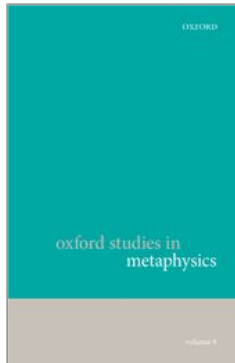


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The coarse-grainedness of grounding

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[-] Abstract and Keywords

This chapter discusses why the grounding idiom does not perform as well as we have been led to believe in providing a plausible approach to relative fundamentality. Grounding suffers from some of the same deficiencies as supervenience: most prominently, grounding also fails to be sufficiently fine-grained to do its intended explanatory work. In addition, there is doubt as to whether the phenomena collected together under the rubric of grounding are really unified by the presence of a single relation. Grounding turns out not to be helpful in capturing and illuminating what is philosophically important about the traditional substance/non-substance distinction. Although grounding performs better than supervenience in some ways, it does not solve all of the problems to which a supervenience-based approach to relative fundamentality falls prey.

Keywords: fundamentality, ground, grounding, non-substance, philosophy, substance, supervenience

1. Introduction

After many years of enduring the drought and famine of Quinean ontology and Carnapian meta-ontology, the notion of ground, with its distinctively philosophical favor, finally promises to give metaphysicians something they can believe in again and around which they can rally: their very own metaphysical explanatory connection which apparently cannot be reduced to, or analyzed in terms of, other familiar idioms such as identity, modality, parthood, supervenience, realization, causation, or counterfactual dependence.¹ The notion of ground is typically intended to indicate relative ontological fundamentality: what is grounded in something else is thought to be less ontologically fundamental than that in which it is grounded; grounds are in turn taken to be more ontologically fundamental than what is grounded in them. It may also be possible to define

a notion of absolute ontological fundamentality in terms of grounding: the absolutely ontologically fundamental would then be that which is itself completely ungrounded, but which serves as ground for other things. Many, though not all, grounding theorists think of grounding as a connection between propositions, facts, states of affairs, or whatever it is that is expressed by declarative sentences. Many, though not all, take grounding to be factive, referentially transparent, well-founded, irreflexive, asymmetric, transitive, non-monotonic, and metaphysically necessary. (More on the alleged characteristics of grounding below.) Often, phenomena such as the following are cited as putative examples of grounding connections:

(1)

- a. Systematic connections between entire realms of facts (mental/physical; moral/natural; etc.).
- (p.307)** b. Truthmaking.
- c. Logical cases (e.g. the connection between conjunctive facts or disjunctive facts and their constituent facts).
- d. The determinate/determinable relation.

Supposing that these four types of phenomena in fact exhibit grounding connections, we can illustrate them by means of the following more specific examples:

(2)

- a. Moral/Natural: The fact that an act is a telling of a lie grounds the fact that the act is morally wrong.
- b. Truthmaking: The truth of the proposition that snow is white is grounded in the existence of the state of affairs, snow's being white.
- c. Logical Cases: The fact that the ball is red grounds the fact that the ball is red or round.
- d. Determinate/Determinable: The fact that the ball is crimson grounds the fact that the ball is red.

One may legitimately wonder whether much of anything has been accomplished by subsuming the four types of phenomena cited above, and perhaps others as well which I have not listed, under a single general rubric of grounding. My own view, which will emerge in the course of this paper, is that classifying all of these phenomena as exhibiting grounding connections does not achieve much in the way of illumination. There are important and fairly obvious differences between these cases which have been obscured by creating the illusion that they are all connected via the single relation or operation of grounding. The important work of giving a positive account of the nature of the connections at issue still remains to be done, even after classifying all of these phenomena as exhibiting grounding connections; and we have not made much progress in that direction by applying a single label to what are evidently quite distinct phenomena. In fact, by treating a collection of phenomena which is in fact heterogeneous as though it were homogeneous, we have, if anything, taken a dialectical step backward.²

(p.308) For several decades, it was widely believed that at least some of the explanatory asymmetries cited above, e.g. systematic connections between entire realms of phenomena such as the moral and the natural in (2.a), could be analyzed by means of the notion of supervenience, viz. the idea that any difference with respect to one type of phenomenon (e.g. the moral) entails a difference with respect to another (e.g. the natural). However, after a period of lively interest in supervenience, even its most committed champions were forced to conclude that this notion is not strong enough and lacks the right formal profile to yield a relation of genuine and asymmetric dependence (cf. Kim (1993)). For one thing, supervenience is not in and of itself an asymmetric relation. Secondly, supervenience serves to mark merely a relation of necessary covariance between its relata. But any such purely modal relation is too explanatorily coarsegrained to capture and illuminate the nature of the connections at issue. The coarse-grainedness of supervenience can be illustrated, for example, by considering two philosophers who occupy radically different positions concerning the moral/natural connection (e.g. an ethical naturalist and an ethical non-naturalist), but who are nevertheless able to endorse the very same supervenience claim **(p.309)** concerning the moral and the natural, e.g. that the moral strongly supervenes on the natural. Given that such a scenario is possible (and, in fact, actual), we may conclude that supervenience does not yield a sufficiently fine-grained characterization of the nature of the connection at issue, i.e. one which would allow us to draw a meaningful distinction between two radically different philosophical positions.

At least with respect to its formal properties, then, grounding does appear to hold more promise than supervenience for the purposes of developing an approach to relative fundamentality, if only because grounding is commonly stipulated to be asymmetric and not definable in modal terms. However, as we will discover below, grounding nevertheless suffers from some of same deficiencies as supervenience: most prominently, grounding also fails to be sufficiently fine-grained to do its intended explanatory work. In addition, there is doubt as to whether the phenomena collected together under the rubric of grounding are really unified by the presence of a single relation. And, finally, grounding turns out not to be particularly helpful in capturing and illuminating what is philosophically important about the traditional substance/non-substance distinction. In the end, we will find that, although grounding performs better than supervenience in some ways, it does not solve all of the problems to which a supervenience-based approach to relative fundamentality falls prey.

2. The Heterogeneity of Grounding

What are we supposed to learn from being told that the phenomena in (2) are all to be subsumed under the single general rubric of grounding? The details of how this question is to be answered of course depend on the particular account under consideration. For the sake of concreteness, I will indicate how several different grounding enthusiasts would respond to the question just posed.

2.1. Grounding as a well-founded partial order

In Schaffer (2009), we are told that the usefulness of the grounding idiom derives, at least in part, from the fact that we can put this notion to work in defining or providing informative equivalences **(p.310)** for a whole host of other important metaphysical concepts (viz. the “grounding family”), such as “(absolutely) fundamental”, “derivative”, “exists”, “integrated whole”, “mere aggregate” or “interdependence” (pp. 373–4). When it comes to characterizing

grounding itself, Schaffer remarks that this notion is best conceived of as a two-place predicate which can take arguments denoting entities from arbitrary ontological categories, e.g. not only facts, propositions, states of affairs (or whatever entities are to be paired up with declarative sentences), but also concrete particular objects, abstract objects, properties, or what have you (p. 375). Thus, in addition to the phenomena cited above, Schaffer also counts the following as clear cases of grounding:

(2)

e. Sets/Members: The singleton set containing Socrates is grounded in its sole member, Socrates.

f. Holes/Hosts: The holes in a piece of Swiss cheese are grounded in the piece of Swiss cheese in which they reside.

g. Abundant/Sparse Properties: The abundant property, *grueness*, is grounded in some combination of sparse properties.

Schaffer furthermore assumes that grounding induces a partial ordering over the entities it relates (i.e. that grounding is irreflexive, asymmetric, and transitive) and that it is well-founded (i.e. that it bottoms out in minimal elements which ground everything else but are themselves ungrounded).

Applying Schaffer's definitions and equivalences to the cases at hand, we can deduce that the grounded entities mentioned in (2.a)–(2.g) are all derivative, since in Schaffer's view everything that is grounded is derivative. (It is left open whether the entities that are doing the grounding are absolutely fundamental, since (2.a)–(2.g) do not reveal whether these entities are themselves grounded in further entities.) Thus, an act's being morally wrong, for example, is classified by Schaffer's account as derivative, because, by (2.a), this fact is grounded in the fact that the act is a telling of a lie; similarly, for the other grounded entities that are appealed to in (2.b)–(2.g). Schaffer's approach also allows us to infer that the grounded entities appealed to in (2.a)–(2.g) as well as their grounds exist (on the assumption that these statements are true), since the entities in question are **(p.311)** either absolutely fundamental or derivative and whatever is either absolutely fundamental or derivative, in Schaffer's view, exists. Schaffer's other definitions of "integrated whole", "mere aggregate", and "interdependence" are not obviously applicable to the cases at hand: these definitions concern the relations between parts and wholes, which appear not to be immediately relevant to the cases in (2).

Those who were hoping to achieve some clarification in their understanding of what fundamentality and derivativeness come to by being directed towards the alleged interconnections between the members of the grounding family may walk away from Schaffer's account with some measure of disappointment. His account, after all, tells us merely that "grounds" is a primitive two-place predicate with the formal characteristics of a partial ordering that is defined over a domain with minimal elements. Thus, to learn that, say, a certain physical fact is absolutely fundamental is to learn only that this entity functions as a minimal element in a domain over which a certain well-founded partial order is defined; and to learn that, say, a certain mental fact is derivative is to learn only that this entity bears the relation in question, directly or indirectly, to the minimal elements in the domain. But the same of course can be said,

for example, of a domain consisting of letters belonging to a certain alphabet, the strings constructed out of these letters in accordance with certain rules, and the partial ordering, *is a substring of*. Moreover, the mere fact that the letters function as minimal elements relative to this domain, in the sense of not being further divisible into anything that itself counts as a string of the alphabet in question, while strings that are constructed out of one or more letters are classified as complex, does not necessarily capture what the physicalist has in mind when he recommends that we consider certain physical facts as absolutely fundamental and mental facts as derivative. For the physicalist may well acknowledge that the absolutely fundamental physical facts in question exhibit the same degree of complexity as the derivative mental facts: such a possibility could arise for example if facts in general (whether physical or mental) are taken to be complex across the board, i.e. constructed out of further constituents (e.g. objects, properties, relations) via some construction operation. The notions of grounding, absolute fundamentality and derivativeness that are at issue in characterizing these versions of physicalism, in that case, **(p.312)** could not be those of construction, simplicity, and complexity, since such notions would not succeed in drawing a meaningful distinction between mental and physical facts.³ Based on what Schaffer has so far told us, then, it seems that we cannot yet distinguish between grounding and other well-founded partial orderings and the notions of absolute fundamentality and derivativeness which might be defined in terms of these idioms. I suspect, however, that, whatever exactly our expectations might have been to begin with, they would not be satisfied by an account which presents us with such an unconstrained conception of grounding, absolute fundamentality, and derivativeness.⁴

2.2. Grounding as a generic kind

We find a somewhat more restrictive, and hence more informative, characterization of grounding and related concepts in Rosen (2010). Unlike Schaffer, Rosen conceives of grounding as a relation among facts, and hence imposes some constraints on the types of entities which may figure as the relata of the grounding relation. Facts, for Rosen, are structured entities individuated by their constituents (e.g. objects, properties, relations) and their manner of composition (e.g. the order in which a certain relation applies to its relata). Like Schaffer, Rosen takes grounding to be asymmetric, irreflexive, and transitive, i.e. to impose a partial order on its domain. Unlike Schaffer, however, Rosen wants to leave open whether grounding turns **(p.313)** out to be well-founded.⁵ In addition, Rosen assumes that grounding is non-monotonic: for example, if a fact, [p], grounds a fact, [q], then there is no guarantee that this grounding connection is preserved by expanding the grounds with some arbitrary fact, [r], since [r] may be completely irrelevant to whether and why [q] obtains. To illustrate, even though it may be plausible to think that the ball's being crimson grounds the ball's being red, we may wish to deny that the ball's being crimson *and round* also grounds the ball's being red, since the ball's shape does not seem to contribute anything to an explanation of why the ball has the color that it does. In this respect, grounding is taken to be similar to other explanatory concepts like causation and different from logical entailment, which is preserved under arbitrary expansion of the premise set. Finally, Rosen considers grounding connections to be metaphysically necessary, i.e. to be governed by the following Entailment Principle: if the fact, [p], grounds the fact, [q], then it is metaphysically necessary that p entails q. Thus, if the ball's being crimson grounds the ball's being red, then the following conditional holds with metaphysical necessity: if the ball is crimson, then the ball is red.

Despite the fact that Rosen's account imposes various substantive requirements on the notion of grounding which go beyond those posited by Schaffer's account, we may nevertheless wonder whether our initial question has been adequately addressed, even in the face of these additional constraints. Supposing that all the cases cited in (2) present us with what Rosen would regard as genuine grounding connections, we may ask again: what exactly has been established by subsuming this plurality under the single rubric of grounding?⁶ We might at this point be tempted to entertain the **(p.314)** following response to this question: by collecting the data together in this way, we have learned at least that what might at first strike us as a quite disparate collection of correlations in reality presents us with a *unified* phenomenon. Rosen in fact takes on board the assumption that grounding presents us with a unified phenomenon as a working hypothesis:

I begin with the working hypothesis that there is *a single salient form of metaphysical dependence* to which the idioms we have been invoking all refer. The plan is to begin to lay out the principles that govern this relation and its interaction with other important philosophical notions. If the notion is confused or incoherent, we should get some inkling of this as we proceed. On the other hand, if all goes smoothly, we will have neutralized the main grounds for resistance, in which case there can be no principled objection to admitting the notion as intelligible, to be used in raising and answering philosophical questions insofar as this proves fruitful. [Rosen (2010), p. 114; my italics]⁷

Schaffer also assumes the unity of grounding and considers the burden of demonstrating the falsity of this hypothesis to rest with those who oppose it:

Whereas Aristotle claimed that there were many notions of priority, singling out priority in nature as foremost among them [...], this objector goes further, holding that priority in nature is *itself* 'said in many ways.' 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 **(p.315)** 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. [Schaffer (2009), pp. 376-7, his italics]

The hypothesis that grounding is a unified phenomenon, as it is presented by Schaffer and Rosen, is open to several different interpretations. In its strongest form (the "single-relation" interpretation), the unity hypothesis states that there is only a single grounding relation and it is exemplified by all cases which allegedly present us with grounding connections. A somewhat weaker version of the unity hypothesis (the "single-genus" interpretation) allows for distinct specific grounding relations, but posits that these distinct specific grounding relations fall under a single generic kind, viz. grounding. A yet weaker reading of the unity hypothesis (the "mere resemblance" interpretation) requires only that the distinct relations which go under the name "grounding" exhibit various objective similarities. Whatever interpretation Schaffer and Rosen were hoping to support, their respective accounts provide direct and positive evidence only for the weakest of the three readings of the unity hypothesis, viz. the mere-resemblance interpretation.⁸ The most we can say concerning the single-genus interpretation is that Rosen's and Schaffer's approaches to grounding are neutral with respect to it: nothing they say is,

strictly speaking, incompatible with this reading of the unity hypothesis; but we are also not given any positive reasons in favor of embracing it. In contrast, the strongest reading of the unity hypothesis, viz. the single-relation interpretation, is explicitly discouraged by the information we are given.

In Schaffer's case, we have already seen that his grounding relation is formally indistinguishable from other well-founded partial orderings which are presumably not numerically identical with the grounding relation, such as the relation, *is a substring of*, when applied to a domain consisting of letters belonging to a certain alphabet and the strings that can be constructed out of them.⁹ But **(p.316)** even Rosen's account pushes us in the direction of positing several distinct specific grounding relations which objectively resemble each other in various respects. Whether we are also licensed to infer that these various objectively similar relations belong to a single generic kind is simply underdetermined by the evidence Rosen provides.

To see why, within Rosen's framework, we are driven away from the single-relation interpretation of the unity hypothesis, consider first the contrast between the determinable/determinate relation, at issue in (2.d), and the genus/species relation, illustrated in (2.h):

(2) h. Genus/Species: The fact that this geometrical figure is a square is grounded in the fact that this geometrical figure is an equilateral rectangle.

(2.h) follows the Aristotelian way of thinking of the genus/species relation, which Rosen adopts, according to which a geometrical figure for example has the more specific property of being a square at least in part in virtue of its having the more general property of being a rectangle. By contrast, as illustrated in (2.d), the relation between determinable facts (e.g. the ball's being red) and determinate facts (e.g. the ball's being crimson) is supposed to be exactly reversed: the ball is said to instantiate the more general determinable property, red, in virtue of its instantiating the less general determinate property, crimson. In addition, while (2.h), in Rosen's view, is an example of a reductive relationship which can be expressed in the form of a real definition (viz. "To be a square is to be an equilateral rectangle"), he urges us not to think of the relationship in (2.d) in this way: the essence of the determinate property, crimson, for Rosen, is not expressible in the form of a real definition which mentions the determinable property, red, together with some differentiating feature. If we go along with the details of Rosen's diagnosis, then the appropriate reaction to these two cases would seem to be to posit at least two distinct specific grounding relations, e.g. the genus/species relation and the determinable/determinate relation. Whether these two alleged specific grounding relations fall under **(p.317)** a single more generic kind, viz. grounding, is left open by the information with which we are provided. There are other striking differences between the connections cited in (2). For example, in the logical cases, which are illustrated in (2.c) by the relationship between a disjunctive fact (e.g. the ball's being red or round) and its constituent facts (e.g. the ball's being red; the ball's being round), overdetermination of the grounded fact by its alleged grounds is permissible. A disjunctive fact of the form, $[p \vee q]$, may obtain in virtue of $[p]$'s obtaining, or it may obtain in virtue of $[q]$'s obtaining, or it may obtain in virtue of the fact that both $[p]$ and $[q]$ obtain. The truthmaking cases, illustrated in (2.b), behave in this way as well, since a single true proposition may be made true by a number of different states of affairs: for example, the proposition that someone is a philosopher can be made true by Socrates' being a philosopher, Plato's being a

philosopher, and so on. There is no incompatibility which arises from the idea that distinct truthmakers act as alleged grounds for the truth of a single proposition.

But now consider the determinable/determinate relation: in this case, notoriously, the determinate facts which are invoked as the alleged grounds for a given determinable fact rule out that some other determinate fact also obtains which involves the attribution of a different determinate property to the same entity. For example, if the ball's being red (all over) is grounded in the ball's being crimson (all over), then that same determinable fact cannot also at the same time be grounded in the ball's being maroon (all over), since a ball cannot simultaneously be both crimson (all over) and maroon (all over). Similarly, in the genus/species case, assuming that Rosen is correct in thinking that something's belonging to a certain species is at least in part grounded in its belonging to a certain genus, there is no leeway here in how a given specific fact may be grounded, as long as we stay at the same level of generality: the specific fact that a certain geometrical figure is a square can only be partially grounded in the generic fact that the figure is a rectangle; it cannot also simultaneously be partially grounded in its being a triangle, since being a triangle and being a rectangle are incompatible.

Thirdly, as has been noted by several writers (e.g. Fine (2012), pp. 43–6), truthmaking has the following unique feature which distinguishes it from all the other alleged grounding connections. When we consider the relation between the truth of a proposition (**p.318**) and a state of affairs which is supposed to make it true, one of the relata of the alleged grounding connection in this case is a representational entity, viz. a proposition or some appropriate item which is capable of being true or false. This truthbearing entity represents the world as being a certain way and it is fairly closely connected to some associated linguistic entities, e.g. sentences which express the proposition in question. The other relatum of the truthmaking relation, in contrast, is a worldly entity of some sort (e.g. a state of affairs) whose existence is supposed to explain the truth of the proposition in question. In this respect, truthmaking differs from all the other alleged grounding connections, since the remaining cases are supposed to draw both of their relata from a purely worldly domain.

In fact, each of the relations that is instantiated in (2) can be differentiated from each of the other relations, either on the basis of the differences to which we have already pointed or on the basis of some other distinguishing mark which will emerge below. The fact that the relations instantiated in (2) exhibit different characteristics, by Leibniz's Law, entails that the relations in question are themselves distinct as well, thereby discounting the strongest, single-relation interpretation of the unity hypothesis. Nevertheless, despite these clear differences between the relations at issue, the data in (2) might still be taken to be at least compatible with the next weaker reading of the unity hypothesis, viz. the single-genus interpretation, according to which grounding imposes on its alleged instances at least the unity of a generic kind. But even this weaker interpretation of the unity hypothesis would have to be supported by explicit arguments: it cannot be inferred merely from the presence of objective similarities that are shared by various distinct specific alleged grounding relations.

Rosen's account only draws attention to the various ways in which the phenomena which he thinks exhibit "a single salient form of metaphysical dependence" resemble each other, thereby providing direct support only for the weakest of the three readings of the unity hypothesis, viz. the mere-resemblance interpretation. But not all objective similarities are in fact indicative of

the presence of a single genus. If such an inference were licensed, then we would be justified for example in assigning all instances of jade to a single kind of mineral, since they are after all objectively **(p.319)** similar in various respects, when in fact we have learned that such a classification would be incorrect, since instances of what is commonly called “jade” exhibit sufficiently different chemical compositions to warrant a distinction between two different kinds of minerals, jadeite and nephrite. Thus, to establish that, for example, the genus/species relation and the determinable/determinate relation are correctly classified as two species which fall under a single genus, viz. grounding, it is not enough to show merely that these relations resemble each other in various objective respects, e.g. by being irreflexive, asymmetric, transitive, non-monotonic and metaphysically necessary. If the genus/species relation and the determinable/determinate relation were indeed two species which belong to a single genus, then, given Rosen’s conception of real definitions, we should expect to be able to state the essence of these two specific relations in the form of a real definition which mentions the genus to which they belong (viz. grounding) together with some differentiating feature which distinguishes the two specific relations from each other. It is not clear, however, what more Rosen could say at this point to convince those of us who are skeptical even of the weaker, single-genus interpretation of the unity hypothesis, given that he (like Schaffer) takes grounding to be a primitive relation, i.e. irreducible and undefinable. For a primitivist like Rosen or Schaffer, the most we can do is to elucidate the notion of grounding by bringing out some of its characteristics, e.g. the formal properties that govern grounding. But this strategy by itself does not distinguish between the mere-resemblance and the single-genus interpretation of the unity hypothesis.

Given the considerations adduced so far, then, grounding theorists cannot take themselves to have established anything stronger than the mere-resemblance interpretation of the unity hypothesis, according to which alleged grounding connections resemble each other in various objective respects. Whether these distinct but similar relations which go under the name “grounding” also fall under a single genus at this point has been neither confirmed nor disconfirmed by the evidence we have been given. Considering the great hype that surrounds the notion of ground, one might be excused for being somewhat underwhelmed by this result. A philosopher who is interested in the problems surrounding personal identity, for example, would not feel that great progress has been made by being **(p.320)** informed that the relation of numerical identity either falls under the same genus as, or is at least objectively similar to, the relation of being the same height as, since both of them are equivalence relations and hence exhibit some objective formal similarities. And yet that is roughly the dialectical situation in which we find ourselves when we are referred to the notion of ground as a promising tool in terms of which to develop an illuminating approach to relative fundamentality.¹⁰

2.3. Grounding as essential connectedness

Audi (2012b) goes to greater lengths than most grounding theorists in attempting to provide explicit support for the hypothesis that grounding presents us with a unified phenomenon. Moreover, he is quite explicit in endorsing the strongest, single-relation interpretation of the unity hypothesis:

Even the view that there is only a generic similarity, that there is a different species of noncausal determination at work in each case, strikes me as under-motivated. What differentiates the species? If it is only that one concerns normative properties, another determinables, still another dispositions, this does not yet give us a reason to think that *how the determination works* differs in each case, simply because it relates different kinds of fact. So I take the burden of proof to be on those who think there are different relations at work to show why, to show in what way the determination differs in the different cases. I will proceed, then, on the assumption that there is just one noncausal determination relation at work in the relevant examples. [Audi (2012), p. 689; Audi's italics]

In order to increase the plausibility of the unity hypothesis under its strongest single-relation reading, Audi has to place fairly severe restrictions on the collection of phenomena which he would recognize as genuine instances of grounding. For example, from among the eight examples cited in (2.a)-(2.h), Audi would classify only **(p.321)** three as involving genuine grounding connections: the relation between the instantiation of moral and natural properties in (2.a); the relation between the instantiation of semantic and non-semantic properties in (2.b); and the relation between the instantiation of determinable and determinate properties in (2.d). Given Audi's approach to grounding, we should not expect the other cases to conform to the same pattern as those which he regards as being indicative of a genuine grounding connection, despite the intuitions to the contrary cited by Schaffer, Rosen, and other grounding enthusiasts. (I will come back to the question of how Audi would treat the relation between sets and their members, in (2.e), as well as that between holes and their hosts, in (2.f).) In general, Audi takes grounding to be a non-causal determination relation which underwrites the correctness of non-causal explanations and which obtains in cases in which a certain genuine property or relation (e.g. semantic, moral, aesthetic) cannot be instantiated brutally, but rather is instantiated only in virtue of the instantiation of some other type of property or relation (e.g. a natural one).¹¹

Given the limitations Audi sets on which types of connections are to be considered to be genuine cases of grounding, the scope of his unification thesis, if successful, of course also decreases in ambitiousness. But we might think that this price is worth paying, as long as the chances of singling out a genuinely unified phenomenon have been improved by cutting down on the range of cases that are supposed to be unified by means of this strategy. But even with respect to Audi's restricted class of phenomena there are nevertheless reasons to be skeptical as to whether a single non-causal determination relation, in all of these cases, underwrites the correctness of the corresponding non-causal explanations.

(p.322) The best hope for unification, within Audi's framework, lies with an additional constraint he imposes on the grounding relation called "*Essential Connectedness*". According to this principle, when the instantiation of a certain property or relation grounds the instantiation of some other property or relation, then it lies in the nature of the properties or relations appealed to in a given grounding claim that their instances should be connected in this way:¹²

For example, when a given instance of maroonness grounds a coincident instance of redness, this fact manifests the natures of the relevant properties. It is part of their essence to behave in this way when instantiated. This is not to give an explanation of *why*

the relevant facts stand in a grounding relation, and indeed there may not be an explanation, properly so called. The point of this characterization is simply to chart an important relation between the essences of properties and the grounding relations that obtain among their instances. [Audi (2012), p. 695]

Can Essential Connectedness be used to establish the single-relation interpretation of the unity hypothesis? Recall, first, that we have already drawn a distinction above between the alleged grounding relations that are instantiated in two out of the three cases Audi recognizes as genuine cases of grounding: the semantic/non-semantic case in (2.b) and the determinable/determinate case in (2.d). In the semantic/non-semantic case, we observed that the relation in question imposes unique type constraints which are not found in the other alleged cases of grounding: truthmaking, for example, takes as its relata a pair consisting of a representational and a non-representational entity. In addition, overdetermination of what is grounded by its alleged grounds is permitted in the semantic/non-semantic case, but disallowed in the determinable/determinate case. These considerations provide evidence in favor of positing two distinct specific relations in two of out of the three cases just cited.

It remains to distinguish the third case, viz. the moral/natural connection, from the other two. In this instance as well, we come **(p.323)** across unique features which do not generalize to the other cases in which Audi discerns genuine grounding connections. Consider the contrast between (2.d), in which a determinable property is said to be instantiated in virtue of its being the case that a determinate property is instantiated, and (2.a), according to which a moral property is instantiated in virtue of its being the case that a natural property is instantiated. Essential Connectedness states that both grounding connections hold in virtue of the natures of the properties at issue. Thus, applying Essential Connectedness to (2.d), we learn that it lies in the natures of the properties, red and crimson, that instantiations of crimson ground instantiations of red. Applying Essential Connectedness to the case of (2.a), we would similarly expect it to be the case that it lies in the nature of the properties, moral wrongness and lie-telling, that an instantiation of lie-telling by an act grounds an instantiation of wrongness by that same act. But at this point an interesting and systematic difference emerges between the moral/natural case and the determinable/determinate case: in the moral/natural case, at least for a non-Kantian, the connection between the properties or relations in question appears to be defeasible in a way in which the connection between determinable and determinate properties or relations is not. To illustrate, in a particular case, an act may be an instance of lie-telling and nevertheless fail to be morally wrong, if, for example, the lie in question is being told to save someone's life. In contrast, the relationship between crimson and red is not similarly susceptible to extenuating circumstances: instantiations of crimson always and in every circumstance give rise to simultaneous instantiations of red by the same object. One might suspect that this contrast can be traced to a difference in the varieties of necessity that are operative in these two cases, viz. metaphysical necessity in the determinable/determinate case and normative necessity in the moral/natural case. But such a divergence with respect to the modal force of the connection at issue again underwrites the suspicion that the relations in question themselves are distinct.¹³

(p.324) Thus, the evidence we have examined up to this point, contrary to what is suggested by prominent grounding theorists, calls into question the strongest version of the unity hypothesis,

according to which all alleged cases of grounding are unified under a single relation. Whether the distinct relations which obtain in these cases at least fall under a single genus has been neither confirmed nor disconfirmed by the data in question. The most to which grounding theorists are at this point entitled therefore is the relatively weak objective-similarity reading of the unity hypothesis. To appreciate just how weak this reading of the unity hypothesis is, however, we should keep in mind that the phenomena in question are equally compatible with the following interpretation, which we might call the “objective-difference” reading of the corresponding “heterogeneity of grounding” hypothesis. According to this reading, we should interpret the phenomena in question as presenting us with a heterogeneous collection, since the distinct relations that are instantiated in alleged cases of grounding exhibit objective differences. Given that we have observed both objective similarities and objective differences between the alleged grounding connections, the unity of grounding hypothesis under the objective-similarity reading is no more supported by the evidence than the heterogeneity of grounding hypothesis under the objective-difference reading. As working hypotheses, then, the unity of grounding and the heterogeneity of grounding stand roughly on equal footing.

3. Grounding and the Substance/ Non-Substance Distinction

So far, my main goal has been to argue for the coarse-grainedness of grounding by emphasizing the lack of unity inherent in the collection of phenomena that are identified as alleged cases of **(p.325)** grounding. At this point, I want to shift my attention to a different way in which the coarse-grainedness of grounding manifests itself, namely through the failure of the grounding idiom to capture and illuminate what is philosophically interesting and important about the traditional substance/non-substance distinction.¹⁴ For the purposes of this argument, we may grant the grounding theorist the strongest reading of his working hypothesis, according to which all genuine cases of grounding are unified under a single relation. The question now before us is, rather, whether the application of this allegedly unified and unifying relation manages to accomplish much significant philosophical work when it is applied to those connections between the fundamental and the derivative to which the traditional substance/non-substance distinction is intended to give voice. I argue in what follows that we will again walk away with disappointment if we expect much illumination from the application of the grounding idiom to this domain.

3.1. Candidate fundamental and derivative entities

The candidates listed in (3) below have been thought by some philosophers to possess the relatively *high* degree of fundamental-ity characteristic of those entities within a given ontology which deserve to be included among the substances (assuming of course that there are such things). We can leave open for present purposes the question of whether these entities are (or ought to be) classified as absolutely fundamental as well, since my present focus is on the notion of relative fundamentality which is meant to go along with the grounding idiom:

(3)

- a. Entities which belong to the inventory of fundamental physics (e.g. fields or fundamental particles).
- b. God.

- c. Cartesian minds.
- d. Positions in spacetime (according to an absolute conception of spacetime).
- e. Unified natural wholes.
- f. Simples.
- (p.326)** g. Platonic universals.
- h. Haecceities.
- i. Aristotelian forms.

In contrast, the following candidates have been thought by some philosophers to possess the relatively low degree of fundamentality characteristic of those entities within a given ontology which deserve to be excluded from the category of substances (assuming again that the entities in question exist):¹⁵

(4)

- a. Boundaries.
- b. Holes.
- c. Tropes (moments, modes).¹⁶
- d. Aristotelian universals.
- e. Heaps.
- f. Mereological sums (fusions, aggregates).
- g. Collections (e.g. non-empty sets, committees, ...).
- h. Artifacts.
- i. Artworks.
- j. Intentional objects (e.g. fictional characters, the golden mountain).

My intention at present is not to endorse any of the classifications that are cited in (3) and (4). Rather, I am interested in examining whether philosophers who are sympathetic to at least some of these classifications might avail themselves of the idiom of grounding, and its associated notions of relative fundamentality and derivativeness, as a suitable vehicle to express the contrasts they have in mind when they assign some entities to the category of substances and others to a non-substantial category of some sort.

(p.327) 3.2. Degrees of substancehood

I mentioned just now that, for the purposes of the present discussion, I want to view the cases listed in (3) and (4) through the lens of relative fundamentality, leaving open whether any of the entities cited in (3) are properly classified as fundamental in some absolute sense. In this vein, it would be possible to say, for example, that tropes (otherwise known as “moments” or “modes”) are less fundamental than the concrete particular objects which are their bearers, while leaving open whether the concrete particular objects which act as the bearers of tropes are themselves absolutely fundamental. In fact, there may very well be good reasons for thinking that at least some of these concrete particular objects ought not to be classified as absolutely fundamental (e.g. because they are composite). Given this approach, together with the assumption that (3) and (4) present us with the sorts of cases to which the traditional substance/non-substance

distinction is intended to apply, it follows that the relevant notion of substancehood currently at issue should also be understood as a comparative one which comes in degrees. Thus, when substancehood is understood as an indicator of relative fundamentality, as opposed to absolute fundamentality, then the notion of substancehood at issue must itself be one which would permit us to classify an entity, or type of entity, as *more of a substance than*, or as more deserving of substance status than, some other entity, or type of entity. (Aristotle seems to have had something roughly of this sort in mind when he introduced the distinction between the “primary” and the “secondary” substances: I take it that the primary substances, in his mind, are even more deserving of substance status than the secondary substances, even though both types of entities count as substances.) All the while, we should leave it open, for present purposes, whether, in addition to this comparative notion of substancehood, an entity which is classified as relatively more fundamental than another (i.e. as more deserving of substance status than another) is also fundamental absolutely (i.e. a substance *simpliciter* or in some absolute sense). Certainly, some of the items listed in (3) would strike those who are committed to them as rather natural candidates to be regarded as absolutely fundamental; but there is no need to settle this question now, given that we are currently engaged in an investigation into the nature of relative **(p.328)** fundamentality. (In what follows, when I speak of fundamentality, I continue to have in mind relative fundamentality, unless otherwise indicated.)

3.3. The existential paraphrase strategy

Since the items listed in (3) and (4), to which the traditional substance/non-substance distinction is meant to apply, at least on the face of it appear to be non-propositional, non-factual entities which cannot in any obvious way be paired with declarative sentences, it is also not immediately obvious how the idiom of grounding, with its associated connectives (e.g. “grounds”, “is grounded in”, “because”, “because of”, “in virtue of”, “is nothing over and above”, or “is explained by”) will be of much help to us in capturing the philosophically relevant differences between the candidate entities with relatively high degrees of fundamentality listed in (3) and those with relatively low degrees of fundamentality listed in (4).

As it stands, a declarative sentence of the form “___ because God” or “___ in virtue of Platonic universals” is not even grammatical in English, when “___” is filled in with another noun-phrase, since connectives, such as “because” or “in virtue of”, which are supposed to be indicative of grounding connections, cannot take simple noun-phrases as their complements. And while sentences of the form “God grounds ___”, “A heap is grounded in ___”, or “___ is explained by God” are at least grammatical in English, when “___” is filled in with another noun-phrase, the constructions in question still leave us with crucial unanswered questions. For example, if confronted with a sentence of the form, “A heap is grounded in ___”, where “___” is filled in by another noun-phrase, the natural response is: “But *what is it about* the heap that is supposed to be grounded in *something-or-other* about ___?” and “*What is it about* ___ that is supposed to ground *something-or-other* about the heap?” If grounding is to be understood as a relation which connects propositions, facts, states of affairs, or whatever goes naturally with declarative sentences (as Rosen, Audi, and others assume), then constructions like “God grounds ___”, “A heap is grounded in ___”, or “___ is explained by God” must be understood as elliptical; and there is nothing we can immediately glean from these grounding **(p.329)** constructions which gives us explicit guidance on how to fill in the ellipsis in question.¹⁷

When grounding theorists are confronted with the question of how the ellipsis under consideration is to be filled in, a popular move seems to be to supply “exists” or “existence” in order to turn the noun-phrases which apparently denote non-propositional, non-factual entities into ones which conform to the propositional, factual format that is presupposed by many grounding theorists for sentences expressing grounding connections:¹⁸

(5)

- a. Boundaries: Boundaries *exist* because the concrete particular objects whose boundaries they are *exist*.
- b. Holes: The *existence* of holes is grounded in the *existence* of the concrete particular objects whose holes they are.
- c. Tropes: Tropes exist in virtue of the concrete particular objects which are their bearers *existing*.
- d. Aristotelian universals: The existence of an Aristotelian universal is explained by the existence of the concrete particular objects which exemplify it. And so on.

But there are two basic problems with this strategy. First, the existential paraphrase strategy illustrated in (5) creates the illusion that the contrasts relevant to the cases listed in (3) and (4) are all purely existential, i.e. that there is some single difference with respect to the conditions of existence which obtains between entities with a higher and entities with a lower degree of fundamentality, namely that the latter exist because the former exist. But many of us have come to believe that there is more going on in the contrasts illustrated in **(p.330)** (3) and (4) than what could be captured in terms of some single asymmetry concerning the conditions of existence governing the entities in question. For example, with respect to (5.c), if tropes can be essential to their bearers, then it seems equally plausible to think that a concrete particular object exists because those tropes which are essential to it exist. But it would constitute a violation of the alleged asymmetry of grounding to say both that the existence of an essential trope is grounded in the existence of its bearer and that the existence of the concrete particular object which is the bearer of the essential trope in question is also grounded in the existence of its essential trope. In addition, even if such situations of mutual grounding were to be admitted, it would still be desirable to have the resources required to express the idea that there is an interesting and philosophically important categorical difference between tropes and their bearers, namely that tropes are the kinds of things which need bearers, while concrete particular objects are the kinds of things which can act as the bearers of tropes, but which themselves do not and cannot have bearers. But the existential paraphrases in (5) do not seem to supply the apparatus necessary to capture such a categorical distinction. And while this particular point may not generalize in exactly this form to the other cases canvassed above, it nevertheless helps to bring out that the existential paraphrases in (5) do not fully get to the heart of the contrasts illustrated in (3) and (4).^{19, 20}

Secondly, and relatedly, even if the sentential reformulations in (5) did do justice to the intended contrasts conveyed by (3) and (4), the existential idiom is nevertheless too coarse-grained to bring out the interesting ontological differences between entities with a higher **(p.331)** degree of fundamentality, such as those in (3), and entities with a lower degree of fundamentality, such

as those in (4). Arguably, the candidate derivative entities cited in (3), if they exist and if in fact they are correctly classified as possessing a relatively low degree of fundamentality, do not all have their derivative status for the same reasons. If there are such things as boundaries, Aristotelian universals, heaps, artifacts, and the like, and if they are in fact derivative in some sense compared to the entities listed in (4) under the rubric, “candidate fundamental entities”, then ideally our approach to relative fundamentality should be sufficiently fine-grained to allow us to distinguish between the different factors that are at play in accounting for the derivative status of these entities. Thus, our ontological and meta-ontological apparatus should be nuanced enough to capture the relevant respects in which, for example, a boundary is different from an Aristotelian universal, a heap or an artifact, even though they are all in some sense derivative compared to entities which belong in the inventory of fundamental physics, God, Cartesian minds, unified natural wholes, simples, Platonic universals and the like (if in fact there are such things). In order to explain the derivative status of artworks and fictional characters, it would be natural to appeal at least in part to the fact that creative acts of intentional agents are required to bring these entities into existence and imbue them with the qualities they come to exhibit; but this line of reasoning may be completely irrelevant to a general explanation of the derivative status of boundaries, holes, and tropes. Similarly, in order to explain the derivative status of heaps, we may wish to appeal to their non-unified character; but lack of unity may again be out of place in an account of the derivative status of tropes. All these more fine-grained explanatory factors which indicate that entities in (3) and (4) have their fundamental or derivative status for different reasons are simply glossed over in the purely existential reformulations of the intended contrasts given in (5).

3.4. Alternative grounding strategies

Although Rosen is primarily focused on those alleged grounding connections whose relata are straightforwardly compatible with his factual approach to grounding, he does briefly address the question of how one might approach cases which apparently involve **(p.332)** non-propositional, non-factual entities from the perspective of a grounding theorist:

Some philosophers believe that the aim of ontology is not simply to say what there is, but rather to say what *really* exists, or what exists in the most fundamental sense.... Such philosophers may say: Of course the lectern exists; it's a thing; it's real. But it is not an *ultimate* constituent of reality; it is not *ontologically* real. What could this mean? Here is one possibility. Say that a fact is fundamental (or brute) if it does not obtain in virtue of other facts, and that a *thing* is fundamental if it is a constituent of a fundamental fact. Then we might say that fundamental ontology seeks a catalog of the fundamental things. When the fundamental ontologist says that the lectern is not 'ultimately real', all he means is that the various facts concerning the [lectern]—including the fact that it exists—ultimately obtain in virtue of facts about (say) the physical particles in the vicinity, facts that do not contain the [lectern] itself as a constituent. [Rosen (2010), p. 112]

Rosen's suggestion is that we can derive a fundamental/nonfundamental distinction for non-factual entities, such as lecterns, from a corresponding fundamental/non-fundamental distinction for facts in roughly the following way, where the operative notion of fundamentality appears to be an absolute one:

Absolute Fundamentality/Non-Fundamentality for Facts:

A fact, [p], is *absolutely fundamental* if [p] does not obtain in virtue of any other facts, i.e. if [p] is ungrounded; otherwise, [p] is *not absolutely fundamental*.

Absolute Fundamentality/Non-Fundamentality for Non-Factual Entities:

A non-factual entity, a, is *absolutely fundamental* if it figures as a constituent in a fundamental fact; otherwise, a is *not absolutely fundamental*.

To illustrate, a fact concerning physical particles might be classified as a fundamental fact, according to this scheme, if it does not obtain in virtue of some further fact. Correspondingly, the physical particles themselves, which figure as constituents in such fundamental facts, would be designated as fundamental entities. In contrast, a lectern presumably would not figure as a constituent in fundamental facts; rather, we would expect facts about lecterns (including, but not limited to, facts about their existence) to obtain in virtue of, i.e. to be grounded in, other facts. Hence lecterns, **(p.333)** following Rosen's proposal, would be classified as not absolutely fundamental.

It is easy to see that this idea, as it stands, does not do justice to the intended contrasts listed in (3) and (4), since it was explicitly left open whether the entities cited in (3) are correctly classified as absolutely fundamental. To illustrate, suppose a trope is merely less fundamental than the concrete particular object which is its bearer, without the bearer itself being absolutely fundamental. In its current form, Rosen's proposal would lump together both the trope and its bearer as not absolutely fundamental, since presumably facts about both of them obtain in virtue of other facts, without giving us the ability to distinguish between the different degrees of non-fundamentality we want to assign to tropes and their bearers. But perhaps Rosen's proposal can be adapted to reflect a difference in the degree of relative fundamentality or non-fundamentality adhering to entities of different types:

Relative Fundamentality/Non-Fundamentality for Facts:

A fact, [p], is *less fundamental than* a fact, [q], if [p] is grounded in [q], where [q] may or may not be absolutely fundamental.

Relative Fundamentality/Non-Fundamentality for Non-Factual Entities:

A non-factual entity, a, is *less fundamental than* a non-factual entity, b, if facts about a are grounded in facts about b, where facts about b may or may not be absolutely fundamental.²¹

To prevent this proposal concerning relative fundamentality and non-fundamentality from simply collapsing into the existential paraphrase strategy, which we have already considered and disposed of earlier, the alleged grounding connections in question cannot be purely existential, i.e. they cannot simply be of the form:

(p.334) (6) a. [The redness trope exists] is grounded in [The rose exists].

for (6.a) is of course simply an instance of the more general existential claim in (5.c.). Rather, if the proposal currently under consideration is to present us with a new idea about how to derive a notion of relative fundamentality and non-fundamentality for non-factual entities from one that is defined in the first instance for facts, at least one of the relata of the alleged grounding relation in question has to be non-existential, e.g.

(6) b. [The redness trope exists] is grounded in [The rose is red].

Presumably, in order for the proposed schema to work in its intended fashion, the allegedly grounded fact, [The redness trope exists], should not tacitly contain the rose as a constituent; and the alleged ground, [The rose is red], similarly should not implicitly contain the redness trope as a constituent. After all, the redness trope is supposed to be classified as a less fundamental entity than the rose, because facts about the redness trope (i.e. facts in which the redness trope figures as a constituent) are said to be grounded in facts about the rose (i.e. facts in which the rose figures as a constituent). I assume therefore that the facts under consideration cannot be hybrid facts, i.e. facts which contain as constituents both the allegedly more fundamental entity and the allegedly less fundamental entity in question.

Suppose, then, that the occurrence of “red”, in the statement, “The rose is red”, which is used to pick out the ground in question, is analyzed as denoting something other than the rose’s redness trope: it might, for example, be analyzed instead as denoting the universal, viz. redness, with the predicational tie, “is”, indicating a relation such as that of characterization, exemplification or instantiation. In that case, the alleged ground, [The rose is red], has as constituents the rose (a concrete particular object), redness (a universal) and characterization (a relation which obtains between them). We can then read the alleged grounding claim in (6.b) as asserting that the existence of the redness trope in question is grounded in the rose’s being characterized by the universal, redness. More generally, according to the proposal currently under consideration, tropes **(p.335)** would be classified as less fundamental than their bearers, because facts in which tropes figure as constituents (e.g. facts concerning the existence of tropes) are grounded in facts in which their bearers together with other entities figure as constituents (e.g. facts about the characterizing relation obtaining between a concrete particular object and a universal).²²

Whatever the merits of this proposal are for the particular case at hand, it does not straightforwardly generalize in its present form to the other cases listed in (3) and (4). For facts about the characterizing relations which obtain between concrete particular objects and the universals they exemplify do not help us understand, for example, the derivative status of heaps, mereological sums, sets, artifacts or artworks, or the fundamental status of God, Cartesian minds, or positions in spacetime. In each case, in order to arrive at a suitable grounding claim that is tailored to the particular case at hand, the facts which are related by the alleged grounding claim in question in effect have to reflect the reason why the entities in question have the relatively fundamental or non-fundamental status they do. In the case of artworks, for example, it might be appropriate to bring out their relatively low degree of relative fundamentality through alleged grounding connections between facts about artworks and facts about the artists who created them. Thus, perhaps the existence of Michelangelo’s *David* is grounded in facts about the shape Michelangelo imposed on a certain block of marble with

certain representational intentions in mind. But, again, the relationship between the properties of an artwork and the intentional acts of the artist who created it is peculiar to this particular case and does not yield a general characterization of derivativeness that is applicable to non-factual entities across the board.

At this point, we can also see why the alternative grounding strategy we have been considering is not particularly helpful in capturing or illuminating what is important about the traditional **(p.336)** substance/non-substance distinction. For whatever useful information we can glean from an alleged grounding claim such as (6.b) concerning the relationship between more fundamental and less fundamental entities must be extracted from the facts themselves which figure as the relata of the alleged grounding claim at issue, and not from the additional consideration that these facts are related by means of an alleged grounding relation. In the case of (6.b), once it is clear what constituents figure in the relevant facts in question and how these constituents are related, then the philosophical work required in elucidating the derivative status of tropes relative to the concrete particular objects that are their bearers and the universals they instantiate has been accomplished. And while expressing this relationship in the form of a grounding claim does encapsulate the idea that some asymmetric explanatory relationship obtains between the allegedly more fundamental facts or entities and the allegedly less fundamental facts or entities, nothing that is specifically tailored to the particular cases that are listed in (3) and (4) follows from thinking of this asymmetric explanatory relationship in terms of grounding. Upon learning that a fact, [p], grounds a fact, [q], we cannot deduce for example that the constituents that figure in [q] are the results of creative acts involving intentional agents or that the constituents that figure in [p] include concrete particular objects which stand in characterizing relations to universals. But this is exactly the kind of illuminating work we should be able to expect from a relation which is supposed to capture what is philosophically interesting and important about the traditional substance/non-substance distinction.

3.5. The multiple dimensions of non-fundamentality

I have argued in other work (cf. Koslicki (2012a), (2013a), (2013b), (forth. c)) that, in order to draw sufficiently fine-grained distinctions among the candidate derivative entities such as those listed in (3) and (4) above, it is necessary to recognize multiple dimensions of non-fundamentality, among them the following:

(i) *Abstraction*. An entity, x , may be non-fundamental in a particular way relative to an entity, y , numerically distinct from x , if it is essential to x that it is in some way “abstracted” from y ; **(p.337)** x is a feature of y ; y is x ’s bearer. In this case, y is more complex than x ; by focusing on x , we gain a partial, but not complete, perspective on y .²³

(ii) *Construction*. An entity, x , may be non-fundamental in a second way relative to an entity, y , numerically distinct from x , if it is essential to x that it is in some way “constructed” out of y , together with other entities. In that case, y is an essential constituent of x ; x is more complex than y ; by focusing on y , we gain a partial, but not complete, perspective on x .²⁴

But even (i) and (ii) do not yet encompass all the distinctions necessary to do justice to the full range of data we encounter in (3) and (4). In addition to (i) and (ii), at least the following additional factors are relevant to an adequate characterization of relative non-fundamentality:

(iii) *Artificiality*. An entity, *x*, may be non-fundamental in a third way relative to some entity, *y*, numerically distinct from *x*, if *x* is essentially the result of a creative act involving an intentional agent, *y*.^{25, 26}

(p.338) (iv) *Disunity*. An entity, *x*, may be non-fundamental in a fourth way relative to some entity, *y*, numerically distinct from *x*, if *x* exhibits a lower degree of unity than *y*.

In my view, we need to recognize at least these four dimensions of relative non-fundamentality, and their correlative versions of relative fundamentality, in order to capture the metaphysically significant distinctions that are present among the candidate derivative and fundamental entities listed in (3) and (4). (And I am in principle open to recognizing further dimensions of non-fundamentality, if a plausible argument can be mounted to the effect that (i)–(iv) still do not supply us with the necessary apparatus to capture all the ontologically relevant facts that need to be accounted for in order to characterize an entity’s derivative or fundamental status.)

The four dimensions of non-fundamentality cited above may also interact in various complex ways. To illustrate, tropes, holes, boundaries, or Aristotelian universals are sometimes taken to be abstracted from, and hence derivative in one particular way of, the concrete particular objects that are their bearers. And yet, despite their abstracted status, these entities may nevertheless be regarded as exhibiting a high degree of unity, e.g. perhaps because they are regarded as simple in the sense of not being constructed out of constituents, and hence count as unified by default. Moreover, their abstracted status also leaves open whether the entities in question are the results of creative acts involving intentional agents (e.g. a boundary around a particular piece of land) or natural (e.g. an Aristotelian universal or a naturally formed hole in a rock formation). Heaps, mereological sums, collections, artifacts, artworks, and natural unified wholes, in contrast, may be taken to be in some sense constructed out of their parts or constituents; but whether they are unified or disunified, artificial or natural, is not immediately settled by their status as constructed entities. And while artifacts, artworks, and intentional objects are arguably the results of certain kinds of creative acts involving intentional agents, some of them may be **(p.339)** classified as abstracted (e.g. an afterimage); others as constructed (e.g. a sculpture). In addition, some of them may have a relatively high degree of unity (e.g. certain artifacts whose constituents work together to fulfil a certain function), whereas others may exhibit a relatively low degree of unity (e.g. an artwork consisting of components that are scattered across multiple geographical locations). Finally, heaps, mereological sums, and collections, which may be taken to be constructed entities, also appear to exhibit a relatively low degree of unity compared to other more unified entities (e.g. natural unified wholes, tropes, simples, Platonic universals).²⁷

4. Conclusion

My main purpose in this paper has been to bring out why the grounding idiom does not perform as well as one might think, and as well as we have been led to believe based on the recent flurry of enthusiasm surrounding the notion of grounding, in providing a plausible approach to relative

fundamentality. Given our observations above, we may conclude that a ground-theoretic approach to relative fundamentality performs poorly in at least the following two respects. Firstly, the idiom of grounding does not capture and illuminate what is philosophically interesting and important about the traditional substance/non-substance distinction, and is therefore ill-suited for the formulation of a criterion of substancehood. Secondly, the grounding idiom is not sufficiently fine-grained to shed much light on the nature of the connections that are at play in putative cases of grounding.

(p.340) Upon learning that a fact, [p], grounds a fact, [q], the approaches to grounding we considered above do allow us to draw several inferences. For example, on the basis of a grounding claim of the form, “[p] grounds [q]”, we are licensed to conclude that [p] and [q] both exist; that [p] is more fundamental than [q] and that [q] is more derivative than [p], according to a sense of “(relatively) fundamental” and “derivative” that is defined directly in terms of grounding. In addition, we may infer from the grounding claim in question that the relation between [p] and [q] is similar to, but not identical to, causal determination, though the specific features that are attributed to grounding differ from account to account.

At the same time, when presented with a grounding claim of the form, “[p] grounds [q]”, we are left in the dark with respect to many other questions which ideally should be resolved by a sufficiently fine-grained approach to relative fundamentality. For example, we cannot infer from the grounding claim in question whether [q] can also be simultaneously grounded by some other fact, [r], of the same level of generality as [p], without resulting in an incompatibility. The grounding claim in question furthermore leaves open the following questions: whether [p] figures in a real definition for [q]; whether [q] is reducible to [p]; whether [p] is more or less general than [q]; whether [p] and [q] are a pair consisting of a non-representational and a representational entity of some sort; whether p entails q with logical necessity, with metaphysical necessity, or only with normative necessity; and whether there is some determinate mereological or set-theoretic relationship between the constituents of [p] and the constituents of [q]. In addition, the grounding claim in question does not settle for us whether [p] has as a constituent an entity which should be classified as more deserving of substance status than the entities which figure as constituents in [q] and, if so, to what specific explanatory factor such a difference in ontological status might be traced.

This evidence suggests that the grounding idiom lacks the requisite unity to tie together the collection of data which allegedly exhibit grounding connections under a single relation. Rather, we are led to believe that a variety of distinct specific relations are at work in these alleged cases of grounding, such as the genus/species relation, the determinable/determinate relation, truthmaking, and so on. These distinct specific relations and their relata all have **(p.341)** different philosophically interesting characteristics and hence should be studied separately. The grounding idiom also runs into trouble when we try to apply it to apparently non-factual, non-propositional cases, in particular those connections between the fundamental and the derivative to which the traditional substance/non-substance distinction is intended to give voice.

In order to arrive at a sufficiently fine-grained approach to relative fundamentality, I suggested above that we must instead recognize several distinct dimensions along which an entity, or a type of entity, may be classified as more or less deserving of substance status. According to such

an approach, when we ask in a particular case whether some entity, or type of entity, is more or less fundamental than another, we must always specify the particular respect in which something is to be categorized as more or less derivative than something else to which it is being compared. Currently available idioms of grounding do not reflect the various gradations of relative fundamentality and non-fundamentality I have distinguished: (i) whether an entity is essentially abstracted from something more complex; (ii) whether an entity is essentially constructed out of other entities; (iii) whether an entity is essentially the result of a creative act involving an intentional agent; or (iv) whether an entity exhibits a high or low degree of unity. Just as one and the same thing can be both good in some respects (e.g. dancing) and bad in others (e.g. playing basketball), one and the same entity, according to this multi-dimensional conception, can be both more fundamental than another in certain respects (e.g. its degree of unity) and less fundamental than another in others (e.g. its naturalness). It is only when we make room for multiple dimensions of fundamentality and non-fundamentality that we can do justice to the data that presents itself to the ontologist and meta-ontologist.²⁸

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Notes:

⁽¹⁾ See for example Audi (2012a), (2012b); Bennett (2011a), (2011b), (forth.); Correia and Schnieder (2012); Fine (2001), (2012); Jenkins (2011); Raven (2012); Rosen (2010); Schaffer (2009), (2010); Schnieder, Hoeltje, and Steinberg (2013); Trogon (2013).

⁽²⁾ Similar sentiments are also expressed in Wilson (2014). Although Wilson and I both reach the same conclusion, viz. that grounding is too coarse-grained to perform the metaphysical work for which it is intended, we arrive at this conclusion in different ways and I do not share all of the substantive commitments she makes along the way. In particular, I diverge from Wilson in the following three main respects. First, I do not follow Wilson in taking the relations she calls "small 'g' grounding relations" (e.g. parthood, composition, realization, constitution) themselves to be relations of metaphysical dependence. Rather, my own position is that these relations *induce* different varieties of metaphysical dependence in different circumstances and in different respects. Thus, in certain cases and in certain respects, the parts composing a whole may depend on the whole in question; and in certain cases and in certain respects, a whole may also depend on its parts. But we lose the ability to make these distinctions if we simply identify parthood itself as a relation of metaphysical dependence. Secondly, and relatedly, I depart from Wilson's position that absolute fundamentality together with her "small 'g' grounding relations" give us the apparatus sufficient to capture the *directionality* of relative fundamentality. Even if we assume an absolutely fundamental level as fixed, such relations as parthood can still induce metaphysical dependence relations going in both directions, both towards the absolutely fundamental and away from the absolutely fundamental. In order to capture the directionality of relative fundamentality, it is thus necessary to make room for the different varieties of metaphysical dependence, in addition to Wilson's "small 'g' grounding relations". Thirdly, I am not convinced that it is legitimate, from the perspective of a metaphysician, to assume an absolutely fundamental level as fixed. Like Rosen, I want to leave it open whether relative fundamentality turns out to be a well-founded relation. Wilson's and my own resistance towards the recent wave of enthusiasm about grounding should also be kept separate from the skeptical stance of others who object to the idioms of grounding, metaphysical priority, or metaphysical dependence on the grounds that they find these notions to be confused, unintelligible, incoherent, or redundant (e.g. Daly (2012), Hofweber (2009)).

⁽³⁾ Here I diverge from the approach to relative fundamentality taken by Bennett (2011a), (2011b), and (forth.), who considers construction, or what she calls "building operations", to be the primary vehicle that takes us from the more fundamental to the less fundamental.

⁽⁴⁾ In addition to the formal properties cited above, Schaffer would also appeal to what he considers to be paradigm cases of grounding, in order to differentiate grounding from other well-founded partial orderings which are numerically distinct from the grounding relation. However, given that I am not convinced that the alleged grounding connections are unified under a single relation, I am also unsure of what exactly would constitute a paradigm case of grounding. Since the alleged cases of grounding strike me as a heterogeneous collection, I cannot consider all of these phenomena equally to be paradigm cases exhibiting a single relation. Which then are we to accept as paradigm cases, which do we discard, and on the basis of what considerations?

⁽⁵⁾ Thus, some constraints on grounding (viz. well-foundedness) are also removed by Rosen, so that his notion of grounding does not end up being more restrictive than Schaffer's in every respect.

⁽⁶⁾ Since Rosen takes the relata of the grounding relation to be facts, (2.e)–(2.g), in their present form, do not obviously conform to Rosen's apparatus. For now, I will simply assume that we can view statements like that in (2.e), "The singleton set containing Socrates is grounded in its sole member, Socrates", as in some way elliptical for something which does fit with Rosen's factual approach to grounding, e.g. "The fact that the singleton set containing Socrates *exists* is grounded in the fact that its sole member, Socrates, *exists*". The issue of whether such existential paraphrases really do justice to what is going on in cases like (2.e)–(2.g), however, will take on some prominence below.

⁽⁷⁾ I want to be clear that I am currently only interested in the question of whether grounding presents us with a unified phenomenon. This question concerning the unity of grounding should be kept separate from some of the other qualms Rosen mentions in the passage quoted above which one might have about grounding, e.g. whether the notion is confused, incoherent, or unintelligible. I am happy to grant that some varieties of metaphysical priority or dependence are at issue in (2.a)–(2.g) and that such notions are coherent and intelligible, despite the fact that they are not reducible to modality, existence, counterfactual dependence, supervenience, realization, causation, identity, and the like. The question I am currently asking is whether all of the cases in (2), and whatever else grounding enthusiasts would subsume under the same rubric, present us with *a single unified* phenomenon. To be fair, Rosen's main focus in his paper is, I think, on putting to rest worries concerning the coherence and intelligibility of grounding and he is therefore less explicitly concerned with establishing the unity of grounding. After all, if one thought that the idiom of grounding was not even coherent or intelligible, then of course the question of whether alleged grounding connections present us with a unified phenomenon would not even arise.

⁽⁸⁾ Schaffer has since informed me (personal communication) that, from among the three interpretations listed above, he feels most drawn to the single-genus interpretation.

⁽⁹⁾ As I indicated in an earlier note, since I take it to be itself a controversial matter what constitutes a paradigm case of grounding, an appeal to alleged paradigm cases does not yet help me in singling out even a unique generic notion among the possible contenders which satisfy the formal properties of a well-founded partial ordering.

(¹⁰) I suppose it is still left open by what has just been said that grounding might be a determinable relation (on analogy with the property of being red) of which the genus/species relation is a determinate (on analogy with the property of being crimson). I suspect, however, that Rosen would find this idea unattractive, since grounding would then turn out to be a less fundamental phenomenon than its determinate manifestations, e.g. the genus/species relation, just as he would regard something's being red as a less fundamental fact than its being crimson, given that the determinable fact is supposed to be grounded in the determinate fact.

(¹¹) Since the scope of Audi's grounding relation is narrower than that of Rosen's, Audi can also accept certain additional constraints on grounding which would be incompatible with Rosen's framework. In particular, because Audi does not recognize the logical cases, e.g. (2.c), as exhibiting genuine grounding connections, he is able to accept a constraint he calls "Minimality", according to which the grounds for some fact must be jointly, but not individually, sufficient to bring about the fact in question. Minimality would be violated by a disjunctive fact, $[p \vee q]$, which obtains in virtue of both of its constituent facts, $[p]$ and $[q]$, obtaining, since $[p]$ individually and $[q]$ individually are already sufficient to make it the case that the disjunctive fact, $[p \vee q]$, obtains.

(¹²) Like Schaffer and Rosen, Audi also takes grounding to be a primitive, and hence indefinable, relation. Thus, Essential Connectedness is not supposed to contribute to a definition of grounding, but merely to help elucidate grounding by pointing to one of its characteristics. Audi also denies that all cases of grounding are themselves grounded; that is, one cannot always expect to be able to ground a grounding claim by appealing to Essential Connectedness.

(¹³) It should be noted that Audi is aware of this objection to his account and addresses it in Section IV.5 of his paper. In his response, Audi attempts to make a case for thinking that the difference just pointed to originates from a difference in the relata in question, and not from a difference in the relations. In his view, the fact that a lie was told is a full ground only of the act's prima facie wrongness and merely a partial ground of the act's all-things-considered wrongness (Audi 2012b, p. 703). However, the very fact that such a maneuver is required in the moral/natural case, but not in the determinable/determinate case, strikes me as further evidence that there is a difference in "how the determination works", and not just a difference in the nature of the relata. If this is right, then we would have encountered one more reason in favor of positing distinct relations in the different alleged cases of grounding. But there is obviously more to be said about the details of the moral/natural case and I do not take these very complex issues to have been settled by my very brief remarks.

(¹⁴) See for example Simons (1998) for helpful discussion of the substance/non-substance distinction, and an interestingly skeptical attitude towards it.

(¹⁵) We have already encountered (4.b) and (4.g) in the form of (2.e) and (2.f), in connection with Schaffer's category-neutral grounding relation.

(¹⁶) I am thinking here of non-reductive trope theorists in the Aristotelian tradition (e.g. Edmund Husserl, Roman Ingarden, Jonathan Lowe), who take tropes (moments, modes) to be less fundamental than the concrete particular objects which are their bearers. In contrast, reductive trope-theorists in the nominalist, empiricist, Humean tradition (such as Keith Campbell, C. B.

Martin, and D. C. Williams) take tropes to be more fundamental than the concrete particular objects which are their bearers; these philosophers would want to place tropes in (3), rather than (4). For more on this dispute, see Koslicki (forth. b).

(¹⁷) Since Schaffer's grounding relation is category-neutral, his account does not require us to understand the noun-phrases flanking "grounds" as elliptical for something that could be expressed by means of a declarative sentence. However, for reasons noted above, Schaffer's account is, if anything, even more liable than Rosen's or Audi's to leave us feeling perplexed as to what exactly we are supposed to have been told about the relationship between a grounded entity and its ground.

(¹⁸) Audi, for one, would not want to sign on to the existential paraphrase strategy, since he denies that existence is a genuine property. Thus, a statement like "Boundaries exist", in Audi's view, fails to denote a fact, since it does not attribute a genuine property to an object or objects. But Audi's resistance to the existential paraphrase strategy puts him in the minority among grounding enthusiasts. In the next section, I turn to an alternative strategy for how grounding theorists might deal with non-factual cases such as those in (3) and (4) which is more amenable to Audi's approach to grounding.

(¹⁹) The possibility just described should be regarded as more than a purely hypothetical scenario for those who are sympathetic both to trope-theory and to essentialism. For from the perspective of a trope theorist, a predication of the form "a is essentially F" would have to be analyzed as involving an F-ness trope whose presence in its bearer (viz. the object, a, in question) is essential to that bearer. Suppose for example the property of being human is essential to Socrates; then, according to a trope-theoretic framework, a particular humanity trope inheres in Socrates and, by hypothesis, it does so essentially. Now consider the following two grounding claims: "Socrates' existence is grounded in the existence of his humanity trope" and "The existence of Socrates' humanity trope is grounded in Socrates' existence". If the grounding theorist wishes to accept only the latter but not the former of these statements, nothing that has been said up to this point concerning the idiom of grounding explains this preference.

(²⁰) See also Koslicki (2013a) for arguments against existential construals of ontological dependence which apply to the existential paraphrases in (5) as well.

(²¹) In addition to the weaknesses I point to below, this proposed definition of relative fundamentality for non-factual entities in terms of relative fundamentality for facts may also be problematic for other reasons. For example, it might be possible that certain facts about a are grounded in certain facts about b, while nevertheless certain facts about b are grounded in certain facts about a. A scenario of this sort would lead to a situation in which a is classified both as more fundamental and as less fundamental than b, according to a single notion of relative fundamentality. (Thanks to Jonathan Schaffer for raising this point.)

(²²) A suggestion along these lines is also roughly what Audi seems to have in mind, when he proposes that we apply his approach to grounding to cases involving constitution or composition by noting for example that a fact like [x is a statue] might be grounded in [x is clay of a certain shape] or [the ys are arranged in a certain way] (cf. Audi (2012b, p. 701). Since Audi does not

believe in existential facts at all, however, both relata of the alleged grounding connections in question would have to be nonexistential facts.

(²³) Although the language of “focusing”, or “gaining a partial or complete perspective on something” sounds epistemic, I intend (i) and (ii) to be understood as aiming at the metaphysical conditions underlying these epistemic contrasts.

(²⁴) Bennett (2011a), (2011b), (forth.), in her account of relative fundamentality, focuses exclusively on what she calls “building relations”. And while it might seem as though Bennett’s “building relations” only include what falls under my rubric of construction, her approach might in fact be sufficiently broad to encompass some of my other dimensions of non-fundamentality, in particular abstraction and possibly even artificiality. As I indicate in the text, I do take construction operations to induce a certain kind of non-fundamentality, but these operations point to only one, among several, important dimensions of non-fundamentality. We would not have succeeded in painting a complete picture of non-fundamentality, if we restricted ourselves solely to the idea that some entities are constructed out of others by means of some construction operation.

(²⁵) Some theists hold that everything other than God is created by God, an intentional agent, and hence that everything other than God counts as artificial by the lights of (iii). I have in mind a notion of artificiality which would allow for example for a contrast between a tree (a natural organism) and a computer (an artifact created by human intentional agents), even though for the theist both the tree and the computer would count as being part of the created world.

(²⁶) There are extensive bodies of literature (too extensive to cite here) relevant to the distinction between what is natural and what is artificial, i.e. the result of acts of creation involving intentional agents. The nature of intentional objects (e.g. the Gorgon that Perseus seeks) has been one of the main topics of interest since the early days of analytic philosophy. An entire subfield of philosophy (aesthetics) is devoted to the study of artworks. Artifacts have perhaps not received as much attention from philosophers as they deserve, at least in the last hundred years or so; but see, for example, Evnine (2014); Ingarden (1960), (1965); Margolis and Laurence (2007); Thomasson (2003), (2009).

(²⁷) The notion of ontological dependence might strike us as more helpful than that of grounding in capturing the sorts of distinctions between the more fundamental and the less fundamental, or the absolutely fundamental and the non-fundamental, to which the traditional substance/non-substance distinction is intended to give voice. For example, Kit Fine and Jonathan Lowe both define notions of ontological dependence which they take to be adequate for the purposes of formulating a criterion of substancehood (see Fine (1995); Lowe (1994), (2005), (2012), (2013)). I discuss these definitions of ontological dependence and the attempt to formulate a criterion of substancehood in terms of them in more detail in other work (see especially Koslicki (2012a), (2013a), (2013b)). I argue that these definitions of ontological dependence are also still too coarse-grained to do justice to the full range of phenomena illustrated in (3) and (4), since they do not take into account the different dimensions along which an entity can be classified as relatively fundamental or derivative.

(²⁸) Some of the research for this paper was conducted while I held the 2012–2013 Alvin Plantinga Fellowship at University of Notre Dame’s Center for Philosophy of Religion. I am very grateful to the Center’s co-directors, Mike Rea and Sam Newlands, for providing me with the opportunity to spend a year in this stimulating environment, and to the Templeton Foundation for its financial support. The Center for Philosophy of Religion as well as the Notre Dame philosophical community at large proved to be an excellent sounding board for my developing ideas on grounding, ontological dependence, fundamentality, and substancehood. This paper was presented at the University of Oklahoma in the Fall of 2013 and at an Invited Symposium on Grounding, held at the American Philosophical Association Central Division meeting in Chicago in February 2014. I would like to thank members of the audience at both places for their interesting feedback and especially my cosymposiasts, Jonathan Schaffer and Kelly Trogdon, for a very engaging discussion. While working on this paper, I received excellent detailed comments from both Jonathan Schaffer and Paul Audi, which helped me understand their views much better than I otherwise would have. Finally, I benefited greatly from discussing this material with the members of the 2013 Metaphysics Summer Reading Group held in Boulder, especially Rebecca Chan, Michaela McSweeney, and Noel Saenz.



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