# Markel Kortabarria\* A Defense on the Usefulness of 'Big-G' Grounding

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**Abstract:** Contemporary metaphysics has undergone a change of perspective due to the irruption of Grounding in discussions of metaphysical dependence. Proponents argue that Grounding is the primitive relationship of determination underlying many of the traditionally posited idioms of metaphysical dependence. In a recent line of scepticism Jessica Wilson has argued that the inability of the notion to be informatively effective regarding substantial matters of metaphysical determination renders it useless in the face of theoretical work. To supply this lack of informativeness proponents must resort to the already available set of specific 'small-g' relations, which renders the formulation of 'big-G' Grounding pre-theoretically unmotivated. In response two motivations are said to remain: The priority and unity arguments. Wilson insists that neither of these motivations succeeds in establishing 'big-G' Grounding as theoretically useful. I argue that none of Wilson's critiques succeeds in establishing eliminative scepticism.

**Keywords:** grounding, metaphysical dependence, metaphysical determination, the priority argument, the unity argument

#### 1 Introduction<sup>1</sup>

There is something particularly persuasive about the thought that there is an underlying structure to reality. That is, the idea that reality, understood as the 9

**<sup>1</sup>** A terminological disclaimer: Throughout the paper I will be using capital-G 'Grounding' to refer to the thesis that there is a distinctive relationship of metaphysical dependence underlying some of the minor relations of metaphysical determination. I reserve the lowercase 'grounding' to refer to Wilson's usage of these specific 'small-g' relations.

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cosmos, is not an unordered jumble of stuff, but that there is an overarching layered structure according to which some things obtain or occur in virtue of other things. Throughout history, philosophers have deployed different notions of metaphysical determination to try to make sense of these 'in-virtue-of' relations and consequently many philosophical theses have been expressed in terms of such dependence relations. Some share the intuition that mental events are functionally realized by physical events, others argue that normative facts supervene on natural facts, and few more hold that matters about truth-making are entailed by matters of existence. Groundists have recently re-vindicated the idea that there is some central explanatory connection (Fine 2012, p. 38) underlying and unifying many of these relationships of metaphysical determination.<sup>2</sup> Something primitive that the typically adduced 'idioms of metaphysical dependence' (Rosen 2010) (i.e., identity, entailment, necessitation, supervenience, composition, emergence, functional realization, etc.) fail to capture. Grounding, it is said, is what is common to all these particular relations: A primitive relationship of noncausal determination understood as explanatorily tracking "what is fundamental, and what derives from it." (Schaffer 2009, p. 379).

Recognizably, the development of the idea is due to the pioneering work of Fine (2010, 2012), Rosen (2010), and Schaffer (2009, 2016b), who, together with the subsequent development of other authors, contributed to a shift of perspective in contemporary analytic metaphysics.<sup>3</sup> Yet, with enthusiasm comes scepticism and, despite the alleged intuitiveness of the initial approach, during the last decades several doubts have been raised against the idea. Daly (2012), Hofweber (2009), Koslicki (2015), and Wilson (2014, 2016a, b) have argued, for reasons often related, that the attempt to develop a theory of Grounding is doomed to failure. Among these detractors, Wilson stands out. She has argued repeatedly that the notion suffers from metaphysical underdetermination and that its inability to be an informatively useful notion renders it useless in the face of metaphysical work. Her strategy is twofold:

First, Wilson contends that expressions of metaphysical determination when formulated in terms of 'big-G' Grounding leave explanations of metaphysical dependence informationally impoverished in comparison to the already available set of 'small-g' relations. Claims of the form "such and such Ground so

**<sup>2</sup>** The idea finds its roots in Aristotelian discussions about substance, ontological dependence, priority, and fundamentality. See Corkum (2020) for discussion.

**<sup>3</sup>** Important contributions include, but are not limited to, Audi (2012a, b), Bennett (2011a, 2011b, 2017), Cameron (2016), Dasgupta (2014a, b, 2017), deRosset (2013, 2020), Leuenberger (2014a, 2014b, 2020), Maurin (2019), Raven (2012, 2013, 2015, 2017), Rettler (2017), Skiles (2015), Thompson (2016a, b, 2019), and Trogdon (2013a, 2018).

and so" are too uninformative to provide any sufficient criteria to adequately address important metaphysical matters such as existence, reduction or causal efficacy. Fundamentally basic questions that any substantive notion of metaphysical dependence must answer. Without such an explanatorily useful notion, Grounding theorists will always be forced to resort to the specific relations of metaphysical determination that "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, p. 539). Consequently, Grounding is revealed as a metaphysically uninformative and explanatorily superfluous notion. If it is to do any metaphysical work additional motivations are required. Motivations that Wilson identifies in the form of two possible arguments:

- (i) The priority argument:
  - (P1) If none of the 'small-g' grounding relations can establish the direction of ontological priority, then we require a primitive directional notion that establishes the direction of ontological priority.
  - (P2) None of the 'small-g' grounding relations can establish the direction of ontological priority.
  - (C1) We require a primitive directional notion that establishes the direction of ontological priority.

and additionally,

- (P3) Grounding is a primitive directional notion of metaphysical dependence.
- (C2) Grounding is required to establish the direction of ontological priority.
- (ii) The unity argument:
  - (P4) If the diverse 'small-g' grounding relations are aptly unified, then there is a strong reason to posit a general unifier.
  - (P5) The diverse 'small-g' grounding relations are aptly unified.
  - (C3) There is a strong reason to posit a general unifier of the 'small-g' grounding relations.

and additionally,

- (P6) Grounding works as a general unifier of the various 'small-g' grounding relations.
- (C4) Grounding is required as a general unifier of the various 'small-g' grounding relations.

The second part of Wilson's critique is devoted to showing that neither of these arguments succeeds in establishing a solid motivation. As regards to (i), she

grants (P2) but denies the inference from (C1) and (P3) to (C2). She argues that even if some primitive notion is required to fix the direction of ontological priority no positing of a distinctive relation follows from that. Instead, she proposes to understand matters of ontological direction in terms of the relevant 'small-g's in addition to an internal primitive of her own, that of *absolute fundamentality*. As regards to (ii), she denies (P5). Wilson believes that the specific relationships are too heterogeneous to motivate the formulation of any possible unifier. Moreover, even if we grant that they do share some unifying features, no formulation of a distinctive primitive notion of metaphysical dependence follows. The conclusion, once again, is that the addition of Grounding to our metaphysical repertoire is unmotivated:

I conclude that ontologists interested in metaphysical dependence should abandon the halfway of Grounding, as no better and in certain respects worse than the inadequate notions it was invoked to replace, and rather join forces with the metaphysicians of dependence already on the scene in exploring the diversity of specific ways in which some goings-on may be grounded in some others.

(Wilson 2014, p. 576)

The purpose of this article is to argue that none of the above criticisms manages to establish eliminativism about Grounding, and that both the priority and unity arguments are valid motivations to justify the proposal. Specifically, I argue in favour of three ideas: (a) That the preliminary consideration that the notion of Grounding is metaphysically underdetermined is not sufficient on its own to cast doubt on the notion since many of the specific relations of determination also suffer from indeterminacy; (b) that the objection that fundamentality cannot be accounted for in terms of Grounding is misguided and conflates giving a characterization of the fundamental with providing a satisfactory criterion of what the property of fundamentality amounts to; and (c) that there is unity among the minor dependence relations, but that this unity is not to be modelled in terms of shared formal features, but in terms of the genus-species relationship that the 'small-g' relations bear to the 'big-G'.

The structure of the paper is as follows: I begin in Section 2 providing a general outline of the theory in question and sketching the commonalities and disagreements among pro-Grounding authors. In Section 3. I put forward Wilson's initial criticism, namely the thought that the problem of metaphysical underdetermination constitutes a preliminary reason to disparage the notion of Grounding. I contend that although Wilson is partially correct in that matters of metaphysical dependence cannot proceed by reference to plain Grounding claims, such an objection does not nullify the notion of Grounding *ab initio*. In Section 4. I

tackle Wilson's response to (i), the priority argument, namely the idea that characterizations of the fundamental in terms of the un-Grounded should be taken as metaphysically suspicious. Finally, in Section 5. I address the objection to (ii), the unity argument and propose that the way to understand this relation among relations is in terms of the *genus-species relationship*.

# 2 The Grounding Grail

The notion of Grounding is supposed to capture two ideas: The first is that of *metaphysical foundationalism*, the idea that reality, understood as the sum of all concrete entities, has a layered structure at the bottom of which the fundamental happenings upon which all non-fundamental entities depend reside. The second is that there is a distinctive constitutive type of *non-causal determination* relating the events in the lower levels of reality with those to which they give rise to at the higher stratum. Grounding is hence understood as what Bennett (2011b, 2017) calls a '*building relation*'. A directional relational notion, the relata of which are fundamentally connected and differ in regard to the priority of one over the other.<sup>4</sup> The idea is that in cases of non-causal determination in which the existence of a given entity metaphysically depends on the existence of another entity a special relationship of production is at issue. Grounding designates that relationship. A connection that takes place in cases in which the obtaining of an entity is constitutively dependent on the existence of another more fundamental entity by virtue of its nature.

Scientific explanations exemplify this illustratively: Scientifically, the formation of a molecule of  $H_2O$  depends on the obtaining of a series of physical-chemical facts, including the fact that two atoms of hydrogen and one of oxygen are joined by their electrons in a covalent bond that provides atomic stability to the system. Metaphysically, these atoms stand in a relation of mereological parthood to the  $H_2O$  molecule, they are the parts that *make up* the sum that is the water molecule. Causally speaking, *what causes* the appearance of a sample of  $H_2O$  is the bonding process that occurs between the atoms. Metaphysically speaking, *what Grounds* the existence of a sample of  $H_2O$  is the relationship of non-causal determination

**<sup>4</sup>** Bennett includes composition, constitution, set formation, realization, micro-based determination, (g)rounding and causation within this family. Her reason for separating Grounding is that when used in a non-generic sense it serves more specific purposes than that of merely 'building' (Bennett 2011b, p. 84). Perhaps I am guilty of misapplying the label, but I hope that the point of the building metaphor is sufficiently illustrated. In any case, my goal is not to state that Grounding is *the* building relationship, but rather that it is *a* building relationship that underlies and unifies a bunch of other relationships of metaphysical determination.

that takes place between the parts and the sum. Paraphrasing Fine, Grounding theorists are motivated by the idea that in addition to the causal explanations deployed in traditional sciences, there is a distinct genus of metaphysical explanation connecting explanans and explanandum via some constitutive form of metaphysical determination (Fine 2012, p. 37).<sup>5</sup>

Nonetheless, despite any apparent agreement, the concept is fraught with significant controversy and parishioners typically dissent on the specifics of the notion. Some take Grounding to be a relational predicate (Audi 2012a, b; Raven 2012, 2013; Rosen 2010; Schaffer 2009, 2012), while others prefer to understand it as a sentential operator (Correia 2010; Correia and Schnieder 2012; Fine 2010, 2012). Some take the relata of the relation to be facts (Audi 2012a, b; Rosen 2010), while others interpret it as connecting entities of any category (Bennett 2011a, 2011b, 2017; Cameron 2008; Schaffer 2009, 2012). There is also substantive disagreement regarding the question of whether Grounding holds necessarily (Audi 2012a, b; deRosset 2013; Bennett 2017; Trogdon 2013b) or contingently (Leuenberger 2014a; Skiles 2015). And although most supporters take it to be an explanatory notion, there are doubts as to what is the exact relation between Grounding and explanation (Maurin 2019; Thompson 2016b).

Still, one may think that such rivalry is not a cause for alarm. Philosophers often disagree on the theoretical character of the concepts they use without this constituting a reason to abandon them. A good starting point is to think that if the notion of Grounding is common to that of explanation, perhaps similarities are to be found in their formal characteristics. Consider the typically predicated properties of Grounding:

- *Irreflexivity:* No entity can Ground itself.
- Asymmetry: If A Grounds B, then it is not the case that B Grounds A.
- Transitivity: If A Grounds B, and B Grounds C, then A Grounds C.
- Facticity: If A Grounds B, then it is the case that both A and B.
- Non-monotonicity: If A Grounds B, it does not follow that A&C Ground B.
- *Hyperintensionality:* If A Grounds B and 'A' is intensionally equivalent with 'A'', it does not follow that A' Grounds B.

**<sup>5</sup>** Analogies with causation run deep in the literature: Schaffer models Grounding in terms of structural equation models claiming that "there is a unified general notion of directed determination (connected to explanation-backing), of which causation and Grounding are distinct species." (Schaffer 2016b, p. 96), Fine holds that "Ground, if you like, stands to philosophy as cause stands to science" (Fine 2012, p. 40), and Bennett states that "the building family is causally tainted" and that "causation itself is properly counted as a building relation" (Bennett 2017, p. 3). Alastair Wilson goes even further as to defend that "grounding *just is* a type of causation: metaphysical causation" (Wilson 2018, p. 1).

- *Well-foundedness:* Grounding chains cannot be infinite, they must terminate on fundamental entities.

Now consider how these principles align with those generally predicated of explanation:

- Nothing Grounds itself just as no happening can explain itself.
- A pair of entities cannot Ground each other just as no pair of events can explain each other.
- Grounding relations chain just as explanations of events link together.
- Grounding claims presuppose their relata just as explanations presuppose the existence of explanans and explanandum.
- Grounding relations need not survive the addition of further grounds just as explanations need not survive the addition of further premises.
- Grounding claims violate substitution salva veritate among intensionally equivalent expressions in the same way explanatory expressions do.
- Grounding chains must have a fundamental ending just as explanations cannot be infinitely accumulated.

If the alignment is correct, the fact that explanation and Grounding share these features would seem to be giving us clear indication that the notions are intimately related. Unfortunately, concordance does not improve here either. Not all who are sympathetic to the idea share these principles and counterexamples have been raised to almost every axiom. In relation to the triad of irreflexivity, asymmetry and transitivity Bliss (2018), Fine (2010); Jenkins (2011) and Krämer (2013) have challenged the irreflexivity of Grounding; Barnes (2018) and Thompson (2016a) maintain that Grounding should also be understood as symmetric; and Schaffer (2012) and Rodriguez-Pereyra (2015) have offered counterexamples to the assumption of transitivity. As to facticity and well-foundedness, non-factive analyses have been proposed by Fine (2012), and while Bliss (2014), Rosen (2010) and Tahko (2014) find nothing bizarre in the idea that Grounding is not wellfounded, Cameron (2008) believes that Grounding chains are guaranteed to have lower bounds only in the actual world.<sup>6</sup> In addition, there is an important dispute regarding the exact relationship between Grounding and explanation with unionists claiming that Grounding has the properties it has for being a form of explanation (Dasgupta 2014b, 2017; Fine 2012; Raven 2015; Rosen 2010), and

<sup>6</sup> Non-monotonicity and hyperintensionality have not been explicitly challenged that I know.

separatists arguing that grounding is an explanation backing relation (Audi 2012a, b, Schaffer 2009, 2016a, b; Trogdon 2018).<sup>7</sup>

With so much disagreement it strikes as no surprise that sceptics have sharpened their spears. One wonders what is common to all these understandings of Grounding that makes them want to subsist in their defence. The answer, as I see it, is found in two things: First, Groundists find commonality in casuistry, which is why discussions often begin with sample exhibitions. They hold that many of the relevant cases of metaphysical determination are satisfactorily formulable in terms of Grounding. Second, and more importantly, formal disputes aside, theorists share the intuition that Grounding is intimately tied to a special notion of constitutive explanation that is at stake in many scenarios of metaphysical dependence. The idea is that in cases of constitutive explanation where the explanans plays no causal role with respect to the explanandum some primitive relation of non-causal determination is at stake. If a fact, entity, object or whatever the category we prefer, explains something else in a non-causal way, then the thing doing the explanation plays a role in non-causally determining that 'else'. Consider the following Grounding-theoretic proposals:

- (1) The existence of the singleton {Socrates} *depends on/is determined by* the existence of Socrates.

(The existence of a set is Grounded on the existence of its members).

(2) The truth of the proposition "Snow is white" *depends on/is determined by* snow being white.

(Propositional truths are Grounded in existence).

- (3) The disposition of a sphere to roll *depends on/is determined by* its shape.
   (Dispositional properties are Grounded in categorical facts).
- (4) My existence *depends on/is determined by* the existence of my body-parts.
   (The existence of wholes is Grounded in the existence of their parts).
- (5) The redness of the rose *depends on/is determined by* the crimsonness of the rose.

(Determinables are Grounded in their determinates).

(6) My being in a mental state M *depends on/is determined by* my being in a brain state B.

(Phenomenal facts are Grounded in physical facts).

- (7) The rightness of act A *depends on/is determined by* A being optimific.
   (Normative facts are Grounded in consequential facts).
- (8) Gender *depends on/is determined by* distinctive social patterns.
   (Social constructions are Grounded in social patterns).

**<sup>7</sup>** For recent and interesting contributions I recommend Maurin (2019) and Skiles and Trogdon (2021).

Despite the diversity in cases, there seems to be something common in all (1) to (8). They are all examples of *metaphysical generation*. Cases in which the existence of a derivative entity is constitutively explained by reference to a building entity on which it is non-causally dependent. In the case of (1) the existence of the singleton {Socrates} is metaphysically dependent on the existence of its unique member in virtue of its nature. However, the existence of Socrates does not cause the existence of the singleton, although in a certain sense it generates it. Likewise, in (2) the truth of the proposition "Snow is white" is non-causally determined by the obtaining of the fact entertained by the proposition. The existence of the fact is what brings about the truthness of the proposition. Analogous formulations can be devised for the rest of the cases. Whether the specific relationship of determination at stake is set formation, truth-making, mereological parthood or another, they are all cases of generative determination in which "the explanandum's holding *consists in nothing more* than the obtaining of the explanants or explanantia." (Fine 2012, p. 39).

Of course, some could argue that what is at stake in many of these scenarios are relations of identity. Identity physicalism, for example, is a sustainable position, just as it is to assert that mereological fusions are nothing but the sum of their parts. It is not that my being in a mental state M constitutively depends on my being in a brain state B in the sense of building it, but rather that my being in a mental state M just is my being in a brain state B. If so, we can avoid Grounding formulations. My response is to grant that there may be scenarios of non-causal determination in which Grounding is not involved, but still deny that this poses any problem whatsoever. The reason is that identity is an ontological *equalizer*, a relationship that *prevents* Grounding from taking place. Whenever two entities A and B turn out to be identical, the relation of dependence at stake is non-generative. The water inside my glass and the molecules of H<sub>2</sub>O that fill it are on a par when it comes to their level of fundamentality. The existence of neither of them results in the existence of the other in the way the shape of a sphere results in its disposition to roll. If we accept that the relationship between the mental and the physical, the whole and the parts, and other examples is one of identity, we would indeed be forced to discard them as cases of metaphysical generation. Yet, this is consistent with there being a distinctive relation of metaphysical dependence at stake in cases of metaphysical determination in which the existence of a more fundamental entity gives rise to the existence of a less fundamental entity.<sup>8</sup> Besides, the objection assumes that a considerable number of the relevant cases are cases of identity, which is already too big an assumption.

<sup>8</sup> This leaves room for a taxonomy of metaphysical dependence where Grounding and identity compose two distinct categories of non-causally determining relationships that can underlie

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Presumably we want to keep that, although not all, many of these examples are cases in which two (or more) entities exist in different layers of reality related by a relation of productive determination.

Now, as to the notion of metaphysical explanation, explanations can be understood as consisting of a worldly and epistemic component (the relation of determination obtaining between the relata of the explanation and the information provided by the relation).<sup>9</sup> In cases of causal determination the explanans and the explanandum are connected through some kind of causal mechanism, while in cases of non-causal productive determination they are connected via some constitutive form of determination. Consider the question "why is there a statue of David, king of the Israelites in front of us?". One adequate response would be that Michelangelo built it five hundred years ago and that it got placed in the Galleria dell'Accademia in 1873. Another answer would be to state that the piece of marble in front of us constitutes Michelangelo's David. Both responses are suitable explanations and yet they differ in regard to the relations of determination they track. The first invokes a series of causal mechanisms that provide us with information about the process of construction and transfer that led to the statue being in front of us. The second offers a metaphysical explanation that speaks about the way in which the entity (or entities) that make up the statue non-causally determines its existence. Construing Grounding as related to cases of metaphysical explanation allows us to account for what is explanatorily relevant and distinctively metaphysical in scenarios of constitutive determination in a way that the traditional idioms of metaphysical dependence cannot.

#### 3 The Uselessness of Grounding

Jessica Wilson, on a strong resistance line, has argued that, despite apparent justification, the relation of Grounding is inadequate to do the work required to characterize any thesis of metaphysical dependence. Her claim can be segmented in two: First, bare Grounding claims are too uninformative to be of any help to the metaphysician. Expressions of the form "such and such Ground so and so"

cases of metaphysical explanation. It also squares well with the distinctive character of identity as compared with other metaphysical relations.

**<sup>9</sup>** There is plenty of discussion on whether explanations should be understood as including an epistemic component or as a purely worldly affair. I do not discuss that here and assume a hybrid view according to which explanations obtain whenever the epistemic component related to the way we represent and understand the world obtains, as well as the external conditions that have to do with the obtaining of the worldly components.

are not specific enough to provide the details required to understand any particular relationship of metaphysical determination. Grounding advocates make little progress in telling that "the existence of the singleton {Socrates} is Grounded in the existence of Socrates", that "my existence is Grounded in the existence of my body-parts", or that "the disposition of a sphere to roll is Grounded in its shape". Wilson argues that these claims tell us nothing about how exactly is it that the existence and features of sets are determined by the existence and features of their members, how exactly is it that wholes depend on their mereological parts, and how exactly is it that dispositional facts are determined by categorical facts. Without substantive illumination on such matters Grounding claims leave open "questions that are crucially relevant to characterizing metaphysical dependence and the structure of reality." (Wilson 2014, p. 544).

Second, given that the notion of Grounding is significantly uninformative and that assessment of claims of metaphysical dependence cannot proceed by reference to the 'big-G' relation alone, proponents will inevitably be driven to say more. Specifically, when explaining how the 'big-G' connection works in specific cases of determination Groundists will be forced to resort to the already available set of 'small-g' relations:<sup>10</sup>

[...] from the bare fact that some goings-on are Grounded in some others, it hardly follows that the latter metaphysically explain the former in any interesting sense; nor does a bare Grounding claim itself constitute an explanation in either a metaphysical or epistemic sense. Gaining even basic explanatory illumination about metaphysical dependence requires appeal to the specific relations (type and token identity, functional realization, the classical mereological part-hood relation, the causal composition relation, the set membership relation, the proper subset relation, the determinable– determinate relation, and so on) that are the typical focus of investigations into such dependence. But insofar as appeal to specific 'small-g' grounding relations is required to gain even basic illumination about metaphysical dependence, what if any point is there moreover to positing Grounding?

(Wilson 2014, p. 553)

Wilson believes that without an insight into such particular matters of metaphysical dependence one could hardly argue that Grounding by itself serves any explanatory purpose. Being so, due to the extreme generality and coarsegrainedness of the relation, Groundists will be forced to resort to the 'small-g' relations of determination. Specifically, they will be forced to say that the existence of the singleton {Socrates} is Grounded in the existence of Socrates *by way of the set membership relation*, that my existence is Grounded in the existence of my body-parts *by virtue of the classic mereological part-hood relation*, and that the

<sup>10</sup> See Koslicki (2015) for a similar criticism.

disposition of a sphere to roll is Grounded in its shape *via the relation of functional realization*.<sup>11</sup> But once the specific 'small-g' relations have been invoked little if no motivation remains to the idea of Grounding. Nothing of what it means to be metaphysically dependent in one way or another remains to be enlightened.

I believe Wilson is right in arguing that investigations of metaphysical dependence cannot proceed by reference to plain Grounding claims. Metaphysicians do not only want to know which aspects of reality give rise to others, they are also interested in knowing what these relations tell us about the world, its structure and its content. So, I agree with Wilson in that "assessment of claims of metaphysical dependence, or associated views, cannot proceed by reference to Grounding alone."12 (Wilson 2014, p. 540) Grounding theorists ought to say something else about how exactly it is that such and such Grounds so and so. However, no proponent has claimed that the 'big-G' relation should be understood as replacing the work of the lesser relationships of metaphysical determination. Conceptualizing Grounding in such terms would be misconceiving its task. Recall that the idea is that Grounding operates underneath the minor relations of metaphysical determination, not in exclusion of them. Thus, the pertinent question to ask, and the one Wilson points to in the second half of her paper, is not whether the appeal to Grounding is doing any metaphysical work associated with the 'small-g's', but whether it is doing any metaphysical work beyond that realized by these relationships. She believes it does not. But before turning into said question let us delve into the matter of preliminary uninformativeness, for I believe that Wilson oversteps in her conclusion.

Wilson mentions three questions that she takes to be central to any project of metaphysical research and that any proper notion of metaphysical dependence should illuminate:

- (a) Whether the dependent goings-on exist.
- (b) Whether the dependent goings-on are reducible to the base goings-on.
- (c) Whether the dependent goings-on are causally efficacious.

She charges that since Grounding claims by themselves do not entail any answer to questions (a) to (c) they allow philosophers to take opposing sides of the debates. In the absence of further information about the 'small-g' relations, when faced with a Grounding-mereologist, a Grounding-naturalist, a Groundingdispositionalist, etc., the denier is unable to know what the theoretical commitments of the Grounding theorist are. Without such informational value, it

<sup>11</sup> I am assuming a Finean theory of the set membership, a neo-Aristotelian view of the parthood relation and a functionalist view of the relation between dispositions and their bases.12 Emphasis added.

is difficult to see how the 'big-G' connection contributes to any claim of metaphysical dependence. Advancing that my existence as a mereological whole is Grounded in the existence of my body-parts, or that the shape of a sphere Grounds its disposition to roll does not tell us anything informative about the existence, reduction, or causal efficacy of the derivative goings-on. The conclusion is that the inability of Grounding to inform us of said issues renders the notion theoretically useless.

The problem with this argument is that the objection that Grounding *qua notion* does not conceptually entail an answer to questions concerning existence, reduction and causal efficacy is not in itself sufficient to nullify the notion. So far nothing that has been said about the notion implies that the relationship *must* offer answers to (a)–(c). Even if it turns out that Grounding is indeed uninformative regarding the questions expressed, eliminativism does not necessarily follow. It may be that the job of Grounding is not to offer answers to these questions, but to illuminate other primitive matters concerning the phenomena of ontological direction and fundamentality. Furthermore, as deRosset (2020, pp. 190–191) also points out, this indeterminacy regarding some of these "questions that must be answered to gain even basic illumination" (Wilson 2014, p. 545) extends to many other metaphysical notions, including many of the 'small-g' relations. Relations of metaphysical dependence do not always offer direct answers to questions of existence, reduction and causal efficacy in the form of conceptual entailments. Yet, this does not constitute a reason to belittle them.

Consider the 'small-g' claim that the existence of my desk as a whole  $d_w$  is determined by the existence of the total sum of its parts  $d_1, d_2, \ldots, d_n$  by way of the classic mereological parthood relation. Nothing is entailed from this statement with respect to (a), (b) or (c). We can assume that the assertion that the parts  $d_1$ ,  $d_2 \dots d_n$  compose  $d_w$  entails the further truth that  $d_w$  exists. However, if we embrace some form of mereological nihilism we will presumably have good reasons to deny that such an entailment follows. Rather, we will believe that there are no composite objects and that the only things that exist are mereological simples (Horgan and Potrč 2008; Merricks 2003; Unger 1979; van Inwagen 1990). Similarly, we can judge that  $d_w$  is not identical, and thus not reducible to  $d_1, d_2, \ldots, d_n$ . Still, logically nothing prevents identity mereologists from insisting that since wholes always share their spatio-temporal location with their parts mereological sums must be identical and thus reducible to their parts (Merricks 1999; van Inwagen 1994; Wallace 2011a, b, 2014). As for the question of causal efficacy, that the existence of my desk is determined by the existence of its parts seems to entail nothing causal about it. Composition, on its own, seems to only give us necessary and sufficient conditions for saying that  $d_1, d_2 \dots d_n$  compose  $d_w$ . In the absence of such entailment's metaphysicians can opt for different positions regarding Wilson's

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fundamental questions. Yet, this does not constitute a reason to abandon the classical parthood relation.

Similar situations can be traced to other cases of 'small-g' determination. Accordingly, if lack of informativeness is taken to support scepticism about Grounding, the same should apply to the minor relationships of metaphysical determination. But importantly enough it usually does not. Thus, the question to be asked is how do metaphysicians decide between their respective positions? They theorize. They deploy conceptual models tracing links that explain how the connections between the relations of metaphysical determination and the relevant positions occur. It is because some moral properties are sui generis and their nature cannot be explained in terms of other properties that they are irreducible to natural properties. It is because the instantiation of a set of properties is sufficient to bring about a certain effect that dispositional properties are causally inefficacious with regard to that effect. It is because an object occupies the same space as its parts and because if they cease to exist or are separated that the object ceases to exist that fusions are reducible to parts. Answers must be given by drawing connections with the metaphysically relevant positions, and in this regard, theories of Grounding fare no worse. Just as we can obtain a greater specification of the connections of the 'small-g' relations by setting up conceptual links, so can we with 'big-G' theoretical proposals. If we believe that, in addition to informing us of the primitive connection between the relata, Grounding must offer answers to metaphysically finer questions, then connections with those questions must be drawn tracing links with other metaphysically relevant notions (i.e., causality, counterfactual analysis, essence, fundamentality, metaphysical explanation, necessity, etc.). Informational indeterminacy does not pose a substantive threat, or at least not as significant a threat as Wilson believes. Moreover, the point remains that Grounding need not be informative regarding these metaphysically fine-grained questions. It could still give us information about other matters for which the minor relations of determination are not useful.

#### **4** The Priority Argument

Having dispatched the argument for uninformativeness it is time to analyse the question of whether Grounding can be of any real use to the metaphysician. I will start with the priority argument. The argument is straightforward, even if Grounding turns out to be useless in the face of the more concrete metaphysical work, it is required to establish the direction of ontological priority between the relata of the minor relations of metaphysical determination. The reason is that none

of these specific relationships suffices to tell the complete tale of metaphysical dependence since none of them is directional in nature.

Consider our previous example. I can know by means of the mereological composition relation that the parts  $d_1, d_2, \ldots d_n$  compose the fusion that is the desk  $d_w$ , but for all the relationship tell us it is still an open question whether the existence of the parts give rise to the existence of the whole, or whether the existence of the whole gives rise to the existence of the parts. Metaphysically nothing follows about the direction of the dependence. In the absence of further information about the structure of the particular relation of determination we are unable to grasp the status of ontological direction. Further facts about the fundamentality of the relata and the connections within the structure of reality are required in order to fix the direction of ontological priority. Simply invoking the 'small-g's' that rule the determination at stake is not enough to give us access to the vertical nature of metaphysical production.<sup>13</sup>

Wilson herself acknowledges this problem. She grants that there is more structure to the world than the one the 'small-g' relations can capture. But this, she asserts, does not commit us to an external and primitive notion of priority. Her response is to grant that something else is needed, but to deny that additional component is Grounding. Instead, she proposes to understand matters of priority in terms of the 'small-g' relations plus a primitive of her own, that of absolute fundamentality. Accordingly, when a relationship of metaphysical determination is at play, all we need is to establish what the specific relationship of dependence is and which of the components of the relation is more fundamental than the other.<sup>14</sup>

**<sup>13</sup>** Some could argue that some 'small-g' relations are in fact directional. Members seem to always be prior to the existence of the set (Wilson 2016b, p. 191). The singleton {Socrates} could not exist if the fact that Socrates exists does not obtain. However, recall that it is also true that the fact that Socrates exists co-occurs necessarily with the fact that the singleton {Socrates} exists. Just as there is no singleton without the existence of the member, there is no member without the existence of the singleton. Nothing about the specific relationship of determination provides us with priority. My suspicion is that when one invokes assumptions of directionality regarding the 'small-g' relations of metaphysical determination, one is assuming the 'big-G' nature of said relations.

**<sup>14</sup>** Wilson does not speak in terms of relative fundamentality, but rather relegates all the metaphysical work to establishing what is absolutely fundamental. Cameron (2016) and Schaffer (2016a) argue that such a move is not enough to set the direction of ontological priority since we also want to establish a treatment of fundamentality in cases in which none of the relata is absolutely fundamental. However, Wilson disagrees stating that "relative fundamentality is a matter of suppositions/facts about what is fundamental and how the non-fundamenta small-g depend on the fundamental and now (via one or other small-g relation) the non-fundamenta

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Having established that the relationship of particular determination that occurs between  $d_1, d_2, \ldots, d_n$  and  $d_w$  is that of mereological parthood we will have already established that one of the entities gives rise to the other. All that remains to be established is that which the Grounding theorists demand, namely establishing which of the relata is ontologically more fundamental.

Before moving on to replies it is worth considering how the dialectic has changed. Up to now the sceptic strategy consisted in showing that Grounding is informationally useless when it comes to answering metaphysically fundamental questions. Faced with this the Groundist accepts that her notion may be neutral in this respect, but counter-argues that it is still useful in accounting for the direction of ontological dependence that the minor relations of metaphysical determination cannot establish. Come to this point Wilson agrees on what to do but is nevertheless reluctant to accept the positing of a new primitive notion of dependency. Instead, she embraces fundamental primitivism arguing for a notion of primitive fundamentality that fulfils the task Grounding is supposed to do. This is important because in the eyes of the proponent of Grounding ground has been gained. Wilson has gone from arguing for pre-theoretical reasons why we should reject the formulation of a new and distinctive primitive dependency relation to reasons why the formulation of another primitive should be preferred. This places the burden of proof on the primitivist since if Grounding can establish issues of priority, it is she who has to demonstrate that Grounding is ill-suited to do the job, or that absolute fundamentality can meet the needs of the pro-Grounders without any additional ideology. I argue that even if Wilson has given reasons to be suspicious about Grounding, these reasons hold over a conflation. Once this conflation is undone the argument weakens.

To cut short, the reason Wilson offers for rejecting the conclusion that Grounding is required to establish the direction of ontological priority is that characterizations of fundamentalia in terms of Grounding should be taken as metaphysically suspicious. Grounding theorists argue that the notion of fundamentality can and should be understood in terms of the *un-Grounded* (Audi 2012b; Cameron 2016; Dasgupta 2014b; Raven 2015; Rosen 2010; Schaffer 2009). According to this characterization "a fact is fundamental (or brute) if it does

stand to one another" (Wilson 2016b, p. 200). I doubt that establishing how specifically the nonfundamenta depend on the fundamenta, along with additional non-Grounding pressuppositions about the nature of the relata will suffice to establish direction. But regardless of whether it does the point of this section remains.

not obtain in virtue of other facts" (Rosen 2010, p. 112).<sup>15</sup> The *Grounding-fundamentality link* establishes that an entity x is fundamental if and only if x is un-Grounded:

- Fundamental  $x =_{df}$  nothing Grounds x.
- Non-fundamental  $x =_{df} x$  is Grounded in something.<sup>16</sup>

Wilson thinks that this characterization of fundamentalia is a mistake for two reasons:

First, the characterization of the fundamental as the un-Grounded is metaphysically suspect. The concern here is not based in the supposition that negative goings-on do not exist or are somehow problematic [...]. The concern is rather that, even granting that negative goings-on exist and are generally unproblematic, in any case the fundamental should not be metaphysically characterized in negative terms—or indeed, in any other terms. The fundamental is, well, *fundamental* [...] Second, the suggestion under consideration pre-supposes that the fundamental goings-on are not themselves grounded. But why think this? Why could the fundamental goings-on not mutually ground each other [...] why could the fundamental goings-on not ground themselves, as some have supposed God capable of doing, or as a metaphysical correlate of foundational self-justified beliefs? These alternative understandings of the fundamental—as self- or mutually grounding—seem to be live possibilities, so it is inadvisable to rule them out.

(Wilson 2014, p. 560)

Grounding talk would do the job of fixing the direction of priority between fundamental and non-fundamental were it capable of characterizing the notion of the fundamental. However, the fundamental taken as primitive cannot be analysed in terms of any other relationship since it is, 'well, fundamental'. Let alone in terms of negatively characterized relationships. Attempting to do so would equivocate on the nature of fundamentality inappropriately characterizing fundamentally basic entities in non-basic terms. Moreover, assuming a definition of fundamentalia in terms of the un-Grounded would rule out the possibility of self and mutually Grounding entities. Hence, insofar as the Grounding-fundamentality link offers a negative, non-basic and theoretically loaded characterization of fundamentality we should opt for a positive, basic, and metaphysically neutral portrayal of the fundamental.<sup>17</sup>

**<sup>15</sup>** For one interesting and alternative understanding of the fundamental as the all-Grounding see Leuenberger (2020).

<sup>16</sup> Definitions are adapted from Schaffer (2009, p. 373).

**<sup>17</sup>** It is worth stressing that the objection of inadequacy does not suffice on its own to establish fundamental primitivism. It only shows that a characterization of the fundamental as the un-grounded might be problematic. Additional work is required to show that fundamental primitivism is preferable.

A couple of thoughts regarding the second objection. First, even granting that fundamental entities could be self-Grounded the objection still applies. One could characterize the fundamental as those entities that are not grounded in anything other than themselves while still criticizing Wilson's argument in our line. Moreover, it could be argued that based on the relation that Grounding connections bear to metaphysical explanation reflexive Grounds violate the irreflexivity of explanation. If there cannot be self-explanatory states of affairs, then we presumably would like to preclude the possibility of self-Grounding entities or facts (Raven 2013, p. 193). Second, I find it difficult to reconcile the idea that something is absolutely fundamental with the idea that it could be metaphysically dependent on other things. If "the fundamental is, well, fundamental" and "entities in a fundamental base play a role analogous to axioms in a theory" should not these fundamental base axioms not be dependent on each other? Even if that is the case, it seems that the Groundist can narrow down a definition of fundamentality (Giannotti 2020). Moreover, the problem remains that it is difficult to find examples, needless to say convincing ones, of self and/or mutually-Grounding entities. Examples by Wilson feature God and Leibnizean monads, which, given the degree of controversy, would not seem to be making a solid case. Tahko (2018) argues that quarks are presumably dependent on each other due to the phenomenon of colour confinement (the fact that quarks always come in triplets and are never seen in isolation). However, recent experiments show that at very high levels of energy quarks go through a phase transition and move to the de-confinement phase, where they move freely in the quark-gluon plasma (Rafelski 2015).

As to the objection that the fundamental cannot be characterized in terms of the un-grounded, the problem with the the-fundamental-is-well-fundamental strategy is that it conflates *what is fundamental* with *the property of being fundamental*. The argument holds that since the fundamental cannot be characterized in terms of anything else, the fundamental cannot be characterized in terms of Grounding for fundamental entities are precisely those which do not admit characterization in terms of other entities. This may be true. However, it does not follow that we cannot offer a Grounding characterization of what the property of being fundamental is. Even if the fundamental does not admit a definition in terms of Grounding (or any other concept), Groundists can offer a coherent criterion of fundamentality in terms of their favoured relation.<sup>18</sup> We must be cautious to distinguish between what a characterization of the property of being fundamental is.

**<sup>18</sup>** This point has also been stressed by Mehta (2017) who argues in favour of the coherence (although not the correctness) of characterizing fundamentality in terms of Grounding. See Raven (2017) for an analysis of fundamentality in terms of ineliminability.

and what a characterization of the entities instantiating that property amounts to. While the latter targets the definiendum that is the entity in question, the former targets the definiens that offers the characterization of the entity. When we define a spherical entity as an entity that instantiates the property of sphericity characterized in such and such way, what we are doing is offering a characterization of the property that defines the entity. We resort to our characterization of what makes an object satisfy the requirement of instantiating said property. There is a qualitative difference in the analysis between that which is spherical and its instantiated property of sphericity. Equally so for what is fundamental and the property of being so. Whilst the fundamental may not be 'speakable' in terms of Grounds, fundamentality is.

To illustrate, consider a fundamentally basic entity E such that it instantiates the property F where E is not characterizable in terms of other entities and F is the property of being absolutely fundamental in Wilson's designated sense. If physicalism is true then quarks, leptons, antiquarks and antileptons will presumably be E-type entities. Indivisible elementary particles that cannot be analysed in terms of other minor structures. We may be unable to offer a characterization of these particles in terms of other things, scientific consensus indicates so. However, it does not follow that the property of being an elementary particle is not analysable in terms of other properties or relations. In fact, the property of being an elementary particle is commonly characterized negatively as the property of not being composed of other particles. Similarly, metaphysical consensus may dictate that we cannot offer a characterization of E, the fundamental, in terms of other relations such as Grounding. However, we can offer a Grounding characterization of what makes E instantiate the property of being absolutely fundamental, namely that E is not Grounded in anything else. It is coherent for Groundists to grant that fundamental entities are uncharacterizable in terms of other entities, while holding that fundamentality amounts to the property of not being Grounded in anything else.<sup>19</sup>

### 5 The Unity Argument

Directionality aside there is another motivation for putting forward a formulation of a general 'big-G' relation of metaphysical determination. Though Grounding may not be required to illuminate investigations into specific matters of metaphysical dependence, it may still be worth positing in addition to the specific relations as tracking certain important features held in common among some of the diverse

<sup>19</sup> Unless one argues that fundamentality is itself fundamental, which I find difficult.

forms of metaphysical dependence. The idea is simple, just as the notion of Causation unifies different types of 'small-c' relations, the notion of Grounding is seen as unifying different types of metaphysical dependence relations (Schaffer 2016a, b).

Wilson objects based on two ideas: The first is that the fact that some phenomena are formally unified does not in itself provide motivation to posit a general unifier. Different determinates are sufficiently formally unified in a way that would appear to be constitutive of general notions of determinables. Nevertheless, these considerations alone are not taken to provide any reason to posit a distinctively general relation of determinables. Instead, determinable concepts are taken to be schematic placeholders for determinate notions (Wilson 2016b, p. 181). Considerations of parsimony push towards deflationary treatments of unity where the positing of a general unifier is unrequired if it does not fulfill some theoretical role. So, even granting the supposition that the 'small-g' relations do share some features in common, no formulation of a distinctive primitive notion of metaphysical dependence follows. The second objection is that the 'small-g' relations are in fact not sufficiently unified. The feature that is presumably common to all grounding relationships is that of being relations of strict partial ordering (i.e., irreflexive, asymmetric, and transitive). However, some of the relationships fail to meet this description.

I agree that it would make little sense to formulate a unifying concept without any theoretically relevant work beyond that of agglomerating relationships. Reasons would only be terminological. However, I do believe there are good theoretical reasons to formulate a unifying notion of constitutive metaphysical determination. Here the analogy with Causation proves handy. There are different types of formally unified causal relationships. These relationships share an insightful amount of characteristics that license us to speak of a 'big-C' Causal relation. They are diachronic dependency relationships that connect events in the form of causes and effects and that back certain kind of dependency explanations, namely causal. The theoretical and informational utility of the notion of 'big-C' Causation when abstracting 'small-c' relations and constructing our theories of causal determination is more than great incentive to postulate its existence. Doing so helps us track explanations of determination and understand the general nature of the connections that govern these particular forms of directed dependence. Grounding works the same way. We have at our disposition several notions of non-causal determination that seem to share enough theoretical and conceptual features to license the use of a general underlying relationship. Abstracting the generalities of these relationships of non-causal determination allows us to unify our theory beyond the terminological, licensing us to speak of the distinctive explanatory relation of metaphysical determination that governs these specific relationships.

Wilson is also right about her second objection. The 'small-g' relations are formally disparate. Some of them may be formally unified, but certainly not all are. Composition, realization and the determinate-determinable relation are all irreflexive, asymmetric and transitive, however set formation is clearly intransitive whereas material constitution is irreflexive (and some say intransitive). Still, this may offer reasons to doubt that the relevant relationships are *formally unified*, but it does not offer reasons to doubt that they are *aptly unified*. Perhaps theoretical unification responds to other criteria than the one exhibited by formal homogeneity. Besides, there is an assumption hovering here, that of supposing that because some number of specific relations are, say, asymmetric, the unifying posed relation must be asymmetric as well. This need not necessarily be the case.

Consider the determinate-determinable relation. The properties of being one meter to the left of A and being one meter above A are both determinables of the property of being one meter away from A, yet the first two are asymmetric while the last one is symmetric. Clearly there is something differentiating cases of part-whole Grounding from cases of normative Grounding. If cases of generative metaphysical determination are relevantly different with regard to the things they connect and the way in which they connect, it should strike us as no surprise that they differ in formal qualities. However, formal disunity is not a good reason on its own to conclude that the specific grounding connections are disunified in a way that precludes us from theorizing in terms of a broader general notion of 'big-G' Grounding. Even more so if there are reasonable motives beyond logical considerations for the idea of formulating unity, and considerations concerning the phenomena of generative non-causal determination and metaphysical explanations seem to be so. In fact, the difference in formal features may be a reason to think there is not one single relation referred to on every occasion of use, but many. The fact that there is a unit of clearly differentiated entities belonging to a unified group provides reason to believe that we are in front of a case of species belonging to a genera. Which take us to the next point.

I propose that unity among 'small-g' relations is not to be modeled in terms of the formal features they could possibly share, but in terms of the genus-species relationship that these relationships bear to the 'big-G'. In words of Schaffer, "I am suggesting that these examples share a common genus. They are all species of grounding."<sup>20</sup> (Schaffer 2016b, p. 5). An idea that although it has not been

**<sup>20</sup>** Schaffer's treatment differs in terms of the mechanism of unification, but importantly it fits quite well with what is stated here. According to him relations of determination, both causal

extensively explored, is easy to find implied in the words of Groundists (Audi 2012b; Bennett 2011a, 2017; Schaffer 2016b; Trogdon 2013b). I argue that conceptualizing Grounding and grounding relations in such terms allows us to properly model the theoretical unity among relations while accounting for the difference that skeptics wield in their arguments. The idea is intuitively clear: Cases of constitutive non-causal generative determination constitute a particular *kind* of non-causal determination. I do not claim that this is the only way to understand this connection between relationships, but I do claim that it is a fairly adequate one.<sup>21</sup>

The basic characterization of the species-genus relationship is extracted from Aristotle: Species-based definitions consists of a *genus proximum* and a *differentia specifica*, where the differentia is the specifying part of the definition that is not provided by the genus but by an essential characteristic that distinguishes a species member from the other species that fall under the genus. Hence, speciesbased definitions are made up of two components, a genus, or family, and a specifying differentia. Consider the kinds 'triangle' and 'square':

- (Species<sub>1</sub>) Triangle  $=_{df}$  (Genus) Plane geometric figure + (differentia<sub>1</sub>) being composed of three angles and three straight bounding sides.
- (Species<sub>2</sub>) Square  $=_{df}$  (Genus) Plane geometric figure + (differentia<sub>2</sub>) being composed of four angles and four straight bounding sides.

Both species correspond to one genus that gets specified by the essential characteristic that constitutes the differentia of the species concept. A triangle is a plane geometric figure that has three angles and three straight bounding sides, whereas a square is a plane geometric figure composed of four angles and four bounding sides. Both these definitions belong to the unifying genus expressed by the definition of plane geometric figure. Heterogeneity is accepted within the kind and modeled in terms of the essential specifying characteristics that are

and non-causal, are best modelled in terms of structural equation models. A formalism that integrates treatment of different types of relations of directed determination while accounting for their particular components. One of the advantages of the formalism is that it allows to make discoveries about the patterns of correlation in the relationships of determination. For discussion of Schaffer's model see Koslicki (2016).

**<sup>21</sup>** The question of what exactly is the relation that the 'small-g's bear to the 'big-G' has surprisingly not received much treatment. Someone who has proposed three ways of understanding this relation is Rettler (2017) who argues that Grounding is a job description realized by different properties in different contexts. Cameron (2015) has suggested that grounding connections might exhibit a kind of unity that is weaker than the one typically associated with the single-species or single-genus interpretation, but stronger than the one associated with mere-resemblance interpretation.

differentia<sub>1</sub> and differentia<sub>2</sub>.<sup>22</sup> Applying this method it is easy to see how the analysis of the 'small-g' relations would go. We can define the different species as cases of the genus Grounding plus their differentia. Doing so we obtain a family of relation concepts in which the 'big-G' genera is further analysable as Grounding + differentia<sub>1</sub>, Grounding + differentia<sub>2</sub>, Grounding + differentia<sub>3</sub> and so on (Trogdon 2013b, p. 99). The task of the metaphysician is to find out which are the specifying conditions relevant to each of the differentia concerning the specimens of Grounding. Some tentative approaches could be as follows:

- (Species<sub>1</sub>) Functional realization  $=_{df}$  (Genus/Grounding) A directed relation of generative non-causal determination + (differentia<sub>1</sub>) the property of fulfilling certain functional role(s).
- (Species<sub>2</sub>) Material constitution =<sub>df</sub> (Genus/Grounding) A directed relation
  of generative non-causal determination + (differentia<sub>2</sub>) the property of being
  spatiotemporally coincident.
- (Species<sub>3</sub>) Truth-making  $=_{df}$  (Genus/Grounding) A directed relation of generative non-causal determination + (differentia<sub>3</sub>) the property of being an obtaining state of affairs to which the proposition refers.
- (Species<sub>4</sub>) Determinate-determinable  $=_{df}$  (Genus/Grounding) A directed relation of generative non-causal determination + (differentia<sub>4</sub>) the property of being co-instanced properties that share a causal subset of properties.
- (Species<sub>5</sub>) Social construction  $=_{df}$  (Genus/Grounding) A directed relation of generative non-causal determination + (differentia<sub>5</sub>) the property of being the product of contingent social patterns.

If, for example, the notion of 'big-G' Grounding expresses the relation of functional realization, then presumably the specifying characteristic will concern the property of fulfilling certain functional role(s). If it is that of material constitution, then differentia<sub>2</sub> will concern the property of the relata being spatio-temporally coincident. In the case of truth-making, the property of the facts expressed by the proposition being some obtaining state of affairs will be part of the characterizing differentia. For the determinate-determinable relation it will depend on our account of the exact relation between determinate and determinable properties. If the account is that of a proper causal subset, then the grounding differentia

**<sup>22</sup>** Note that the genus-species relationship is a relative relation. One could define a species concept 'cat' as belonging to the genus feline, while the species 'kitty' is also belonging to the genus 'cat'. This is relevant because it conforms to the fact that while the 'determinable' determinate' relation is a species of the genus 'Grounding', the 'colour-determinable' relation and the 'shape-determinable' relations are species belonging to 'determinable-determinate' genus.

will concern the property of being co-instanced properties that share some causal subset of properties. Finally in the case of social constructions the specifying feature will very likely touch upon the property of being the product of some contingent social patterns.

I do not claim that these examples are necessarily correct, better theorization of the specifying differentiae will lead to a better account of the components. But for now, they serve to illustrate the type of schema that the genus-species relationship provides. Thinking of Grounding in these terms allows us to account for the unifying conceptual connection between different species of 'small-g' determination while permitting us to also explain why the relations appear to be so disparate in their features. The result is that we have a non-formal justification to postulate a unifying notion of metaphysical dependence that respects, and furthermore, accounts for the disagreement about the axioms, principles, and counterexamples concerning Grounding.<sup>23</sup> Theorists think of different uses of the genera in terms of the specific species. No wonder they cannot agree.

Before finishing, I anticipate one troubling objection. The genus-species relation is also typically regarded as a grounding relationship. Seemingly, the fact that a geometrical figure is a triangle is Grounded in the fact that it is a plane geometric figure composed of three angles and three straight bounding sides. Applied to our characterization we get that Grounding is Grounded in the lesser grounding relations, which delivers the problematic result that Grounding is less fundamental than the 'small-g' relations. I do not have a ready answer to this, but I think two things could be said. The first is to concede that the description is true. It is the existence of the species that share some features that makes up the existence of the genus. Nonetheless, nothing we have said so far commits Groundists to the further truth that the Grounding relation itself is fundamental. The problem with this response is that it abandons the primitiveness that many authors have given to Grounding. Still, even if it turns out that Grounding is in fact derived from other more fundamental metaphysical notions, this does not compromise the distinctive and explanatory nature we have defended. The second thing to argue is that insofar as the species-genus relationship is a 'small-g' relation it is unable to inform us about matters of ontological direction. Nothing of what it means to be a species belonging to a genus informs us about priority. For all we know it could be the case that genus is ontologically prior to the species. In which case the specific 'small-g' relations of metaphysical determination would be partially Grounded in the genera that is the 'big-G' relation, putting support in the more intuitive view

**<sup>23</sup>** Observe that this also seems to be addressing the concern that Grounding is a plurally said relation that includes the further species of normative, natural, metaphysical and logical Grounding (Fine 2012a).

that the specific relations are less fundamental than Grounding. One problem with this is that it seems to clash with some views about classificatory practices in biology. Yet, the fact that we undertake biological research by identifying species and then grouping them, after further investigation, under the same genus seems to be consistent with the idea that the genus is ontologically prior to the species.

# 6 Conclusion

The Grounding project presents a broad research horizon in contemporary metaphysics. It is not surprising that with the emergence of such a concept sceptics and detractors have appeared showing their misgivings. Throughout these pages, I have argued that Grounding advances are too remarkable to abandon the idea. If what I have argued is right, Grounding is far from being the useless notion that some have claimed it to be. I have tried to show that the arguments of the 'big-G' theorists are sound, and that if sceptics want to establish some form of eliminativism about Grounding additional reasons are required. Criticism is legitimate and welcome, but it's far from definitive. We should not give up without a fight.

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