explanatory role of grounding. So, Revised Explanation would be of help only to a certain kind of self-grounder. Never mind: it would be big news enough if there were genuine Jenkins-style cases of self-grounding. At this point, however, we should ask: even if identity explanations are possible, why think that any of them is a *grounding* explanation? After all, identity explanations are familiar, if controversial. But the mere possibility of identity explanations doesn’t show of any particular kind of explanatory relation that *that* relation can fail to be irreflexive. For example, even if identity explanations are possible, they obviously aren’t causal explanations, so their possibility wouldn’t show that causation isn’t irreflexive. Do we have any better reason to think that they show that grounding isn’t?

To show that there can be grounding explanations whose explanans is identical to their explanandum, the self-grounder has to go beyond claiming that self-grounding involves identity explanation. To see this, first note that lots of facts could be described in lower- and higher-level vocabulary (analogously to the H- and O-parts/water example) to yield such an explanation. It is controversial whether *all* intrinsic macrophysical properties can be identified with the micro-based property of having parts that instantiate such and such properties and stand in such and such relations. But we can safely say that at least *many* can be: we can often replace the ordinary, higher-level description that picks out intrinsic macrophysical properties with a micro-based description of
the entity’s parts and their microphysical properties and relations.\textsuperscript{30} This much is enough to make macrophysical/micro-based fact identities ubiquitous.

Since self-grounders usually write as if they thought that the phenomenon of self-grounding was surprising and rare, the ubiquitous nature of such fact identities should already make us suspect that this is not really what they had in mind. Suppose, however, that the self-grounder does accept this characterization: every informative fact identity of the sort mentioned above is an instance of self-grounding. It should be conceded that this proposal doesn’t necessarily suffer from the problem I raised for modifications to the structuring role. While many facts figure in informative fact identities, one might reasonably (if controversially) deny that all do. For example, perhaps fundamental facts can be perspicuously described only in the language of fundamental physics. In that case, Revised Explanation won’t allow each fact to ground itself. On the other hand, any fact whatsoever weakly/improperly/non-strictly etc. grounds itself. So if there is a problem with Revised Explanation, it’s not that the broad notions of grounding can also play it. There is a good case to be made that they cannot.

However, it’s one thing to say that the role-player of Revised Explanation doesn’t collapse into the dualist notions and another that it’s a revisionary conception of the narrow notion of grounding. Notice that on the present proposal the role grounding plays in metaphysical explanations is very different in the irreflexive and in the reflexive cases. In the irreflexive case, the story is familiar: grounding is the explanatory relation that underlies metaphysical explanations and which accounts for the explanatory directedness between the grounder and the grounded. But in reflexive cases

\textsuperscript{30} See Kim (1998: 84); cf. Armstrong (1978: Ch. 18). Don’t confuse micro-based properties with microphysical properties and relations. The properties of being an O-atom and being an H-atom, and the relation of being bound in such and such a way, are microphysical. So, the fact [An O-atom and two H-atoms are bound in such and such a way] is presumably a microphysical fact and is not identical to the macrophysical fact [S is water]. By contrast, having O-parts and H-parts bound up in such and such a way is a micro-based property, so the fact [S has as parts O-atoms and H-atom parts that are bound in such and such a way] has a good claim to be identified with [S is water].
grounding cannot do this kind of work, since in and by itself it doesn’t introduce any kind of directedness between a fact and itself. For that, we need to switch from facts to facts-under-such-and-such-conceptual-guises, but now what accounts for the explanatory directedness are simply the guises. At this point, it’s hard to see how grounding itself is an explanatory relation in the intended sense: even if [S has H and O parts bound in such and such a way] explains [S is water], that the former fact grounds the latter has nothing to do with this. ‘The fact that S has H and O parts bound in such and such a way explains the fact that S is water’ comes out true simply because its first clause presents the very same fact under a lower-level conceptual guise than its second clause does.

It may be helpful to draw here a comparison between grounding and a more traditional notion of ontological reduction that is often invoked in identity explanations.31 As van Riel (2013) has recently observed, the relation between identity and reduction is somewhat puzzling: ‘water reduces to H₂O’ is true only if ‘water’ and ‘H₂O’ are co-referring terms, yet ‘H₂O reduces to water’ seems false. So ‘reduces’ creates intensional contexts, and the truth values of ‘reduces’-sentences is sensitive to the conceptual guises under which the putative reduction relata are presented. With varying levels of explicitness, many philosophers subscribe to one version or other of this view (Smart 1959, Crane 2001, van Gulick 2001). Clearly, however, identity isn’t itself an “explanatory relation”. The whole point of emphasizing the role of conceptual guises in reductive explanation is to show that reductions can showcase the desired explanatory asymmetry despite the fact that identity itself is a symmetric relation. To put it in a slogan form: a reductive explanation is reductive because the reduced is identical to the reduction base, but it’s an explanation because they occur under different conceptual guises.

31 I say “more traditional” because while Rosen (2010) also argues that reduction entails grounding, he understands reduction in terms of real definition. This notion is different from the one that has been widely discussed in the philosophy of mind and science literatures and which I also have in mind here.
If this is correct, self-grounding is simply the ontological reduction of facts in the sense explained above. Which, of course, naturally raises the question: why think of ontological reduction as a case of grounding? We have seen that irreflexive grounding is very different from ontological reduction: in the former, much of the explanatory work is done by an explanatory relation, while in the latter, all the explanatory work is done by the conceptual guises under which the identity relata fall. These two types of explanation are so different that subsuming them under the same category seems deeply misleading. It seems, then, that Revised Explanation doesn’t help us to a conception of grounding that allows for reflexive instances but is still apt to play the explanatory role.

One can of course always decide to use the word ‘grounding’ for the disjunction of (irreflexive) grounding and ontological reduction. But the orthodox irreflexivist can agree that there are both grounding explanations underwritten by grounding and identity explanations where the explanatory work is done by the conceptual guises. She can even introduce a new notion, grounding*, for the disjunction of grounding in the narrow sense and reduction. The problem is that this disjunctive notion seems like an excellent candidate for playing the explanatory role as specified by Revised Explanation. But then, the self-grounder hasn’t done enough to show that he has a revisionary conception of the narrow notion of grounding. We still have no information about how his supposedly revisionary conception of grounding differs from the straightforwardly disjunctive notion of grounding*, which also satisfies Revised Explanation.

At this point, you might start suspecting that the foregoing lengthy discussion of Revised Explanation, fact identities, and conceptual guises was all a red herring. You might have this reaction because you might think there is a much simpler way of bringing the Self-grounding Thesis in line with the informativeness constraint: perhaps facts can ground themselves through “grounding loops”. The idea is that while simple cases of a fact directly grounding itself would indeed violate the requirement that explanations be informative, it may still be informative to learn that $f_1$ grounds $f_2$, 


that $f'_2$ grounds $f'_1$, and that $f, \ldots$ grounds $f_i$. If grounding is transitive, or if at least this particular instance of it doesn’t violate transitivity (which I will grant for the argument’s sake), then we get the result that $f_i$ and $f_j$ ground each other. There is nothing wrong with circles as such, so long as the circle is big enough – or so the thought goes.\footnote{Dasgupta (2014a: 11) hints that he wouldn’t be hostile to large enough grounding loops, though he doesn’t outright endorse their possibility.}

Temping as this thought may be, it is misguided. My initial case against self-grounding being explanatory made no assumption about the bigness of the circle that ends with a fact grounding itself. As I formulated it, the informativeness constraint demanded that the explanans convey information not provided by the explanandum, or at least convey information in a way it was not conveyed by the explanandum. Obviously, for any fact, $f$, $f$ doesn’t convey any information in any way that $f$ itself doesn’t convey in the very same way. Whether there are some other facts, some of which convey information that $f$ doesn’t convey and some of which fail to convey information that $f$ does convey (the kind of structure we would need for a grounding loop) is neither here nor there. More generally: no putative explanans that is identical to the explanandum will satisfy the informativeness constraint, and nothing in the description of a grounding loop tells us why this constraint should be given up.

The reason it might seem that the size of a grounding circle is relevant to whether it can be explanatory is that the informativeness constraint does nothing to rule out any of the following explanatory hypotheses: that $f_i$ explains $f_s$, that $f_j$ explains $f_s$, …, and that $f_{i'}$ explains $f_i$. However, from the fact that the constraint doesn’t rule out any single one of these possibilities it simply doesn’t follow that it doesn’t rule out their conjunction. I’m happy to concede that when we have what looks like a big (at least 3-membered) grounding loop, there is plausibly some explanation going on: this is why we have the intuition that big loops are better than small ones. But this intuition does
nothing to show that the explanation at issue proceeds from a member of the loop to that same member; and so it does nothing to cast on the informativeness constraint.33

Where does this leave us? Prima facie, for grounding to play the explanatory role it has to be irreflexive. As in the case of the structuring role, this prima facie assumption could in principle be defeated, and the analogy with disjunctive universals indicates what could count as a suitable defeater. Introducing further constraints that drive a wedge between mere identity explanation and self-grounding would go a long way toward establishing that there is a non-irreflexive notion of grounding that is still a version of the narrow notion. Alternatively, explaining how grounding loops are compatible with the informativeness requirement on explanation, or why we should think that they give us some reason to abandon this requirement, might help, too. But in the absence of such arguments to the contrary, we should conclude that the self-grounder has not yet offered a non-irreflexive notion that can play a sufficiently robust version of the explanatory role.

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My main purpose in this paper has not been to deny there is a legitimate use of the word ‘grounding’ in which it doesn’t pick out an irreflexive notion; on the contrary, I want to suggest that for terminological, technical (etc.) reasons it may be convenient to recognize such a use, analogously to

33 One may wonder if the possibility of causal loops should give us some reason to accept the possibility of grounding loops. A complete answer would require a thorough discussion of the grounding-causation analogy, a topic worthy of a paper in its own right; here, I have to confine myself to a few brief remarks. First, even if self-grounding is conceivably, it doesn’t follow that a non-irreflexive notion could play the grounding roles. I’m willing to say the same thing about causation: if a relation isn’t irreflexive, it cannot play the causation roles. Even many friends of causal loops admit that no event in a causal loop explains itself (cf. Lewis 1976: 148, Hanley 2004: 125, and Meyer 2012: 260–261.) Second, the distinction between narrow and broad notions of grounding has no analogue in the causation literature. Since there is no such thing as a well-worked out “broad notion of causation”, revisionists about causation have more wiggle room in weakening the theoretical roles assigned to causation. Perhaps this shows that despite a shared explanatory component, grounding is significantly different from causation and is in certain regards more akin to metaphysical notions like parthood and constitution. Alternatively, it might just show that we have a more nuanced understanding of the formal features of grounding than of those of causation. Either way, a non-irreflexive conception of causation doesn’t face the same obstacles a similar view of grounding does.
the extended notions of parthood, constitution, realization, and other metaphysical relations. What I want to cast doubt on is that there is a notion that (i) isn’t irreflexive but (ii) plays strong enough versions of the structuring and explanatory roles to still qualify as a notion of grounding. The revised notions I considered are not up to task, and I don’t see better revisions forthcoming.

Even if I turn out to be wrong about this last bit, I take myself to have shown something important. You cannot solve the puzzles of grounding by simply “rejecting” irreflexivity, and you don’t get to give up irreflexivity merely by offering intuitive “counterexamples” to it. If you want to be a self-grounder, you face the very real threat that no matter how you fill in the details, you wind up with a notion that is neither useful nor clearly distinguishable from the familiar dualist notions. However, while the challenge is serious it isn’t by its form insurmountable. The analogy with disjunctive universals gives us a reasonably clear idea of what would need to be done to articulate a revisionary conception of the narrow notion of grounding. Either way, realizing that there is a challenge is philosophical progress.

In the absence of a detailed story about how a non-irreflexive notion of grounding could play the core grounding roles, we need to regard this challenge as unanswered. This leaves us with two options: either any existing and forthcoming counterexample to irreflexivity is bound to be illusory, or grounding is unsuitable for the kind of job it has been invoked for and is therefore best abandoned.\footnote{[Acknowledgments omitted]}
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