Grounding Pluralism

by

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ABSTRACT

My dissertation consists of a series of papers on *grounding pluralism*, the broad view that there are multiple kinds of metaphysical grounding relations. Specifically, I argue that there are three species of grounding: why-grounding (which tells us why things are the case), how-grounding (which tells us how things are the case), and what-grounding (which tells us what it is for things to be the case). I call the resulting view *wh-pluralism*. I show how wh-pluralism can resolve various debates within metaphysics.

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Contents

Dissertation Summary

My dissertation consists of a series of papers on *grounding pluralism*, the broad view that there are multiple kinds of metaphysical grounding relations. Specifically, I argue that there are three species of grounding: why-grounding (which tells us why things are the case), how-grounding (which tells us how things are the case), and what-grounding (which tells us what it is for things to be the case). I call the resulting view *wh-pluralism*. I use wh-pluralism to resolve debates within metaphysics.

In "No Work for a Theory of Small-G Grounding," I argue against the standard account of grounding pluralism: small-g pluralism. According to the small-g pluralist, there are multiple basic grounding relations, where those relations are familiar dependencies like causation, composition, constitution, emergence, and so on. I argue that small-g pluralism is either an eliminativist theory of grounding or it does not account for what most grounding theorists are talking about.

In "Grounding Pluralism: Why and How," I use wh-pluralism to explain a debate about the transitivity of grounding. Grounding is thought to be transitive in the sense that: if ϕ grounds ψ, and ψ grounds χ, then ϕ grounds χ. Some accept this principle, a small minority reject it on the basis of counterexamples, and an even smaller minority think there are two kinds of grounding at work. I clarify and defend the super-minority view. I argue that there are two kinds of grounding at work here: why-grounding and how-grounding.

In "Grounding is Necessary and Contingent," I use pluralism to explain a debate about the necessity of grounding. It is common to think that, if ϕ grounds ψ, then necessarily: if ϕ, then ψ. Though most accept this principle, some give counterexamples to necessitation. Instead of straightforwardly arguing for, or against, necessity, I explain the sense in which grounding is necessary and contingent. I argue that there are two kinds of grounding: what-grounding and why-grounding, where the former kind is necessary while the latter is contingent.

Chapter 1

No Work for a Theory of Small-G Grounding

1.1 Introduction

The friends of metaphysical grounding divide into two camps. *Grounding monists* think that, when we talk about what grounds what, we refer to a single grounding relation.[1] *Grounding pluralists* think that grounding-talk refers to different grounding relations at different contexts.[2] Monism is the orthodox view. Pluralism is the heterodox alternative.

Pluralists are often motivated by the thought that a monolithic grounding relation would be too coarse-grained to be explanatory.[3] For example, it doesn't help to learn that physicalism is the thesis that the mental facts are grounded in the physical facts; for grounding to be explanatory, we need a more specific account of how or why the mental facts are grounded in physical facts.

One way to give a fine-grained account of grounding is to posit multiple grounding relations. Wilson (2014) has argued that the grounding relations are composition, constitution, realization, emergence, and other familiar dependencies. Call these more specific grounding relations

[1]For the general monist view, see: Rosen 2010; Schaffer 2009; Audi 2012; Leuenberger 2014; Skiles 2015; Raven 2013; Berker 2017.

[2]The following have all suggested pluralist views of grounding: Wilson 2014; Koslicki 2015; Fine 2012a; Schaffer 2016b; Cameron 2015; Griffith 2014; Rettler 2017.

[3]Koslicki (2015) and Wilson (2014) give the most extensive versions of this critique.

small-g grounding relations, in contrast to the generic *big-G* grounding relation posited by monists. Call this general view *small-g pluralism*. It is the most popular form of grounding pluralism.[4]

Unlike most critics of small-g pluralism, I'm sympathetic with the critique of grounding monism, as well as the move to grounding pluralism.[5] However, I don't think small-g pluralism is the right pluralist theory.

In this paper, I'll argue that small-g pluralism is no more explanatory than the monism it attempts to replace. The theory is either a skeptical account of grounding or an account of a broader notion like metaphysical building.[6]

I will proceed as follows. In §1.2, I motivate small-g pluralism; I reconstruct the argument that small-g grounding relations are explanatory, unlike big-G grounding. In §1.3, I characterize the basic commitments of small-g pluralist theories. In §1.4 and §1.5, I consider two versions of small-g pluralism and argue that they fail to be explanatory. In §1.6, I speculate about where small-g pluralists went wrong and I briefly sketch an alternative pluralist theory.

1.2 Motivating Small-g Pluralism

Small-g pluralism emerges as a response to the inadequacy of monism. To motivate small-g pluralism, then, I will reconstruct the main small-g pluralist argument again monism.

Consider the following claims.

- LOGICAL: It's true that people exist or unicorns exist *because* it's true that people exist
- MORAL: An act x is right *in virtue of* the fact that it promotes happiness
- NATURAL: *What it is* for x to be water is for x to be H20

[4]The following can be considered small-g pluralists: Wilson 2014; Rettler 2017; Griffith 2014; Koslicki 2015.

[5]For critics of small-g pluralism who reject pluralism *simpliciter* or the granularity objection to monism, see: Schaffer 2016a; Raven 2012; Cameron 2016; Berker 2017.

[6]For the notion of building, see Bennett (2011).

- METAPHYSICAL: Individuals *reduce to* bundles of properties
- TRUTHMAKING: The proposition p is true *because* the fact that p obtains
- MIXED: The singleton set containing Socrates *metaphysically depends on* Socrates himself

On the one hand, these claims differ. They have different subject matters—logical, moral, natural, etc. They also use different locutions to express explanatory dependence—"because," "in virtue of," "reduces to," etc.

On the other hand, these claims are similar. They all appear to express a kind of dependence between one fact (or collection of facts), and another fact (or collection of facts).

The grounding monist accounts for similarity by taking each of these claims to express a single grounding relation. The difference between what is said, in each case, only concerns the relata of this relation.

According to the monist, we can give more perspicuous truth conditions for each claim. Take grounding to be a relation between objects, properties, or facts.[7] Read $\psi \prec / < \phi$ as: ψ is partially/fully grounded by ϕ. Read $[p]$ as: the fact that p. Then the monist thinks the previous claims may be regimented as follows:

- LOGICAL^M: [It's true that people exist or unicorns exist] < [It's true that people exist]
- MORAL^M: For any right act x, [x is a right act] $\prec$ [x promotes happiness]
- NATURAL^M: The kind *water* < the kind *H20*
- METAPHYSICAL^M: For any individual i, there exists some mereological sum of properties s such that: $i < s$
- TRUTH^M: [The proposition p is true] < [p obtains]

[7] Grounding doesn't have to be a relation, but this is the simplest and most common approach. For views where there is grounding-talk but not a grounding relation, see: Fine 2001, 2012a; Correia 2010.

- MIXED^M: {Socrates} < Socrates

You might disagree about the details of this account. For example, you might think some of the previous claims are better formulated in terms of essence or identity. Nonetheless, the basic idea should be clear: we can get rid of the inconsistent phrasing and ambiguity of a class of dependence claims by clarifying what is common to each claim—the grounding relation. We take the different dependence claims to refer to partial or full grounding between facts, objects, properties, etc.

One major objection to monism is that a single grounding relation is too coarse-grained to be explanatory. Wilson (2014, p. 559) writes:

> [Suppose] someone claims that the mental is Grounded in the physical. Am I in position to know whether I should agree with them? Not at all. ... the bare assertion of Grounding is compatible with both reductive and non-reductive versions of physicalism—indeed, perhaps even with anti-realist eliminativism about the mental. Absent further information about the specific grounding relation(s) supposed to be at issue, I am stuck: I am not in position to assess, much less endorse, the claim that the mental is Grounded in—is metaphysically dependent on, nothing over and above—the physical.

Koslicki (2015, p. 340) makes the same point, writing:

> [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.

According to Wilson, Big-G grounding is coarse-grained because it leaves open questions about metaphysical dependence that it, intuitively, should not.[8] Suppose the mental facts are grounded in the physical facts. Is it true that...

- ... the mental facts reduce to the physical facts?
- ... the physical facts are fundamental?

[8] Wilson (2014, pp.542-548).

- ... the mental facts are causally efficacious?
- ... the mental facts emerge from the physical facts?
- ... the mental facts really exist?

These questions (among others) are basic questions relevant to metaphysical dependence. Wilson (2014, p. 545) says these questions "*must be answered* to gain even basic illumination about or allow even basic assessment of claims of metaphysical dependence."

Big-G grounding, by itself, provides no answers to these questions. This is a problem if we think, as most do, that grounding is an explanatory relation, where grounding is *explanatory* iff: if ϕ grounds ψ, then ϕ metaphysically explains ψ.[9] If Grounding is tied to metaphysical explanation, how could it leave so many of these questions open? Big-G grounding tells us that one thing metaphysically depends on another, but it tells us almost nothing about how or why one depends on the other.

Big-G grounding does close some questions, but the answers to these questions fail to distinguish Grounding from other kinds of dependence. The standard properties of Grounding—e.g., irreflexivity, asymmetry, transitivity—fail to distinguish Grounding from other forms of metaphysical dependence. For example, causation is (arguably) irreflexive, asymmetric, and transitive, but it isn't Grounding.

We have a problem. If Grounding is explanatory, it should answer basic questions relevant to metaphysical dependence. Big-G grounding can't do this. It can only gesture toward metaphysical dependence of some sort or other. Big-G grounding is too coarse-grained to be explanatory, and if big-G grounding isn't explanatory, there is no work for big-G grounding to do. Call this the *granularity argument*.

The most contentious aspect of this argument concerns "the basic questions of metaphysical dependence." What are they? Why should we think questions of reduction and causation are among them? And why

[9]For a sample of grounding theorists who subscribe to the grounding-explanation link, see: Schaffer 2009, 2016b; Fine 2012a; deRosset 2013a; Litland 2013; Dasgupta 2014a. For extensive discussions of the grounding-explanation link, see: Schaffer 2016b; Kovacs 2016; Thompson 2016.

does grounding itself have to settle them? It's unclear how Wilson (2014) understands the demand for fine-grainedness.[10]

A less contentious version of the granularity argument doesn't make claims about the "basic questions of metaphysical dependence." I will try to construct such an argument. It may not correspond to what Wilson or Koslicki had in mind, but it will be in the neighborhood of the original argument.

The first premise of the argument is: if big-G grounding exists, it's explanatory. To better understand this premise, we need to know more about what explanation is supposed to be.

I propose we think of an explanation as an answer to a question. I ask, "Why did you eat my cake?" The short answer is: "Because it was delicious." The long answer is: "I ate the cake because it was delicious." Officially, an explanation is a long answer. Answers are truths, so explanations are explanatory truths (as opposed to acts of explanation or worldly things).

A grounding explanation, then, is an explanatory truth, where an explanatory truth is a long answer to some question. Say that big-G grounding is explanatory if it backs (or makes true) a grounding explanation. For example, suppose it's true that donating to charity is right because it promotes happiness. Then the fact that the act of donating to charity promotes happiness big-G grounds the fact that it is right.

The big picture view is that an explanatory truth is backed by a grounding relation. Since there is only one grounding relation, according to the monist, that relation is Grounding.

The second premise of the argument is: if Grounding is explanatory, it must be fine-grained. The third premise is: big-G grounding isn't fine-grained. Wilson understands fine-grainedness in terms of answering "basic questions of dependence," but this raises difficult issues about what counts as such a question.

My framework allows us to think of it in a different way. Fine-grainedness simply means that there has to be a distinct sort of explanation that Grounding backs.

An analogy can help illustrate this point. Imagine someone posited

[10]For this criticism, see Berker (2017) and Schaffer (2016a, p. 148, fn. 30).

a new relation—the Priority relation. Suppose we are told the structural properties of this relation; namely, that it is asymmetric and transitive. We are then given a few examples. Disjuncts are prior to disjunctions. Table-parts are prior to tables. Finally, we are told that Priority is an explanatory relation.

Intuitively, the fact that something is prior, in some sense, to another thing, isn't explanatory. There are multiple notions of priority in the area—conceptual, compositional, causal, temporal, etc. For priority to be explanatory, we need to be told which of these we are talking about. Similarly, the fact that one thing grounds, in some sense or other, another thing, isn't explanatory. Or so says the pluralist.

The monist notion of Grounding is analogous to the broad notion of Priority. The basic problem is that both notions gesture in the direction of an explanatory relation, but they do not identify specific explanatory relations themselves. Just as we need to decide on a particular kind of priority to back priority explanations (as opposed to simply asserting that such explanations exist), we need to decide on a particular type of grounding to back grounding explanations.

The two conclusions of the argument are: (*i*) big-G grounding isn't explanatory, and (*ii*) big-G grounding doesn't exist. The former is true because Grounding isn't fine-grained. The latter is true because, if Grounding did exist, it'd be explanatory.

Metaphysicians debate the merits of the granularity argument. I won't go into more detail here. My main goal is to show that this argument motivates an alternative account of grounding claims.

The story goes like this: instead of being satisfied with a general notion that alludes to some explanatory relation or other, why not appeal directly to those specific explanatory relations? In the case of metaphysical dependence, those relations appear to be familiar dependencies like realization, constitution, composition, and so on.

Wilson (2014, p. 539) calls these relations *small-g* grounding relations; for her, the set of such relations includes "type identity, token-but-not-type identity, functional realization, the classical mereological part-whole relation, the causal composition relation, the set membership relation, the proper subset relation, and the determinable-determinate relation,

among others." These more specific relations will answer the the questions that big-G grounding fails to answer. Small-g grounding gives a more perspicuous representation of the informal dependence claims we make.

On the resulting view, we "take the idioms of metaphysical dependence ('in virtue of', 'nothing over and above', 'grounded in') to be schematic placeholders for *specific metaphysical relations*... that we have independent reason to accept, and which serve, against the backdrop of some presumed more fundamental base, to characterize diverse forms of metaphysical dependence in a genuinely explanatory and illuminating way" (Wilson, 2014, p. 539). Grounding-talk is just a schematic way of referring to the relevant metaphysical relations at an explanatory context.

For a clear application of the idea, consider the following pluralist paraphrases of the grounding claims we started with.

- LOGICAL^P: The truth that people exist or unicorns exist *is relevantly entailed by* the truth that people exist
- MORAL^P: For any right act, the *objective reason why* it's right is the fact that it promotes happiness
- NATURAL^P: Water *is essentially* H20
- METAPHYSICAL^P: Every individual is *fully composed of* properties
- TRUTHMAKING^P: The proposition ϕ is *made true by* the fact that ϕ
- MIXED^P: The singleton set containing Socrates *essentially depends on* Socrates himself

These paraphrases wipe away all traces of a general grounding relation. In its stead, you have specific, more familiar relations. The thought it is that the move from Grounding to, say, essence, entailment, and truthmaking, marks an explanatory advance because explanations are answers to questions—for instance, why-questions—and Grounding is too unspecific to answer such questions.

Call this broad view *small-g pluralism*. It's the most popular version of grounding pluralism.[11] This kind of pluralism is attractive to those who think big-G grounding is not explanatory. Small-g pluralism purports to give us a more metaphysically perspicuous rendering of grounding-talk, and it does so by appealing to specific dependence relations like realization, composition, and causation.

In what follows, we will get clearer about the thesis of small-g pluralism.

1.3 The Structure of Small-G Pluralism

What, exactly, is small-g pluralism?

Narrowly construed, small-g pluralism is a view developed by Wilson (2014) in the course of her multipronged attack on big-G grounding. Wilson identifies a specific class of small-g relations and argues that those relations (plus fundamentality) are genuinely explanatory, and more explanatory than big-G grounding.

Broadly construed, small-g pluralism is a family of views that includes Wilson (2014)'s view as a special case, but also includes the pluralist views of Rettler (2017), Griffith (2014), and Koslicki (2015). The broad conception excludes monist views—though this gets complicated, as we'll soon see—and pluralist views that don't appeal to small-g grounding relations (like Fine (2012a)'s theory of normative, natural, and metaphysical grounding).

I will focus on the broad conception of small-g pluralism, for two reasons.

First: Wilson's small-g pluralism isn't clearly a positive theory of grounding. In both places where Wilson discusses her view,[12] it's unclear whether she is offering an alternative account of grounding or whether she is actually a full-blown grounding skeptic. Some have interpreted

[11] The following have all suggested pluralist views of grounding: Wilson 2014; Koslicki 2015; Fine 2012a; Schaffer 2016b; Cameron 2015; Griffith 2014; Rettler 2017. Of these proposals, only Cameron (2015) and Rettler (2017) are fully worked out defenses of pluralism.

[12] See Wilson (2014) and Wilson (2016b).

her as a friend of grounding,[13] but I don't want my discussion to depend on this hermeneutic point. I will be concerned with pluralist views *in the neighborhood* of what Wilson actually says.

Second: my critique of small-g pluralism doesn't depend on the details of Wilson's theory. The problem isn't that Wilson gets the set of small-g relations wrong, or that her class of small-g relations is too disunified.[14] As I will argue, all small-g pluralist theories have a common structural problem: namely, that they are not theories of grounding but, at best, theories of something more expansive and heterogeneous.

Because I will be working with the broad conception of pluralism, I need to outline the structure of the small-g pluralist view. It consists of three claims.

> SEMANTIC PLURALISM: "Grounds" can refer to different grounding relations.
>
> RELATIONAL PLURALISM: There are multiple grounding relations.
>
> SMALL-G GROUNDING: The only grounding relations are familiar relations like composition, constitution, and so on, or some combination thereof.

I will unpack each thesis in turn.

Semantic pluralism is the view that the grounding idiom is either ambiguous, polysemous, or context-sensitive. By "the grounding idiom," I mean: the term "grounds" and similar phrases—"in virtue of," "metaphysically depends on,"—as used in the context of self-consciously ground-theoretic investigations. I make this simplifying assumption because the grounding theorist does not seek to account for *every* use of the terms "in virtue of," "metaphysically depends on," etc, in past and present metaphysics.

It is sometimes suggested that pluralists think "grounds" is ambiguous.[15] I don't think this is a promising position. "Grounds" is not semantically ambiguous at all, assuming we take "bank" (river versus financial

[13] See Schaffer (2016a) and Rettler (2017).

[14] This is one major difference between my critique of small-g pluralism and that of Berker (2017) and Cameron (2016).

[15] Correia and Schnieder (2012) say that pluralists "[hold] that several very diverse

institution) as our paradigm case. The different utterances of "grounds" have *something* in common.

Semantic pluralism is better understood in terms of context-sensitivity. The view is that each grounding sentence expresses a single context-sensitive content. We might write the truth conditions as follows.

> "ϕ grounds ψ" is true at a context c iff the small-g relation R dictated by c is such that $\phi R \psi$.

Each context supplies a specific small-g relation. Grounding-talk simply refers to that relation. The truth conditions of grounding claims will differ from case to case, but the difference is relatively innocent. This is context-sensitivity, not ambiguity or polysemy.

Contextualism precisifies Wilson (2014, p. 557)'s suggestion that 'references to 'Grounding', 'a grounding relation', or 'nothing over and aboveness' are schematically and neutrally ranging over specific 'small-g' grounding relations." With this in mind, let's move on the second central thesis of small-g pluralism.

Relational pluralism is the view that there are multiple grounding relations. There are stronger and weaker versions of this thesis.

On the strong version, there is no big-G grounding relation that unifies the small-g relations. It's easiest to think of this view as a *disjunctivist* theory of grounding. Big-G grounding is a disjunctive composite of small-g grounding relations. For this reason, there is no deep unity among small-g relations.

On the weak version, small-g grounding relations are species, determinates, or realizers of big-G grounding. The most developed version of this view is *functionalism* about Grounding.[16] Big-G grounding exists as a functional kind. Small-g relations are whatever relations play the grounding role.

The difference between strong and weak pluralism is the difference between a single internally divided phenomenon and multiple funda-

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phenomena and notions are inadequately garbled together under the title 'grounding"' (p. 35). Trogdon (2013b) and Tahko (2013) describe pluralism as the view that "grounds" is equivocal.

[16]Rettler (2017) gives a formulation of this view.

mentally distinct phenomena.[17] Later, I will further characterize both versions of the view. For now, however, I should describe the final structural element of small-g pluralism.

Small-g grounding relations constitute a class of dependence relations that are familiar to us *qua* metaphysicians. Note that I do not take "small-g grounding" to be a generic name for the different kinds of grounding relations. As I use the term, you can think there are multiple grounding relations without thinking those relations are small-g relations.

For now, I will ignore the question of how membership in the class of small-g relations is determined. The answer to that question depends on how one cashes out relational pluralism. Instead, I will provide a list of possible candidates for small-g grounding-hood, along with the persons nominating them for candidacy.[18]

- Realization (Wilson, 2014; Bennett, 2011; Griffith, 2017)
- Mereological composition (Wilson, 2014; Bennett, 2011)
- Set membership (Wilson, 2014; Bennett, 2011)
- Determinable-determinate relation (Wilson, 2014)
- Ontological dependence (Rettler, 2017)
- Truthmaking (Rettler, 2017; Griffith, 2014; Bennett, 2011)
- Reduction (Rettler, 2017)
- Emergence (Bennett, 2011)

This is an abridged list. The current list has the shape it does because (*a*) it describes, by my lights, the most plausible instances of small-g grounding, (*b*) it represents the diversity of relations that metaphysicians have proposed for candidacy, and (*c*) it captures how much overlap exists between the lists of small-g grounding theorists.

[17] Alethic pluralists make a similar distinction. See Wright (2005).

[18] I have included Bennett (2011) as proposing small-g relations here, but this isn't precise. Bennett is a pluralist about *building relations*, not grounding relations. Nonetheless, her building relations are plausible instances of small-g grounding, if such a thing exists.

Now let's take a step back. I have described three theses that collectively define small-g pluralism: SEMANTIC PLURALISM, RELATIONAL PLURALISM, and SMALL-G GROUNDING. I have defined small-g pluralism in this way because it presents the basic structure for solving the problem that small-g pluralists are trying to solve.

Recall that the problem was supposed to be that grounding, by itself, isn't explanatory. For it to be explanatory, it needs to answer basic questions about how or why things are grounded. This information is found in the more familiar, more fine-grained, small-g grounding relations.

For example, suppose we say that mental properties are grounded in physical properties, where "grounds" refers to realization. Since realization is typically understood as a non-reductive dependence, we know that grounding, here, entails non-reduction. This is informative.

Realization is informative in the sense that it specifies the way in which (or the reason why) things are grounded in other things. The physical properties ground the mental properties by way of realizing them. Or the physical properties ground the mental properties because the former realize the latter. More generally, there are constraints on realization (concerning the relata and conditions of realization) that specify how or why things depends on one another (above and beyond the fact of their dependence). Other small-g relations are similarly informative.

We then recover the intelligibility and aptness of grounding-talk by taking such talk to be schematic. The talk is meaningful, and not confused, because "grounds" refers to different grounding relations at different contexts.

I have described the basic architecture of small-g pluralism. On my view, small-g pluralist theories are committed to multiple grounding relations (RELATIONAL PLURALISM), the context-sensitivity of grounding-talk (SEMANTIC PLURALISM), and small-g grounding relations (SMALL-G GROUNDING). Next, I will consider two versions of small-g pluralism and argue that, on both versions, small-g grounding fails to be explanatory.

1.4 Small-G Pluralism: Strong Version

How disunified could grounding could be? Here's one answer: there is nothing common to the different small-g grounding relations that makes them *grounding* relations; instead, there is only a mosaic of unconnected small-g relations.

This is the *strong* version of small-g pluralism. It is strong in the sense that it makes grounding strongly disunified. On more unified views, big-G grounding is a genus, determinable, or functional role and small-g grounding relations are species, determinates, or realizers. In contrast, strong pluralism is uncompromising in its commitment to disunity.

This version of small-g pluralism is closest to the pluralism espoused by Wilson (2014), which has been criticized for the extreme amount of disunity is posits.

Rettler (2017) puts the objection like this.

> [If] we replaced every occurrence in [Wilson's] paper of 'grounding relation' with a disjunction of the grounding relations - 'type or token identity, functional realization, classical mereological parthood, set membership, the proper subset relation, and the determinable/determinate relation' - the reader would be unsatisfied. We'd be left with questions like, 'why did those relations make the list?,' 'what unifies these relations?,' 'should we add more relations to this list?,' and the like.

Without appealing to big-G grounding, the strong small-g pluralist has no way of specifying the class of small-g relations. We are given an open-ended list, but we aren't give a systematic guide to determining which relations belong on the list. This is unsatisfying.

The dissatisfaction might have different sources. On one reading, the dissatisfaction is epistemic. We simply don't know what all the small-g grounding relations are, and we don't know what makes something a small-g relation.

That can't be right, however. I don't know what makes something the color red, and I can only give you an open-ended list of red things

to elucidate the concept red. Nonetheless, there's nothing especially unsatisfying about this state of affairs. This is the case for most concepts, I would think.

The real problem is not that we don't *know* what makes something a small-g relation, but that the strong pluralist doesn't seem to think there is anything that makes something a small-g relation. The small-g pluralist appears utterly unconcerned about the existence of a metaphysical principle that unifies the class of small-g relations.

Call this the *metaphysical selection problem.* This problem is a common knee-jerk response to strong pluralism. However, I don't think the selection problem, in its current form, is enough to cast doubt on the view. If disjunctivism about properties is an intelligible position, strong pluralism doesn't have a metaphysical selection problem.

Think of strong pluralism as a disjunctivist theory of small-g grounding. The disjunctivist thinks that, insofar as big-G grounding exists, it is a disjunctive kind defined by the class of small-g grounding relations. So ϕ *Grounds* ψ just in case $\phi R_1 \psi \vee \phi R_2 \psi \vee \ldots \vee \phi R_n \psi$, where each R is a relation like *causally-composes, is-more-fundamental-than,* and so on.[19]

Disjunctivism generally makes sense as kind of analysis. The disjunctivist about pain thinks pain is a disjunctive property consisting of various physical states. The disjunctivist about grue thinks that grue is the disjunctive property of being green and observed before t. What's wrong, then, with disjunctivism about big-G grounding?

It can't be that it's hard to characterize the class of small-g relations. This is exactly what disjunctivism predicts! It's difficult to describe the list of small-g relations because the relevant category—Grounding—is an unnatural one. It's hard to say what counts as a grounding relation for the same reason that it's hard to say what counts as a cupcake.

Just are there might not be a metaphysical principle that determines what makes something a cupcake, there might not be a principle that determines what makes something a grounding relation. The disjunctivist doesn't doubt that there are particular cupcakes and grounding relations. She just doubts their unity (with respect to there being natural categories of Cupcake and Grounding).

[19]For the sake of simplicity, I assume the disjunction is finite.

Overall, it's unclear why there must be a metaphysical principle that unites the small-g relations. For this reason, I I don't think there is a genuine metaphysical selection problem. However, I do think there's another problem in the same neighborhood.

The new problem concerns how grounding relations are semantically selected at contexts. On the small-g account, "grounds" selects different small-g grounding relations at different contexts. But there doesn't seem to be a principled semantic basis for this selection.

Without appealing to big-G grounding, the strong small-g grounding theorist has no way to give determinate content to grounding claims (and the concept of grounding). I call this the *semantic selection problem*.

A theory of grounding should be minimally informative about what grounding claims mean. It need not give a full semantics or conceptual analysis of "grounds." We only need a minimal guide to the application of the term. My claim is that strong small-g pluralism, at least when conceived as a disjunctivist theory, cannot deliver such a guide.

An example will illustrate this. Suppose you say that the mental properties are grounded in the physical properties. Should I agree with you or disagree? I do not know. Small-g pluralism does not tell us *what* grounding relation we are talking about in a given context; it only tells us *that* we will talk about some grounding relation or other. The latter information is unhelpful given (*a*) the size of the class of small-g grounding relations, and (*b*) the fact that there is no metaphysical principle that determines what relations are small-g relations. There are many candidate meanings for our grounding claims, but small-g pluralism gives us no guide to which meaning will be selected.

Notice that this last point is one that echoes the granularity argument against monism. The worry was that Grounding wasn't explanatory because it didn't identify a specific relation of metaphysical dependence; it only waved in the direction of an undefined class of metaphysical dependence relations. It appears that strong small-g pluralism suffers from the same problem. It alludes to a class of relations but gives no sense of which relation we are singling out.

It's important to note that the semantic selection problem doesn't generally afflict context-sensitive expressions. We have systematic stories

of how other putative context-sensitive expressions (like "tall," "might," and "knowledge") work. For example, the epistemic contextualist doesn't simply say "knows" refers to different knowledge relations in different contexts; she gives an account of what differs between contexts—interests, evidence, stakes, alternatives, etc. Contextualist semantics don't simply make brute appeals to salience.[20]

In contrast, the contextualism posited by the strong small-g pluralist seems more like ambiguity or confusion than genuine context-sensitivity. The suggestion seems to be that "grounds" refers to some salient dependence relation out of a class of dependence relations (whose membership and criteria for membership are opaque or non-existent). This is problematic.

The problem isn't that we lack a metaphysical principle that selects the grounding relations. If we had a semantic principle but no metaphysical principle, we would be fine. There need not be a natural category of cupcakes for the word "cupcake" and the concept *cupcake* to play an important role in my thinking. Analogously, a theory of grounding would be useful even if Grounding wasn't a natural kind.

The problem is that there is nothing in the world (like a natural category of big-G grounding) nor in our thought (like a unified concept of big-G grounding) that systematically fixes the truth conditions of grounding-talk. This results in truth conditions that say: "p grounds q" is true just in case there is some salient dependence relation or other that holds between p and q.

Though it's possible that grounding claims have truth conditions that are this vague, the simplest explanation is that grounding-talk is simply confused. There is no systematic function from contexts to contents. There is only a jumble of things that someone using the term "ground" might mean.

The latter view is not a positive theory of grounding. It doesn't seek to capture, in systematic fashion, what "grounds" or grounding theorists mean. Rather, it's a theory that's better suited for the grounding skeptic who wants to highlight the unprincipled nature of grounding-talk.

I think we should conclude that strong small-g pluralism is actually

[20] Demonstratives constitute the sole exception.

a form of *grounding skepticism*, the view that there is no such thing as a grounding relation. The strong pluralist isn't offering a competing account of grounding; she's trying to explain away the determinate content of grounding-talk. The talk is an undisciplined jumble, not a disciplined context-sensitive discourse.

There is a sense in which we should have known that strong pluralism wasn't a genuine pluralist theory. Wilson (2014), the closest example of a strong small-g pluralist, is also known for being a grounding skeptic. In a surprising dialectical twist, she has been interpreted as offering a pluralist theory of grounding.[21]

No matter how the text is *intended* to be understood, it *should* be understood as a skeptical theory. Strong small-g pluralism is a trojan horse. It is not a true gift to the friends of ground.

1.5 Small-G Pluralism: Weak Version

You might think that strong small-g pluralism makes grounding too disunified. A more moderate view posits a single unified kind of grounding that subsumes particular small-g relations. This is the *weak* version of small-g pluralism.

Here are different formulations of the weak view.

- DETERMINABLE-DETERMINATE: Big-G grounding is a determinable of which small-g grounding relations are determinates.
- GENUS-SPECIES: Big-G grounding is a genus of which small-g grounding relations are species.
- FUNCTIONALISM: Big-G grounding is a functional kind that small-g grounding relations realize.

In each case, the small-g grounding relations are subsumed (in some sense) by big-G grounding. The presence of big-G grounding distinguishes strong and weak pluralism.

But how does weak pluralism compare to monism? Like the standard monist, the weak pluralist takes there to be a single basic grounding

[21] For this interpretation see: Rettler 2017; Berker 2017; Schaffer 2016a.

relation (or kind). Unlike the standard monist, the weak pluralist takes small-g relations to be specific ways of grounding.

To be more concrete, let's assume that weak pluralism is understood in terms of FUNCTIONALISM. To explicate the functionalist theory of grounding, it is useful to compare it with a more familiar functionalist theory: pain functionalism.

The pain functionalist thinks that the property *pain* is a functional property.[22] By definition, a pain state is whatever mental state that plays the pain-role. The grounding functionalist thinks that *being-a-grounding-relation* is a functional property. A small-g grounding relation, then, is whatever plays the functional role characteristic of grounding.

Given pain functionalism, pain will inevitably consist in different states for different beings. Nonetheless, the diversity of pain states is unified by the fact that they all play a common role. For grounding functionalism, we find that there are many different small-g relations, but those relations are unified by the fact that they play a single role.

What is the functional role of pain? One possibility: a mental state p is a pain just in case being in p tends to cause its experiencer to think something is wrong with their body. This analysis is overly simplistic, but the point is that we need criteria that fix the pain-role.

In the case of grounding functionalism, then, we need to give criteria that fix the grounding-role. Here are a few criteria for the grounding-role R, along with weak pluralists who propose them.

- ASYMMETRY: not: $\phi R\psi$ and $\psi R\phi$. (Bennett, 2011)
- PRIORITY: if $\phi R\psi$, then ϕ is more metaphysically fundamental than ψ. (Bennett, 2011; Rettler, 2017)
- EXPLANATION: if $\phi R\psi$, then ϕ metaphysically explains ψ. (Rettler, 2017)

The criteria help define the core features of a grounding relation. As one grounding functionalist—Rettler (2017)—puts it, we are specifying

[22]This functionalist theory identifies pain with a functional role. There are other kinds of functionalism where where pain isn't a functional role; rather, there is a functional concept of pain which picks out physical states which satisfy certain criteria. The latter type of functionalism would be a form of strong pluralism, if not eliminativism.

the "job description" of grounding.

These features are necessary, though perhaps not sufficient, for being a small-g grounding relation. Of course, you might dispute the precise criteria presented, but it should be clear what the criteria are intended to do: single out small-g relations.

It's important to contrast the way that weak and strong pluralists single out small-g relations. While the strong pluralist simply relies on paradigm cases, the weak pluralist gives a core description of the grounding role.

This means that the weak pluralist can, at least in principle, avoid the semantic selection problem. This is because the weak pluralist does give content (even if it's thin) to the content of grounding claims. The characterization of the grounding role, as well as the explicit commitment to big-G grounding, makes it clear that weak pluralists are true friends of grounding.

Though weak pluralism isn't a skeptical theory of grounding, I still don't think it constitutes a theory of grounding. Or at least, it doesn't capture the thing that most metaphysicians are describing when they talk about what grounds what.

We need to distinguish between *grounding* and *building*. They are two different kinds of relations, and we can see this because they are motivated in two fundamentally different ways.

Grounding was motivated by the thought that dependencies like supervenience, realization, composition, semantic analysis, essential dependence, and so on, can't frame our metaphysical debates.[23] The standard approach is to start with more familiar dependence relations—most prominently supervenience and causation—and then give a battery of reasons why those relations aren't sufficient for grounding.

In contrast, consider Bennett (2011)'s notion of building. The notion of building is designed to lump together (to use her metaphor) similar dependence relations. She is mainly interested in the general idea of building, constructing, or generating the world.

Her notion of construction is more general than that found in dis-

[23] You see this in the early influential manifestos on grounding. See: Fine 2001; Schaffer 2009; Rosen 2010; Audi 2012.

cussions of grounding. Grounding, as it is usually discussed, identifies a species of building relation that differs from other more familiar dependence relations.[24] In contrast, building identifies several dependence relations that are *similar* to one another.

An example will make the tension clearer. Suppose grounding and building coincide. Also suppose that the parts of a table compose the whole table. If composition is a building relation, then there is no further question of whether the parts of the table build the whole. Since building and small-g grounding coincide, there is no further question of whether the parts of the table ground the whole. But for most grounding theorists, it *is* an open question whether parts ground wholes.

The same is true of other small-g relations—causation, realization, emergence, etc. We don't want to say that every case of causation, realization, or emergence, is an instance of grounding. However, it's perfectly fine to say that those are all instances of building, where we take building to be a broader notion than grounding.

In other words, building is an inclusive notion while grounding is an exclusive one. The weak pluralist mistakenly tries to assimilate the two notions.

The weak pluralist has a response to this point. First note that the current theory assumes that the class of small-g grounding relations is fixed while the relation picked out varies. If realization is a grounding relation, it is always a grounding relation, although it may not always be picked out by grounding-talk.

However, you might think that the class of small-g grounding relations itself varies from context to context. We shouldn't assume that every small-g relation is intrinsically a grounding relation. To use a phrase by Berker (2017), certain relations can be "turned on" as small-g grounding relations, depending on facts that are independent of the nature of the relation itself.[25]

Koslicki (2015) describes a view like this. She (p. 307, fn. 2) writes:

[24] Bennett (2011) notes this fact in footnote 11 of her paper. You can think of me as expanding upon, and insisting upon, this very point.

[25] Berker criticizes this view. It appears to be held by (Wilson, 2014, p. 569), Rettler (2017), and Koslicki (2015).

> I do not follow Wilson in taking the relations she calls "small 'g' grounding relations" (e.g., parthood, composition, realization, constitution, and the like) 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.

Similarly, Rettler (2017, p. 14) writes:

> Most properties that play the grounding role do so accidentally; Grounding is the unifier of them because it plays the grounding role essentially.

On both views, whether a relation is a small-g relation differs from context to context. It's important to note that this is a claim about the small-g grounding relations *themselves*, not about which grounding relation is selected by grounding-talk. The class of small-g relations itself expands and contracts, depending on the context. For example, realization might be a small-g relation in one context but fail to be a small-g relation in another.

This view resolves the tension between the inclusiveness of building and the exclusiveness of grounding. If what counts as a grounding relation differs from context to context, we don't have to be committed to the view that, say, every instance of causation is an instance of grounding. When we shift to some contexts, causation will stop being a grounding relation.

Though this revised view avoids the previous objection, it obscures the relationship between big-G and small-g grounding. Initially, we had criteria that determined a fixed set of small-g grounding relations. On the new view, we have criteria that determine a contextually variable set of small-g grounding relations. But how does this contextual variation work?

How does causation cease to be a grounding relation at one context yet succeed in being a grounding relation at another context? The mechanism for turning on and off (or inducing) grounding relations is opaque.[26]

A related problem for the revised view is that it is in danger of collapsing into the widely accepted idea that small-g and big-G grounding sometimes coincide. For example, there will be cases where ϕ composes, and grounds, ψ and cases where ϕ composes, and doesn't ground, ψ.

You don't have to be a pluralist (in any sense) to think that grounding and other dependence relations overlap. This is just the standard monist view. On the face of it, the revised weak pluralist view is indistinguishable from a harmless view that most grounding theorists accept.

Overall, it appears that weak small-g pluralism is too weak to account for what most grounding theorists mean to be talking about. In the first place, it is too inclusive of relations that aren't, by most standards, grounding relations. But when we amend the view to make it more exclusive, it becomes unclear how small-g grounding relates to big-G grounding.

1.6 A Diagnosis

I've argued that there are significant problems with both versions of small-g pluralism. Is there a common thread here? Yes. Each version of pluralism appears to be vulnerable to a version of the granularity argument. In a surprise twist, small-g pluralism is no more explanatory than the monism it opposes.

Recall the granularity argument. If Grounding exists, it's explanatory, and if Grounding is explanatory, then it must be fine-grained. But big-G grounding isn't explanatory, so big-G grounding doesn't exist. This was only thought to count against monism, but the argument appears to apply to both strong and weak small-g pluralism.

Earlier, I argued that strong small-g pluralism suggests that there is no principle in nature or in language that determines which grounding relations are small-g relations. So big-G grounding, even understood as

[26]See Berker (2017) for an extended version of this objection.

a disjunctive relation, is too coarse-grained to be explanatory. It doesn't refer to a specific explanatory relation; it only cobbles them together in an ad hoc way.

My objection to weak small-g pluralism was that the resulting notion of grounding is too inclusive. Every case of causation isn't a case of grounding, for instance. It seems that the grounding genus is too coarse-grained because it doesn't refer to the specific explanatory relation we want to account for.

Small-g pluralism was motivated by the worry that big-G grounding was too coarse-grained to be explanatory. However, it seems like small-g pluralism, however you understand it, suffers the same problem. Small-g pluralism is no better than monism.

One might take this to show that both monism and pluralism make grounding unexplanatory, so we are better off dropping the notion of metaphysical grounding entirely. In this case, one endorses *grounding skepticism*, the view that there are no grounding relations.

Grounding skepticism entails that much of recent metaphysics is fundamentally confused. But does this mean that metaphysics would be better off if there had never been a discussion of grounding? Or is there a kernel of truth in the generally confused grounding literature? The skeptic owes us answers to these questions.[27]

Given the felt sense, among many, that metaphysics has progressed in light of the grounding turn, it seems that grounding skepticism is too hasty. There may be confusion about grounding, but it goes too far to say that the confusion extends to the very existence of a genuine subject matter.

With monism, small-g pluralism, and skepticism out of the picture, our theoretical options seem limited. But this is because we have overlooked the possibility of grounding pluralism without small-g pluralism.

Small-g pluralism is the most common, and most worked out, version of grounding pluralism. If there are problems with small-g pluralism, then, those problems are thought to reflect badly on the general pluralist position. However, there might be other ways of understanding ground-

[27]For skeptics that attempt to answer these questions, see Wilson (2014) and Sider (2011, §7.2, 8.2.1).

ing pluralism. And importantly, alternative pluralist theories may not suffer the same defects as small-g pluralism.

To make this option concrete, I must briefly sketch an alternative pluralist theory. My goal, here, is not to persuade you that my theory is correct. Rather, the goal is to illustrate the structure of a potentially satisfactory theory.

On my view, there are three basic species of grounding: *why-grounding* (which tells us why things are), *what-grounding* (which tell us what it is for things to be), and *how-grounding* (which tells us how things are). The three kinds of grounding corresponds to three different kinds of explanation.

In the case of what-grounding, we want to know *what it is* for something to be the case. What is it for an act to be right? For an act to promote happiness. Other examples: for someone to be a bachelor is for them to be an unmarried male; a property just is a bundle of tropes. What-grounding backs what-it-is explanations, and what-grounding corresponds to the idea of grounding as reduction or definition.

In the case of why-grounding, we want to know why something is the case. Why is the glass fragile? Because it has a certain microphysical structure. More examples: it's true that people exist and televisions exist partly because it's true that people exist; an object is a hammer because it plays a certain practical role in the lives of its users. Why-grounding backs why-explanations, and it corresponds to the idea of grounding as analogous causation.

In the case of how-grounding we want to know how something is the case. How is it true that people exist or unicorns exist? By its being true that people exist. The true disjunct is the way the disjunction is true. Other examples: for the ball to be red is a way for the ball to be colored; you raising your hand is way for you to vote. How-grounding backs how-explanations, and it corresponds to the layered conception of reality.

These three kinds of grounding are species of a common genus: the grounding genus. They are all equally basic, in the sense that none can be reduced to another. Finally, they are the *only* kinds of grounding there are. Call the resulting view *wh-pluralism*.

I will not say more about wh-pluralism because the precise content of the view is not relevant here. The current point is that wh-pluralism has the right kind of structure to avoid the granularity argument.

First, notice that you are given an exhaustive list of the grounding relations. They are why-, how-, and what-grounding. You are not left with an open-ended list that you must continue. The finite, explicit list of grounding relations makes it easier to apply the concept of grounding; or at least, it makes it clearer what we are doing when we apply the concept.

Second, wh-pluralism tells you what kinds of explanatory contexts will be relevant to the understanding of grounding-talk. Sometimes we are concerned with why-questions, how-questions, and what-it-is questions. Depending on the kind of question, a different kind of grounding will be relevant. Furthermore, each kind of grounding is characterized in different ways, making it easy to determine what is meant by a given use of "grounds" at a context.

Wh-pluralism gives you a guide to the use and intepretation of grounding-talk. It tells you what kinds of grounding will be relevant at a context. More generally, it gives you a better sense of how to apply the concept of grounding. The problem with small-g pluralism is that it gives no guide—metaphysically or semantic—to the concept of grounding. Wh-pluralism, on the other hand, is structurally designed to give you such a guide.

In the chapters that follow, I will further develop the three notions of grounding and show how they can be used to resolve certain debates in metaphysics. In the discussions that follow, I will restrict myself to comparisons between two species of grounding per chapter. In future work, I aim to give an account of how the three species interact.

1.7 Conclusion

In this chapter, I've sought to make two points.

First point: there is no work for a theory of small-g grounding. The theory isn't actually a positive theory of metaphysical grounding, where grounding is the thing that metaphysicians have been explicitly discussing in recent years. The theory is either (*a*) a skeptical rejection of grounding,

or (*b*) a theory of building.

Second point: the problems with small-g pluralism should not be interpreted as an indictment of grounding pluralism itself. Rather, there is a different version of grounding pluralism that possesses the advantages of small-g pluralism but not its disadvantages.

My suggestion is that we try to develop this alternative pluralist theory as opposed to retreating to grounding monism or skepticism. Small-g pluralism was a wrong step in the right direction.

Chapter 2

Grounding Pluralism: Why and How

2.1 Introduction

There are many ways to express metaphysical dependence. Here are a few.

- Tables are *reducible to* atoms arranged table-wise.
- It's true that people exist or unicorns exist *because* it's true that people exist.
- Mental facts *metaphysically depend on* physical facts.
- The ball is colored *in virtue of* being red.

It's become popular to think these claims are underwritten by a kind of dependence called *metaphysical grounding*.[1]

As a linguistic fact, grounding is *said* in many ways. But is grounding itself one or many? If you think grounding is one, you're a *monist*; you think there is a single kind of grounding.[2] If you think grounding is

[1] A sample of the literature: Fine 2001; Rosen 2010; Schaffer 2009; Audi 2012; deRosset 2013a; Dasgupta 2014b; Correia and Schnieder 2012; Trogdon 2013b; Clark and Liggins 2012; Raven 2015; Bliss and Trogdon 2014.

[2] For the general monist view, see: Rosen 2010; Schaffer 2009; Audi 2012; Leuenberger 2014; Skiles 2015; Raven 2013.

many, you're a *pluralist*; you believe there are multiple kinds of grounding.[3]

Monism is the well-known orthodox view. Pluralism is the less-known heretical alternative. Pluralists are driven to heresy by the following consideration: a monolithic grounding relation is too coarse-grained to be explanatory; the fact that p grounds q doesn't, by itself, isolate a specific form of metaphysical dependence.[4] For this reason, we need a more fine-grained account of grounding, one that acknowledges the varieties of grounding.

Though several philosophers have expressed pluralist sympathies, few have given a clear statement of the view.[5] The most prominent pluralists—Wilson (2014) and Koslicki (2015)—spend most of their time arguing against monism instead of developing a specific pluralist position.

For pluralism to be viable, however, we need a positive statement of pluralism, not just a negative statement of why monism is false. The bare thesis of pluralism tells us that there are multiple kinds of grounding, but we need an account of (*i*) what those kinds are, and (*ii*) the sense in which those kinds relate to one another.

The goal of this paper is to provide such an account. I characterize two basic kinds of grounding: *why-grounding* (which tells us why things are the case) and *how-grounding* (which tells us how things are the case). I argue that the two kinds of grounding are individuated by the kinds of grounding explanations they offer, and that they are species of a common genus. I call the resulting view *wh-pluralism*.

I will proceed as follows. In §2.2, I motivate pluralism by considering cases where our intuitions about grounding pull in two different directions. In §2.3, I suggest that the two kinds of grounding at work here are how-grounding and why-grounding. In §2.4 and §2.5, I give an account of how-grounding and why-grounding. In §2.6, I take wh-pluralism to be the specific view that there are multiple basic species of grounding.

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[3]The following have all suggested pluralist views of grounding: Wilson 2014; Koslicki 2015; Fine 2012a; Schaffer 2016b; Cameron 2015; Griffith 2014; Rettler 2017.

[4]Koslicki (2015) and Wilson (2014) make this point. I also discuss this in more detail in the first chapter.

[5]Rettler (2017) and Cameron (2015) being the few exceptions.

2.2 Motivating Grounding Pluralism

Metaphysicians use grounding to make sense of metaphysical dependence claims. They adopt monism because they think these claims can be understood in terms of one basic kind of grounding. We will have reason to be pluralists, then, if we can show that at least two kinds of grounding are needed to make sense of grounding claims. In this section, I will present cases that push us in the direction of pluralism.

Consider Tye the metaphysician. Tye wants to give an account of the moral facts. (I say "facts" here, but you could speak of moral truths or properties.) On his view, moral facts are metaphysically dependent on the practical perspective of a community; he describes himself as a social constructivist about the moral domain.[6]

In light of this, it seems fair to describe Tye as thinking that the moral facts are grounded in social facts. Grounding makes sense of metaphysical dependence, and Tye is making a dependence claim about moral and social facts.

Here is how we represent his grounding claim. Let *Moral* and *Social* be the set or plurality of moral facts and social facts, respectively. Read $\phi <\!/\prec \psi$ as: ϕ is fully/partially grounded in ψ. We get the following:

SOCIAL-TO-MORAL: *Moral* $\prec$ *Social*

For independent reasons, Tye thinks that who we are, socially, metaphysically depends on who we are, biologically. He thinks that our social perspective partially depends on our biological constitution. It seems like Tye thinks that the social facts are grounded in the biological facts. We can represent this view as follows.

BIOLOGICAL-TO-SOCIAL: *Social* $\prec$ *Biological*

So Tye thinks (*a*) the biological facts ground the social facts, and (*b*) the social facts ground the moral facts. But does he think that the biological facts ground the social facts?

BIOLOGICAL-TO-MORAL: *Moral* $\prec$ *Biological*

[6]For a survey on constructivism in metaethics, see Street (2010).

Suppose the answer is yes. This view doesn't seem to capture Tye's metaethical views. Tye is a *social* constructivist. The moral facts are a consequence of our social organization, not our biological constitution. Tye wants to pin responsibility for moral facts on the social, not biological, aspect of human life.

To make this point vivid, we can imagine another theorist, Megan, who also thinks that the biological facts ground the social facts and that the social facts ground the moral facts. Unlike Tye, however, Megan sees herself as a biological naturalist about morality.

For Megan, our biological natures determine the content of morality by determining certain social facts, but the social facts are just how they do it. The social facts are a way station, a minor stop on the journey to the moral facts. The biological facts are primary.

Intuitively, Tye and Megan have different views. One thinks the social determines the moral; the other thinks the biological determines the moral. If we think Tye is committed to the view that the biological facts ground the moral facts, we cannot make sense of the difference in explanatory commitment between Tye and Megan.

Should we say that Tye denies that the biological facts ground the moral facts? This doesn't seem right. It's not as if Tye thinks that the social facts float free of the biological facts. Quite the opposite: the social depends on the biological.

But if Tye thinks the social facts depend on the biological facts, and he also thinks the moral facts depend on the social facts, then he seems committed to thinking that the moral facts depend on the biological facts.

The biological facts do not run out power after grounding the social facts; the influence of the biological carries through to the moral. The biological facts are relatively low-level (or fundamental), so we should expect them to be the prime movers, not the social facts.

On the one hand, it looks like Tye thinks the biological facts do not ground the social facts. On the other hand, it looks like Tye thinks the biological facts do ground the social facts. This is puzzling.

The source of puzzlement isn't fundamentally about moral constructivism. We could substitute the legal, artistic, or other conventional facts for the moral facts and come up with a similar puzzle. It's unclear that

the biological facts ground such facts. At the same time, it's implausible that these facts are ungrounded.

The puzzle also doesn't stem from Tye, specifically, or the idea that he has inconsistent commitments. This puzzle often emerges in the debate over whether grounding is transitive, where transitivity is the following principle.

> TRANSITIVITY: If ϕ partially grounds ψ, and ψ partially grounds χ, then ϕ partially grounds χ.

TRANSITIVITY is a widely accepted thesis.[7] Nonetheless, there are several putative counterexamples to this principle.[8]

Schaffer (2012) provides the most well-known of such examples. He asks us to imagine a sphere O with a maximally determinate shape S, where O has a small dent D in it. Then the following grounding claim seems plausible.

> DENT-TO-SHAPE: [O has shape S] $\prec$ [O has dent D]

Read this as: the fact that O has shape S is partially grounded in the fact that O has a dent D.

DENT-TO-SHAPE is plausible because the dent in the sphere is partially responsible for its shape. The following is also plausible.

> SHAPE-TO-SPHERE: [O is more-or-less spherical] $\prec$ [O has shape S]

SHAPE-TO-SPHERE is plausible because the shape of O contributes to its being more-or-less spherical (or nearly-spherical).

If TRANSITIVITY holds, then so does the following.

> DENT-TO-SPHERE: [O is more-or-less spherical] $\prec$ [O has dent D]

[7] A sample of philosophers who think transitivity holds: Fine 2001; Rosen 2010; Schaffer 2009; Audi 2012; deRosset 2013a.

[8] Fine 2012a; Schaffer 2012; Rodriguez-Pereyra 2015; Tahko 2013; Schnieder 2006.

Intuitively, DENT-TO-SPHERE is implausible. The near-sphericality of O doesn't need the dent; even stronger: the near-sphericality of O exists *in spite* of the dent, not because of it. The dent doesn't make a metaphysical contribution to the near-sphericality of O.

So it seems that DENT-TO-SHAPE and SHAPE-TO-SPHERE are true, but DENT-TO-SPHERE is false. If this is so, we have a counterexample to TRANSIVITY.

However, some philosophers have resisted this conclusion. They note that the dent *does* contribute to the near-sphericality of O; namely, it tells us the determinate way in which O is nearly-spherical. If O is grounded in the way it's nearly-spherical, and the dent is part of that way, it's plausible that the dent grounds the near-sphericality of O.

Philosophers give other putative counterexamples to transitivity in the literature. My case can be seen as an instance of this genre. The structure of my case is as follows.

SOCIAL-TO-MORAL: $\mathit{Moral} \prec \mathit{Social}$

BIOLOGICAL-TO-SOCIAL: $\mathit{Social} \prec \mathit{Biological}$

BIOLOGICAL-TO-MORAL: $\mathit{Moral} \prec \mathit{Biological}$

Supposing SOCIAL-TO-MORAL and BIOLOGICAL-TO-SOCIAL are true, is BIOLOGICAL-TO-MORAL thereby true? If yes, transitivity is preserved. If not, transitivity fails.

In both cases, there is a sense in which p appears to ground, and at the same time doesn't ground, q. This is puzzling.

Transitivity is relevant to the Tye case, but the rhetoric of "counterexample" tilts the dialectic in a specific direction. By presenting these examples as counterexamples, we build in the assumption that we are trying to refer to a single kind of dependence.

I want to consider another hypothesis. Maybe we do not enter the discussion with the same basic kind of grounding in mind. Maybe there are two kinds of grounding and we mistakenly think they are in competition with one another. Let us take the plurality of grounding as a working hypothesis.

Upon further investigation, you might conclude that there cannot be two kinds, or that one kind is more fundamental than the other. Still,

the hypothesis is at least worth considering. Our intuitions are pulled in different directions, and there is independent support for the view that there are multiple kinds of grounding.[9]

2.3 Two Kinds of Grounding

If there are two kinds of grounding, what are they, exactly?

A good starting point for the two kinds of grounding is grounding explanation. Grounding is explanatory in the sense that: if ϕ grounds ψ, ϕ metaphysically explains ψ. Philosophers agree with this general principle.[10]

But what is explanation supposed to be? Philosophers disagree on this point, but I will take an explanation to be an answer to a question. Why did Jack go to the party? Because he wanted to have fun. The complete explanation is: Jack went to the party because he wanted to have fun. Explanations are explanatory truths of this form.

Grounding explanations are backed (or made true) by grounding relations. For this reason, grounding explanations are objective in the sense that: if p ground-theoretically explains q, then p explains q even if we didn't exist. Explanation, as I understand it, does not depend on our actual practices of explaining.

So grounding is explanatory in the sense that grounding relations back grounding explanations, where grounding explanations are answers to questions. With this in mind, we can make a case for two different kinds of grounding.

My view is that we think (*a*) that grounds explain *why* something is the case, and (*b*) that grounds explain *how* something is the case. The problem is that these two kinds of explanation do not always overlap.[11]

Consider Tye as he tries to explain the moral facts. Let's focus on a specific moral fact. It's good that Tye keeps his promises. We can ask

[9]Wilson 2014; Koslicki 2015; Fine 2012a; Schaffer 2016b; Cameron 2015; Griffith 2014; Rettler 2017.

[10]Each of the following theorists make this observation: Fine 2001; Rosen 2010; Schaffer 2009; Audi 2012.

[11]See Litland (2013) for the suggestion that grounding can be understood as how-explanation or why-explanation.

the question: why is it good that Tye keeps his promises? Tye's answer is something like: because it follows from the moral code of Tye's community (or some idealized version thereof). By Tye's lights, the fact that keeping Tye's promises follows from the moral code of Tye's community is what explains why it's is good that Tye keeps his promises.

Facts about the moral code—actual or idealized—of a community are social facts. Social facts, for Tye, are grounded by biological facts. Therefore, the fact it is good that Tye keeps his promises is grounded in the fact that Tye has such-and-such biological origins.

Is Tye committed to thinking that the fact he has such-and-such biological origins explains why it's good that he keeps his promises? Intuitively, no. On his view, what's relevant to the nature of morality are the social facts, not the biological ones. The social facts are grounded in certain biological facts, but the biological aspect of social life does not percolate up to an explanation of why the moral facts are what they are.

Nonetheless, the biological facts do make sense of *the way in which* actions are good and bad. There are many ways for it to be good that Tye keeps his promises. Some of those ways have to do with Tye's biological origins, but the biological facts do not tell you why the moral facts obtain.

In contrast, Megan—the metaethicist who emphasizes the biological, as opposed to social, grounds of morality—*does* think the biological facts explain why the moral facts are what they are. On her view, the social facts only explain how the moral facts obtain.

At this point, it will be helpful to make some terminological stipulations. Call *why-grounding* the grounding relation that supports why-explanation. Call *how-grounding* the relation that supports how-explanation. Let subscripts w, h, and $h{+}w$ indicate why-grounding, how-grounding, and the coincidence of why- and how-grounding.

With this in mind, we can now represent the grounding relations in light of the different kinds of explanation.

SOCIAL-TO-MORAL′: *Moral* $\prec_{h+w}$ *Social*

BIOLOGICAL-TO-SOCIAL′: *Social* $\prec_{h+w}$ *Biological*

BIOLOGICAL-TO-MORAL′: *Moral* $\prec_{h}$ *Biological*

By Tye's lights, the biological fact explain how and why the social facts obtain, and the social facts explain how and why the moral facts obtain. But the biological facts explain only how the moral facts obtain. In this case, why-grounding isn't transitive but how-grounding is.

The same kind of explanation can be applied to the case of the dented sphere. The dent does not explain why the object is nearly-spherical, but we still cite the dent because it explains how the object is nearly-spherical. We represent the case as follows.

> DENT-TO-SHAPE′: [O has shape S] $\prec_{h+w}$ [O has dent D]
>
> SHAPE-TO-SPHERE′: [O is more-or-less spherical] $\prec_{h+w}$ [O has shape S]
>
> DENT-TO-SPHERE′: [O is more-or-less spherical] $\prec_{h}$ [O has dent D]

For the sake of argument, we can assume that DENT-TO-SHAPE′ and SHAPE-TO-SPHERE′ are both why- and how-grounds. Nonetheless, O's being nearly-spherical is only how-grounded by its having a dent.

The general idea is that can resolve our seemingly conflicting grounding intuitions by distinguishing between two different kinds of grounding explanation: how-explanation and why-explanation. These two kinds of grounding explanation are backed by two different grounding relations. In what follows, I will further characterize the two relations and give an account of how they relate to one another.

2.4 How-grounding

How-grounding is grounding as how-explanation. To illuminate this notion, I will not give a reductive analysis or definition. Instead, I will describe central characteristics of how-grounding.

I will do this in a few ways. First, I will give paradigm cases of how-grounding. Second, I will characterize the relevant type of how-explanation. Third, I will argue that how-grounding is connected to constitutive ways for things to be. Lastly, I will argue that how-grounding corresponds to the idea of grounding as layered dependence.

Here are a few representative examples of how-grounding.

DISJUNCTIONS: [People exist or unicorns exist] $<_h$ [People exist]

DETERMINATES: [The ball is colored] $<_h$ [The ball is red]

VOTING: [You voted] $<_h$ [You raised your hand]

In taking the aforementioned examples as representative, I am not saying that they are all definitely cases of how-grounding. Rather, the purpose of these examples is to give plausible instances of how-grounding *claims*. Even if you disagree with these dependence claims, they should at least be intelligible to you.

Each example is a case of how-explanation, but what is how-explanation? It is useful to think of a how-explanation as an answer to a how-question. How is it true that people or unicorns exist? By its being true that people exist. How is the ball colored? By being red. How did you vote? By raising your hand.

In each case, one asks, "How is it that ψ is the case?" Someone answers: "By ϕ's being the case." Of course, there are many kinds of how-questions (and consequently, how-explanations). It's implausible that every how-question is a question about grounding. We need to determine what kind of how-question corresponds to how-grounding.

The two most relevant types of how-explanations are causal and constitutive. Searle (2001, pp. 51-2) writes: "If I fire the gun by means of pulling the trigger, the relationship is causal. Pulling the trigger causes the gun to fire. If I vote by way of raising my arm, the relation is constitutive. In that context raising my arm constitutes voting... In that context the bodily movement constituted or counted as the action in question."

Raising my arm does not merely cause me to vote; raising my arm *counts as* or *constitutes* voting. This is a case of how-grounding. Searle, a philosopher, makes this point, but this distinction has also been independently drawn by linguists.

Linguists have observed that some verbal predicates set abstract criteria that are satisfied by more specific conditions.[12] Here is an example. Suppose Jones is hunting in a place where hunting is illegal. You could

[12]Kearns 2003; Saebø 2008; Sæbø 2015; Behrens 2006.

ask: how did Jones break the law? The answer: by hunting.[13] It's not that John's hunting *caused* the law to be broken. Rather, Jones' hunting *counted* (or *qualified*) as a breaking of the law.

Hunting is a determinate *way* of counting as breaking the law, just as raising one's hand is a determinate way of counting as voting. In contrast, pulling the trigger of a gun isn't a way of counting as firing a gun, it's simply a way of firing a gun.

In linguistics, the constitutive how-question is generally discussed in the context of intentional action, but the current suggestion is that it can be extended to other cases. Disjunction is the obvious case. If p is the actual way that p or q is the case, then p explains how p or q is the case. So you can have constitutive how-explanations in the absence of intentional action.

I have contrasted constitutive how-explanation with causal how-explanation, but a more extensive typology might look like this.

- MANNER: How did he defuse the bomb? Very carefully.
- MEANS: How did she get to Atlanta? By plane.
- METHOD: How did Jones butter the toast? With a knife.
- CAUSAL: How did she break the vase? By dropping it.
- CONSTITUTIVE: How did he vote? By raising his hand.

Linguists disagree about the exact classification of the various how-claims, but they all agree that language users know how to make distinctions between various types of how-claims.[14]

We may not understand the basis for the various distinctions, but we certainly have a grasp of them. Consequently, we know how to pick out how-grounding claims—which are constitutive how-explanations—even though it's likely that we can't explain precisely how we pick them out.

So far, I have characterized how-grounding by its connection with how-explanation. Now I want to highlight another central characteristic of how-grounding: its connection with constitutive ways.

[13] Kearns (2003) uses this example.

[14] See Jaworski (2009) and Sæbø (2015) for discussion.

There appears to be a general connection between *hows* and *ways*. For each how-claim in the previous examples, there is a corresponding way-claim. Using a plane is a way to get to Atlanta. Using a knife to butter toast is a way of buttering toast. Dropping a vase is a way of breaking it.

Generalizing, we get the following principle: if ϕ explains how ψ is the case, ϕ is a way that ψ is the case. I won't talk about this general principle because we are interested in its specific application to constitutive how-explanation. Here are the previous how-claims put in way-theoretic form.

> DISJUNCTIONS': That people exist is a way for it to be a fact that people exist or unicorns exist
>
> DETERMINATES': Being red is a way for the ball to be colored
>
> VOTING': You raising your hand is way for you to vote

Our specific principle is as follows: if ϕ constitutively explains how ψ is true, ϕ is a constitutive way that ψ is the case. This principle seems true, though it prompts the question: what are constitutive ways?

Ways serve an important role in verifying the truth of how-grounding explanations. So far, I have said that a how-grounding explanation is an answer to a question, but I haven't said anything about what kind of thing this is, exactly.

Officially, a how-grounding explanation is a truth concerning constitutive how-explanation. For example, "The fact that I raised my hand explains how I voted" is a how-grounding explanation.

We typically think that, if an explanation is true, there is something that makes it true. This is where ways come in. Ways are the objective features of reality that make true (or back) grounding explanations. For example, if "The fact that I raised my hand explains how I voted" is true, then every way that makes true "I raised my hand" also makes true "I voted."

This proposal is a version of Fine (2012b)'s truthmaker semantics for grounding claims.[15] Each truth is assigned a set of facts that (relevantly)

[15]For more on how truthmakers can play a semantic role, see Fine (2014) and Yablo (2014).

make it true. Then we say that "p grounds q" is true just in case every fact that makes p true makes q true. This way, facts provide a semantic basis for grounding truths.

To use his analogy: grounding truths stand to facts as modal truths stand to possible worlds. Philosophers and linguists think that the claim "It's possible that p" is true iff there is a possible world where p is true.

My claim is that constitutive ways play the same semantic role. They underwrite the content of constitutive how-explanations. Additionally, they underwrite the content of the corresponding way-claims. For example, "You raising your hand is way for you to vote" will have the same way-theoretic semantics as the relevant how-explanation.

I don't define ways, but they can be understoood through their theoretical role. The modality analogy is relevant here. Possible worlds illuminate the semantics of modal truths even though we might not have a settled view of what they are. Similarly, ways illuminate the content of how-grounding claims despite the fact that we don't have a definition of ways.

The semantic role of ways explains the tight connection between hows and ways. Ways follow from hows because the former constitutes the semantic basis of the latter.

This view also gives some insight into the relationship between how-grounding explanation and the world. Ways constitute truth-conditions for how-grounding explanations.

We can also characterize ways by their relationship to "counting as" or qualification. This is clearest when we think about examples related to intentional action. Jones' hunting qualifies as a breaking of the law. My raising my hand qualifies as voting. Qualifications are abstract criteria met by ways.

My view is that the relationship between ways and qualification is also present in the more general case. P's being the case qualifies as an instance of P or Q's being the case. However, it doesn't follow that P's being the case consists in P or Q's being the case. After all, Q might add something more than P alone can account for.

This is generally the case when we are considering ways. There are many ways that things are, and could be, the case. How-grounding al-

lows for multiple realizability.

I have argued that there is an important connection between how-grounding and constitutive ways. I will end my discussion by focusing on another illuminating connection to how-grounding: its connection to layered dependence.

It is common to think that grounding accounts for layered structure. For example, deRosset (2013a, p. 1) motivates grounding by pointing out that it's intuitive to think that "city facts rest on other facts, including facts about human beings; facts about human beings rest on other facts, including facts about organs, cells, and genes; these facts in turn rest on chemical facts; and so it goes, at least for a while. Reality comes in layers."

The example gives us a chain of explanation that goes from large things (like cities) to small things (like genes). It is natural to think there is a chain of explanatory dependence from macrophysical facts to microphysical facts. For deRosset and others, "*Grounding* is supposed to be the notion needed to explain the compelling but elusive idea that reality has a layered structure."[16]

The idea of layered structure is taken seriously, here. Let's try to figure out what it means.

We are invited to imagine reality as it were structured like a wedding cake or office building. This layering relation is intuitively represented as a *strict order*; that is, it is irreflexive (no layer can depend on itself), asymmetric (levels cannot mutually depend on each other), and transitive (if a lower and higher level share an intermediary level, then the higher level depends on the lower level).

It follows that the transitivity of the layering relation is part of the nature of layered dependence structures. Layered dependence structures are bottom-heavy. Every layer depends on all the layers underneath it, so the fundamental layer must be robust enough to support the weight of the non-fundamental layers.

The logic of layered dependence corresponds to the logic of how-explanation. How-grounding is irreflexive. If ϕ how-grounds ψ, then we know that ϕ is a way that ψ is the case. If these are distinct facts, we get

[16]See deRosset 2013a, p. 2.

a how-explanation.

How-grounding is also transitive. This is implicit in the idea that there are a chain of truths linked by how-explanations. The "chain" is nothing more than the fact that, if ϕ fully explains how ψ is true, and ψ fully explains how χ is true, then ϕ fully explains how χ is true.

If how-grounding is irreflexive and transitive, it must be asymmetric. This means that grounding is a strict order. And if how-grounding is a strict order, it's possible that philosophers have how-grounding in mind when they think of grounding as layered dependence.

Why-grounding isn't transitive, so it can't correspond to layered dependence. This assumes layered dependence is transitive. If layered dependence isn't transitive, then I am unsure how I should interpret talk of layering. In any case, I think that how-grounding is the best candidate for the notion of grounding as layered dependence.

Let us take stock. I have characterized how-grounding in various ways: paradigm examples, how-explanation, ways, and layered dependence. My independent characterization of how-grounding has reached its limit. Further illumination will be gained by considering the differences and similarities between how-grounding and its sibling, why-grounding.

2.5 Why-grounding

To explicate why-grounding, I will proceed as follows. First, I will give paradigm examples of why-grounding. Second, I will identify the kind of why-question at issue. Third, I will describe the connection between why-grounding and difference-making. Lastly, I will argue that why-grounding vindicates the grounding-causation analogy.

Here are a few representative examples of why-grounding.

> LAWS: [It is a law that all *F*s are *G*s] $<_w$ [There is a necessitation relation between *F*-ness and *G*-ness][17]
>
> CONSTRUCTIVISM: [It's good that Tye keeps his promises] $\prec_w$ [Keeping one's promises follows from the moral code of Tye's

[17]See Armstrong (1983) for this view.

community]

FUNCTIONALISM: [That object is a hammer] $<_w$ [That object is designed to effectively insert nails into solid objects]

Just as how-explanations are answers to how-questions, why-explanations are answers to why-questions. Why is it a law that all *F*s are *G*s? Because there is a necessitation relation between the universals *F* and *G*. Why is it good that Tye keeps his promises? Because keeping one's promises follows from the moral code of Tye's community. Why is that object a hammer? Because it is designed to effectively insert nails into solid objects.

To better understand the why-grounding, it is useful to contrast a paradigm case of why-grounding with a case of how-grounding. Consider the following.

CONSTRUCTIVISM': [It is good that Tye keeps his promises] < [Tye's friends think it's good to keep one's promises]

CONSTRUCTIVISM concerns Tye's *community* while CONSTRUCTIVISM' concerns Tye's *friends*. If CONSTRUCTIVISM is true, and Tye's community consists solely of his friends, then CONSTRUCTIVISM' intuitively follows.

But even if we suppose that CONSTRUCTIVISM is true, CONSTRUCTIVISM' does not explain why it's good that Tye keeps his promises. What's important is Tye's community, not his friends. In this case, his community consists of his friends, but the fact that the community consists of his friends isn't needed (in some sense) to explain why his promise-keeping is good.

Nonetheless, CONSTRUCTIVISM' is explanatory because it tells us the way in which it's good that Tye keeps his promises. Tye's act qualifies as good because his friends think it is. This how-explanation is underwritten by CONSTRUCTIVISM, which says that Tye's community determines the goodness of states of affairs.

CONSTRUCTIVISM' is a case of how-grounding while CONSTRUCTIVISM is a case of why-grounding. The cases are similar, but there is still a sense in which only one case is an instance of why-explanation.

The relevant kind of why-explanation is constitutive why-explanation. We can distinguish between constitutive why-explanations and causal why-explanations.

Why did the glass break? Because I dropped it. The dropping is a cause of the breaking, but the breaking is not constituted by the dropping. This is causal why-explanation without constitutive why-explanation.

Here is a different case. Why is the vase fragile? Because of its microphysical structure. The microphysical structure doesn't cause the vase to become fragile. Rather, the microphysical structure constitutively explains why the vase is fragile. This is constitutive why-explanation without causal why-explanation.

It is likely that the two kinds of explanations overlap. If mental states are individuated by their causes, then the causes of mental states causally and constitutively explain why mental states exist (or are the way they are). In those cases, we can still recognize the fact that the two kinds of explanation are in principle separable.

We can further illuminate constitutive why-explanation by contrasting it with constitutive how-explanation. Why-explanation, unlike how-explanation, is contrastive. The contrastivity of why-explanations derive from the contrastivity of why-questions.

Consider CONSTRUCTIVISM. In this case, we want to know why it's good that Tye kept his promises rather than not. The answer is that: keeping one's promises follows from the moral code of Tye's community. The fact that this state of affairs is good would presumably be lost if the moral code of the community was suitably different.

Now consider CONSTRUCTIVISM'. Here, we want to know how it's good, or the way in which it's good, that Tye kept his promises. The answer is that the state of affairs is good because it follows from the moral code of Tye's friends. Assuming CONSTRUCTIVISM is true, this how-explanation probably does not explain why the state of affairs is good rather than not. In the absence of Tye's friends, Tye would constitute a community of one, and it is likely that Tye's moral code alone would vindicate the goodness of promise-keeping.

Here is the emerging view. Why-questions related to why-grounding take the form: "Why is ψ rather than not-ψ the case?" Why-explanations

take the form: "ϕ explains why ψ rather than not-ψ is the case." How-questions related to how-grounding take the form: "How is ψ the case?" How-explanations take the form: "ϕ is a way for ψ to be the case."

The contrastivity of grounding explanation is not a new idea. Schaffer (2016b) gives an account of contrastive grounding explanation, and Schaffer (2012) argues that we should take grounding to be contrastive in response to the putative counterexamples to transitivity. Schaffer gives a richer account of the contrastivity of grounding.

My contribution to the discussion is to link contrastive grounding explanation with a specific kind of grounding. Philosophers typically think grounding explanation simply is, or is not, contrastive. Against this, I suggest that one kind of grounding explanation is contrastive while another isn't.

So far, I have focused on the connection between why-grounding and why-explanation. At this point, I should highlight the connection between why-grounding and difference-making.

The contrastivity of why-explanation seems to derive from modal contrasts. To explain why ψ rather than not-ψ is the case, I want to cite a ϕ that makes more of a difference to ψ than not-ψ. Difference-making, here, can be understood as simple counterfactual dependence. Say that ϕ makes a difference to ψ rather than not-ψ just in case, if ϕ wasn't the case, ψ wouldn't be the case. Now let us run examples through this constraint.

Consider the Tye case. Tye thinks it's not true that: if the biological facts didn't hold, the moral facts wouldn't hold. The biological facts fail to make a difference to the moral facts, so they fail to explain why the moral facts hold. On the other hand, the social facts do make a difference. Tye thinks that if the social facts didn't hold, the moral facts wouldn't. We are now able to distinguish between the views of Tye and Megan. Megan thinks the biological facts do make a difference to the moral facts, while Tye doesn't.

Consider the dented sphere case. It's not true that: if there wasn't a dent, the object wouldn't be more-or-less spherical. The more-or-less sphericality clearly persists in the absence of the dent. If anything, the near-sphericality is happy to be rid of the presence of the dent. The dent fails to make a difference to the near-sphericality of O. In contrast, the

maximally determinate shape of O does make a difference. If the shape disappeared, the near-sphericality of O would disappear with it.

The idea is that there is a difference-making constraint on grounding when grounding is conceived as explaining why things are the case. I have given a simple account of difference-making grounding, but a more sophisticated story will be needed.[18] There are two reasons for this.

First, the difference-making counterfactuals must be understood in a way that allows for non-trivially true (or false) counterpossible conditionals. If there are necessary grounds (grounds that exist at all metaphysically worlds), then the difference-making counterfactuals will be counterpossibles. It takes work to cash out the meaning of these counterpossibles.

Second, the difference-making counterfactuals may be more precisely formulated using the structural equations framework. The idea is to use structural equation models, which are used to model causal relationships, to model grounding relationships.

Structural equations are useful for modeling more complex counterfactuals like the following: if p weren't the case, and we held fix some relevant fact f, q wouldn't be the case. This kind of dependence—sometimes called *de facto* dependence—will be important in understanding the relevant form of difference-making.[19]

However one spells out the details, difference-making is essential to why-grounding. Difference-making helps explain the contrastive nature of the why-explanation involved. It can do this in two general ways.

One possibility is that why-grounding is a binary relation that obeys a difference-making constraint. For example, ϕ explains why ψ only if: ϕ wasn't the case, ψ wasn't the case. Another possibility is that why-grounding is a ternary or quaternary relation that takes several contrasts. For example, ϕ explains why ψ rather than ψ^* is the case only if: ϕ why-grounds ψ rather than ψ^*.[20]

In either case, why-grounding explanations are backed by grounding

[18] For detailed analyses of this sort, see: Schaffer 2016b; Krämer and Roski 2017; Wilson 2016a, 2017.

[19] This is because they have played an important role in clarifying difference-making causes. See Yablo (2002, 2004).

[20] See Schaffer (2016b) for the quaternary approach.

relations. We can take these relations to be the truthmakers of why-grounding explanations. A why-explanation is a truth that tells us what constitutively explains what. Why-grounding relations are what make those explanations true.

Notice that why-grounding explanations are backed in a different way than how-grounding explanations. Ways—the things that form the semantic basis of how-grounding explanations—aren't contrastive, and there's no obvious difference-making constraint on ways for things to be the case.

I have argued that the relevant why-question is a difference-making question. Consequently, the relevant why-explanation is a difference-making explanation. Now I will argue that difference-making helps make sense of the view that grounding strongly parallels causation.

Several philosophers—most notably, Schaffer (2016b)—have noted similarities between grounding and causation.[21]

Causation and grounding are forms of building.[22] Causes generate their effects while grounds build their groundeds. Effects and groundeds "come from"—are built by, are made by—causes and grounds.

Causation and grounding are both directed (irreflexive and asymmetric) dependencies. Causation and grounding are both explanatory.

Causal explanation has been thought to be specific to science while grounding explanation is sometimes considered specific to metaphysics; Fine (2012a, p. 40) writes: "Ground, if you like, stands to philosophy as cause stands to science."

Causation and grounding can both be modeled using the structural equations framework. This framework is largely dedicated to modelling causal relations, but Schaffer (2016b) argues that it can model grounding relationships, as well.

Grounding is certainly analogous to causation, but it isn't obvious that grounding is *distinctively* analogous to causation. So far, everything about the causal analogy could just as well apply to *any* kind of asymmetric dependence. But if the analogy is not a targeted one, then the causation analogy cannot play an informative role in theorizing about

[21] See Schaffer 2016b; Fine 2012a; Wilson 2016a.

[22] For the notion of *building*, see Bennett (2011).

grounding.

I think there is a way of thinking about the causal analogy that leads to a special emphasis on why-grounding. Suppose you think that causation is a kind of difference-making, where difference-making is understood in terms of (some sophisticated form of) counterfactual dependence. Then you would expect grounding to be a kind of difference-making.

The idea of grounding as difference-making corresponds to why-grounding. So why-grounding best fits the analogy with causation. This hypothesis is confirmed by the fact that those who think of grounding as analogous to causation generally appeal to difference-making and counterfactual dependence to explicate grounding.[23]

The view that grounding is (or is importantly analogous to) causation is a familiar one. What is new, here, is the suggestion that causation-like grounding is only one kind of grounding. The other kind, how-grounding, doesn't clearly make sense of grounding in the image of causation. Or at least, it isn't clear what image of causation it makes sense of.[24]

Let's review. I have given an account of why-grounding by focusing on three aspects of the notion: why-explanation, difference-making, and grounding as metaphysical causation.

2.6 The Unity (and Plurality) of Grounding

I have given an account of two kinds of grounding explanation: how-explanation and why-explanation. I believe these two kinds of explanation correspond to two kinds of grounding: how-grounding and why-grounding.

To complete my account of pluralism, I should say more about what I take pluralism to be. There are two broad ways in which one can be a grounding pluralist.

[23]See Schaffer (2016b) and Wilson (2016a).

[24]One possibility is that how-grounding makes sense of causation as *production* while why-grounding makes sense of causation as *dependence*. See Hall (2004) for the dependence/production distinction.

According to *strong* pluralist theories of grounding, grounding is fundamentally disunified. The various grounding relations merely resemble one another. Insofar as there is such a thing as grounding *simpliciter*, it is a disjunctive relation composed of the various, more fundamental grounding relations.

According to *weak* pluralist theories of grounding, grounding is both united and plural. On this view, the various grounding relations are species, determinates, or realizers of the same genus, determinable, or functional role. Grounding is united in that it constitutes a single non-gerrymandered category, but it is plural in the sense that there are multiple robust kinds that fall under this category.

I propose a weakly pluralist theory. Specifically, I take grounding to be a genus of which how-grounding and why-grounding are species.

One way to characterize the genus of grounding is to consider the most common way that metaphysicians motivate grounding.

> GROUNDING GENUS: A metaphysical grounding relation is a relation of metaphysical dependence that provides a distinct kind of metaphysical explanation, a kind of explanation that is not (independently) provided by more familiar dependence relations like supervenience, causation, or composition.

This doesn't provide a positive characterization of grounding. It mainly says what grounding *isn't*. Nonetheless, this negative characterization does help us get a grip on the notion of grounding. Foundational theories of grounding consist largely in attempts to demonstrate the utility of grounding by showing that we needed to distinguish grounding from more familiar notions.[25]

Another way to think of the genus is as follows: it is what how-grounding and why-grounding have in common. We can understand redness by taking it to be what red things have in common. Similarly, we can understand the grounding genus by taking it to be what the varieties of grounding have in common.

We can understand a species in terms of its genus plus its differentia. The classic Aristotelian example goes like this: a human (species)

[25]See: Fine 2001; Schaffer 2009; Rosen 2010; Audi 2012.

is an animal (genus) that is rational (differentia). My grounding relations can be given a similar treatment. Why-grounding is grounding as why-explanation. How-grounding is grounding as how-explanation.

We can take the different species of grounding to be partly defined by their genus. Or at least, the genus of grounding will always be an essential, irreducible aspect of each species of grounding. On either view, the species of grounding are united by the genus they fall under.[26]

Now I am in a position to state my version of grounding pluralism. *Wh-pluralism* says that how-grounding and why-grounding are species of the grounding genus. (It also says there is another species of grounding called *what-grounding*, but I don't have the space to discuss this kind here. The "wh" in "wh-pluralism" stands for the various "wh-" questions.) Wh-pluralism describes two kinds of grounding—how and why—and explains how they relate to one another—they are species of a common genus.

On my account, grounding is unified and plural. It is unified in the sense that there is a single genus. It is plural in the sense that there are two equally basic species of grounding. By "equally basic," I mean that neither species of grounding can be defined in terms of the other.

There is a potential threat to this view, however. You might think that why-grounds can be defined as difference-making how-grounds. If this reduction works, then it will turn out that there is only one basic species of grounding.

Here is an argument to that effect.[27] Suppose you think that only some grounds can back grounding explanations. In this case, we isolate an elite class of grounds, why-grounds, because those grounds are explanatorily relevant, not because they carve a joint in nature. Why-grounds, unlike mere how-grounds, are good for explanation because they are difference-makers.

This response mirrors a common view about the relationship between causal explanation and causation. It sounds odd to say that the Big Bang causes water to boil even though there is a causal chain leading from

[26] For this reason, I am not a pluralist in the sense that Berker (2017) opposes.

[27] Krämer and Roski (2017) make an argument of this form. Their argument is intended to apply to their specific notions of grounding, but it could just as well be an argument for the reduction of why-grounding to how-grounding.

water's boiling to the Big Bang. Perhaps we are unwilling to call the Big Bang a cause because the Big Bang is not explanatory for our purposes. Ordinary speakers will only speak of salient causes at a context, not just any cause. [28]

Just as causal explanations are more more discriminating than the class of objective causes, grounding explanations might be more selective than the class of objective grounds. As a result, we mistake explanatory useful grounding relations like why-grounding for the basic grounding relation—how-grounding.

The basic problem with this argument is that, in general, why-explanations aren't how-explanations. There is a difference between an explanation of why I washed the car and an explanation of how I washed the car. Why did I wash my car? Because it was dirty. How did I wash my car? With soap and a sponge.

Given that why-explanations are not normally how-explanations, why should we think that why-grounding is reduced to how-grounding? It's unclear how this reduction is supposed to work. For this reason, we should conclude that the two species of grounding are equally basic.

I have proposed a theory of grounding pluralism—wh-pluralism. My investigation has been preliminary. More can be said about the two kinds of grounding, the monist/pluralist debate, and the differences between wh-pluralism and other possible pluralisms. My goal has only been to articulate a promising pluralist position in a largely monist landscape.

[28]See Lewis (1986) for this view.

Chapter 3

Grounding is Necessary and Contingent

3.1 Introduction

Most of the friends of grounding believe that grounding is necessary, in the following (rough) sense:

> If $\phi_1, \phi_2, \ldots, \phi_n$ collectively fully ground ψ, then necessarily: if $\phi_1, \phi_2, \ldots, \phi_n$, then ψ.

Call those who endorse this principle *necessitarians*.[1]

Necessitarianism is compelling because it is the consequence of two natural views about grounding: (*i*) if grounds fully explain groundeds, then grounds necessitate groundeds; (*ii*) there is an essence-grounding link that ensures the necessity of grounding.

Despite the necessitarian orthodoxy, some philosophers have offered putative counterexamples to necessity. Call these philosophers *contingentists*.[2] To make their case, contingentists point to the forcefulness of their apparent counterexamples. They also think grounding is analogous to causation. Just as causation is a contingent form of metaphysical dependence, so is grounding.

[1] Audi 2012; deRosset 2013a; Trogdon 2013a; Rosen 2010; Fine 2012a.

[2] deRosset 2013b; Leuenberger 2014; Dancy 2004; Schnieder 2006; Skiles 2015.

In this paper, I argue that grounding is necessary *and* contingent. Less provocatively: I propose a pluralist theory of grounding in which one kind of grounding is necessary while another kind is contingent. On my view, the debate between necessitarians and contingentists is not fundamentally about necessity; rather, it is about two robust kinds of grounding that differ beyond their modal properties.

I posit two kinds of grounding: what-grounding (which tells us *what it is* for things to be the case) and why-grounding (which tells us *why* things are the case). What-grounding is necessary. It corresponds to the idea of grounding as reduction or real definition. Why-grounding is contingent. It corresponds to the idea of grounding as difference-making or metaphysical causation.

The resulting view has two major upshots. First, the necessitarianism/contingentism debate is founded on a false presupposition: that there is a single kind of grounding. Second, we can account for most necessitarian and contingentist intuitions without taking an exclusive stance on either side.

I will proceed as follows. In the first half of the paper, I motivate contingentism by describing putative counterexamples to necessity (§3.2) and consider necessitarian response to contingentism (§3.3). In the second half of the paper, I motivate the pluralist hypothesis (§3.4), describe my pluralist theory (§3.5-6), and revisit the necessitarian/contingentist debate in light of pluralism (§3.7).

3.2 Counterexamples to Necessity

Here is my official formulation of the necessity of grounding.

> NECESSITY: $(\psi < \phi_1, \phi_2, \ldots, \phi_n) \rightarrow \Box(\phi_1 \wedge \phi_2 \wedge \ldots \wedge \phi_n \rightarrow \psi)$.[3]

The antecedent says that some facts ($\phi_1, \phi_2, \ldots, \phi_n$) collectively fully ground ($<$) another fact (ψ). The consequent says that it's metaphysically necessary ($\Box$) that: if the ϕ-facts obtain, so does ψ. Overall, NECESSITY

[3]Greek letters indicate schematic letters (or metavariables), so this principle should be interpreted as an axiom schema.

says that the ϕ-facts entail ψ if they fully ground ψ, where ϕ *entails* ψ just in case $\Box(\phi \rightarrow \psi)$.

I make three assumptions: (*i*) grounding is a many-one relation between facts; (*ii*) facts obtain at all the possible worlds where they exist; (*iii*) facts are structured complexes of objects and properties. The main assumption—that grounding is a relation between facts—is present in most versions of NECESSITY.[4] I will work with this standard assumption, but I don't think the arguments here crucially depend on whether grounding relates facts.[5]

We now have a precise principle. The necessitarian thinks this principle holds. The contingentist thinks it doesn't. The natural way to motivate contingentism is by providing compelling counterexamples to NECESSITY. There are many such examples, but I will describe the two that I find most persuasive.

3.2.1 Physicalism

Suppose physicalism is true, where physicalism is the view that every mental fact is fully grounded in some collection of physical facts. Now consider a specific mental fact about my phenomenal experience.

Red: I am having an experience of a red object

Let *Phys* be the physical facts that fully ground *Red*. *Phys* might consist in facts about light, my environment, and my perceptual faculties. If NECESSITY holds, then the following should also hold.

$\Box$ (*Phys* $\rightarrow$ *Red*)

Leuenberger (2014) presents a compelling case where physicalism is true (and as a consequence, it's true that *Phys* fully grounds *Red*), but *Phys* doesn't entail *Red*.

Leuenberger (2014, p. 160) describes the scenario as follows:

[4]See Trogdon (2013a, p. 466), Rosen (2010, p. 118), Leuenberger (2014, p. 155), and Skiles (2015, p. 718).

[5]There are similar formulations of NECESSITY that are not committed to grounding relations or facts. See Litland (2015, p. 485).

> In the actual world, God had put all the physical facts in place by the end of day seven. This was enough to make it the case that *Red* obtains. God henceforth left the world alone. In world w_b, God on day eight ensured that in the region occupied by my brain, a non-physical fundamental property, to be called 'chromaplasm', is instantiated. Chromaplasm makes visual phenomenology disappear. In w_b, I do not have a red experience, i.e. *Red* does not hold. The presence of *chromaplasm* is a *blocker* of *Red* in w_b.

There are two possible worlds: the actual world ($w_@$) and another possible world (w_b). Both worlds contain *Phys*. The difference is that $w_@$ contains no non-physical facts, while w_b is a world that contains at least one non-physical fact: namely, a fact about chromaplasm. Crucially, the presence of chomaplasm prevents *Red* from obtaining in w_b.

This scenario is conceivable. Given that it's conceivable, we have prima facie reason to think it's possible. And if it's possible, then NECESSITY doesn't hold. This is because *Phys* fully grounds *Red*, in $w_@$, but *Phys* obtains and *Red* doesn't, in w_b.

The intuition that Leuenberger is trying to pump is that "What God could have done after day seven ought not to bear on the question whether our world—where, by hypothesis, He stopped after day seven—is physicalistic."[6] Why should what happens in $w_@$ (with respect to what grounds what) necessarily determine what happens in w_b? It shouldn't.

3.2.2 Restricted Accidental Generalizations

Skiles (2015) asks us to imagine that the following fact obtains.

> *Gen*: All the swans in Switzerland are white

Gen is a restricted accidental generalization. It's a *generalization* because it includes a quantifier in its logical form. It's *restricted* because it isn't about *every* swan. It's *accidental* because it can obtain in the actual world

[6] Leuenberger (2014, pp. 160-161).

while failing to obtain in a world with the same laws of nature and Swiss-swans.[7]

Let $s_1, s_2, \ldots, s_n$ be all the facts in $w_@$ of the form: x is a white swan in Switzerland. It is natural to think that true generalizations are fully grounded in their instances. Since *Gen* is a generalization and $s_1, s_2, \ldots, s_n$ are the instances of *Gen*, we should conclude that $s_1, s_2, \ldots, s_n$ fully ground *Gen*.

Skiles (2015) gives reasons to think that this scenario entails the falsity of NECESSITY. Consider *Gen*, the restricted accidental generalization that is true at the actual world. Skiles (2015, p. 731) writes:

> [Although] this accidental generalization is grounded in its instances at $w_@$, its instances also all obtain at a world, $[w_b]$, that is just like $w_@$ except that I have smuggled a bevy of black swans from Australia into Geneva, and thus they all obtain at a world in which not every swan in Switzerland is white.

Post-smuggling, w_b includes additional non-white swans, so it's not a fact at w_b that all swans in Switzerland are white. But w_b still contains all the white swans found in $w_@$. So $s_1, s_2, \ldots, s_n$ ground *Gen* at $w_@$, and $s_1, s_2, \ldots, s_n$ obtains at w_b, but *Gen* doesn't obtain at w_b. We have a counterexample to NECESSITY.

3.3 In Defense of Necessity

What can the necessitarian say in response to these potential counterexamples to NECESSITY?

Lots of things. I will focus on two principled defenses of necessitarianism in the literature.

> EXPLANATION: Full grounds completely explain what they ground, and if this is true, then NECESSITY is true.
>
> ESSENCE: There is an essence-grounding link that entails NECESSITY.

[7] More precisely, restricted accidental generalizations take the form: $\forall x.\ (x \text{ is } F) \rightarrow (x \text{ is } G)$. *Gen* is just the fact that $\forall x.(x \text{ is a swan in Switzerland}) \rightarrow (x \text{ is white})$.

I focus on these arguments because they are the most common, and most detailed, arguments for NECESSITY. Additionally, these arguments have the virtue of being principled, as opposed to piecemeal, reasons to think the counterexamples fail. This allows the necessitarian to defend NECESSITY without depending wholly on the details of the various purported counterexamples.

In what follows, I will consider both arguments and argue that they are inconclusive. Despite their appeal, they don't vindicate NECESSITY.

3.3.1 Explanation

Many grounding theorists endorse the following principle.

> GROUNDING-TO-EXPLANATION: If $\phi_1, \phi_2, \ldots, \phi_n$ fully ground ψ, then $\phi_1, \phi_2, \ldots, \phi_n$ completely explain ψ.

This principle is appealing for two reasons.

First: it's a natural strengthening of a principle that we already accept. Most agree that, if ϕ grounds ψ, ϕ explains ψ.[8] It's only natural that: if ϕ *fully* grounds ψ, ϕ *fully* explains ψ.

Second: metaphysical grounding is thought to produce a particularly tight explanatory connection between grounds and grounded. Fine (2012a, p. 39) writes:

> [If] we were to claim that the particle is accelerating in virtue of increasing its velocity over time (which is presumably a statement of metaphysical ground), then we have the sense that there is - and could be - no stricter account of that in virtue of which the explanandum holds. We have as strict an account of the explanandum as we might hope to have.

Another way of putting it: there cannot be an explanatory gap between full metaphysical grounds and what is grounded. Either way we phrase it, it sounds like we are committing ourselves to GROUNDING-TO-EXPLANATION.

There may be disagreement about how, precisely, to characterize explanation, but explanation must be *objective* in the sense that: if ϕ explains

[8] See: Fine 2001; deRosset 2010; Dasgupta 2014b; Litland 2015, 2013.

ψ, ϕ could explain ψ even if we didn't exist (unless ϕ and ψ are about us). Explanation, in the sense discussed here, isn't metaphysically tied to our actual, non-ideal explanatory practices.

Given GROUNDING-TO-EXPLANATION, we can now explain why the counterexamples are thought to fail.

Take the physicalism case. The explanation of *Red* (the fact that I'm having an experience of redness) is supposed to be fully explained by *Phys* (the physical facts) at $w_@$. But you might think the full explanation of *Red* should include the fact that there are no blockers at $w_@$. An anti-blocking clause doesn't give a positive explanation of *Red*, but it does appear to be part of the full explanation of why *Red* obtains. This additional ground rescues NECESSITY.

Take the restricted accidental generalization case. *Gen* (the fact that all swans in Switzerland are white) is supposed to be fully explained by its instances. But you might think the full explanation of *Gen* should include the fact that the swans in $s_1, s_2, \ldots, s_n$ are the only swans in Switzerland. Again, NECESSITY is saved.

In each case, we find that the proposed full ground does not provide a complete explanation of what is grounded. Because GROUNDING-TO-EXPLANATION is true, we must conclude that the counterexamples aren't genuine because they do not provide complete explanations.

Or so the argument goes.

The major sticking point of this argument concerns the nature of complete explanations. Some complete explanations don't necessitate. Complete causal explanations, for instance, aren't always metaphysically necessary; full causes might not necessitate their effects.[9] Why should complete grounding explanations be any different?[10]

To answer this question, we need to get clearer about explanatory completeness. Luckily, deRosset (2010) sheds light on this matter. On his view, an explanation is *complete* only if it has no confounding case and *incomplete* otherwise. A *confounding case* for an explanatory claim like "ψ

[9]Skiles (2015, p. 742) makes this point.

[10]Complete causal explanations might be *nomologically* necessary, but this doesn't obviously support the idea that complete grounding explanations are metaphysically necessary. You would have to think there are equivalent metaphysical laws, where those laws are metaphysically necessary.

because ϕ" is any possible world where ϕ obtains but ψ doesn't.

The animating idea is that complete explanations shouldn't have confounding cases because confounding cases represent unexplained differences. If ϕ obtains at $w_@$ and w_b, but ψ only obtains at $w_@$, there is some explanatory factor f that explains why ψ obtains at w_b rather than $w_@$. A complete explanation of ψ should include f. But if it does, and it contains all the other relevant explanatory facts, then ψ must obtain.

This conception of explanatory completeness implies:

> EXPLANATION-TO-NECESSITY: If ϕ_1, ϕ_2, ..., ϕ_n completely explain ψ, then necessarily: if $\phi_1 \wedge \phi_2 \wedge \ldots \wedge \phi_n$, then ψ.

This principle, coupled with GROUNDING-TO-EXPLANATION, entails NECESSITY. Full grounds provide complete explanations, and complete explanations necessitate, so full grounds necessitate.

This proposal isolates the reason why contingentist explanations seem unsatisfactory. Such explanations don't explain relevant differences across metaphysically possible worlds. It's still a legitimate question to ask: "Why should ψ obtain given that ϕ does?" But if this question is legitimate, then something has been left unexplained.[11]

Though this is a compelling line of thought, there are still wrinkles in the argument. I agree that there is something left unexplained, but it's not obvious that a complete explanation of ψ needs to explain it. I want to know what explains ψ. I don't necessarily want to know what explains ψ rather than $\neg\psi$. If there is such a thing as complete non-contrastive explanation, then it should be debateable whether complete explanations account for all relevant interworld differences.

The more general question is: what is complete explanation like such that it requires that these interworld differences be accounted for? It can't be our contingent interests that determine this fact, since we are thinking of explanation in an objective sense. It has to either be: (*a*) something about our ideal explanatory practices, or (*b*) a fact about the worldly explanatory relations. In either case, we would have to go beyond a pure appeal to explanation.

[11] Trogdon (2013a) gives a more extensive "open question" argument of this form.

Though I think there's something right about this argument against contingentism, I think the notion of a complete explanations is too underspecified. If complete explanation is to do heavy-duty metaphysical work—like secure NECESSITY—then we need a more robust account of complete explanation. For this reason, I think we should turn to other defenses of NECESSITY.

3.3.2 Essence

Some grounding theorists think there is a systematic connection between grounding and essence.[12] Fine (2012a, p. 74) proposes a connection of this sort, writing:

> Given that the fact F is grounded in the facts G_1, G_2, ..., then it lies in the nature of the fact F (or of the items that it involves) that it should be so grounded given that the facts G_1, G_2, ... do indeed obtain.

We can put this grounding-essence link in the form of a principle.

> GE: $(\psi < \phi_1, \phi_2, \ldots, \phi_n) \rightarrow \Box_\psi((\phi_1, \phi_2, \ldots, \phi_n) \rightarrow (\psi < \phi_1, \phi_2, \ldots, \phi_n))$

Informally put: if ψ is fully grounded in the ϕ-facts, it lies in that nature of ψ ($\Box_\psi$) that: if the ϕ-facts hold, then ψ is fully grounded in the ϕ-facts.

GE is appealing for two reasons.

First: it assigns a clear role for essences in ground-theoretic metaphysics. The essence of a thing is not its grounds, but the essence of a thing does put constraints on how that thing is grounded. On this view, essence and grounding are complementary, rather than competing, notions.[13]

Second: this proposal explains some of the epistemology of grounding. On this view, you can determine what grounds some non-fundamental (viz., grounded) thing by determining the nature of that thing. This

[12] See: Fine 2012a, 2015; Trogdon 2013a; Correia 2013; Dasgupta 2014b.

[13] For more on the view that essence and grounding are complementary, see Fine (2012a, pp. 74-80) and Fine (2015).

is epistemologically significant because it clarifies how we know what grounds what.

So GE has some appeal. For it to entail NECESSITY, it needs two additional assumptions.

> FACTIVITY: If ϕ fully grounds ψ at a possible world w, then ϕ and ψ obtain at w.
>
> NEC-ESS: If it lies in the nature of ψ that n obtains, then it's metaphysically necessary that n obtains.[14]

FACTIVITY is largely uncontroversial. NEC-ESS is a familiar view about essence.[15]

To see how NECESSITY follows from these assumptions, I will start by showing how these assumptions entail specific instances of NECESSITY.

Start with the physicalism case. Suppose *Phys* fully grounds *Red*. By GE, it lies in the nature of *Red* that: if *Phys* obtains, then *Phys* fully grounds *Red*. By NEC-ESS, it's metaphysically necessary that: if *Phys* obtains, then *Phys* fully grounds *Red*. Assuming FACTIVITY, if *Phys* obtains then *Red* obtains. By transitivity, it follows that: if *Phys* fully grounds *Red*, $\Box(\textit{Phys} \rightarrow \textit{Red})$. This is just an instance of NECESSITY. So there must be something missing—perhaps the fact that there is no chromaplasm—from the contingentist's proposed full ground for *Red*.

The generalization case is trickier. GE predicts that: if *Gen* is fully grounded in $s_1, s_2, \ldots, s_n$, then it lies in the nature of *Gen* that: if $s_1, s_2, \ldots, s_n$, then *Gen* is fully grounded in $s_1, s_2, \ldots, s_n$. This gives the intuitively wrong verdict, since it seems like the essence of the generalization shouldn't specifically refer to $s_1, s_2, \ldots, s_n$; *Gen* isn't tailor-made for those particular swan facts.[16]

We can fix GE by revising our account of what lies in the nature of the grounded fact.[17] Maybe the fact that all swans in Switzerland are white does not identify the particular fact that Susan the Swan is a white swan in Switzerland, but it certainly identifies a condition that is met by

[14]There is a weaker principle in the area: if it lies in the nature of ψ that n obtains, then n obtains if ψ does. This weaker principle won't secure NECESSITY.

[15]See Fine (2005) and Fine (1994) for discussion.

[16]See Skiles (2015, p. 747) for this criticism.

[17]This proposal is based on Fine (2012a, p. 75).

this particular fact: namely, that it is of the form: x is a white swan in Switzerland. So it lies in the nature of *Gen* that: a plurality of Swiss-swan facts collectively fully ground *Gen*.

Generalizing, we get:

> GE^2: $(\psi < \phi_1, \phi_2, \ldots, \phi_n) \rightarrow \Box_\psi$ (there is a condition Φ satisfied by $\phi_1, \phi_2, \ldots, \phi_n$ which implies: $(\phi_1, \phi_2, \ldots, \phi_n) \rightarrow (\psi < \phi_1, \phi_2, \ldots, \phi_n)$)

The content of Φ will be clear in light of specific cases. In the current case, it references all the facts about individuals being white Swiss swans. It does so indirectly, via the abstract condition of *being-a-white-Swiss-swan*. So we avoid the objection that the essence of the grounded fact is too specific.

With this revised proposal in place, we see that the full ground of *Gen* must necessitate it. We use the same basic reasoning as we did with the physicalism case. The crucial point is that it lies in the nature of *Gen* that, if the swan-facts obtain, then so does *Gen*, and by NEC-ESS, this conditional holds at every metaphysically possible world. So the contingentist full grounds must be missing something—perhaps a totality fact.

So far, I've shown how these assumptions entail instances of NECESSITY. At this point, it should be clear how these assumptions entail NECESSITY itself.[18] Let's now evaluate the assumptions underlying the essentialist defense of NECESSITY.

One might question FACTIVITY or STRONG, but I think there are two bigger (and lesser-known) problems with these proposals.

The first problem is that there may not be enough essences to go around. Both proposals require that that every non-fundamental fact have an essence, but this contradicts much work in social metaphysics and philosophy of biology. Many argue that social or artifactual kinds—e.g., genders, races, artworks—exist but have no essences.[19] Within phi-

[18] In case this *isn't* clear, here's a proof. Assume that $\psi < \phi$. GE^2 gives us: $\Box_\psi(\phi \rightarrow (\psi < \phi))$. NEC-ESS holds, so: $\Box(\phi \rightarrow (\psi < \phi))$. From FACTIVITY, we get: $\Box(\psi < \phi \rightarrow \psi)$. Applying transitivity to the last two conclusions, we get our desired consequent: $\Box(\phi \rightarrow \psi)$.

[19] Butler (1990) is a classic instance of this view.

losophy of biology, it's standard to think the same thing about species and other biological kinds.[20] The essentialist defense of NECESSITY rules out these possibilities.[21]

The second problem is that, even if everything does have an essence, there may be some essences that have nothing to say about what grounds what. This possibility is most salient in cases where a fact has multiple full grounds but those grounds are suitably distinct. Suppose value pluralism is true in the sense that: there are multiple distinct ways in which states of affairs can be good. Then it's plausible that this fact

Good: It's good for me to exercise

has multiple full grounds, namely:

Happy: Exercising makes me happy

Healthy: Exercising makes me healthy

If either GE or GE^2 is true, the essence of *Good* should reference some condition that's met by *Happy* and *Healthy*. But why? The two full grounds are fundamentally different (by the hypothesis of value pluralism). A more general condition would be disjunctive and artificially imposed. The essentialist would have to rule out value pluralism, but this idea seems perfectly intelligible. Alternatively, the essentialist would need to argue that value *pluralism*—that things are good in fundamentally different ways—implies value *disjunctivism*—that it lies in the nature of goodness that things are good in ways X or Y or Z.

The general worry is that GE and GE^2 conflict with two ways that essences could be sparse. First, essences could be sparse in the sense that some things don't have essences. Second, essences could be sparse in the sense that they have sparse contents; they don't tell us what grounds what.

[20] See Ereshefsky (2010) for a recent view of this sort.

[21] In both social metaphysics and philosophy of biology, there are some who argue that the criticisms of essentialism are misplaced. For example, Witt (2011) argues that gender essentialism is often conflated with biological essentialism, and that the latter, not the former, should be rejected. Regardless of the merits of essentialism, my point is that anti-essentialism is an intelligible position that strikes many as promising. There at least needs to be an argument for ruling it out.

Now, I don't think these considerations are decisive reasons to reject the essentialist story. I only want to highlight the theoretical costs of adopting such a story. They aren't trivial. The essentialist needs to explain why local anti-essentialists are mistaken. They also need to explain why the nature of every grounded fact must have something to say about how it's grounded.

3.4 The Case for Pluralism

So far, we have discussed putative counterexamples to NECESSITY, necessitarian responses to those counterexamples, as well as my own objections to *those* responses. After all the back and forth, where do we go from here?

The standard approach is to keep the back and forth going until we figure out whether necessitarianism or contingentism is true. This would involve responding to various objections, extending certain lines of argument, and arguing for certain assumptions. In short: the standard approach is to do more of what I did in the previous section.

This approach is well-represented in the literature. In fact, it's the *only* approach currently represented. It follows from a substantive assumption about grounding: that there is a single grounding relation. Call this view *grounding monism.*

Necessitarians and contingentists alike preface their inquiries with the monist assumption.[22] For example, Leuenberger (2014, p. 153) writes:

> In this paper, I shall presuppose that there is no ambiguity in our talk of grounding: we have identified a single relation that we can theorize about. I am indebted to previous writers on the subject who worked towards pinning it down.

The underlying idea is that the early foundational manifestos on grounding have successfully singled out the grounding relation,[23] and that our job, now, is to determine what properties hold of this relation.

[22]See: Skiles (2015, p. 719-20), Leuenberger (2014, p. 153), and Trogdon (2013a, p. 479, fn. 1).

[23]I'm thinking of the early discussions of grounding by Fine (2001), Schaffer (2009), and Rosen (2010).

At the time the key papers for and against NECESSITY were written, the monist assumption went largely unchecked. Recently, however, the monist assumption has been questioned, in two ways.

First: some metaphysicians have criticized the idea that a single grounding relation was ever "pinned down." Most notably, Koslicki (2015) and Wilson (2014) have argued that a monolithic grounding relation would be too coarse-grained to make sense of many of the basic questions of metaphysical dependence. Another way of putting it: grounding *simpliciter* is too uninformative to do any explanatory work.

Second: several metaphysicians have suggested that there are a plurality of grounding relations. Call this broad view *grounding pluralism*.[24] On the pluralist view, the early foundational discussions of grounding did not identify a single grounding relation, but they did identify a *family* of grounding relations.

In light of these developments, I think we must take seriously the possibility that there are at least two grounding relations (or kinds of grounding). And if we take the general pluralist thesis seriously, we have to take seriously the possibility that one grounding relation is necessary and the other is contingent.

In what follows, I will describe a pluralist theory of grounding and show how it could resolve the necessitarian/contingentist debate. The goal is not to provide a proof of pluralism; rather, the goal is to demonstrate how pluralism, an emerging theory of grounding, might explain the debate between necessitarians and contingentists.

3.5 The Structure of Pluralism

Any specific pluralist theory has to answer two basic questions. What is the sense in which grounding is plural? And what does the relevant plurality consist of? These two questions concern the structure and content of pluralism, respectively. In this section, I will answer the first question.

On my view, grounding is plural in the following senses.

[24]The following have all suggested pluralist views of grounding: Wilson 2014; Koslicki 2015; Fine 2012a; Schaffer 2016b; Cameron 2015; Griffith 2014; Rettler 2017.

SEMANTIC PLURALISM: "Grounds" can refer to different grounding relations.

KIND PLURALISM: There are multiple, non-trivially different kinds of grounding relations.

Start with SEMANTIC PLURALISM. This claim concerns "grounds" and similar phrases—"in virtue of," "metaphysically depends on,"—as used in the context of self-consciously ground-theoretic investigations. It does not account for *every* use of the terms "in virtue of," "metaphysically depends on," etc, in present and past metaphysics.

I understand the plurality of reference in terms of context-sensitivity. "Grounds" refers to different kinds of grounding in different contexts. The current view should not be mistaken for the view that grounding-talk is ambiguous or polysemous.[25]

I am thinking of "grounds" along the lines of ordinary indexicals like "I," "tomorrow," and "can." There is a unified linguistic meaning which only yields a truth-evaluable semantic content when supplied with a context. In §7, I will explain how I understand the necessitarian/contingentist debate in light of contextualism. For now, I won't go into more detail.

On to KIND PLURALISM. There are multiple non-trivially different kinds of grounding. The notion of a non-trivially different kind can be understood by considering examples. Here are two different kinds of animals: *hen* and *rooster*. Intuitively, these two kinds trivially differ from one another. They aren't fundamentally different kinds of animals.

In contrast, *human* and *tiger* are non-trivially different kinds of animals. Humans and tigers differ extensively, but they're still animals. They are multicelluar organisms that eat and digest food, and do all the other things that unites the kind *animal*. So they are non-trivially different kinds, but they still fall under a common kind.

The distinction between non-trivial and trivial kinds is intuitive, and there are different ways to cash out this idea. I will understand it in terms

[25]Correia and Schnieder (2012) say that pluralists "[hold] that several very diverse phenomena and notions are inadequately garbled together under the title 'grounding'" (p. 35). Trogdon (2013b) and Tahko (2013) describe pluralism as the view that "grounds" is equivocal. This isn't my view.

of the genus-species relationship. On this view, kinds are species. The kinds *human* and *tiger* are species of the genus *animal*. Species, by their nature, non-trivially differ from one another. The differences between species are specified by *differentia*, which are facts of the form: to be a member of species s is to be a member of genus g such that p.

My view is that the species of grounding are like *human* and *tiger*, not *hen* and *rooster*. There is a genus, *grounding*, of which there are least two species. Grounding is unified, but there is a non-trivial sense in which there are varieties of grounding.

This marks an important difference between my conception of grounding pluralism and that of others. Sometimes pluralism is taken to imply that grounding is disunified and that the varieties of grounding are largely unconnected.[26] Against this view, I acknowledge that grounding is unified, and that there are intimate connections between the different varieties of grounding.

Grounding pluralism need not posit the disunity of grounding in order to be a significant thesis. If someone discovered a new kind of human, we wouldn't say their discovery was insignificant because the new kind falls under a antecedently understood genus. The fact that you've discovered a new species of human should be significant enough! Similarly, the discovery of two related but non-trivially different kinds of grounding is a significant one.

Let us take stock. I've explained how I understand the structure of my specific account of grounding pluralism. On my view, grounding-talk is context-sensitive, and grounding is plural in the sense that there are multiple species of grounding united under a single genus, *grounding*. Now we should try to determine what those species are, exactly.

[26]Berker (2017) is a notable critic of pluralism who thinks pluralists are committed to the disunity of grounding. More precisely, he defines grounding pluralism as the view that: for any two grounding relations, they cannot define each other, and there is no other grounding relation that they can be defined in terms of. Assuming that a genus plus a differentia defines a species—which I'm willing to assume, for the sake of argument—my view is not pluralist, in his sense.

3.6 The Content of Pluralism

What are the two kinds of grounding? To answer this question, I will start with a prior question: what do all kinds of grounding have in common? On my view, grounding is a species of which there are at least two species. So how do we characterize the genus?

Here is my proposal.

> GROUNDING GENUS: A metaphysical grounding relation is a relation of metaphysical dependence that provides a distinct kind of metaphysical explanation, a kind of explanation that is not (independently) provided by more familiar dependence relations like realization, causation, or composition.

This proposal states what every grounding relation has in common and unifies them *qua* species of the genus *grounding*.

The motivation for this proposal consists in the fact that (*i*) all of the early foundational discussions of grounding think that this is what all grounding relations have in common, and (*ii*) most current grounding theorists agree.

On the first point: metaphysical grounding was introduced because it was thought that familiar dependencies like realization, causation, composition, and so on, fail to give us the kind of explanations we are after. In the early reflections on grounding, the standard approach was to start with an explanatory intuition and then give several reasons why familiar dependence relations don't capture this intuition.[27]

Though there has been a flurry of work on grounding in the wake of these discussions, few have strayed from this basic idea. Most agree that grounding is explanatory, in the following sense: if ϕ grounds ψ, ϕ explains ψ. The precise relationship between grounding and grounding explanation is contentious. Some think that grounding *just is* metaphysical explanation, while others think grounding is a relation that *backs* explanation.[28] Nonetheless, it's largely agreed upon that grounding provides metaphysical explanations.

[27] See: Fine 2001; Schaffer 2009; Rosen 2010; Audi 2012.

[28] See Schaffer (2016b) for discussion.

It's also largely agreed upon that grounding is something over and above the usual band of metaphysical dependence relations. There may connections between grounding and supervenience, causation, composition, and so on, but these are independent connections; the core of grounding does not consist in any of such relations.[29]

So GROUNDING GENUS is a plausible starting point for characterizing the grounding genus. Now we should think about the different species of grounding. What are they? I will describe two and show how they account for the necessity and contingency of grounding.

3.6.1 What-grounding

At the core of grounding is the idea that grounding is beyond X, where you plug in familiar dependence relations for X. One of the most common versions of this idea is that grounding is beyond modal dependence.

This point is demonstrated by considering dependencies between facts that are modally equivalent yet different in identity and explanatory priority, where two facts ϕ and ψ are *modally equivalent* iff $\Box(\phi \leftrightarrow \psi)$.

The simplest example is the fact that Socrates exists and the fact that Socrates' singleton exists. These facts exist in all the same possible worlds, yet the fact that {Socrates} exists is grounded in the fact that Socrates exists, not vice versa.

The idea, here, is that grounding captures metaphysically significant necessary and sufficient conditions.[30] Socrates' existence is necessary and sufficient for Socrates, and the fact that these things are modally equivalent has something to do with one of the facts involved, not because of some independent factor.

For example, every necessary fact is modally equivalent to every other necessary fact, but this equivalence isn't always symptomatic of a metaphysically significant connection between the two facts. The fact [Barack Obama exists or doesn't exist] and the fact [There are infinitely many prime numbers] are modally equivalent. Though Obama was an important U.S. president, his existence didn't have an impact on the mathe-

[29] The few notable exceptions to this idea are Wilson (2014) and Wilson (2017).

[30] I am assuming the common view of necessary and sufficient conditions whereby p is necessary and sufficient for q iff $p \leftrightarrow q$.

matical facts. Another way of putting it: Obama's existence is no part of what it is for there to be infinitely prime numbers.

More generally, we can take metaphysically significant necessary and sufficient conditions to indicate *what it is* for things to be the case. Being an unmarried male is a metaphysically significant necessary and sufficient condition for being a bachelor. So it follows that what it is to be a bachelor is to be an unmarried male.

This leads me to posit the core characterization of my first kind of grounding.

> WHAT-GROUNDING: If ϕ what-grounds ψ, ϕ is a metaphysically significant necessary and sufficient condition for ψ.

I will sharpen up this idea soon. But first, I want to provide evidence that this is a way that other metaphysicians actually try to identify this notion. It is found in three places.

First: the idea is found in discussions of grounding and reduction.[31] Schaffer (2009, p. 353) says grounding captures the notion that dependent entities are "no addition to being," that they are "ontological free lunches." These philosophers use the language of reduction, but the relevant notion of reduction and my notion of definition appear to coincide.[32] If ψ reduces to ϕ, then it's natural to think that ψ and ϕ are modally equivalent. It's also natural to think that ϕ is nonetheless metaphysically prior to ψ.

Second: the idea is found in discussions of real definition. Real definitions, like semantic definitions, give you necessary and sufficient conditions. Unlike semantic definitions, real definitions are definitions of worldly objects, properties, and facts. So real definitions have a metaphysical significance that semantic definitions don't necessarily have. Rosen (2015) gives a a precise account of real definition, where this notion is partly defined in terms of grounding.

Third: the idea is found in discussions of generic identity (or metaphysical analyticity).[33] Some metaphysicians want to account for claims

[31] See: Fine 2001; Rosen 2010; Schaffer 2009.

[32] This is most explicit in Rosen's shift from talking of a grounding-reduction link in Rosen (2010) to a grounding-definition link in Rosen (2015).

[33] See: Dorr 2017, 2005; Linnebo 2014; Rayo 2013.

like "To be a bachelor is to be an unmarried male" or "What it is for an act to be right is for an act to promote happiness." These claims have been thought to express a special kind of identity. Like ordinary identity, generic identities provide necessary and sufficient conditions. These generic identities also appear to carve up metaphysically significant distinctions or priorities.

I am not saying that these metaphysicians identify grounding with what-grounding, only that they all appear to single out what-grounding. This correspondence isn't perfect, because a lot depends on the details, but the relevant notions all broadly capture the idea of metaphysically significant necessary and sufficient conditions. This gives us prima facie reason to believe that what-grounding is a kind of grounding discussed by metaphysicians.

I have presented the general idea of what-grounding and motivated the relevance of this kind to metaphysics debates. Now I should say more about its properties. There are different approaches, but I prefer to think of it along the lines of real definition.

> WHAT-GROUNDING. ϕ fully what-grounds ψ only if $\Box_\psi$(if ϕ or ψ, then ϕ fully grounds ψ).[34]

Think of real definitions as backing, or making true what-it-is explanations. For this reason, you could just as easily call what-grounding "definition." In fact, this is what I will do, on occasion.

WHAT-GROUNDING is not a definition (real or otherwise) of what-grounding. I am only presenting a necessary condition on what-grounding.[35] The notion of grounding on the right side of WHAT-GROUNDING is the genus notion of grounding.

The simplest way to understand WHAT-GROUNDING is to consider what it says about a concrete example. Suppose *being-a-happiness-promoting-act* fully what-grounds *being-a-right-act*. (Because definitions are usually definition of properties (as opposed to facts or property instances), I will

[34]This proposal is inspired by, but not identical to, Rosen (2015, p. 200)'s definition of real definition.

[35]Rosen (2015) purports to provide a real definition of real definition in terms of essence and grounding. This view is compatible with my pluralism, but I don't assume this strong view.

relax my assumption that grounding only relates facts.) Then it lies in the nature of *being-a-right-act* that: for every possible act x, if x is right, then the fact that x is right is grounded by the fact that x promotes happiness, and if x promotes happiness, x is right, and its being right is grounded in the fact that it promotes happiness.

Another way to understand WHAT-GROUNDING is to think of it as an expansion of GE. Recall that GE says that, if ϕ grounds ψ, it lies in the nature of ψ that, if ϕ exists, then ϕ grounds ψ. WHAT-GROUNDING says that, if ϕ grounds ψ, it lies in the nature of ψ that: if ϕ **or** ψ exist, then ϕ grounds ψ

WHAT-GROUNDING adds the disjunct that I've highlighted in bold. This disjunct is crucial because it ensures the modal equivalence of ϕ and ψ, a property that is central to real definition. ϕ necessitates ψ for the same reasons I discussed when talking about GE. ψ necessitates ϕ because the nature of ψ tells us that, if ψ obtains, then it must be grounded in ϕ. Since essences are necessary, this claim is metaphysically necessary.

By now, you can see that what-grounds is a kind of grounding that accounts for NECESSITY. However, WHAT-GROUNDING requires modal equivalence, while you might only want grounding to be necessary in the upward (grounds necessitating grounds) direction. For example, you might think that the promoting-happiness grounds and necessitates right action, but right action does not necessitate happiness-promotion. Call this *upward necessitation.*

In such cases, one might be aiming for a *partial* definition of right action. We can get one notion of partial definition by removing the highlighted disjunct from WHAT-GROUNDING.[36]

> ϕ partially what-grounds ψ only if $\Box_{\psi}$(if ψ exists, then ϕ fully grounds ψ).

So happiness-promotion partial defines right-action if, it lies in the nature of right action that: for every happiness-promoting act, the fact that this act is right is grounded in the fact that it promotes happiness.

[36]We can get another notion of partial definition by removing the other disjunct, instead. Given what I say about the mere upward necessitation case, it should be straightforward how to use partial definition to make sense of mere downward necessitation.

Partial definition accounts for merely upward necessitation. Since full definitions are hard to come by, it is likely that partial what-grounding will be the notion we usually appeal to.

In addition to making sense of NECESSITY, what-grounding can also make sense of closely related features of NECESSITY like complete explanation and essence.

Recall the complete explanation defense of NECESSITY. Full grounds provide complete explanations, and complete explanations necessitate, so full grounds necessitate. If we replace grounds with what-grounds, the argument is sound. what-grounding provides complete definitions, and complete definitions *certainly* necessitate. If a bachelor is defined in terms of unmarried male, you can't have an unmarried male that fails to be a bachelor. Necessitation is a central part of the logic of complete definition.

Now recall the essentialist defense of NECESSITY. WHAT-GROUNDING also has an essence-grounding link, but the link has an independent motivation. The point is not simply to capture the necessity of grounding, but to capture the notion of a real definition.

WHAT-GROUNDING also captures the appeal of NECESSITY with respect to the specific putative counterexamples to NECESSITY. If pain is defined in terms of physical states, then you can't have the physical states without pain. If *being-a-Swiss-swan* has a definition, then it must be modally equivalent to its definiens.

Giving a definition for pain and generalizations may be impossible. This would be a problem if grounding was always what-grounding. On the current view, however, everything doesn't necessarily have a definition.

This point is worth emphasizing. In §3.2, I considered two possibilies: (*i*) some things don't have essences, and (*ii*) some essences don't speak to the issue of what grounds what. In either case, such things won't have what-grounds. If grounding and what-grounding were identical, then we'd have a problem, because it's implausible that generalizations are ungrounded. But if there are multiple kinds of grounding, a thing can have grounds (in general) without having what-grounds.

There are other cases where we want to say that a thing doesn't have

a definition but does have grounds. For example, Williamson (2000) argues that knowledge cannot be defined. Many accept this conclusion but nonetheless reject the view that knowledge is metaphysically fundamental. If definition and grounding are identical, this view is incoherent. If definition is just one kind of grounding, then the view is coherent. Knowledge has no what-ground but it has grounds.

Again, what-grounding has independent motivation. By now, I hope it's clear that WHAT-GROUNDING is not an artificial proposal concocted to entail NECESSITY. It's something that metaphysicians appear to talk about, it can be given a precise characterization, it makes sense of the two key principled defenses of necessitarianism, and it has independent theoretical utility.

3.6.2 Why-grounding

I have talked about what-grounding and shown how this kind of grounding is necessary. But what about contingent grounding? We need a way of cashing out contingent grounding that isn't ad hoc.

The key to contingent grounding lies in the contingentist responses to necessitarians. A recurring theme of contingentism is that *causation* isn't necessary, so it's unclear why *grounding* must be. Contingentists see themselves as showing that grounding is more like causation than we previously thought. For example, Skiles (2015, p. 749) writes:

> Breaking the link between *causation* and necessitation was not the end of philosophical inquiry into causation, but rather just the beginning. Precisely the same is true for *grounding* as well.

In a similar vein, Leuenberger (2014, p. 152) writes:

> In my view, grounding is no more a necessary connection than causation is. My aim in this paper is to liberate it from the shackles of metaphysical necessity.

The analogy to grounding and causation could be taken as a one-off comparison that is supposed to work in the contingentist's favor. However, several metaphysicians—most notably, Schaffer (2016b)—have inde-

pendently motivated further analogies between causation and grounding.[37] Causation and grounding are both...

- ...forms of building.[38]
- ...directed (asymmetric) dependencies.
- ...explanatory.
- ...perspicuously modelled using structural equations.

Given that other metaphysicians have independently taken grounding to be importantly like causation, it's plausible that Skiles and Leuenberger are part of this crowd. All of these philosophers are thinking of grounding "in the image of causation," to use Schaffer (2016b)'s phrase.

My initial hypothesis is that contingent grounding is grounding as causation. This hypothesis faces an immediate problem: it's unclear what makes grounding *distinctively* analogous to causation. So far, everything about the causal analogy could just as well apply to *any* kind of asymmetric dependence. If the causation analogy is to play an informative role in theorizing about grounding, there should be a principled reason why we compare grounding to causation as opposed to, say, composition.

I think there is a way of thinking about the analogy that makes grounding distinctively similar to causation. Suppose we think of causation (at least partially) in terms of difference-making. Causes make a difference to their effect, where difference-making is typically understood as a form of counterfactual dependence.[39]

We then understand grounding as another form of difference-making dependence. While causal difference-making paradigmatically relates concrete events or facts, metaphysical difference-making relates abstract entities or facts. This gives us the core characterization of our second kind of grounding.

Most of those who think of grounding as importantly analogous to causation appeal to difference-making and counterfactual dependence to

[37] See: Schaffer 2016b; Fine 2012a; Wilson 2017; Krämer and Roski 2017.

[38] For the notion of *building*, see Bennett (2011).

[39] Here is a small sample of what has been said about difference-making causation: Lewis 1973; Sartorio 2004; Menzies 2004; Yablo 2002.

explicate grounding.[40] For this reason, I think it's plausible that grounding as causation is, fundamentally, grounding as metaphysical difference-making.

The basic idea of a difference-making ground is that it explains why ψ rather than not-ψ is the case. This kind of why-explanation appears to be supported by counterfactual dependence.

> WHY-GROUNDING: If ϕ why-grounds ψ, then: (*i*) ϕ grounds ψ, and (*ii*) if ϕ didn't obtain, then there would be no full ground (not even a zero-ground) of ψ, and ψ wouldn't obtain.

You look at the nearest possible world where ϕ doesn't obtain. If that's a world where ψ obtains and is grounded, then we conclude that ψ isn't why-grounded by ϕ.[41]

Now let's see how this conception of grounding helps us make sense of grounding contingentism. While the physicalism and generalization cases aren't plausibly cases of what-grounding, they are plausibly cases of why-grounding.

Start with the physicalism case. Because of the existence of blockers, NECESSITY fails. The necessitarian imposes strong modal constraints on physicalism, such that a failure of NECESSITY spells doom for physicalism. But if physicalism is understood in terms of why-grounding, then can capture the physicalist thesis without having a wholly modally unconstrained view.

The thought is that w_b, the world containing chromaplasm, is a distant possible world. If you subtract out *Phys*, nothing will ground *Red* and *Red* won't exist. So *Phys* is a difference-making ground for *Red*, despite the fact that it doesn't necessitate *Red*.

You can run a similar story for the generalization case. There is a possible world, w_b, where the swan-facts that actually obtain also obtain there, but *Gen* fails to obtain. Nonetheless, in the nearest possible worlds where the actual Swiss-swan-facts don't obtain, nothing grounds *Gen* and *Gen* doesn't obtain. So the swan-facts are why-grounds for *Gen*, even though they don't necessitate *Gen*.

[40] See: Schaffer 2016b; Krämer and Roski 2017; Wilson 2017, 2016a; Skiles 2015.

[41] For the sake of simplicity, I ignore the fact that some of these counterfactuals will be counterpossibles. For discussion, see Wilson (2016a).

Why-grounds don't necessitate, but they do have a fair amount of counterfactual stability. Just as causes are judged by their counterfactual stability, why-grounds are judged by their counterfactual stability.

Admittedly, the current notion of counterfactual stability is simple counterfactual dependence. I have chosen this notion because it applies to the paradigm cases. Though you might want a more sophisticated notion. For example, you might want to say that P and Q are why-grounds for [P or Q]. Given the current definition of why-grounds, this isn't true.

We might deal with this case in the same way causal theorists deals with pre-emption. Specifically, we might define difference-making in terms of *de facto* dependence—counterfactual dependence holding fixed some relevant fact.[42] For example, P is a difference-making ground for [P or Q] once we hold $\neg Q$ fixed.

I can't give an account of what determines which fact is held fixed. This is an open question for theorists who take grounds to be difference-makers. My current point is only that the notion of why-grounding can be modified to account for more complex cases of difference-making.

With both kinds of grounding in mind, we can make clear sense of the defenses of, and objections to, necessitarianism.

The necessitarian argues that full grounds are complete explanations and complete explanations necessitate. This argument is sound if we are talking about what-grounds, but it's unsound if we are talking about why-grounds. Complete difference-making explanations don't need to necessitate (as we see from the case of causation).

The necessitarian argues that there is an essence-grounding link that entails NECESSITY. This is true if we think of grounding as definition, but it's false if we think of grounding as difference-making. Essences are relevant to difference-making, and perhaps they put constraints on difference-making constraints, but the connection is not tight enough to guarantee NECESSITY.

It's possible there are other species of grounding that are also contingent. In fact, I think this is actual. On my full view, there is a kind of grounding called *how-grounding* that is even less modally constrained

[42]See Yablo (2002, 2004) and Hitchcock (2001) for this view of causation.

than why-grounding. I don't mention this species, however, because the case for contingent grounding is clearest for why-grounding.

There is more to be said about why-grounds, but in this section, I have only sought to (*a*) minimally characterize the relation, (*b*) show that it is independently motivated, and (*c*) demonstrate its role in explaining the necessitarian/contingentist debate.

3.7 Revisiting the Debate

I have given an account of two different kinds of grounding, grounding as definition and grounding as difference-making. I have also motivated the idea that these kinds aren't ad hoc. Now I will ecplore the consequences of pluralism for the necessitarian/contingentist debate.

If there are two species of grounding, where one is necessary and the other is contingent, there are several possible conclusions we could draw about the debate about NECESSITY.

The first possibility is that necessitarians and contingentists disagree about a single species of grounding, where the referenced species defines the other. On this view, the necessitarian thinks why-grounding is defined in terms of what-grounding and the contingentist thinks that what-grounding is defined in terms of why-grounding.

There are two problems with this view. First, it doesn't seem to be a pluralist theory. If one species defines the other, then it seems like the derivative species is a trival variant of the fundamental one. Second, it's unclear what the relevant definitions would look like. Pending an account of how the species could define each other, we should work on the hypothesis that the two species of grounding aren't defined in terms of one another. (Though it is possible that they are both defined in terms of the grounding genus.)

The second possibility is that necessitarians and contingentists simply talk past one another. On this view, when a necessitarian says "grounds," he means what-grounds, and when a contingentists says "grounds," he means why-grounds. So the sentences "Grounding is necessary" and "Grounding is contingent" will both be true, relative to the right contexts.

This seems plausible if we only think about grounding-talk when the-

orists aren't explicitly engaged in a debate about the modal properties of grounding. However, this view doesn't make sense of the clear disagreement between self-identified necessitarians and contingentists. *They* take themselves to be disagreeing. Why shouldn't we take their claims at face value?

Another possibility is that there is presupposition failure on both sides. On this view, necessitarians and contingentist both think there is a single basic species of grounding, but the necessitarian thinks it's necessary while the contingentist doesn't. Because this presupposition is false, the sentences "Grounding is necessary" and "Grounding is contingent" will both be false.

Though I think there's something infelicitous about both sentences, I'm not sure this is an instance of semantic presupposition failure. Even if speakers presuppose there is a single species of grounding, this is not to say that the meanings of the respective claims presuppose that there is a single species of grounding. Additionally, you might think that speakers do not presuppose a single species of grounding, only a single *genus* of grounding.

This brings us our fourth possibility: contingentism is true because it's true of the grounding genus. On this view, necessitarianism and contingentism are theories of the grounding genus. But since contingentism is true of a species of grounding, it seems that NECESSITY cannot be a feature of the grounding genus. Therefore, pluralism represents a victory for contingentism.

This view accounts for the disagreement between necessitarians and contingents. It also accounts for a significant sense in which necessitarians weren't completely off-base. There is a non-trivial species of necessary grounding but it doesn't characterize the grounding genus.

This view is implausible, however, insofar as it is supposed to make sense of ordinary judgments of what grounds what. If there are two basic species of grounding, then it's plausible that our grounding-talk will refer to these specific species in conversation. The genus *animal* is too general for many conversational purposes, so we often refer to the species *human* and *tiger*. Similarly, the genus *grounding* will often be too general, so we will generally refer to why-grounding or what-grounding,

directly.

This, in addition to earlier consideration, leads me to think we should distinguish between two contexts where grounding-talk is used. The first is a context where we are explicitly thinking about whether grounding is necessary. The second is a context where we aren't.

In the first context, we are trying to characterize the general nature of grounding. In this case, it is plausible that we are talking about the grounding genus.

In the second context, we are only concerned with the specific grounding relations we want to establish. In that case, it is plausible that we refer to either why-grounding or what-grounding, depending on what we're currently interested in.

The resulting account is two-tiered. Grounding-talk refers to the genus in one context and its species in other contexts. Though inelegant, I think this is the best interpretation of the debate.

If the two-tiered account is right, we need to answer the question: how do we explain the fact that most grounding theorists have overlooked this interpretation? Another way of putting it: how could presumably competent speakers of grounding-talk fail to recognize that we refer to different species in different contexts?

I suspect that part of the confusion stems from the fact that "grounds" is a relatively new technical term. "Metaphysically grounds" is not an expression found in ordinary language. It's a technical term that's supposed to refer to an important kind of dependence. Given that the term isn't clearly anchored in ordinary language, it is hard to theorize about what it means.[43] The fact that the term has been recently coined makes it even harder to single out its content.

Another contributor to confusion is the lack of a clear, salient pluralist position. On the current account, grounding is plural (in the sense that there are multiple basic species) and unified (in the sense that there is a genus). These distinctions aren't usually drawn, however. As a result, it is natural to divert to the simple hypothesis that we are referring to the same single basic grounding relation in every context.

I have given my account of how the pluralist might interpret the ne-

[43]Hofweber (2009) makes a criticism of this form.

cessitarian/contingentist debate. I have also given reasons why this interpretation may have been overlooked. Now I want to consider whether pluralism truly resolves the debate.

There is a way of thinking about pluralism where the thesis simply produces more necessitarian/contingentist debates. You might reject the contingency or necessity (or existence) of the different species of grounding I've described. In that case, we would actually have *two* necessitarian/contingentist debates.

It's possible for the diehard necessitarian or contingentist to continue fighting over the modal properties of the species of grounding. I don't see the basis for this further debate, but if such a debate was had, we will nonetheless have made progress. Why? Because the resulting debate will be clearer about what kind of grounding we are talking about.

You can read my conclusion as one about concepts as opposed to kinds. There are two different concepts of grounding, and depending on which you use, the modal consequences will differ. You are free to argue that, in fact, there is only one kind of grounding, or that both kinds are necessary/contingent, but this further argument is only possible in light of my sketches of the two kinds of grounding.

So even if pluralism doesn't make the necessitarian/contingentist debate disappear, it does allow it to continue along more perspicuous lines. We stop asking "Is grounding necessary?" and instead ask, for $n \geq 2$, "Is grounding$_n$ necessary?"

3.8 Conclusion

I will conclude by reflecting on what work has been done and what work needs to be done in the future.

I *have* given an account of how we can resolve the debate about the necessity of grounding. The solution is to become grounding pluralists. There are two kinds of grounding, what-grounding and why-grounding, that have been independently discussed by others, and these kinds make sense of aspects of contingentism and necessitarianism. In light of this, it's reasonable to take grounding to be necessary and contingent.

I *haven't* given an extensive account of the properties of the two kinds

of grounding, or spell out how they interact together, in detail. This is the work of some future pluralist theory of grounding. The current project has been to show how a pluralist theory might handle the debate about the necessity of grounding.

Bibliography

Armstrong, D. M. (1983). *What is a Law of Nature?* Cambridge University Press.

Audi, P. (2012). Grounding: Toward a Theory of the In-virtue-of Relation. *Journal of Philosophy*, 109(12):685–711.

Behrens, B. (2006). What the structure of criterion predicates told me. *A Festschrift for Kjell Johan Sæbø–in partial fulfilment of the requirements for the celebration of his 50th birthday. Oslo: Universitat d'Oslo.*

Bennett, K. (2011). Construction area (no hard hat required). *Philosophical Studies*, 154(1):79–104.

Berker, S. (2017). The unity of grounding. *Mind*.

Bliss, R. and Trogdon, K. (2014). Metaphysical Grounding. *Stanford Encyclopedia of Philosophy*, page N/A.

Butler, J. (1990). *Gender Trouble: Feminism and the Subversion of Identity*. Routledge.

Cameron, M. A. (2015). Is Ground Said-in-Many-Ways? *Studia Philosophica Estonica*, 7(2):29–55.

Cameron, R. P. (2016). Do we need grounding? *Inquiry*, 59(4):382–397.

Clark, M. J. and Liggins, D. (2012). Recent work on grounding. *Analysis*, 72(4):812–823.

Correia, F. (2010). Grounding and truth-functions. *Logique Et Analyse*, 53(211):251.

Correia, F. (2013). Metaphysical Grounds and Essence. In Schnieder, B., Hoeltje, M., and Steinberg, A., editors, *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence (Basic Philosophical Concepts)*, pages 271–295. Philosophia Verlag.

Correia, F. and Schnieder, B. (2012). Grounding: an opinionated introduction. In Correia, F. and Schnieder, B., editors, *Metaphysical Grounding: Understanding the Structure of Reality*, page 1. Cambridge University Press.

Dancy, J. (2004). *Ethics Without Principles*, volume 116. Oxford University Press.

Dasgupta, S. (2014a). On the plurality of grounds. *Philosophers' Imprint*, 14(20).

Dasgupta, S. (2014b). The Possibility of Physicalism. *Journal of Philosophy*, 111(9/10):557–592.

deRosset, L. (2010). Getting priority straight. *Philosophical Studies*, 149(1):73–97.

deRosset, L. (2013a). Grounding Explanations. *Philosophers' Imprint*, 13(7).

deRosset, L. (2013b). No Free Lunch. In Schnieder, B., Hoeltje, M., and Steinberg, A., editors, *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence (Basic Philosophical Concepts)*. Philosophia Verlag.

Dorr, C. (2005). What we disagree about when we disagree about ontology. In Kalderon, M. E., editor, *Fictionalism in Metaphysics*, pages 234–86. Oxford University Press.

Dorr, C. (2017). To be f is to be g. *Philosophical Perspectives 30: Metaphysics*, pages 39–134.

Ereshefsky, M. (2010). What's wrong with the new biological essentialism. *Philosophy of Science*, 77(5):674–685.

Fine, K. (1994). Essence and modality. *Philosophical Perspectives*, 8:1–16.

Fine, K. (2001). The question of realism. *Philosophers' Imprint*, 1(2):1–30.

Fine, K. (2005). Necessity and non-existenc. In *Modality and Tense: Philosophical Papers*, pages 235–260. Oxford University Press.

Fine, K. (2012a). Guide to Ground. In Correia, F. and Schnieder, B., editors, *Metaphysical Grounding*, pages 37–80. Cambridge University Press.

Fine, K. (2012b). The pure logic of ground. *Review of Symbolic Logic*, 5(1):1–25.

Fine, K. (2014). Truth-maker semantics for intuitionistic logic. *Journal of Philosophical Logic*, 43(2-3):549–577.

Fine, K. (2015). Unified Foundations for Essence and Ground. *Journal of the American Philosophical Association*, 1(2):296–311.

Griffith, A. M. (2014). Truthmaking and Grounding. *Inquiry*, 57(2):196–215.

Griffith, A. M. (2017). Social construction: big-g grounding, small-g realization. *Philosophical Studies*, pages 1–20.

Hall, N. (2004). Two concepts of causation. In Collins, J., Hall, N., and Paul, L., editors, *Causation and Counterfactuals*, pages 225–276. The Mit Press.

Hitchcock, C. (2001). The intransitivity of causation revealed in equations and graphs. *Journal of Philosophy*, 98(6):273–299.

Hofweber, T. (2009). Ambitious, yet modest, metaphysics. In Chalmers, D. J., Manley, D., and Wasserman, R., editors, *Metametaphysics: New Essays on the Foundations of Ontology*, pages 260–289. Oxford University Press.

Jaworski, W. (2009). The logic of how-questions. *Synthese*, 166(1):133–155.

Kearns, K. (2003). Durative achievements and individual-level predicates on events. *Linguistics and Philosophy*, 26(5):595–635.

Koslicki, K. (2015). The Coarse-Grainedness of Grounding. *Oxford Studies in Metaphysics*, 2015:306–344.

Kovacs, D. M. (2016). Grounding and the argument from explanatoriness. *Philosophical Studies*.

Krämer, S. and Roski, S. (2017). Difference-making grounds. *Philosophical Studies*, 174(5):1191–1215.

Leuenberger, S. (2014). Grounding and Necessity. *Inquiry*, 57(2):151–174.

Lewis, D. (1973). Causation. *Journal of Philosophy*, 70(17):556–567.

Lewis, D. (1986). Causal explanation. In Lewis, D., editor, *Philosophical Papers Vol. Ii*, volume 2, pages 214–240. Oxford University Press.

Linnebo, Ø. (2014). 'just is'-statements as generalized identities. *Inquiry*, 57(4):466–482.

Litland, J. E. (2013). On Some Counterexamples to the Transitivity of Grounding. *Essays in Philosophy*, 14(1):3.

Litland, J. E. (2015). Grounding, explanation, and the limit of internality. *Philosophical Review*, 124(4):481–532.

Menzies, P. (2004). Difference-making in context. In Collins, J., Hall, N., and Paul, L., editors, *Causation and Counterfactuals*. MIT Press.

Raven, M. J. (2012). In defence of ground. *Australasian Journal of Philosophy*, 90(4):687–701.

Raven, M. J. (2013). Is ground a strict partial order? *American Philosophical Quarterly*, 50(2):191–199.

Raven, M. J. (2015). Ground. *Philosophy Compass*, 10(5):322–333.

Rayo, A. (2013). *The Construction of Logical Space*. Oup Oxford.

Rettler, B. (2017). Grounds and "grounds". *Canadian Journal of Philosophy*, pages 1–25.

Rodriguez-Pereyra, G. (2015). Grounding is not a strict order. *Journal of the American Philosophical Association*, 1(3):517–534.

Rosen, G. (2010). Metaphysical Dependence: Grounding and Reduction. In Hale, B. and Hoffmann, A., editors, *Modality: Metaphysics, Logic, and Epistemology*, pages 109–36. Oxford University Press.

Rosen, G. (2015). Real Definition. *Analytic Philosophy*, 56(3):189–209.

Saebø, K. J. (2008). The structure of criterion predicates. *Event Structures in Linguistic Form and Interpretation*, 5:127.

Sæbø, K. J. (2015). How questions and the manner–method distinction. *Synthese*, pages 1–26.

Sartorio, C. (2004). Causes as difference-makers. *Philosophical Studies*, 123(1-2):71–96.

Schaffer, J. (2009). On what grounds what. In Manley, D., Chalmers, D. J., and Wasserman, R., editors, *Metametaphysics: New Essays on the Foundations of Ontology*, pages 347–383. Oxford University Press.

Schaffer, J. (2012). Grounding, transitivity, and contrastivity. In Correia, F. and Schnieder, B., editors, *Grounding and Explanation*. Cambridge University Press.

Schaffer, J. (2016a). Ground rules: Lessons from wilson. In Aizawa, K. and Gillett, C., editors, *Scientific Composition and Metaphysical Ground*, pages 143–169. Palgrave MacMillan.

Schaffer, J. (2016b). Grounding in the image of causation. *Philosophical Studies*, 173(1):49–100.

Schnieder, B. (2006). Truth-Making without Truth-Makers. *Synthese*, 152(1):21–46.

Searle, J. R. (2001). *Rationality in Action*. MIT Press.

Sider, T. (2011). *Writing the Book of the World*. Oxford University Press.

Skiles, A. (2015). Against Grounding Necessitarianism. *Erkenntnis*, 80(4):717–751.

Street, S. (2010). What is constructivism in ethics and metaethics? *Philosophy Compass*, 5(5):363–384.

Tahko, T. E. (2013). Truth-grounding and transitivity. *Thought: A Journal of Philosophy*, 2(4):332–340.

Thompson, N. (2016). Grounding and metaphysical explanation. *Proceedings of the Aristotelian Society*, 116(3):395–402.

Trogdon, K. (2013a). Grounding: Necessary or Contingent? *Pacific Philosophical Quarterly*, 94(4):465–485.

Trogdon, K. (2013b). An Introduction to Grounding. In Hoeltje, M., Schnieder, B., and Steinberg, A., editors, *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence (Basic Philosophical Concepts)*, pages 97–122. Philosophia Verlag.

Williamson, T. (2000). *Knowledge and its Limits*. Oxford University Press.

Wilson, A. (2016a). Grounding entails counterpossible nontriviality. *Philosophy and Phenomenological Research*, 92(3).

Wilson, A. (2017). Metaphysical causation. *Noûs*, 50(4).

Wilson, J. (2016b). The unity and priority arguments for grounding. In Aizawa, K. and Gillett, C., editors, *Scientific Composition and Metaphysical Ground*, pages 171–204. Palgrave MacMillan.

Wilson, J. M. (2014). No Work for a Theory of Grounding. *Inquiry*, pages 1–45.

Witt, C. (2011). *The Metaphysics of Gender*. Oup Usa.

Wright, C. (2005). On the functionalization of pluralist approaches to truth. *Synthese*, 145(1):1–28.

Yablo, S. (2002). De facto dependence. *Journal of Philosophy*, 99(3):130–148.

Yablo, S. (2004). Advertisement for a sketch of an outline of a proto-theory of causation. In Hall, N., Paul, L. A., and Collins, J., editors, *Causation and Counterfactuals*, pages 119–137. Cambridge, Mass.: MIT Press.

Yablo, S. (2014). *Aboutness*. Princeton University Press.