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The Unity and Priority Arguments for Grounding

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Introduction

Grounding, understood as a primitive posit operative in contexts where metaphysical dependence is at issue, is not able on its own to do any substantive work in characterizing or illuminating metaphysical dependence—or so I have argued (Wilson 2014). Such illumination rather requires appeal to one or other of the specific metaphysical relations—type or token identity, functional realization, the determinable–determinate relation, the mereological part–whole relation, and so on—typically at issue in these contexts. In that case, why posit "big-G" Grounding in addition to the "small-g" grounding relations already in the metaphysician's toolkit? The best reasons for doing so stem from the Unity argument, according to which the further posit of Grounding is motivated as an apt unifier of the specific relations, and the Priority argument, according to which Grounding is

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K. Aizawa, C. Gillett (eds.), *Scientific Composition and Metaphysical Ground*, DOI 10.1057/978-1-137-56216-6_7

needed in order to fix the direction of priority of the specific relations. In my (2014), I considered versions of these arguments, and argued that they did not succeed; in two recent papers, however, Jonathan Schaffer (2016 and this volume) aims to develop a better version of the Unity argument, and offers certain objections to my reasons for rejecting the Priority argument. In this paper, I consider and respond to these new motivations for Grounding. I start with some clarificatory remarks concerning the dialectical import of Grounding, its assumed relata, and how I take the ideology/ontology distinction to be relevant to the discussion (section "Preliminaries"); I then present and respond to Schaffer's new versions of the Unity argument (section "The Unity Argument") and the Priority argument (section "The Priority Argument").

Preliminaries

The Dialectical Import of Grounding

Why posit Grounding? Certain of the original proponents, including Fine (2001), Schaffer (2009), and Rosen (2010), initially motivate Grounding as a neo-Aristotelian corrective to overly Quinean or empiricist approaches to metaphysical theorizing: rather than ignore metaphysical dependence or treat it, unsuccessfully, in empiricist-friendly terms like entailment or supervenience, we should return to a traditional Aristotelian concern with what is fundamental, and what depends on what, understood in metaphysically substantive terms as involving a distinctive, primitive notion or relation of Grounding operative in contexts where metaphysical dependence is at issue.

The rhetoric of revolutionary revival here is inspiring, and frequently reproduced. But it is misleading, in ways that obscure Grounding's dialectical import. To start, the initial motivation for Grounding is enthymematic. As I've previously pointed out:

> Attention to metaphysical dependence is not new: many, perhaps most, contemporary metaphysicians have spent their careers investigating forms of such dependence, typically assumed to go beyond merely modal or

> causal notions, in service of developing or assessing comprehensive theses such as physicalism […] or of developing or assessing accounts of some phenomena—events, properties, possible worlds, persons, objects, laws, causes, artifacts, institutions, and seemingly indeterminate states of affairs, among many others—in terms of some others presumed (as a working, speculative, or antagonistic hypothesis) to be more fundamental. These investigations take the idioms of metaphysical dependence ("in virtue of", "nothing over and above", "grounded in") to be schematic placeholders for specific metaphysical relations […] that we have independent reason to accept, and which serve, against the backdrop of some presumed more fundamental base, to characterize diverse forms of metaphysical dependence in a genuinely explanatory and illuminating way. These specific relations—call them ("small-g") grounding relations—include type identity, token-but-not-type identity, functional realization, the classical mereological part–whole relation, the causal composition relation, the set membership relation, the proper subset relation, and the determinable–determinate relation, among others. (Wilson 2014, 539)

Given existing substantive accounts of metaphysical dependence, there is no direct route from the failure of supervenience or other empiricist-friendly conceptions of such dependence to a distinctive, much less primitive, posit of Grounding.[1] Proponents need some alternative motivation for this posit.

Increasing the pressure here is that there is no hope of dispensing with attention to small-g relations in favor of attention (only) to Grounding in investigations into metaphysical dependence. These investigations largely and crucially proceed by considering what implications a given small-g relation has for the existence, distinctness, efficacy, and so on, of the goings-on whose status as dependent is at issue (as per usual: against the backdrop of some presumed more fundamental base). Hence it is, for example, that the primary positions in the physicalism debates vis-à-vis the status of the mental as metaphysically dependent (or not) on the

[1] Nor does the rhetoric of a neo-Aristotelian "revival" of concern with metaphysical dependence make sense, for Aristotle operated with a variety of small-g relations, differently applied in different cases, rather than with a primitive big-G conception. The point here isn't merely (anti-)rhetorical, but also indicates that no ready appeal to an Aristotelian notion in good historical standing is available to proponents of primitive Grounding.

physical—reductive physicalism, non-reductive physicalism, eliminativism, epiphenomenalism, strong emergentism—are defined in terms of their answers to these questions. Moreover, specific versions of these views crucially appeal to features of specific small-g relations (or the lack of any appropriate such relation) as motivating the answers at issue. Hence it is, to focus just on a few non-reductive physicalist accounts, that Putnam (1967) argues that taking mental states to be functional states accommodates the multiple realizability of the mental, that Yablo (1992) argues that taking mental states to be determinables of physical determinates accommodates the distinctive efficacy of the mental, and that Wilson (1999) argues that taking mental states to have a proper subset of the token powers of their physical realizers guarantees the distinctness and physical acceptability of the mental.

As a primitive posit, however, Grounding is too abstract, on its own, to provide answers to such questions, much less illuminating answers. Suppose that the mental is Grounded in the physical. Does the mental exist? Is it distinct from the physical? Is it epiphenomenal or not? If it is efficacious, is it distinctively efficacious—efficacious qua mental? As is reflected in the discussions of the original proponents, who express inclinations toward realism (Schaffer), anti-realism (Fine), and agnosticism (Rosen) about Grounded goings-on, no clear answer even to the question of existence follows from a Grounding claim. Similarly for failures of Grounding claims. Suppose that the mental is not Grounded in the physical. Is this due to the mental's being a case in point of strong emergence, substance dualism, eliminativism, expressivism, or what? Here again, no answers follow just from attention to Grounding. Nor is there hope of overcoming this underdetermination by supplementing Grounding with general presuppositions entailing specific answers to such questions, not just because such presuppositions will fail to accommodate various live accounts of metaphysical dependence (a point to which I will return down the line), but because such presuppositions will necessarily fail to provide the fine-grained explanations of *how* these answers are generated that attention to small-g relations is able to provide.

We are now in position to see past the rhetoric to the real dialectical import of Grounding. The debate over Grounding is not over whether metaphysicians should be concerned with dependence and priority—they clearly already are. Nor is it over whether investigations into dependence

and priority can or should dispense with attention to small-g relations in favor of attention to Grounding—they clearly can't do so. What is rather at issue is the rhetorically less revolutionary question: should we posit a primitive notion or relation of Grounding in addition to the small-g relations that are an existing and indispensible part of the metaphysician's toolkit?

As above, in what follows, I'll consider Schaffer's recent arguments for a positive answer to the less revolutionary question. First, however, two preliminary clarifications.

The Relata

Proponents of Grounding differ somewhat as regards the metaphysical category of this notion. Most commonly, Grounding claims are taken to express the holding of a relation, but there is disagreement about whether the relata of Grounding are facts, understood as states of affairs or Russellian propositions (Fine 2001; Rosen 2010; Audi 2012), or rather entities of diverse ontological categories (Cameron 2008; Schaffer 2009). There is also disagreement about the adicity of the Grounding relation (see Jenkins 2011; Schaffer 2012), and about whether there is one or rather multiple primitive relations of Grounding, associated with metaphysical, nomological, and normative areas of inquiry (see Fine 2012).[2]

Accounts on which the relata of Grounding are broadly representational, or which aim to neutrally regiment claims about metaphysical dependence via appeals to sentential or propositional operators, reflect a conception of Grounding as entering into explanations, suited to be reasoned with (as in Fine's "logic of ground").[3] As I discuss in my (2014), my view is that in specifying the relata relevant to grounding explanations, metaphysicians should talk about the worldly goings-on directly: compare causation and causal explanation, where theorizing cuts to the metaphysical chase; Schaffer (2012) makes a similar point. Hence, I will follow Schaffer in characterizing Grounding as a relation whose relata are worldly entities, perhaps supplemented (though here too I think there is

[2] Note that the specific Grounding relations here, as well as the "constituent" and "feature-based" forms of dependence discussed in Koslicki 2012, are distinct from the specific "small-g" relations I've flagged.

[3] Hence Fine (2001, 15) says, "We take ground to be an explanatory relation."

an inappropriate admixture of worldly and representational phenomena) to allow for the contrastive account of Grounding discussed in his (2012) and (2016).

Ideology and Ontology

As we'll see, Schaffer's pitch is sometimes presented in terms of our possessing a general concept of Grounding, rather than in terms of there being a general relation of Grounding, even though his ultimate aim is to motivate the latter posit. This may reflect the supposition that general concepts bring general metaphysical posits in their wake. I think representation and reality can come apart, however—in particular, I think that even if there were a general concept of Grounding, it wouldn't immediately follow that there is a correspondingly general metaphysical posit, since the concept might be given a deflationary treatment, as schematic for or reducible to some specific metaphysical posit(s). I'm interested in the metaphysical question, so I'll pitch my remarks accordingly. Down the line I will revisit the question of whether and when a general concept (or associated general term) should be taken to motivate a correspondingly general metaphysical posit.

The Unity Argument

Again, the question before us is: why posit Grounding in addition to the diverse small-g relations already on the metaphysical scene? In his (2009), Schaffer suggests that the posit of Grounding is motivated as a unifier of the small-g grounding relations; that is, as tracking certain important features held in common among all the diverse forms of metaphysical dependence:

> I digress to consider a possible objection, according to which there are many distinct notions of grounding, united only in name. […] By way of reply, I see no more reason to consider this a case of mere homonymy, than to consider various cases of identity as merely homonymous. In both cases, there is a common term, and the same formal structure. This is

> some evidence of real unity. At the very least, I would think it incumbent on the objector to provide further reason for thinking that the general term "grounding" denotes no unified notion. (377)

Here the primary motivation for unity stems from taking the small-g grounding relations to share the formal structure of a strict partial order—that is, to each be irreflexive, asymmetric, and transitive.

Schaffer has come to believe that a better Unity argument is needed. This reflects, in part, that he now thinks that some cases of metaphysical dependence are not transitive, and asymmetry and irreflexivity seem too thin a reed upon which to hang a unified general posit of Grounding.[4] This also reflects that, in response to my previously stated concerns, he has come to appreciate the need for Grounding to provide a basis for answering certain core questions about the status of Grounded entities (or to say why a general notion of Grounding doesn't need to answer them), and moreover to provide an account (though presumably one more general than those provided by specific small-g relations) of how, exactly, some goings-on metaphysically depend upon some others.

Schaffer's new unification strategy, as described in Schaffer (this volume), is threefold. First, he offers a rule—"let the best formalism decide"—for determining when considerations of unity (defeasibly) support positing a general concept:

> It seems to me that the best principled way to decide [whether to posit a general notion] is to construct the best formalism one can for the concept. If there is no meaningful concept, this should show up in a lack of any clear formalism, and if there are many, this should show up in a need for a formal distinction. But if one winds up with a clear and precise formalism that embeds the concept in a unified way, then this is a good sign that there is a single unified concept. I offer this as a general "ground rule" for unity debates: let the best formalism decide (Rosen 2010: 114; Schaffer 2016, 4.4).

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[4] See Schaffer (2012). Interestingly, Schaffer's main case illustrating intransitivity (whereby a ball's surface being dented partly grounds the ball's having a specific shape, and the ball's having a specific shape grounds its being more-or-less spherical, but the ball's surface being dented doesn't ground the ball's being more-or-less spherical) involves mixing two different small-g relations (mereological parthood and the determinable-determinate relation). A more straightforward case (see Wilson 2014) adverts to set membership: sets metaphysically depend on their members, but set membership is not transitive.

Second, by way of addressing the concern that bare Grounding claims underdetermine basic questions concerning the existence, distinctness, and efficacy of Grounded entities, he suggests that as a matter of "conceptual entailment", Grounded entities both exist and are distinct from their associated Grounding entities, and that as a matter of "conceptual exclusion", the causal status (as efficacious, or distinctively efficacious) of Grounded entities is appropriately left open. Third, he suggests that suitably informative yet suitably general answers to the question of "how, exactly" Grounded entities stand to Grounding entities in a given case of small-g dependence may be provided by considering the patterns of broadly counterfactual dependence made salient by modeling cases of dependence using the apparatus of structural equations modeling (SEM) (more on this shortly). Putting these three factors together: given that the diverse forms of metaphysical dependence are all appropriately (and best) modeled using the SEM formalism, in ways which preserve the conceptual entailments and exclusions, and which illuminate the general but still informative "how, exactly" patterns, then, Schaffer claims, this provides good (albeit defeasible) evidence that there is a "single unified concept" of Grounding.

In implementing this new unity strategy, Schaffer aims to duplicate, for the case of Grounding, unity-based motivations relevantly similar to those he takes to support the posit of a general notion of causation:

> To illustrate, consider causation […]. In my view, the best argument for causal monism is that causation is best modeled via structural equations, and that in such a formalism one does not need "red" arrows for one type of causal connection and "blue" arrows for another type of causal connection, but rather can say something informative about causation generally.[5]

Here Schaffer highlights, by analogy to causation, a second potentially informative kind of answer to the "how exactly" question, besides the

[5] Note that here Schaffer's remarks target a general relation of causation as opposed to (just) a general concept of causation. Schaffer goes on to discuss two other reasons for endorsing genus-level notions of causation and Grounding, respectively, according to which, first, the SEM formalism enables one to make useful explanatory and predictive generalizations, and second, that such general notions enable one to speak open-endedly about the species-level notions or relations. I'll discuss these further motivations down the line when considering whether and how considerations of formal or other forms of unity motivate an associated general metaphysical posit.

fine-grained answers offered by the small-g relations. For causal claims such as "smoking causes cancer", one sort of answer to the "how, exactly" claim proceeds by specifying the underlying causal mechanisms, but another sort of answer, associated with the SEM framework developed (in particular) by Pearl (2000) and Spirtes et al. (1993), proceeds by specifying the shape of the association between cause and effect, allowing us "to embed causal claims in a deeper framework that posits not just an on-off connection (cause or no cause?) but a more informative function relating a range of values associated with one option (number of cigarettes per day) to a range of values for the other (risk of cancer)". On the SEM framework, such patterns of dependence are represented via structural equations specifying how the value of a given (endogenous) "child" variable is determined as a function of the values of certain (exogenous) "parent" variables (e.g., one linking an independent variable representing cigarettes per day with a dependent variable representing cancer risk); these functional dependencies then constitute pattern-based information about "how exactly" cause and effect are related.

Schaffer suggests that Grounding claims should be similarly embedded "in a deeper framework that posits not just an on-off connection (ground or no ground?) but a function relating a range of values for the one option […] to a range of values for the other" (4). For example, one might model a case where the normative is Grounded in the natural, by specifying a function from (natural) pleasure/pain ratios to (normative) preference rankings. Indeed, Schaffer suggests that the analogy between causation and Grounding runs so deep that we should similarly take Grounding claims to be informatively embedded in the SEM framework, though with some provisos to preserve the distinction between causation and Grounding. Supposing so, then the proponent of Grounding can take on board what Schaffer nicely calls "Wilson's first lesson", according to which, as he puts it, "An account of grounding must give us more than just the bare ideology of 'this grounds that,' and in particular must allow us to make sense of follow-up inquiry into how exactly the grounding connection works, in terms of the specific rule mapping the more fundamental input to the less fundamental output". Moreover, by lights of the "let the best formalism decide" criterion, embedding specific cases of

(small-g) grounding in the SEM framework provides unity-based reason to posit Grounding:

> [I]n the case at hand—namely the case of grounding—the best formalism also makes use of structural equation models, and clearly does not need to draw different colored arrows for different flavors of dependence. This is a strong (albeit defeasible) indicator of unity. Indeed if I am right then grounding has exactly the same ultimate claim to unity as causation.

We are now in position to lay out Schaffer's new Unity argument:

(1) If some phenomena are aptly formally unified, then this provides strong (albeit defeasible) reason to posit a unifier. ("let the best formalism decide")
(2) The diverse (small-c) causal relations are aptly formally unified by the SEM framework.

Therefore, there is strong (albeit defeasible) reason to posit a general notion of causation.

(3) The diverse (small-g) grounding relations are just as aptly formally unified by the SEM framework as the diverse (small-c) causal relations.

Therefore, there is strong (albeit defeasible) reason to posit a general notion of Grounding.

I'll now argue that each of premises 1–3 are false.

Against Premise 1

If some phenomena are aptly formally unified, does this in itself provide strong (albeit defeasible) reason to posit a unifier? It seems not.

The cases of determinables and determinates and of special science entities are illustrative. Diverse determinates are formally unified in ways that would be constitutive of general determinables, were determinables to irreducibly exist; moreover, we have terms for, and concepts of, determinables. But these considerations alone are not taken to provide strong (albeit defeasible) reason to posit determinables. On the contrary,

the most common treatments of determinables are along deflationary anti-realist or reductionist lines, according to which (on an anti-realist view), terms for/concepts of determinables are taken to be schematic for determinate terms/concepts, or (on a reductionist view) determinables are taken to be identical with disjunctions of determinates. Similarly for special science entities: diverse lower-level physical goings-on are formally unified in ways that would be constitutive of special science entities, were special science entities to irreducibly exist; moreover, we have terms for, and concepts of, special science entities. But these considerations alone are not taken to provide strong (albeit defeasible) reason to posit special science entities. On the contrary, the most common treatments of special science entities are in deflationary anti-realist or reductionist terms.

Why is it that formal unity alone isn't typically seen as strongly (albeit defeasibly) motivating the posit of a general unifier? The obvious reason is that parsimony considerations—good old Ockham's Razor—push toward give deflationary treatments of formal unity, wherever possible. Moreover, the methodological force of parsimony is not that of a "defeater"—it is not as if unity considerations first motivate general metaphysical posits, which are then potentially defeated by considerations of parsimony. Rather, parsimony considerations are first on the scene: thou shalt not posit entities beyond necessity. So premise (1) is false.

Similar remarks apply to a version of premise (1) understood as incorporating two other other broadly unity-based considerations: first, that the SEM formalism enables one to make useful generalizations, pertaining to prediction, counterfactual reasoning, and explanation; second, that a general notion or relation provides a basis for speaking open-endedly about the species-level notions or relations.[6] Here again, attention to the standard treatments of determinables and special science entities is informative, for the formal treatments of these entities also provide a basis for useful generalizations, pertaining to predictions, counterfac-

[6] As Schaffer (this volume) says, "the theorist who speaks of 'small-g' grounding-type relations has no clear way to enumerate her own preferred menu of relations. Wilson herself (2014: 535) must resort to 'and so on' when listing her own open-ended plurality of 'small-"g"' grounding relations, and so one must wonder how she understands how to continue her own list, if not in terms of listing further species of the grounding relation".

tual reasoning, and explanation, and for speaking open-endedly about determinates or lower-level natural phenomena. But the standard accommodation of these features is again in deflationary terms, according to which the availability of explanatory generalizations and use of general concepts/terms is taken to reflect not distinctively general features of reality but rather inexact resemblances between determinate or lower-level physical goings-on, which resemblances track certain patterns in lower-level phenomena that, were we better epistemically, perceptually, or theoretically situated, could be omitted without loss of metaphysical generality. And here again the methodology is immediately and in the first instance driven by parsimony considerations.[7]

To be sure, sometimes it is appropriate to posit a general unifier of some diverse phenomena. But given Ockham's razor, this requires providing reasons for thinking that the commonalities at issue are tracking a distinctively unspecific level of ontological grain which cannot be accommodated in deflationist (schematic, reductionist) terms. Hence, for example, I argue for a non-reductive treatment of determinables on grounds that these are associated, on a given occasion, with a proper subset of the token powers of their realizers on that occasion, and that candidate reductive treatments of determinables (notably: in terms of disjunctions of determinates) fail to accommodate this proper subset relation (since instances of disjunctions are associated with all the token powers of the disjunct instanced on the occasion).[8] And I argue for a non-reductive treatment of certain special science entities on grounds, first, that these have strictly fewer degrees of freedom DOF (independent parameters required to specify their law-governed properties and behavior) than are needed to specify the lower-level entities upon which they depend; and second, that given the loss of information associated with such eliminations in (e.g., spin) DOF, the special science entities at issue

[7] There are other motivations for deflationary strategies in these and other cases, including concerns about the coherence of general concepts (as per Berkeley's 1710 rejection of abstract ideas) and about causal overdetermination (following Kim), among others.

[8] See Wilson (1999) and (2009). The irreducibility at issue here is compatible with determinables being posterior to determinates, as is usually assumed.

cannot be identified with any lower-level entities—effectively, because the lower-level (e.g., quantum mechanical) laws can't operate without the eliminated information.[9]

So far as I'm aware, proponents of Grounding haven't offered reasons for rejecting deflationary means of accommodating what unity exists among the small-g relations. In any case, the moral of determinables and special science entities remains: given Ockham's razor, if there is a strong (albeit defeasible) presumption in the vicinity of formal or other unity, it is in favor of deflationary rather than inflationary accounts of such unity. Premise (1) is false.

Against Premise 2

Are the diverse (small-c) causal relations aptly formally unified by the SEM framework? It seems not.

To start, we need to get clear about what sort of unification of the "small-c" relations is needed, if the SEM-based motivation for a unified notion of causation is going to serve as an analogue for a unified posit of Grounding. Schaffer suggests that the SEM framework formally unifies diverse causal relations, such as "baking, making, waking". But these sorts of "small-c" causal relations are not relevantly analogous to small-g grounding relations. The diverse small-g relations are of importantly different forms of dependence that might be at issue in a given case—again, type and token identity, the determinable/determinate relation, the set membership relation, and so on. As such, if the unity associated with the SEM formalism is to provide a model for the unity of the small-g relations, what is in the first instance required is that the SEM formalism unify any diverse forms of causal relation that we have reason to think exist. Here there is room for dispute, since some accounts of causation are presented, rightly or wrongly, as competitors. As such, we might not

[9] See Wilson 2010. The irreducibility at issue here is compatible with the special science entities and laws' being posterior to the lower-level (e.g., quantum mechanical) entities and laws, as physicalists assume.

require that the SEM framework formally unify all candidate forms of causation, which include (among other contenders) regularity or nomological sufficiency accounts (on which causation is a matter of instantiation of a causal law), dispositional essential accounts (on which causation involves the manifestation of a disposition), transference accounts (on which causation involves the transfer of a conserved quantity), and counterfactual accounts (on which causation is tracked by certain counterfactual dependencies).

Still, independent of the end of metaphysical causal inquiry, thanks to Hall (2004) we have good reason to think that there are (at least) two fundamentally different, and incompatibly applicable, forms of causal relation: first, causation as production (covering regularity, transference, and powers-based accounts), and second, causation as (counterfactual) dependence. Both sorts of accounts are needed, Hall compellingly argues, to accommodate various theses about causation—that causation is transitive (Transitivity), that cause and effect are connected by spatiotemporally continuous processes (Locality), that the character of a causal relation is determined by its intrinsic features in combination with the laws (Intrinsicness), that counterfactual dependence between wholly distinct events is sufficient for causation (Dependence), and that omissions can be causes and effects (Omissions)—that are individually true but jointly incompatible, as is illustrated by what theses are required in order to handle (in particular) cases of double prevention. Hall's somewhat conservative interpretation of this incompatibility is that there are at least two notions of causation associated with different of the true theses, which are operative in different cases of causal relation:

> [T]he five theses I have mentioned are, I claim, all true. Given the deep and intractable tensions between them, that can only be because they characterize distinct concepts of causation. Events can stand in one kind of causal relation—dependence—for the explication of which the counterfactual analysis is perfectly suited (and for which omissions can be perfectly suitable relata). And they can stand in an entirely different kind of causal relation—production—which requires an entirely different kind of analysis (and for which omissions are not suitable relata). Dependence and Omissions are true of the first of these causal relations; Transitivity, Locality, and Intrinsicness are true of the second. (226)

Now, the SEM formalism does not unify these two fundamentally different "small-c" forms of causal relation. On the contrary, as James Woodward (see, e.g., his forthcoming) and others have noted, the SEM formalism aims to accommodate causation as counterfactual dependence, and does not aim to accommodate causation as production. This is no surprise, since SEM accounts incorporate and model the driving intuition behind counterfactual dependence accounts, according to which causes make a difference to their effects: counterfactually wiggle the cause, and the effect wiggles, too. As Schaffer (this volume) puts it, "structural equation models are our best technology for understanding difference-making relations".[10]

Since the SEM framework models (at best) counterfactual dependence accounts of causation and clearly does not model production accounts of causation (much less diverse forms of such accounts), this framework does not aptly formally unify the diverse small-c relations, in the relevant sense. Premise (2) is false.

Against Premise 3

The falsity of premises (1) and (2) undermines the sub-conclusion of Schaffer's argument, according to which there is strong (albeit defeasible) reason to posit a general notion of causation: the SEM framework does not in fact formally unify the relevant small-c causal relations, and even if it did, Ockham's razor would push toward trying to accommodate such unity in deflationary terms, antecedent to positing a general unifier. These results in turn technically undermine the value of premise (3)—according to which the diverse small-g grounding relations are "just as" aptly formally unified by the SEM framework as the diverse (small-c) causal relations—as generating the desired unity-based motivation for Grounding, since at this point the truth of premise (3) is compatible with the SEM framework's not aptly formally unifying the small-g relations.

[10] As such, the formal unity afforded by the SEM framework in modeling, for example, "baking, making, and waking" is at best a unification of different applications of a counterfactual dependence account. But the formal unity associated with different applications of a single small-c relation is beside the point of motivating Grounding as a unifier of the diverse small-g relations.

Let us put aside the analogy to small-c relations, however, and independently ask: does the SEM framework aptly formally unify the small-g relations? It seems not.

We can start by observing that for the SEM framework to properly model grounding relations, grounded goings-on must counterfactually depend on grounding goings-on: wiggling the ground wiggles the grounded. That's the whole point of the SEM-based approach—to identify or model dependence relations, of whatever sort, as reflected in counterfactual dependencies. But, for reasons I'll discuss shortly, many grounded goings-on are not counterfactually dependent on grounding goings-on.

For example, and to start, suppose one wants to model the dependence of determinables on determinates, against the backdrop assumption that fundamental reality is maximally determinate. More specifically, suppose one wants to model the metaphysical dependence of a shirt's being red, at a time, on the shirt's being maroon, at that time. On the face of it, there is no counterfactual dependence in this case; for both intuitively and on every similarity-based account of counterfactuals (i.e., on pretty much every live account), the counterfactual "if this shirt weren't maroon, it wouldn't be red" is false, since in the closest worlds where the shirt isn't maroon, it is some other determinate of red. Koslicki (2016) precisifies this observation by constructing an SEM model for this case, on which the exogenous variables represent determinate states of the shirt—Maroon, Crimson, Navy, and so on; the endogenous variables represent determinable states of the shirt—Red, Blue, and so on; and the structural equations connect these variables in the obvious ways (Maroon = Red, Navy = Blue, and so on). Having done so, she notes:

> There is now reason to doubt whether […] the model at hand actually encodes "how the shirts determinate shade sets its determinable color", as Schaffer claims […]. Given that Maroon's being set to 0 leaves open, for example, whether Crimson should be set to 1 in the scenario in question [it] would therefore be incorrect to define [the relevant structural equation] in such a way that it assigns 0 to Red whenever 0 is assigned to Maroon; for the scenario in question may be one in which the shirt is nevertheless red, only in some other way, for example, by being crimson rather than maroon. This result presents a counterexample to Schaffer's

> slogan, "wiggle the ground, and the grounded wiggles" (Schaffer 2016, Sect. 3.2): for in a case in which we "wiggle the ground" by imagining the shirt's color to be changed from maroon to crimson, say, it is not the case that thereby "the grounded wiggles" as well, since the shirt continues to be red, only in a different way. (107)

Koslicki also helpfully observes that the concern here is a Grounding variation on the theme of causal preemption:

> When the structural equation model is applied to an alleged case of determinable/determinate grounding, the grounding scenario in question is in fact more aptly compared to a causal scenario involving *massive causal preemption*, i.e., a scenario in which a single effect can be brought about by multiple alternative causes, each of which is individually sufficient to bring about the effect in question and each of which occurs only if none of the others occur. As it stands, it is not clear, even in the causal case, how the structural equation model, as described by Schaffer, would produce the correct results in a case of massive causal preemption. At most, then, we are dealing with a situation in which a supposedly clear case of grounding is comparable to a problematic case of causation, one which has led to headaches for extant theories of causation including, by Schaffer's own admission, the structural equation model of causation. (108)

I agree with Koslicki both that the SEM formalism does not appropriately model the determinable/determinate case, and that the difficulty here is of a piece with notorious difficulties that difference-making accounts of causation have in modeling cases of causal preemption. In what follows, I want to defend, develop, and generalize these concerns.

To start, Schaffer would presumably reject Koslicki's specific model of the determinable/determinate case, on grounds that, like causation, grounding is a contrastive notion, such that grounding claims have the general form "a rather than b grounds c rather than d". To be sure, relative to the fine-grained contrast class of the exogenous variables in Koslicki's model, where Maroon contrasts not just with Navy but with other determinates of red, the counterfactual dependence between determinate and determinable will not be in place, but, Schaffer might say, that's not a failure of the SEM model—it's a failure of the modeler to correctly specify

an appropriately coarse-grained contrast ("wiggle") class.[11] It's a model, after all, and the variables can and should be set up in whatever way is deemed perspicuous. On Schaffer's proposed model, there is a single exogenous variable (Determinate), which is set to 1 if the shirt is maroon, and to 0 if it is navy, and a single endogenous variable (Determinable), which is set to 1 if the shirt is red and to 0 if the shirt is blue. On this model, wiggling the determinate color of the shirt (from maroon to navy) does wiggle the determinable color of the shirt (from red to blue).

Ultimately, however, the appeal to a coarse-grained contrast class fails to show that the SEM framework aptly models the determinate/determinate case. For an apt model of this case should be able to capture the metaphysical dependence of the shirt's being red on the shirt's being maroon, independent of the contrast between red and blue. After all, the world might have been one according to which everything was one or other shade of red. In such a world, the usual reasons for thinking that determinable instances metaphysically depend on determinate instances might have remained in place—it might have been reasonable to suppose that fundamental reality is maximally determinate, and that determinable instances are ontological abstractions from determinate instances. But if we were denizens of such a world, then like Black and White Mary, we would not have possessed the concepts of determinable colors other than red. We might not have even contemplated the bare possibility of other determinables, or we might have rejected their bare possibility, concluding (rightly or wrongly, given further details) that the redness of things was metaphysically necessary. Either way, we would be unable to model the determinable/determinate dependence at issue by means of the SEM framework.

Indeed, we don't need to go to an all-red world to generate the difficulty here. We just need to consider cases of metaphysically necessary determinables, such as shape. Just as the shirt's being red depends on the shirt's being maroon, so does the shirt's being shaped depend on its being some determinate shape. But here there is, of metaphysical necessity, no

[11] Nor, I think he would say, need we require (as Koslicki seems to assume) that the variables in the determinable/determinate case exactly mirror the variables in the throw/shattering case in representing the "on–off" obtaining of events or states of affairs.

contrast class to which one might appeal in order to set up any counterfactual dependencies, for whatever determinate shape properties the shirt has, it will still be shaped.[12]

Ultimately, then, the SEM framework does not aptly model the metaphysical dependence of determinables on determinates, since gaining the requisite counterfactual dependence requires an appeal to coarse-grained contrast classes that may be either conceptually unavailable or metaphysically impossible. But, as Schaffer grants, one might well maintain that determinables metaphysically depend on determinates.[13] Hence, the SEM framework does not formally unify (all) the small-g relations, and premise (3) is false.

This result can be pressed further by pinpointing and generalizing the underlying reason why the SEM framework goes wrong in the determinable–determinate case. As above, Koslicki observes that the failure of determinables to counterfactually depend on their associated determinates is analogous to the failure of effects, in cases of preemption, to counterfactually depend on their associated causes: in both cases, the dependence at issue is strongly immune to counterfactual variation, effectively due to there being a many–one structure between dependence base and dependent goings-on. In the determinable–determinate case, however, we can say more; for here the many–one structure is generated by the determinable–determinate relation's being, on the operative understanding, an abstraction relation taking more specific to less specific goings-on. It is the washing away of determinate-level details that makes it the case that "wiggling the determinate" often and sometimes necessarily fails to "wiggle the determinable".

That the underlying concern in the determinable–determinate case is generated by this relation's taking more to less specific goings-on spells further trouble for the claim that the SEM formalism aptly unifies the small-g relations. For many paradigm cases of small-g relations are such that the associated grounded goings-on are ontologically and causally less specific than their grounding goings-on. This is true, for example, of

[12] Indeed, even if the shirt is a vague object, it will still be (indeterminately) shaped.

[13] Indeed, one might well maintain this even if, as I argue in Wilson (2012), determinables can be fundamental; for as I discuss in Wilson 2014, metaphysical dependence can be symmetric.

many of the small-g grounding relations posited by physicalists as holding between special science and lower-level physical goings-on, including accounts on which special science goings-on are characterized by abstract functional roles that can be implemented by diverse lower-level realizers, accounts on which special science goings-on are associated with proper subsets of the powers of their diverse lower-level realizers, and accounts on which special science have strictly fewer DOF than are had by their diverse lower-level realizers. Indeed, it is even clearer in these cases than it is in the case of the determinable/determinate relation that the whole point of the relation, from a metaphysical point of view, is to characterize dependent goings-on whose comparatively abstract nature enables them to float largely free of actual or counterfactual variations in the goings-on upon which they depend. It is this insensitivity that accommodates, for example, the multiple realizability of special science properties, and the compositionally flexible persistence conditions of special science entities. These relations are in the business of *same*-making, not difference making. Hence it is that, in cases of dependence involving these relations, difference-making considerations involving counterfactually nearby states of affairs are typically not in place, and difference-making considerations involving counterfactually distant states of affairs are, even if in place, irrelevant to characterizing the same-making form of dependence at issue.

It is moreover worth noting that the abstractionist character of these and other small-g relations blocks a potential line of response on the part of Schaffer and others[14] who take Grounding to be appropriately modeled by the SEM framework. Here the suggestion starts with the claim that the analogy between Grounding and causation "runs deep", with it being difficult, in each case, for otherwise attractive counterfactual dependence approaches to appropriately model many–one cases of dependence, with the tricky cases of small-g relations being relevantly similar to cases of causal preemption and cases where a given effect is characterized in general terms; the further suggestion is then that variations on available strategies for overcoming these difficulties in the causal case may overcome the difficulties in the grounding case. But granting

[14] Notably, Alistair Wilson, in his (in progress).

(as a generalization of Koslicki's observation) that the failures in both cases are relevantly similar, there is no hope that the strategies for accommodating the problematic cases of causal relation will carry over. For the strategies for gaining back counterfactual sensitivity in cases of causal preemption or of general effects crucially rely on characterizing the effect in more fine-grained terms; this is, for example, the recommended strategy for accommodating the full range of cases of preemption in Lewis (2000) and Paul (2000). But while there is no barrier to reconceiving of preempted or overly general effects in more fine-grained terms, this strategy is not available for cases of abstractionist grounding, since in such cases the holding of the relation requires that the grounded be less specific than the ground.

Summing up: not just the determinable–determinate relation but many paradigm cases of small-g grounding relations fail to be aptly modeled by the SEM formalism—and insuperably so. As such, the SEM framework does not aptly formally unify the small-g relations. Premise (3) is false.

I've now argued that all three premises of Schaffer's Unity argument are false. I conclude that considerations of formal and other unity, of the sort associated with the SEM formalism, in particular, provide no reason to posit a general relation of Grounding.

The Priority Argument for Grounding

Another proposed motivation for Grounding is that Grounding is required in order to fix the direction of priority of small-g relations, since in some cases these relations fail to do this on their own.[15] For example, given just that some entities stand in the part–whole relation, nothing follows about whether the parts depend on the whole, or vice versa. In that case, the suggestion goes, something more is needed to determine what is prior to what—namely, Grounding. My (2014) response to this argument is to grant that something more is needed, but to deny that the additional component is Grounding. Rather, I argue, by attention to

[15] Perhaps some small-g relations are able to fix the direction of priority on their own; in cases of set membership, for example, perhaps members are always prior to their containing sets.

standard metaphysical methodology, that in the first instance what more is needed for the small-g relations to do their work is a primitive specification of the fundamental.[16] Schaffer's indirect support for the Priority argument targets my proposed alternative, in ways I will consider after presenting my alternative and illustrating its application.

The Primitive Fundamentality Framework

There are two cases where the direction of priority associated with the holding of a given small-g relation might be at issue: first, cases where the relation connects fundamental to non-fundamental goings-on; second, cases where the relata are each non-fundamental.

For the first sort of case, I argue that, as attention to standard metaphysical methodology shows, what more is needed is specification of what is presumed, as a speculative, antagonistic, or working hypothesis, to be fundamental. Hence, given that the Whole is fundamental (as per monism), then proper parts of the Whole are non-fundamental; given that atoms are fundamental (as per atomism), fusions of the atoms are non-fundamental; given that the fundamental goings-on are maximally determinate (as physicalists commonly assume), then determinables of these goings-on are non-fundamental; and so on. So Grounding is not needed in order for the small-g relations to fix the direction of priority between fundamental and non-fundamental goings-on.

Before continuing, one might ask: what if the fundamental is understood as that which is not itself grounded? If so, then since on my proposal the small-g relations (typically) do their work only after the fundamental is specified, the notion of the un-grounded operative in characterizing the fundamental must appeal to Grounding, after all. But, I argue, we should not understand the fundamental as the un-Grounded, both because doing so inappropriately metaphysically characterizes basic entities in non-basic (indeed, relational negative) terms, and because such a characterization rules out of court various live metaphysical views on

[16] Or of what serves as fundamental; see my 2014, note 64, and below.

which the fundamental goings-on are self-grounding (as per, e.g., a self-sustaining god) or mutually grounding (as per, e.g., Leibnizian monads). Rather, we should metaphysically characterize the fundamental in primitive, metaphysically neutral terms—after all, if anything is fundamental, it's the fundamental! Though the fundamental is primitive, we can say more about this notion; namely, that it follows from what goings-on are fundamental at a world that these, individually or together, provide a ground (nota bene: in one or other small-g fashion) for all goings-on at the world. Such a conception encodes the intuitive, commonly registered understanding of the fundamental in terms of "all God had to do to create the world". Perhaps, in drawing to attention that what is fundamental sets the valence for certain priority relations, I may be seen (as Schaffer suggests) as here introducing a "new hyperintensional primitive notion"; but really, I think I am just making explicit the presuppositions of standard metaphysical methodology—as in, for example, Schaffer's (2010) descriptions of monism and pluralism:

> The monist holds that the whole is prior to its parts, and thus views the cosmos as fundamental, with metaphysical explanation dangling downward from the One. The pluralist holds that the parts are prior to their whole, and thus tends to consider particles fundamental, with metaphysical explanation snaking upward from the many. Just as the materialist and idealist debate which properties are fundamental, so the monist and pluralist debate which objects are fundamental. (31)

Indeed. And the way the monist and the pluralist go about debating "which objects are fundamental" is, again, to first assume (as a working, speculative, or antagonistic hypothesis) one or the other fundamental base, and then go on to explore which such base best accommodates the rest of the reality, by appeal (in sometimes complex fashion) to various small-g relations understood as holding between fundamental and non-fundamental goings-on.

Moving now to the second case: what about priority relations between goings-on each or all of which are non-fundamental—say, between hands and bodies? A specification of the fundamental won't, in itself, always fix the direction of priority between such non-fundamenta: for

example, atomists might agree about what is fundamental, but disagree about whether hands are prior to bodies, or vice versa. So, how are priority relations between non-fundamenta, presumably also involving small-g relations, determined?

My treatment of the second case again encodes standard metaphysical methodology. To start, investigating into dependence relations between non-fundamental goings-on requires that one be in possession of fairly specific accounts of the non-fundamenta in terms of fundamenta—else one wouldn't be in position to characterize the goings-on as non-fundamental. As per the treatment of the first case, such accounts of the non-fundamental in terms of the fundamental appeal to the holding of various small-g relations, where one of the relata is fundamental and the other is non-fundamental. These accounts of the non-fundamental, in turn (more specifically, their metaphysical correlates), provide a basis, along with further suppositions or associated facts about the non-fundamenta and their relations, for priority relations between non-fundamenta. As we'll see, there is considerable room for debate about which further suppositions and associated priority relations are (or are not) in place, even holding fixed the operative account of the non-fundamenta, but in any case, no appeal to Grounding is required.

By way of illustration, suppose that a form of atomism is true, on which hands and bodies are mereological fusions of atoms, and hands are mereological proper parts of bodies. Which is prior: hands, bodies, or neither? The answer depends on which further facts are (assumed to be) in place. A mereological atomist might maintain that hands are prior to bodies, on grounds that a hand fusion can exist without any body fusion existing, but not vice versa. Alternatively, a mereological atomist might maintain that hands and bodies are on a par, priority-wise: they overlap, one is bigger, littler ones can exist without bigger ones existing and not vice versa, but so what? Or suppose that atomism is true, but hands and bodies are functionally realized by atomic aggregates. Which is prior: hands, bodies, or neither? Again, the answer depends. A functionalist atomist might maintain that bodies are prior to hands, on grounds that a body's function can be implemented in the absence of a hand, but not vice versa. Alternatively, a functionalist atomist might maintain that hands are prior to bodies, on grounds that a body's function sensitively depends on the functions of its parts,

including its hands. As these examples suggest, no appeal to Grounding is needed for the associated non-fundamenta to (be reasonably taken to) stand in priority relations (or not to stand in any such relations, as the case may be). What is rather needed, in addition to the suppositions/facts about what is fundamental and which small-g relations are in place between the fundamental and the non-fundamental, are suppositions/facts about the natures of the non-fundamenta and how (via one or other small-g relation) the non-fundamenta stand to one another.

Summing up: on the primitive fundamentality framework, facts about what is (or serves as) fundamental, coupled with the holding of diverse small-g relations, determines what is non-fundamental; these facts, coupled with facts about the natures of the non-fundamenta and how the non-fundamenta stand to one another, determines priority relations between non-fundamenta (if such there be, in a given case). No appeal to Grounding is required.

Three Concerns with the Primitive Fundamentality Framework

Schaffer thinks that the primitive fundamentality framework is worthy of serious consideration. But he offers three reasons for thinking that this framework is worse off than one rather appealing to primitive Grounding, understood as a primitive hyperintensional notion of relative fundamentality. If Schaffer were correct, that would resurrect the Priority argument for Grounding. In what follows, I argue that Schaffer is not correct.

Expressive Power

Schaffer claims that the primitive fundamentality framework is expressively impoverished as compared to the Grounding framework:

> It seems to me that absolute fundamentality can easily be defined in terms of relative fundamentality (the fundamental is that which has no deeper grounds), and so a framework using relative fundamentality as a primitive can easily be used to say everything one wants to say via absolute

> fundamentality. But there is no obvious definition to be found in the other direction, and so it is not at all obvious that using absolute fundamentality as a primitive will allow one to say everything one wants to say in terms of relative fundamentality.

I respond by restating my position that the notion of the fundamental[17] should not be defined "in terms of relative fundamentality (the fundamental is that which has no deeper grounds)"; for we should not metaphysically define or characterize the fundamental in non-basic, theoretically loaded terms. In particular, it is not true that "a framework using relative fundamentality as a primitive can easily be used to say everything one wants to say via absolute fundamentality", since the relative fundamentality framework will not allow one to express a number of currently live metaphysical theses, including views positing a self-sustaining God, mutually dependent monads, and so on. And while it is true that on my account there is no definition of relative fundamentality just in terms of fundamentality—or, more to the metaphysical point, that the facts about relative fundamentality are not generated just by the facts about fundamentality—on my view the facts about relative priority, if such exist in a given case, are generated by facts about what is fundamental, coupled with off-the-shelf resources about small-g relations and their features and implications in specific circumstances. Since my framework can say everything Schaffer's can say and then some, it is not a fundamentality framework but a Grounding/relative fundamentality framework that is expressively impoverished.

Priority in the Absence of a Fundamental Level

Schaffer claims that a primitive fundamentality framework faces difficulties in cases where there is no fundamental level:

> [The need for primitive fundamentality] makes trouble for Wilson in scenarios in which there is no fundamental level at all, but just a limitless descent of every deeper structure. If such a scenario is metaphysically possible, it is trouble for Wilson, for she can attribute no metaphysical structure

[17] Contra Schaffer's exegesis, I do not use the expression "absolute fundamentality", or appeal to any such notion, for reasons that I discuss in my 2014 (note 64), and upon which I will expand shortly.

> to it—when nothing is metaphysically fundamental, Wilson's primitive gives no guidance. But the friend of relational fundamentality can still make sense of metaphysical structure in such scenarios, including the guiding idea that things are getting ever more fundamental without limit.

I respond, to start, by noting two ways in which priority might be fixed, on my account, in worlds with infinite chains of dependence (hence, I reject Schaffer's characterization of my view as one requiring an "absolutely" fundamental level). The deeper point illustrated by these possibilities is that fixing the direction of priority does not require an absolutely fundamental level; rather, an appropriately principled metaphysical asymmetry that enables some goings-on (which may or may not exist, as per the cases below) to act as a fundamental level will do.

First, priority might be fixed in the absence of a fundamental level if there is convergence on a fundamental level, and non-fundamental goings-on depend on goings-on in that limit. The suggestion here extends Montero's (2006) observation that "even successive decompositions can still bottom out into something fundamental. For example, just as the infinite decreasing sequence of numbers 1/2, 1/3, 1/4 … is still bounded below by zero, there could be infinite descending sequences of decompositions, with fundamental entities below them all" (179). What I furthermore add (or take away) from Montero's line of thought is that even if the goings-on in the limit do not exist, the valence of priority may still be established by reference to goings-on in this limit, much as the thermodynamic properties and behavior of a gas are properly modeled as non-fundamental features of statistical mechanical collections in the "thermodynamic limit", as the number of particles and the volume each approach infinity.[18] In other words, goings-on in the limit may act as a fundamental level.

Second, priority might be fixed in the absence of a fundamental level if there is a level at which the archeology of further dependence relations ceases to be relevant to priority relations at or "above" that level.

[18] The possibility broached here might also be seen as a metaphysical version of the temporal supertask discussed in Cameron 2008, 9.

Such a level acts as a fundamental base for what lies above; hence, for example, the physical level might operate as a fundamental level for purposes of understanding priority relations among broadly scientific phenomena, even if the physical entities are non-fundamental relative to some deeper level of reality.[19] The existence of this sort of structure would also provide a principled basis for fixing the valence of priority; hence it is that Montero (2006) suggests that the physicalist commitment to the priority of the physical over the mental can be accommodated in an infinitely decomposable world as the thesis that "all mental properties are eventually determined by non-mental properties such that all further determinations of these properties, if any, are non-mental" (187).

Again, these possibilities indicate that associating a direction of priority with a given small-g relation (assuming that the relation does not do this on its own) does not require an absolutely fundamental level; rather, an appropriately principled metaphysical asymmetry in the structure of reality, enabling some goings-on to act as a fundamental level, will do.

But what if there is no fundamental level, no convergence on a fundamental level, and no level at which deeper archeology ceases to matter? In that case, one may reasonably deny that it makes sense to posit any priority relations between non-fundamenta (besides those fixed just by the relation alone, as might be the case with the set membership relation). As Leibniz said in his correspondence with Arnaud,

> Where there are only beings by aggregation, there are no real beings. For every being by aggregation presupposes beings endowed with real unity, because every being derives its reality only from the reality of those beings of which it is composed, so that it will not have any reality at all if each being of which it is composed is itself a being by aggregation, a being for which we must still seek further grounds for its reality, grounds which can never be found in this way, if we must always continue to seek for them. (1686/1989, 85)

[19] In my 2014, I referred to such a level as "relatively fundamental", which reference is not to be confused with Schaffer's use of "relatively fundamental".

Here, as Cameron (2008) puts it, "the thought is that if everything were dependent, there would be no grounding to being …" (6–7). In further support of this thought, consider again the "all God had to do to create the world" heuristic that underlies the conception of the primitively fundamental in my framework. In cases where there is no convergence, and no level of goings-on that fix the priority relations at higher levels, then to create the world God would have to bring into being all the levels—all the entities—that is, God would have to do, or create, everything. Hence, on the operative understanding of the fundamental (and again, modulo any fixed directions of priority there might be) everything would be on a par, priority-wise—and that's just to be expected. Indeed, Schaffer (2010) agrees: "There must be a ground of being. If one thing exists only in virtue of another, then there must be something from which the reality of the derivative entities ultimately derives" (37).[20]

Relative Fundamentality

Schaffer claims that a primitive fundamentality framework has difficulty accommodating priority relations between non-fundamenta:

> [Wilson's framework has trouble] in making sense of structure among non-fundamental entities. Suppose that what is fundamental are just particles in the void, and consider the following three non-fundamental entities: my whole body, my whole body minus my left shoulder, and my heart. Holding fixed that particles in the void are fundamental, and holding fixed the mereological and other "small-'g"' relations among these three entities, there still seems to be a residual question as to the direction of fundamentality (and one not so different in spirit from the question of whether the ultimate parts or the ultimate whole is basic, which inspired Wilson to add a primitive notion of fundamentality in the first place). […] Wilson's view seems to give no guidance.

[20] Schaffer's commitment to a fundamental level opens the door to a fourth response to his objection—namely, to deny that it makes sense to posit a world without any fundamental base. Hence, it is that he offers as an advantage of monism that it can accommodate both infinite decomposition and the reasonable assumption that dependence relations require "a ground of being".

Schaffer notes, more specifically, that I provide an account of relative fundamentality, which aims to treat the sort of case he mentions, but says:

> … I am afraid that I do not understand her reply. I read her as saying that the answer turns on whether we treat the entities involved as fusions or as functionally defined entities. But I do not see how either treatment makes a difference, within Wilson's framework, unless we have some general principle to hand of relative fundamentality for fusions or for functionally defined entities (etc.). For suppose that my whole body, my whole body minus my left shoulder, and my heart are all understood as fusions, and that particles are fundamental. I see no way to extract any conclusion as to relative fundamentality for these fusions, without some general principle connecting parthood to relative fundamentality.

I respond that Schaffer has not read me correctly, though I think I could have been clearer in my original exposition. On my view, the direction of priority between non-fundamenta is not assumed to follow just from the (small-g) facts about what is fundamental coupled with facts about how non-fundamenta stand to fundamenta—hence it is that even the mereological atomist has options so far as understanding the priority relations between hand and body. Even more options arise if the non-fundamental fusions are functionally characterized, if more complex parthood relations (of the sort discussed by, e.g., Fine 1999; McDaniel 2001; Paul 2002; Koslicki 2008) are at issue, if there is disagreement about the persistence conditions of the non-fundamenta, if endurantist or perdurantist conceptions of objects are presupposed, and so on. Relatedly, nor would it make sense to assume that priority between non-fundamenta of a given variety (e.g., fusions) is algorithmically determined with the help of "some general principle". Rather, what emerges from attention to metaphysical methodology is that relative fundamentality is a matter of suppositions/facts about what is fundamental and how the non-fundamental small-g depends on the non-fundamental, along with (not general principles, but) suppositions/facts about the natures of the non-fundamenta and how (via one or other small-g relation) the non-fundamenta stand to one another. So that my view does not entail or encode general principles of relative fundamentality is a feature, not a bug.

Here it is also worth pointing out that what priority relations hold between non-fundamenta is further complicated by its being the case that the dependence of a given non-fundamental entity on another is typically wrapped up in not one, but a number of relations. For example, even supposing that there is a clear sense in which my hand qua functionally specified entity depends on my body qua functionally specified entity, but not vice versa, there is an equally clear sense in which the weight of my body, at least at the present moment of writing, is in part metaphysically dependent on the weight of my hand, in that the weight of my body is clearly an additive function of the weight of its parts, and certainly the things that my body, even if abstractly functionally specified, can do—its powers, so to speak, depend to some extent on the powers of my hand.

That relations of relative fundamentality are not properly seen as subject to uniformly applicable general principles, for even a single small-g relation, much less (as the proponent of Grounding supposes) for all such relations, spells deep and to my mind insuperable trouble for a framework that appeals to primitive Grounding/relative fundamentality. As I previously rhetorically asked:

> Is all this complexity supposed to involve numerous Grounding relations, primitively pointing in different directions? The idea is just plain silly, and suggests that, even if there were some problem (which there is not) with the specific relations not being themselves up to the task of fixing directions of priority among non-fundamental goings-on, the posit of additional Grounding relations would not be of any help. (566)

Non-rhetorically: no. Nor, given that the SEM framework does not formally unify the small-g relations, can this framework be appealed to as a general basis for rendering the primitive pointings of Grounding any more substantive. We can do no better, in such investigations, than to work closely with the diverse relations that are plausibly taken to hold between non-fundamental goings-on, as informed by the accounts of these non-fundamenta in terms of fundamental goings-on (or goings-on that properly serve as fundamental), making explicit in the process what assumptions are guiding our claims that one or another of these is, in a given case, operating as a grounding relation (or not).

Summing up: the primitive fundamentality framework is not subject to any of Schaffer's three concerns: it is not expressively impoverished, it has resources for dealing with the absence of a fundamental level, and it accommodates relative fundamentality in an appropriately fine-grained and articulate way. This is no surprise, since the framework encodes the usual suppositions and strategies of standard metaphysical investigations into dependence and priority. Moreover, and by way of contrast, the primitive Grounding/relative fundamentality framework is both expressively impoverished and—for all that Schaffer has yet established—deeply inarticulate as regards characterizing the diverse and complex network of relations of relative fundamentality. I conclude that considerations of priority provide no reason to posit a general relation of Grounding. Thanks to Jonathan Schaffer, an interlocuter par excellence, and to the Dr. Martin R. Lebowitz and Eve Lewellis Lebowitz Foundation, along with the Phi Beta Kappa Society and the American Philosophical Association, for making possible the fruitful debate that led to this paper. Thanks also to members of audiences at the Eastern APA and Fordham Lebowitz Prize lectures, the University of Buffalo, the University of Notre Dame, the University of Tennessee, the University of Edinburgh Workshop on Grounding, and the Rutgers Newark Workshop on Composition and Ground, for helpful comments and questions.

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