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Wholly, Grounding, Truth

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Wholly, Grounding, Truth

by

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The final copy of this thesis has been examined by the signatories, and we find that both the content and the form meet acceptable presentation standards of scholarly work in the above mentioned discipline.

Abstract

Saenz, Blas Noël (Ph.D., Philosophy)

Wholly, Grounding, Truth

Thesis directed by Professor Graham J. Oddie

This thesis is about how grounding, in some sense or other, and whether explicitly or implicitly, bears on truthmaking, groundmaking, and wholemaking.

Part I deals with truthmaking and argues that one can be a truthmaker theorist and yet reasonably reject truthmaker maximalism — the claim that all truths have truthmakers. It does this by arguing that there are worlds where it is reasonable to think that negative existentials lack truthmakers but where such worlds do not jeopardize truthmaker theory. It also argues in favor of two claims: It argues in favor of thinking that truthmaking should not be analyzed solely in terms of the grounding relation holding between truthmakers and truths and it argues in favor of thinking that grounding is part of the analysis of truthmaking by arguing in favor of an analysis that makes use of grounding.

Part II deals with groundmaking. What is it that makes it that some facts or things ground other facts or things? Here I both discuss reasons to think that facts about grounding must have a ground and criticize two answers to the above question. One answer has it that the first relatum in facts about grounding grounds that very fact. I show that two arguments in favor of this position, which I call Subtractionism, fail. Another answer has it that facts about the essence of things ground facts about grounding. I argue against this answer.

Part III deals with what it is that grounds complex wholes. It shows that, on an intuitive view of what wholes are grounded in, we have the resources to solve the infamous grounding problem for coincident entities. It is also about facts. The most common account of the nature of facts appeals to their being, in some manner or other, composed

of individuals and properties. But not everyone likes this view. In particular, there are a number of mereological objections to thinking of facts as composed of individuals and properties. This part argues that facts are no more mereologically problematic than are the chairs you and I are sitting in.

To my wife, Amy Jean Greenip,

A model of what it means to sacrifice one's life for one's spouse.

Acknowledgments

Custom seems to have it that the number of pages devoted to acknowledging those who have helped write a dissertation rarely exceeds two pages, much less five. I say 'to heck with custom!'

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Mike and Sam were (and still are) the co-directors of the center and each did a terrific job in making me feel at home. Mike was particularly helpful, reading a number of my papers and providing me with critical feedback. Brad, Tim, and I initially composed a truthmaker reading group — the best reading group I have yet to be a part of. Not only are these two a blast to hang out with, they have been some of the most careful readers, and critics, of my work. Would that every reading group include members like Brad and Tim.

A number of people merit special consideration. Indeed, my being able to complete this dissertation is so indebted to the following people that it will be awfully hard for me to give enough credit where such credit is due. But here I go!

I cannot but help and start with one of my undergraduate philosophy professors, Dr. Gregg Ten Elshof. He set the stage for my philosophy career by showing me, not only what makes a good philosopher (though he did this), but, and most importantly, what makes a good person. Though Gregg may not know this (a failure on my part), he showed me, through tongue and deed, what it means to be a Christian first, and a philosopher second.

During my two years at Western Michigan University, James Gibson's friendship and philosophical acumen were a constant source of encouragement and motivation. We spent many nights talking philosophy over beers or coffee (and the occasional cigar or cigarette), reading each others work, and going through Lemmon's logic textbook until we were sure we correctly completed every proof. James and his wife Jill were more than generous in opening up their home to me and I am certain that life in Michigan (at least during its cold and gloomy winters) would have been well-nigh intolerable had it not been for their friendship.

I must mention my family in all this starting with my mother, Dolores Saenz, who has been the chief reason for my pursuing philosophy. Her love of philosophy and ideas was, and still is, infectious. She taught me to seek the truth and to have an open, but critical,

mind with respect to philosophical positions I may not agree with. It would not be an exaggeration to say that I owe all of my philosophical achievements (such as completing this dissertation) to her.

My father, Robert Saenz, taught me the value of diligence and hard work, and I saw the benefits that followed as a result. His is the kind of work ethic I aspire to. My father also *loved* to work. Whether it was managing manufacturing plants, mowing the lawn, or helping me with school projects (which he did numerous times), my father was eager and ready to tackle the task at hand. Dad, I worked hard on this dissertation and loved doing it. I hope I honor you through it.

My first years in college were spent in southern California, close to my eldest sister, Charissa Boyce (then Charissa Saenz), and I have such warm memories of her during what was a very difficult time in my life. She visited me at college, constantly invited me over to her place, and made sure that her little brother was taken care of. One memory that really stands out is her taking me, on my 19th birthday, to the Hollywood Bowl to see Swan Lake. What a blessed time that was.

My other older sister, Naomi Saenz, has been there for me more times than I can count. Here is just one of many examples. When I gave my first talk in philosophy at Princeton University, my sister drove two and a half hours from her home to attend my talk, had dinner with me, and drove two and a half hours back that very day. Seeing her there in the audience, and knowing that she was there because she cared for me, made my presenting this first talk of mine much less scarier than it would otherwise have been.

Finally, my brother Nicolas Saenz, who has been, up until I got married four and a half years ago, my absolute best friend. Two years after my birth, the Lord gave me a brother, friend, and play-mate. The memories I have playing baseball and basketball, watching cartoons, collecting NBA and MLB trading cards, building legos, playing Nintendo, wrestling, burning leaves with magnifying glasses, and doing so many other things with him, are like precious jewels to me. His friendship has provided a rock-steady founda-

tion that has been with me all of my life and has been a foundation I have relied on in completing this dissertation.

Love from one's siblings can go a long way in helping someone complete a long and arduous task (such as a doctoral dissertation). In the case of my siblings, it has.

For the past five years while getting my Ph.D., two philosophers have had a tremendous impact on my personal and philosophical life. They are Kathrin Koslicki and Graham Oddie.

The most enjoyable class I ever took was Kathrin's class on ontological dependence. This was also the class where I first met Kathrin. Little did I know what kind of influence she would have on me. In spite of rejecting the central conclusion of a number of the chapters in this dissertation, Kathrin has constantly encouraged me to pursue my ideas and given me the confidence I needed to continue. Though she may not know this, her work on mereology and ontological dependence has been the catalyst for just about every chapter in this dissertation. Indeed, the central idea behind chapter 5 came to me while reading her book, *The Structure of Objects*, and was a result of thinking hard about her solution to the infamous grounding problem concerning coincident entities. Kathrin has also been a friend, having been more than willing to read my papers and has often gone out of her way to mention or recommend me to philosophers who are in a position to further my career. Kathrin is the kind of professor that often goes above and beyond the call of duty for her students. Thanks Kathrin, for going above and beyond the call of duty for me.

I could not ask for a more welcoming, kind, and warm-hearted dissertation advisor than Graham Oddie. The very first time I met Graham I asked him if he would be willing to read a paper of mine. Without a second's hesitation, he said 'yes' despite my being a complete stranger to him. And this kindness, and quality of taking students and their ideas seriously, continued. He has had me and my family over to his house, paid for too many meals or cups of coffee, attended a number of my talks at conferences (even when

the talks were as early as 9 a.m.), and listened carefully to my philosophical ramblings. So Graham has been an absolutely terrific philosophical *advisor*. But Graham has also been an absolutely terrific *philosophical* advisor. Graham has that great quality of being easy to talk philosophy with. Many of our philosophical discussions ended in discussions somewhat removed from the original topic. This is evidence that talking philosophy with Graham comes easy. (If you are in doubt about this, just consider those people in your life you find it easy to talk to. More often than not, when having discussions with such people, you will notice that the topic of the discussion changes quite often in a rather natural sort of way. This changing of topics is a result of the ease with which you can talk to such people.) Graham has also been a gentle, though penetrating, critic of my dissertation. Even though he does not agree with everything I say, he has often times pushed me exactly where I needed to be pushed. I cannot thank him too much for his help in my completing this dissertation (though he will almost certainly say that I have).

Kathrin and Graham, it is my hope that this dissertation does justice to the philosophical influence you have had on my work, and that my philosophical career does justice to the overall influence you have had on my life.

Finally, I would like to thank the most valued and loved persons in my life — my wife, Amy Greenip, whom I dedicate this dissertation to, and my two little beauties, Aletheia and Jeannette Saenz.

Aletheia came into our world as I was beginning my dissertation. She is just two and a half and has already taught me so much about beauty, patience, and love. Seeing her fascination with the world around her has reminded me of how wonderful God's creation really is and has given me a reason to continue to pursue philosophy (mija, if you want to know what this reason is, ask me sometime and I will tell you). Aletheia my joy, may you stay curious and forever young at heart.

Jeannette came into our world as I was finishing my dissertation. Despite being less than two months old, she has already had an influence on my philosophical life. About a

month ago, time spent calming her in the middle of the night resulted in a new idea that I hope to put on paper soon. But besides this, taking care of her, and sacrificing much sleep for her, has made it vividly clear how selfish I can be. It has shown me that, despite serving someone who willingly, without hesitation, sacrificed His life for me, I am often unwilling and hesitant to do the same for one of my very own children. Jeannette, what a blessing you have already been! And what a blessing you will continue to be.

Amy has sacrificed more for me than I care to think. Chief of all was her staying behind, in Boulder, with Aletheia (who was at the time just short of one and our only child) while I spent nine months in South Bend Indiana on a dissertation fellowship. She was, for all practical purposes, a single parent during this time and not once complained about it. She has also been the greatest supporter of my work and my career. She has proofread many of my papers, listened to me (sometimes for hours) give practice talks, dealt with many a lonely bed while I stayed up late doing work, and put up with a graduate student's wages. (And, lest you forget, she has, through all of this, given birth to two beautiful girls). She has been through the thick and thin of my writing and completing this dissertation. I could not ask for a more understanding, patient, and loving wife. Amy, you are my love.

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Chapter 1

A Brief Introduction to Grounding

Some things are grounded in other things.[1] Some controversial, but intelligible, examples are as follows

Wholes are grounded in their parts (if you accept priority pluralism).

Sets are grounded in their members.

Truth is grounded in the world.

Moral facts are grounded in natural facts (if you accept moral non-naturalism).

Mental facts are grounded in physical facts (if you accept non-reductive physicalism).

Holes are grounded in their hosts.

Determinables are grounded in determinates.

Species are grounded in genera and differentia.

Abundant properties are grounded in sparse properties.

Space-time (or space-time structure) is grounded in those events and things "inside" space-time (if you accept relationalism about space-time).

---

[1]By 'thing' I mean any sort of entity. A thing can therefore be an individual, a property, or a fact.

Individuals are grounded in their properties (if you accept bundle theory).

Tropes are grounded in their bearers.

The existence of temporal parts is grounded in the existence of the persisting object (if you accept a controversial account of three-dimensionalism).

Free will (at least in part) is grounded in agents (if you accept an agent causal account of libertarianism).

Abstract objects are grounded in divine cognitive activity (if you accept theistic activism).

Modality is grounded in causally isolated worlds (if you accept modal realism).

These examples, at best, give us a rough sense of what grounding is. But this, of course, is not enough. We want something much more. We want, at the very least, to begin to understand the nature of this grounding relation. Moreover, we want to know what general import grounding has on metaphysics. Is it a useful notion, or should we dispense with it in favor of something else (such as supervenience, entailment, or counterfactual truths)? In what follows, I provide a brief introduction to grounding that is relevant to some of the basic and pervasive assumptions I will make in this dissertation. Though many of these assumptions are explicitly made in the chapters to follow (recall my saying in the preface that each chapter in this dissertation can stand alone), my purpose here is to give you a little more insight on what is at stake concerning these assumption. As such, nothing like a full-blown introduction will be provided.[2] Here then is the structure of this first chapter: show what import many think grounding has on metaphysics (§1.1); discuss the logical form of grounding statements (§1.2); take a look at a number of basic structural principles governing grounding (§1.3); address a matter concerning the relata of grounding (§1.4).

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[2]For papers whose purpose is to give a much fuller introduction to grounding, see Rosen (2010), Audi (2012a, b), Clark and Liggins (2012), and Trogdon (forthcoming).

1.1 Metaphysical Import

Though philosophical musing on grounding can be found throughout the history of philosophy, in modern times, it has not been until the start of the 21st century that work on grounding has really taken off.[3] This, I think, is due (given the modal craze of the 70s, 80s, and 90s) largely to the inability of modal notions to do the job necessary in providing us with a satisfactory account of non-causal explanation.

For example, some (Fox 1987, 189; Bigelow 1988, 125–7) have sought to understand the truthmaking relation that holds between truthmakers and truths, where truthmakers are the non-causal explanations of truth, in terms of entailment:

> x makes p true if and only if x's existence entails that p is true.

But this cannot be right since it entails that any necessary thing (say, the number 2) makes true any necessary truth (say, that all red things are colored things). But even if we restrict this to contingent things and truths, it still will not work. For my singleton's existence entails the truth that I exist. But my singleton's existence does not make it true that I exist.

These kinds of worries with a modal account of non-causal explanation are due almost entirely to the work of Kit Fine (1994, 1995a). But it is worth mentioning that others, at least in modern times (when modality was in its heyday), began to see the light Fine saw (and perhaps saw it earlier). For example, Alvin Plantinga (1980), in attempting to define what it means for something to depend on something else, gets awfully close to seeing that modal concepts were not enough. Plantinga begins by stating a number of definitions of dependence and shows why each one fails. He then arrives at the following

> x depends upon y for P if and only if x has P and some proposition or state of affairs relevantly involving y is a necessary condition of x's having P.

---

[3]For example, it is claimed that Aristotle employed the notion and used it to frame central metaphysical debates (Schaffer 2009), while both Bolzano (Tatzal 2002) and Husserl (Correia 2004) developed theories of grounding. There is also reason to believe that grounding played an important role in the work of both Leibniz and Spinoza (Della Rocca 2012).

But Plantinga realizes that this will not do. He says

> Presumably Jim Whittaker does not depend upon Pope John Paul for his ability to climb Mt. Everest; yet the proposition
>
> > (19) Either Jim Whittaker or Pope John Paul can climb Mt. Everest
>
> relevantly involves Pope John Paul and is a necessary condition of Wittaker's being able to thus climb. In the same way, according to [the above definition of dependence], God would be dependent on Bertrand Russell for the property of creating the world, since
>
> > (20) Either God or Bertrand Russell created the world is a necessary condition of God's creating the world and relevantly involves Bertrand Russell. (1980, 72)

Plantinga goes on to suggest that we can perhaps amend the above definition, in light of these worries, by adding that the state of affair in question not involve x. But he realizes this will not do either, saying

> presumably God is not dependent upon me for the property of having created me, but
>
> > (21) I exist
>
> and
>
> > (22) I have been created
>
> relevantly involve me, do not relevantly involve God, and are necessary conditions of God's having created me. (1980, 72-3)

Plantinga then concludes with

The fact is some further condition has to be added to the analysans in [the above definition of dependence], and it isn't at all easy to see what it might be. (1980, 73)

In light of varies worries with a modal account of non-causal explanation, attention has moved from trying to define it in modal terms to either taking it as primitive or trying to define it using other notions that are not modally defined.[4] So grounding is important to metaphysics because we need a non-causal dependence relation that is something over and above a relation cashed out in modal terms.

Grounding has also been deemed important to metaphysics since it allows us to be permissive when it comes to what exists while being stingy when it comes to what is fundamental. Here is Schaffer:

Contemporary metaphysics, under the Quinean regime, has focused on existence questions such as whether properties, meanings, and numbers exist, as well as whether possible worlds exist, whether and when mereological composites exist, etc. I will glance at the debates over (i) whether numbers exist, (ii) whether properties exist, (iii) whether mereological composites exist ... and will use these examples to suggest that the contemporary existence debates are *trivial*, in that *the entities in question obviously do exist*. (What is not trivial is whether they are fundamental.) (2009, 356-7)

Schaffer goes on to conclude that

contemporary metaphysics, insofar as it has been inspired by the Quinean task, has confused itself with trivialities. Hofweber 2005 speaks of a "puzzle about ontology," namely how it could be that (i) metaphysics seems to ask deep and difficult questions, when (ii) the existence questions seem shallow

---

[4]For more worries trying to understand non-causal dependence in modal terms, see Kim (1974, 1994) ,Gregory (2001), and Stoljar (2009). For some accounts that try to understand non-causal explanation using notions that are not modally defined, see Fine (1995a, b), Bricker (2006) and Skiles (ms a).

and trivial. *This is only a puzzle on the Quinean assumption that metaphysics is asking existence questions. The deep questions about numbers, properties, and parts (inter alia) is not whether there are such things, but how.* (2009, 361-2)

If Schaffer is right about this, then grounding is *very* important to metaphysics since the deep questions about things such as numbers, properties, and parts, all of which figure prominently in metaphysics, are questions involving what grounds what.

Another reason many think grounding is important to metaphysics is its ability to play a central role in understanding notions and theories. For example, Schaffer (2009, 374) puts grounding to the use of defining the following notions:

x is fundamental $=_{df.}$ nothing grounds *x*

x is derivative $=_{df.}$ something grounds *x*

x is an integrated whole $=_{df.}$ *x* grounds each of its proper parts

x is a mere aggregate $=_{df.}$ each of *x*'s proper parts grounds *x*

Others have it that grounding allows us to characterize entire theories. For example, Fine (2012) proffers the following as a way of understanding three-dimensionalism

The existence of temporal parts is grounded in the existence of the persisting object.

And Dasgupta (ms) says that one way to understand non-reductive global physicalism is as follows

All non-physical facts are grounded in physical facts.

Of course, the importance of these purported uses in metaphysics can be questioned. For example, the use grounding plays in understanding the above notions Schaffer mentions is only important to metaphysics if these notions are antecedently comprehensible. For if they are not, or there is no well-fixed meaning attached to them, then we can see Schaffer's definitions as mere stipulations. As Clark and Liggins point out,

But it may be doubted whether the expressions being defined were antecedently comprehensible: they are pieces of philosophical jargon; and like other pieces of philosophical jargon, different authors have defined them, or otherwise introduced them, in many different ways. (2012, 3)

Moreover, one may wonder if any real advance has been made in understanding, say, non-reductive global physicalism in terms of grounding. Let me be clear. I do think that understanding non-reductive global physicalism in terms of grounding is better than understanding it in terms of supervenience. But what advance is there in understanding this kind of global physicalism in terms of grounding over the following way

All non-physical facts metaphysically depend on physical facts?

Indeed, insofar as 'grounding' and 'metaphysical dependence' are synonymous, then appealing to grounding is not so much an improvement but a restatement of this latter way of understanding non-reductive global physicalism. But almost everyone accepts this latter way of understanding non-reductive global physicalism. Whence then the improvement?

This gets us to something that I think is quite important with respect to the metaphysical import of grounding. The above reasons for thinking that grounding has metaphysical import, and therefore is something that we are justified in investigating, are *extrinsic* in nature. They are reasons having to do with grounding's not relying on modal notions, its necessity in framing the deep metaphysical questions, and its ability to, in part, define other notions and make sense of entire theories. Indeed, it seems to me that many think that if grounding lacks this kind of extrinsic justification, then we should do away with it.

I disagree (which is not to say that I think grounding does lack this kind of extrinsic justification). Grounding does not have to be justified in this kind of way. In order to see why I think this, it will help to compare it to work on parthood.[5] The last two decades

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[5]Everything I say here can also be said about modality and causation. So in order to see why I think this,

have seen an explosion of work on parthood. Under what conditions are some *x*s a part of some *y*? Are there arbitrary undetached parts? Are there different kinds of parthood relations? What are the formal features of parthood? What kinds of things stand in the parthood relation? Can there be two objects that, either at different times or the same time, share all of their parts? Can some objects have only one proper part? Are there objects with no proper parts? And the list goes on. Now this interest in parthood ultimately stemmed not from the need for parthood to play any theoretically fruitful role extrinsic to it (though of course, it does), but from (to most of us still, and to all of us before we became philosophers) the obvious fact that some things are parts of others and that, when we start thinking about this obvious fact, interesting questions and puzzles rise concerning it.[6] Talk of parthood is ubiquitous, part of our everyday picture of the world, and, when thought hard about, generates interesting philosophical puzzles. So, naturally, metaphysicists have taken an interest. No extrinsic theoretical role is needed for parthood in order to justify investigating it and appealing to it in our philosophy.

I think the same is true of grounding. Talk of grounding (though perhaps not always with the word 'grounding') is ubiquitous, part of our everyday picture of the world. Here is a handful of everyday examples:

> One has the right to vote in virtue of being an adult citizen. (Witmer et al. 2005)

> One has the responsibility to care for one's children in virtue of being a parent. (Witmer et al. 2005)

> Tiger Woods is rich in virtue of making millions of dollars per year.

> The Seattle Seahawks won the Super Bowl because they scored more points than the Denver Broncos.

---

one can also compare it to work on modality and causation.

[6]It is worth noting here that a classic paper on parthood by Leonard and Goodman (1940) was motivated by nominalist sympathies. But obviously, nominalist sympathies are not what have driven so many philosophers to work on parthood.

Eating meat is wrong in virtue of causing unnecessary suffering. (Clark and Liggins 2012)

Apple computers are of high quality because they are made of high quality parts.

So, I think, as with parthood, so with grounding. What explains our interest in grounding does not merely (and should not only) stem from the need for grounding to play any theoretically fruitful role extrinsic to it (though of course, I think it does — see chapters 3 and 5), but from (to many of us at least, and to just about all of us before we became philosophers) the obvious fact that some things are grounded, hold in virtue of, exist because of, other things and that, when we start thinking of this obvious fact, interesting questions and puzzles rise. Indeed, when philosophers were concerned with supervenience in the 80s and 90s, this was only because they realized that some things non-causally depend on other things and thought (or at least hoped) that modal notions, such as supervenience, could do the job in defining or understanding this kind of dependence. But then I think that when philosophers were concerned with supervenience in the 80s and 90s, they were really concerned with grounding (though perhaps they did not know this and/or failed to make this explicit).[7]

I therefore think we are justified in taking grounding seriously, investigating it, and using it in our philosophy for precisely the same reasons I think we are justified in taking parthood seriously, investigating it, and using it in our philosophy. Grounding does not need to play a theoretically useful role extrinsic to it in order to earn its keep. It has already earned its keep in being part of how we view and understand the world.

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[7]Does this contradict my above claim that it has not been until the start of the 21st century that work on grounding has really taken off? No. For what I had in mind was that work on grounding understood as a distinctively non-modal notion has really taken off at the start of the 21st century.

1.2   The Logical Form of Grounding Statements

Consider three kinds of sentences we can use to express a proposition of something's grounding something else: (*i*) that the ball is red *is grounded in* its being crimson, (*ii*) the ball is red *because* the ball is crimson, (*iii*) the ball is red *in virtue of* its being crimson. All of these sentences would seem to express the same proposition. But which one does the best job? That is, which sentence best describes reality as it is? Which one carves reality at the joints? Notice the differences. (*i*) uses a relational predicate and would seem (at least on the plausible assumption that the semantic value of 'is grounded in' is a relation) to require the existence of things that can stand in the grounding relation. This is the *predicate view*. (*ii*), on the other hand, makes no such requirements. It merely involves a sentential operator that takes sentences to form larger sentences, and there is nothing about this that requires things standing in the grounding relation. This is the *operator view*. So the operator view is ontologically neutral, not requiring anything like facts or properties. The predicate view is not. If the predicate view is true, then there is the fact that the ball is red and the fact that the ball is crimson.[8] So, which one should we opt for as best carving reality? That depends. If you think that facts exist, then the predicate view is the clear winner. If you think they do not, then the operator view is. So considerations concerning ontology play an important role in considerations over how best to formulate statements of ground.[9]

Now this dissertation sides with the predicate view.[10] So both facts and the grounding relation (again, on the plausible assumption that the semantic value of 'is grounded in' is a relation) are entities I will often quantify over in this dissertation. So this dissertation is not ontologically neutral when it comes to grounding.

---

[8](*iii*) is neither a sentential operator nor a relational predicate. It is rather a mixed case since 'in virtue of' takes a sentence on one side and a singular or plural term on the other. Because of this, I will (unjustifiably) assume that it cannot be the sentence that carves best.

[9]The line of reasoning could go the other way. For example, we may have reasons independent of whether or not facts exist to favor the predicate view over the operator view. If so, then it might be that we should accept facts because we accept the predicate view and not vice-versa.

[10]For a worry with the operator view, see Correia and Schnieder (2012, 10-12).

Before I move on, and since one of my chapters is on whether or not all truths have truthmakers, I cannot help but point out two interesting implications of all this for truth-making.

1. Consider the debate between those who think that negative existentials have truth-makers and those who do not.[11] Those who think they do often accuse those who think they do not of failing to respect the intuition that truth depends on the world; that truth *is* because the world *is*. But this criticism may have more bark than bite. For those who deny that negative existentials have truthmakers do not deny that, say, it is true that there are no hobbits because there are no hobbits. They can readily affirm this and so readily affirm that truth does depend on reality. What they cannot affirm is that the fact that the proposition that there are no hobbits is true is grounded in some *thing*. But there is no inconsistency here since the truth of 'it is true that there are no hobbits because there are no hobbits' does not require positing something in the world to make the proposition that there are no hobbits true. So denying that there is something in the world that make negative existentials true is not tantamount to denying the intuition that truth depends on the world since it is not tantamount to denying that it is true that there are no hobbits because there are no hobbits.[12]

2. Consider truth*maker* maximalism, which says that all truths have truthmakers. We may distinguish this from truth*making* maximalism, which merely says that every truth can be explained.[13] The latter affirms the following as capturing the basic form of statements concerning explanations for truth

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[11]For some work on this debate, see Molnar (2000), Armstrong (2004), Dodd (2007), Merricks (2007), Mumford (2007), Cameron (2008a, b), Efird and Stoneham (2009), Schaffer (2010a), and Tallant (2010).

[12]Interestingly, this might show that sentences about grounding that involve the predicate 'is grounded in' are not expressing the same proposition as sentences about grounding that involve the operator 'because.' After all, if someone can accept that it is true that there are no hobbits because there are no hobbits but reject that this truth is grounded in anything, then it cannot be, on pain of a contradiction, that sentences about grounding involving 'is grounded in' express the same proposition as sentences about grounding involving 'because.'

[13]Those who think that there is truthmaking without truthmakers are Hornsby (2005) Melia (2005), and Schneider (2006). Those who think that we need truthmakers if we are to have truthmaking are Armstrong (2004), Cameron (2008c), and Rodriguez-Pereyra (2005).

> For any p, if p is true, then p is true because q.

The former, however, affirms the following as the basic form of statements concerning explanations for truth

> For any p, if p is true, there is something that makes it true.

Now consider the proposition that there are no hobbits. Truthmaking maximalists have no trouble explaining this truth. For they will say that

> If the proposition that there are no hobbits is true, then it is true because there are no hobbits.

So truthmaking maximalists can provide a rather easy explanation for negative existential truths. Not so for truthmaker maximalists. For them, they will have to say something like

> If the proposition that there are no hobbits is true, then there is something (a totality fact, negative fact, absence, etc.) that makes it true.

That is, truthmaker maximalists will have to accept not only facts, but totality facts, or negative facts, or absences, or some other unfavorable entity (for more on this, see chapter 2). No such problem is present for truthmaking maximalists. And since the debate between truthmaker maximalists and truthmaking maximalists turns in large part on whether we should accept a sentential operator or a relational predicate as best carving reality, then questions concerning, not just the ontology of facts, but the ontology of certain other controversial ontologies, are at stake here in this dispute.

1.3   Structural Principles

Grounding is typically thought to impose a *strict partial order*. So grounding is typically taken to be transitive, asymmetric, and irreflexive. We therefore have

Transitivity. If x grounds y and y grounds z, then x grounds z.

Asymmetry. If x grounds y, then y does not ground x.

Irreflexivity. If x grounds y, then $x \neq y$.[14]

However, each of these principles has been questioned. For example, Schaffer (2012) provides us with a number of cases purporting to show that Transitivity is false. And Fine (2010) and Jenkins (2011) provide us with cases that potentially undermine Irreflexivity (which, if we accept Transitivity, would also undermine Asymmetry). In this work, I will assume (as I think we in fact should) all three. For those who are interested in the status of these three principles, see Krämer (2013), Litland (2013), Correia (2014), and Raven (2013).

Monotonicity is thought to fail for grounding. That is,

If x grounds y, then for any z, x and z grounds y

is not true of grounding. We can show why this is using the following cases involving me grounding my singleton:

I ground my singleton. But if grounding is monotonic, then I and my singleton ground my singleton, which contradicts Irreflexivity when formulated using partial grounding.

I ground my singleton. But if grounding is monotonic, then I and my singleton's singleton ground my singleton. So my singleton's singleton partially grounds my singleton. But surely my singleton partially grounds its singleton, which contradicts Asymmetry when formulated using partial grounding.

I ground my singleton. But if grounding is monotonic, then I and the Eiffel Tower ground my singleton. But intuitively, the Eiffel Tower has nothing to do with my singleton. It does not contribute, in any way, to grounding, and therefore explaining, my singleton.

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[14]I have stated these principles using *full* grounding. But they can be stated using *partial* grounding, where something partially grounds something else just in case the former help to fully ground the latter.

There are connections between grounding and modality. Here is one most advocates of grounding accept:

>**Weak Necessitation.** If x grounds y, then necessarily, if x exists, then so does y.[15]

Here is an even stronger necessitation principle

>**Moderate Necessitation.** If x grounds y, then necessarily, if x exists, then something grounds y.

And for a yet stronger necessitation principle, we have

>**Strong Necessitation.** If x grounds y, then necessarily, if x exists, then x grounds y.

Strong Necessitation would seem to undergird both Weak and Moderate Necessitation. In so far as x grounding y entails that something grounds y, then Strong Necessitation entails Moderate Necessitation. And in so far as grounding is factive (if x grounds y, then both x and y exist), then Strong Necessitation entails Weak Necessitation. In this dissertation, all three of these connections between grounding and modality will be accepted.

Here is another connection between grounding and modality:

>**Supervenience.** If x grounds y, then necessarily, y supervenes on x.[16]

Supervenience seems right.[17] But it is not nearly strong enough. After all, if x and y are necessary existents (say, God and his singleton), then that y supervenes on x trivially

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[15]See Leuenberger (2014a) and Skiles (ms b) for a rejection of a principle similar in spirit to this one. See Trogdon (2013) for a defense of it.

[16]One might think that Supervenience follows from Weak Necessitation on the grounds that if the existence of x entails the existence of y, then y supervenes on x. But we should be cautious in making such a move since moving from a claim about entailment to a claim about supervenience can fail. Consider the following (Bennett and McLaughlin, 2014): Being a brother entails being a sibling. But one can go from being a sibling to not being a sibling without a change in whether or not they are a brother since one can go from being a sister to not being a sister without any change in their status as a brother. So even though being a brother entails being a sibling, being a sibling does not supervene on being a brother.

[17]For a rejection of it, see Leuenberger (2014b).

follows from x grounding y. So we want something stronger. Here, I think, is the needed strengthening:

> **Strengthening.** If x grounds y, then if it were the case that x does not exist, then it would be the case that y does not exist[18]

Strengthening does better than Supervenience since, if x and y are necessary existents, the consequent does not trivially follow from the antecedent (contra Lewis (1973) and Stalnaker (1968)). For example, suppose God exists and that God grounds his singleton. Surely it is non-trivially true that if, *per impossibile*, God's singleton were not to exist, then neither would God.[19]

1.4   The Relata

Assuming that there is a grounding relation (which is controversial, see §1.2), it is natural to ask what kinds of things flank that relation. Borrowing terms from Clark and Liggins (2012), we have *flat* theories and *dimensioned* theories. Flat theorists say that only one kind of entity (typically facts) can stand in the grounding relation (Audi 2012a, b; Rosen 2010) whereas dimensioned theories have it that more than one kind of entity (say, facts, individuals, and properties) can stand in the grounding relation (deRosset 2012; Schaffer 2009, ms).

I side with the dimensioned theorists. And my reason is, in part, that it is both intelligible and common to talk of grounding holding between entities other than facts (consider the list given at the beginning of this chapter). This places a burden of proof on flat theorists to tell us why such talk is misguided and should be restricted to cases where facts are involved. Consider then the following two reasons for preferring flat theories to dimensioned theories.

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[18]I rely on a principle very similar to this in chapter 4 called 'Sensitivity'.

[19]For some work on further principles of grounding, see Fine (2010, 2012), Rosen (2010), and Schaffer (2009, ms).

Grounding is tied to explanation. So either the grounding relation just is an explanation relation or, at the very least, we have the following equivalence: something grounds something else if and only if the former metaphysically explains the latter. Since it makes no sense to say that I, in any sense, explain my singleton (we need sentences flanking 'explains', not names), then it cannot be that I ground my singleton.

But this is not a very good argument. For one, it assumes a controversial position on the connection between grounding and explanation. Is the grounding relation identical to an explanatory relation, or does it merely undergird, back, or enforce one? If the latter, then there is no reason to think that we have the above equivalence between grounding and metaphysical explanation. Moreover, insofar as dependence relations are relevant to explanations (as they surely are), then it cannot be that all dependence relations just are, or are equivalent to, explanatory ones.[20] After all, no one should deny that my singleton depends on me. But as was just made clear, it makes no sense to say that I explain my singleton. So why think that grounding must be, or be equivalent to, a metaphysical explanatory relation if dependence relations can exist and not be, or be equivalent to, explanatory relations?

Here is another reason given in favor of flat theories over dimensioned theories. No one doubts that grounding relates facts. But if dimensioned theories are right, grounding can relate all sorts of diverse things. Facts, individuals, properties, abstracta, concreta, etc. Surely this counts in favor of thinking that there cannot be just one relation here. That there is a relation relating such diverse phenomena as concreta and abstracta is a strong indication that we have fundamentally different relations here. So we have reason to think that grounding does not relate all these different kinds of entities.

But this line of reasoning is not persuasive, and for two reasons. For one, no one doubts that if the parthood relation relates anything, then it relates material objects. But

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[20]Specifying the manner in which dependence relations are relevant to explanations may not be an easy task. However, it is a task for everyone since, as I show in the next couple of sentences in the main text, some things surely depend on others without its being the case that the latter things alone explain the former things.

we could (and many do) accept a view according to which many kinds of things stand in the parthood relation. We could accept a view according to which facts, individuals, properties, abstracta, numbers, and concreta all stand in the parthood relation (in chapter 6, I defend a view according to which both individuals and properties are proper parts of facts). But the diversity of things, according to this view, standing in the parthood relation should not cause us to think that there cannot be just one relation here.[21] That, in this case, there is a relation relating such diverse phenomena is not a strong indication that we have fundamentally different relations here. But then why should it in the grounding case?

For another, it is open to the dimensioned theorist to concede that there are multiple relations here and to think of the grounding relation as either a species with genera and differentia or a determinable with determinates. So even if there are different relations here, there can still be a non gerry-mandered, unified, higher-order relation that relates facts, individuals, properties, abstracta, concreta, etc.

In addition to these two failed reasons against dimensioned theories, there seems to be reason to think that things other than facts can stand in the grounding relation. Most (if not all) who think that facts stand in the grounding relation take it that grounding at least holds many-one (Rosen 2010, Fine 2012). That is, many facts can ground one fact. So take the fact that America was at war in 1861. What grounds this fact? A plurality of facts involving various people engaged in certain actions at a certain time. So far, so good. But it would also seem that the mereological sum of all these facts is just as good a candidate to ground the fact that America was at war in 1861. After all, if a collection of facts can ground some fact, why can't their sum? What is the relevant difference here such that collections of facts can, but sums of these very facts cannot, ground facts? I doubt one can be given. So grant that this sum grounds the fact that America was at war

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[21]It is worth noting that the majority of philosophers who think that we do have different relations here is not due to the diversity of the relata, but to the existence of different principles governing these relations. A good example of this is D. M. Armstrong (1997). Armstrong thinks that facts are built up non-mereologically because you can have distinct facts with the same parts. Since he accepts as an axiom of mereology that if x and y have the same parts, then $x = y$, then according to him, it must be that facts are non-mereologically composed.

in 1861. Now notice that this sum is not a fact. Though some may call it a conjunctive fact, it is no more a fact than a sum of simples is a simple, or a sum of books is a book, or a sum of cars is a car. Instead, this sum is an individual. So if this sum is just as good a ground of the fact that America was at war in 1861 as is the above mentioned plurality of facts (as it seems to be), then we have reason to think that if facts can compose a sum, then, at least in some cases, if we have a plurality of facts grounding some fact, we have a sum grounding some fact. So here is a reason for thinking that things other than facts can stand in the grounding relation that puts the burden of proof on the flat theorist.

Part I

Truthmaking

Chapter 2

The World and Truth About What is Not

Truth requires an explanation, or ontological ground, of sorts.[1] One way of articulating this requirement is to say that *things*, broadly construed, are the ontological ground of truths and therefore, that things *make* truths true. Call the claim that things make truths true *Truthmaker*. Call the claim that *all* non-analytic truths are made true by things *Max*, which I'll formulate as follows:

> **Max.** Necessarily, for all non-analytic propositions p, if <p> is true, then there is some thing(s) E and <p> is true in virtue of E[2]

Recently, there have been a number of arguments purporting to show that if one embraces Truthmaker, then one ought to embrace Max (Mumford 2007: 49; Merricks 2007: 39-67; Dodd 2007; Cameron 2008a: 411-412). Some philosophers who accept this conditional do a *modus ponens* and embrace Max. Others do a *modus tollens* and reject Truthmaker.[3] It is my belief that the conditional is false. One can embrace Truthmaker without being obligated to embrace Max.

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[1]For example, Aristotle (1984: 22) says "if there is a man, the statement whereby we say that there is a man is true ... And whereas the true statement is in no way the cause of the actual thing's existence, the actual thing does seem in some way the cause of the statement's being true." W. V. O. Quine (1970: 10-11) echoes this thought when he says "No sentence is true but reality makes it so".

[2]I follow custom in allowing that '<p>' stand for 'the proposition that p'.

[3]For example, Mumford (2007) and Cameron (2008a) do a *modus ponens* while both Dodd (2007) and Merricks (2007) do a *modus tollens*.

My discussion is divided into four main parts. In §2.1 I present arguments given in the literature in favor of accepting the relevant conditional. These arguments are given in the context of considering whether or not negative existentials have truthmakers. As such, the arguments conclude specifically that if one wants to accept Truthmaker, then one ought to posit truthmakers for negative existentials. In §2.2 I take a look at two recent attempts by Ross Cameron and Jonathan Schaffer to provide truthmakers for negative existentials by appealing to the world, weigh those attempts, and find them wanting. In §2.3, I argue that the relevant conditional is false by considering worlds where we have good reasons to doubt Max but not Truthmaker. And finally, in §2.4, I consider some objections.

2.1   The Conditional

A much talked about reason to reject Max is the claim that negative and general truths — *x* does not exist, *x* is not F, all *x* are F — lack truthmakers. But many find in this rejection of Max a reason to reject Truthmaker. Trenton Merricks (2007: 40-3) gives three such arguments focusing on negative existentials. They are as follows: (*i*) If truthmakers could be found for negative existentials, then truthmaker theorists would accept such truthmakers. But this suggests that the only reason some truthmaker theorists reject Max is the fact that finding truthmakers for negative existentials has proved difficult. (*ii*) Our truthmaker intuition is that *every* truth depends on being. We do not have the gerrymandered intuition that all truths, except truths about *what does not exist*, depend on being. Truthmakers for every truth, except true negative existentials, thus "fails to be motivated by any other compelling intuition about truth's dependence on being" (2007: 41). (*iii*) Given that E makes <p> true, and that <p> entails, in the relevant way, some negative existential <q>, and that therefore E makes <q> true, then truthmaker theorists are committed to truth-

makers for some negative existentials.[4] But then, Merricks claims, all negative existentials should have truthmakers, for "it would then be both unprincipled and unmotivated to persist in saying that other true negative existentials lack truthmakers" (2007: 43).[5]

Arguments (*i*) - (*iii*) are all indictments of ad hocery. There is no independent reason to reject Max once Truthmaker is accepted.

David Armstrong argues along similar lines claiming that if one simply asserts that negative existentials do not have truthmakers, then this "seems to be nothing more than giving up on truthmakers as soon as the going gets hard" (2004: 70). Julian Dodd (2007: 394) agrees, saying

> The intuition that truth must be ontologically grounded in the sense explicated by [Truthmaker] is an intuition concerning (non-analytic) *truth in general*: it is one particular way of trying to explain the intuition that what is true is determined by how things are, but not *vice versa*. Consequently ... it would seem to be a failure of nerve to depart from this general [Truthmaker] principle in the wake of the problem of finding truthmakers for negative truths.

Finally, Ross Cameron (2008a: 411) says

> If we don't get the negative truths for free given the positive truths, then what possible motivation could there be for accepting that some truths require truthmakers but that negative truths don't? That would be to accept that the negative truths are not true in virtue of anything: but if we allow that then why do we not allow positive truths that are not true in virtue of anything?

As I see it, the central objection to accepting Truthmaker while rejecting Max just is that it is ad hoc. The truth of propositions *in general* needs to be explained. True propositions

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[4]That <p> entails <q> in the relevant way is important. For reasons why, see Restall (1996) and Armstrong (2004: 10).

[5]Merricks gives a fourth argument that presupposes the correspondence theory of truth. Since I will neither assume nor argue for the correspondence theory, I will ignore Merricks' fourth argument.

in general require an ontological ground. But then it would seem that negative truths require an explanation just as much as positive truths. After all, if, for example, eclipses in general stand in need of an explanation, then so do lunar eclipses and not just solar eclipses. But then if true propositions in general stand in need of an explanation, then so do negative truths and not just positive truths.

Consequently, exempting negative existentials from requiring truthmakers simply because finding such truthmakers has proved difficult just will not do. Either one must provide a non ad hoc reason for exempting negative existentials from requiring truthmakers or, in the absence of other reasons to reject Max, accept Max. If there is no non ad hoc reason, then those who find Truthmaker true have the burden of providing suitable truthmakers for negative existentials. It is the burden of providing suitable truthmakers for negative existentials that I turn to next.

2.2   The World

Three types of candidates have been offered to play the role of truthmakers for negative existentials: absences, totality facts, and the world.

The philosophical discussion over absences and totality facts is rather large and a good deal has been said both in favor of and against them. Since I have nothing new to say with respect to whether or not we should admit such entities into our ontology, and since I think that the criticisms leveled against them render their existence implausible (Molnar 2000: 80-2; Parsons 2005: 168; Dodd 2007: 388-9; Merricks 2007: 59-64), I will instead focus my attention on the world.[6]

According to Ross Cameron (2008a, b) and Jonathan Schaffer (2010a), it is the actual concrete world, which I will henceforth refer to as 'U' (for *universe*), that is the truthmaker for true negative existentials.[7] And this generalizes: since necessarily, there are true neg-

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[6]But for two recent defenses of negative ontology, see Barker and Jago (2011) and Zangwill (2011).

[7]Cameron seems to no longer hold this view since he has argued in favor of compositional nihilism —

ative existentials, then necessarily, there is a concrete world that makes these negative existentials true.[8] Let's call this view *The Worldly View*, which I'll sum up as follows:

> **The Worldly View.** Necessarily, some concrete world exists such that it is the truthmaker for all true negative existentials.

I will now argue, in the remainder of this section, that we should be hesitant in accepting The Worldly View. Since, as we will soon see, Cameron's view differs from Schaffer's, and since my criticisms of their views depends on this difference, the following will require that I make explicit this difference.

Suspicious Properties

Cameron wants truthmakers to necessitate the truths they make true (Cameron 2008a: 413). If E makes <p> true, then necessarily, if E exists, <p> is true. In order then for U to make negative existentials true, it has to necessitate that they are true. And in order for it to do this, Cameron rightly says that the following has to be true of U:

> The world, I claim, is composed of the truthmakers for the positive truths, and is essentially composed of exactly them: nothing composed of any fewer truthmakers, and nothing composed of any more truthmakers, could be our world...[however] it's perfectly consistent with everything said above that our world could exist at another possible world where there are arctic unicorns, provided that the unicorns in that world are not a part of the thing that

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the view that there are no complex objects — and the concrete world, if it is the truthmaker for negative existentials, would not exist if nihilism were true (Cameron 2008d, 2010). But that the concrete world is a truthmaker for true negative existentials deserves attention regardless of who does or who does not advocate it, and this justifies my presenting and criticizing it.

[8]Cameron and Schaffer could reject this generalization and say that at other possibilities, it is something other than whatever concrete world exists that makes negative existentials true. But in the absence of independent reasons to think this, such a rejection appears ad hoc. After all, what Cameron and Schaffer seem to be providing us with is the type of truthmaker one needs for true negative existentials *in every world* and not merely the type of truthmaker one *actually* needs for true negative existentials.

is actually our world. What we need to add is the claim that the world is essentially worldly: that no possible thing can be the thing that is actually our world unless it is itself a world—the biggest thing that there is. This claim, together with the above essentialist claims, secure the claim that the world couldn't co-exist with anything that doesn't actually exist, in which case it is a suitable truthmaker for any negative existential. (Cameron 2008b: 294-5)

Given that U is essentially composed of all and only the actual truthmakers for positive truths, and given that U is essentially a world, then it will necessitate the negative existential truths that it makes true. So in order for U to make negative existentials true, it has to be part of U's essence that it is composed of all the truthmakers for positive truths and no more, that it is the biggest thing there is, and that nothing exists other than what actually exists. Indeed, Cameron (2008b) is explicit in giving U this essence:

The world is constituted from these truthmakers, and is essentially constituted from just them (295)

The world is essentially maximal, in that it can't exist without being a world; that is, it cannot be a proper part of something bigger (295)

Similarly, I claim that the world's essence is exhausted by it being constituted of exactly what it is actually constituted of and by its being the biggest thing that there is (296)

It is of the essence of the world that nothing exists other than what actually exists (296)

Let's focus on the second quote, that the world (U) is essentially maximal in that it cannot be a proper part of something bigger. Or what amounts to the same thing, that one of U's essential properties is *not being a proper part of something bigger*. Now here's the rub: the property *not being a proper part of something bigger* shares some of the problems that plague totality facts. Briefly, a totality fact is the second-order fact that these first-order

facts are *all* the first-order facts. Or alternatively, it is the fact that these first-order facts jointly have the property *being such that they are all the first-order facts*, an instance of the general property *being such that they are all the F-things*. But this property is a "no more" or "negative" property since it says that these, and no more than these, are the F-things. Such a property is branded by Merricks (2007: 60-1) and Sider (2001: 40-1) as suspicious, by Cameron (2008b: 294) himself as peculiar, while Dodd (2007: 389) and Molnar (2000: 81-2) label it, pejoratively, a negative property (or the fact of which it is a constituent a negative fact). Notice though that the property *not being a proper part of something bigger* is also a "negative" property since it says that U is such that no thing has it as a proper part. In fact, according to Cameron, *not being a proper part of something bigger* should be an uncontroversial example of a suspicious property. Why? Because this property easily satisfies Cameron's analysis of what a suspicious property is. According to Cameron (2011: 61), if a property violates Intrinsic Determination,

> **Intrinsic Determination.** For all objects *x* and properties *F* and times *t*, if *x* instantiates *F* at *t*, then *x* has the intrinsic nature at *t* that it has partly in virtue of instantiating *F* at *t*,

then that property is suspicious. The rationale behind Intrinsic Determination is captured in the following:

> Properties should make a difference to how their bearers are intrinsically: instantiating a property should make a difference to the intrinsic nature *simpliciter* of the bearer at the time of instantiation. (Cameron 2011: 60-61)

But *not being a proper part of something bigger* violates Intrinsic Determination. Instantiating this property makes no difference to U's intrinsic nature. There are plenty of intrinsic duplicates of U that are proper parts of something bigger. So by Cameron's lights, we should not admit such properties into our ontology. Such properties do no truthmaking work. But then, contra Cameron, U does not have this property as part of its essence. But

then, contra Cameron, U is not a suitable truthmaker for negative existentials. Therefore, with respect to ridding oneself of suspicious properties, it would appear that not much is gained in resorting to Cameron's version of the The Worldly View over resorting to totality facts.

Are there any responses to this worry? If there are, they are going to require that it is not part of the essence of U that it is not a proper part of something bigger. For so long as U has this as part of its essence, then U has as part of its essence a suspicious property. Moreover, whatever responses there are to this worry, they are going to have to do the explanatory work Cameron wants them to do while remaining non-suspicious. For example, suppose one decided to "put into" U's essence the following property: *making true negative existentials*. If U has this property as part of its essence, then U will be both the truthmaker for negative existentials and will not require that it instantiate *not being a proper part of something bigger*. But this property will not do. For one, it appears explanatorily thin. There was a reason why Cameron says U has the essence he said it did: doing so explains why U makes negative existentials true. But in dropping Cameron's description of U's essence and replacing it with the essence of making negative existentials true, one gets the feeling that no genuine explanation for why U makes negative existentials true has been given. One has merely taken what was supposed to be explained and made it part of U's essence in order to explain it. Moreover, the property *making true negative existentials* is, at least according to Cameron's analysis, a suspicious property. For there are plenty of intrinsic duplicates of U that do not make negative existentials true since these duplicates are not worlds. They are rather proper parts of worlds. So having this property does not make a difference to how U intrinsically is. So this property should also be, according to Cameron, suspicious.

Are there any other properties we could appeal to that both explain why U, and concrete worlds in general, make negative existentials true and are non-suspicious according to Cameron's account of what a suspicious property is? I cannot think of any. And I have

an argument for thinking that there are not any. Take U and an intrinsic duplicate of U, U*, where U* is a proper part of some object. If U is to make negative existentials true and U* is not (since U* is not a concrete world but merely a proper part of one), then there must be some difference in the properties that U and U* instantiate. But whatever this difference in properties is, it is not an intrinsic difference since, by hypothesis, U and U* are intrinsic duplicates. So this difference in properties makes no intrinsic difference to U. But then by Cameron's lights, it is a suspicious property. But then it cannot be used as part of an explanation for why U, and not U*, makes negative existentials true. Since this line of reasoning generalizes, then there are no properties we could appeal to that both explain why concrete worlds make negative existentials true and are not suspicious.

Non-Concreta

Jonathan Schaffer (2010b) has recently defended a view in fundamental mereology according to which the parts depend on the whole. More specifically, he defends a view according to which necessarily, there is only one fundamental concrete entity whose parts depend on it and that entity is the world. Schaffer calls this view *Priority Monism* and thinks that it, in conjunction with the claim that the world is the one and only truthmaker, can, to use his phrase, 'slay the dragon' of negative existentials. Here's how.

Intuitively, U alone will not necessitate every true negative existential (Cameron, as we've seen, must reject this intuition). Take the truth, <There are no dragons>, and consider an expanded world, U_{dr}, where U (or an intrinsic duplicate of U) and a dragon exist. Notice that, according to priority monism, in U_{dr} it is not U that is fundamental since it is not U that is the concrete world. It is rather U_{dr} that is fundamental. So we have a difference here in what is fundamental. In the actual world, it is U that is fundamental but in the possibility that contains both U and a dragon, it is U_{dr}. We also have a difference in truth. In the actual world <There are no dragons> is true but in the possibility that contains both U and a dragon, it is false. What accounts for this difference in truth?

Answer: A difference in the world. As Schaffer (2010a: 321-322) says

> any difference in the truth of <there are no dragons> must stem from some
> difference in what is fundamental. If there can only be one fundament, and
> it is the world, then any difference in the truth of <there are no dragons> can
> only possibly stem from a difference in the world. Fixing the one fundament
> as *actuality* fixes the world, and in so doing fixes the truth of <there are no
> dragons>.

Notice that Schaffer's and Cameron's views are similar though not identical. Both say that
it is U that makes negative existentials true. However for Cameron, concrete worlds are
not fundamental but are essentially worlds (2008a: 419). For Schaffer, concrete worlds are
fundamental but are not essentially worlds (2010a: 318). So while both say that concrete
worlds are the truthmakers for true negative existentials, they put different constraints
on what concrete worlds have to be like in order to play the truthmaking role.

Now perhaps the biggest problem for Schaffer's version of The Worldly View is its
not being at all clear that U makes true every true negative existential. In stating pri-
ority monism, Schaffer (2010b: 33) is *very* clear in telling us what kinds of objects he is
concerned with. He says

> I should stress that I am only concerned with actual concrete objects. *Possibilia*,
> *abstracta*, and actual concreta in categories other than *object* are not my concern
> (deities and spirits, if such there be, are not my concern either). When I speak
> of the world...I am speaking of the material cosmos and its planets, pebbles,
> particles, and other proper parts.

So it is only actual *concrete* objects that Schaffer has in mind in advancing the thesis that
the parts depend on the whole. Possibilia, abstracta, deities, spirits, etc. play no role in
Schaffer's monism. And this should be expected. For Schaffer's arguments in favor of
priority monism only favor grounding things in the world when the scope of the things

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standing in such a relation are concrete. Schaffer's arguments for priority monism are as follows: (*i*) Common sense endorses the priority of the whole in cases of integrated wholes. Common sense thinks that the cosmos is an integrated whole, and therefore thinks that the cosmos grounds its parts (2010a: 46-50). (*ii*) Physics provides us with good evidence that the cosmos is an entangled system, and there is good reason to treat entangled systems as irreducible wholes (2010a: 50-57). (*iii*) Priority monism, unlike the pluralism that postulates ultimate parts (simples) as fundamental, is consistent with the possibility of gunky worlds (worlds where everything has a proper part) (2010a: 60-65). Notice though that these three arguments in favor of priority monism are all inconclusive with respect to whether or not non-concreta are grounded in the cosmos. For that common sense thinks the cosmos is an integrated whole is neutral with respect to the grounding status of non-concreta. That the cosmos is an entangled system, and therefore an irreducible whole, is silent on how the cosmos relates to non-concreta. And non-concreta need not be grounded in the cosmos in order to have a fundament in gunky worlds. Therefore, the arguments that Schaffer adduces in support of priority monism do not support the claim that non-concreta depend on the cosmos.

And so the arguments in favor of accepting priority monism only favor grounding *concreta* in the concrete world. They do not favor grounding non-concreta, such as Cartesian egos, in the world. That is, they do not favor saying that non-concreta exist, or that non-concreta do not exist, is grounded in the world. But then they do not favor saying that truths about non-concreta are grounded, and therefore made true, by the world. And so the reasons given in favor of accepting priority monism are completely silent on whether truths such as <There are no Cartesian egos> are grounded in the world. And so these reasons do not favor saying that a difference in the truth of <There are no Cartesian egos> stems from some difference in the world.[9] So what we need is an argument for thinking

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[9]And this is precisely why it will not do to say as a response, as an anonymous referee did, that if priority monism is true, and therefore if necessarily there exists only one fundamental concrete world, then Cartesian egos necessarily do not exist. Since the arguments in favor of priority monism (at least as defended by its present champion, Jonathan Schaffer) only motivate the claim that concreta are grounded

that the world grounds both concreta and non-concreta alike, and therefore makes true truths about both concreta and non-concreta alike.

Here is such an argument: If all concreta (save U) are grounded in U, as they are according to priority monism, then *everything* (save U) is grounded in U. Or, what amounts to something similar, if, when it comes to concreta, grounding works such as to go from things that are not the world to the world, then this is how grounding works *tout court* — so non-concreta, which are things that are not the world, are grounded in the world. Unfortunately, I see no reason to accept this conditional *unless a relevant similarity exists between concreta and non-concreta*. But that there is a relevant similarity between concreta and non-concreta is by no means obvious. Indeed, it would not at all be arbitrary to think that the cosmos grounds only concreta. Why? Because the difference between concreta and non-concreta marks a natural and sharp joint in the existence of things, unlike, to use Schaffer's example, any level of decomposition in a homogeneously pink sphere of gunk.

Of course, none of this bars someone from accepting that non-concreta depend on U.[10] But again, why believe this? As I stressed above, the arguments in favor of priority monism do not give us this conclusion. And saying that we should believe this because if we do, we can have a truthmaker for every true negative existential about non-concreta is of little help. For we can believe many things that are such that, if we do, we can have a truthmaker for every true negative existential about non concreta. If non-concreta depend on the existence of two electrons, then, for the very same reasons for thinking that U makes true all true negative existentials about non-concreta if non-concreta depend on U, two electrons would make true all true negative existentials about non-concreta. But this gives us very little reason to think that non-concreta are grounded in two electrons.

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in the world, which is consistent with non-concreta not being grounded in the world, then the arguments in favor of priority monism do not motivate thinking that necessarily, there are no Cartesian egos.

[10] And it would seem that Schaffer accepts this. For he presents a view where the *partialia* are grounded in the world and then says that "it remains to ground *abstracta* (such as *numbers* and *possibilia*) in the actual concrete realm. Here matters are too complicated to discuss further within the scope of this paper." (2009: 379) So even though Schaffer does not give us reason to think that non-concreta are grounded in the world, it seems that he thinks they are.

What we need here are independent reasons to think that non-concreta depend on two electrons. Similarly, what we need here are independent reasons for thinking that non-concreta depend on U.

Admittedly, none of this is decisive. But it is a challenge. And the challenge is to come up with reasons for thinking that non-concreta depend on U. If such reasons are provided, then we can enter into philosophical debate concerning the adequacy of those reasons. Since I am skeptical of the whole priority monistic approach, I would, most likely, be skeptical that such reasons are compelling. But at least I would have reasons to be skeptical about! And besides, or so I will now argue, looking for truthmakers for negative existentials is misplaced. There is nothing ad hoc in accepting Truthmaker while denying Max.

2.3   Truthmaker Without Max

On the assumption that if one embraces Truthmaker, then one ought to embrace Max, and if you think that we have good reasons not to embrace Max — since we have good reasons to think that absences, totality facts, and the world are not plausible truthmakers for negative existentials — then you should think that we have good reason not to embrace Truthmaker. For those partial to Truthmaker, as I am, my advice here is to reject that if one embraces Truthmaker, then one ought to embrace Max. In order to do this successfully, a non ad hoc reason needs to be given showing that Truthmaker advocates should not feel obligated to embrace Max.

Small Worlds

In discussing whether we need truthmakers for certain kinds of truth, and if we do, what kinds of truthmakers we need, I think the method of focusing on small and simple worlds

proves extremely useful.[11] Consider then the smallest of all worlds, the *empty world*, where no concrete thing exists, and the following list of truths in the empty world:[12] <There are no Martians>, <There are no hobbits>, <There are no humans, rocks, chairs, and houses>, etc. If the empty world were actual, if there were no concrete things, then it would be true that there are no Martians, no hobbits, and no humans. But in the empty world, what entity plays the role of making all these truths true? Non ad hoc answer: No entity does. In order to motivate this, let's paint the picture as follows: It is also useful, in trying to figure out what needs to exist in order to make some truth true, to appeal to God. What does God have to create in order to make some proposition true? For example, what does God have to create in order to make it true that humans exist? Well, either you or I would do (assuming we are human!). If God created you, then <Some human exists> would be true. Now let's shift to negative existentials. What does God have to create in order to make it true that there are no Martians? Well, *nothing*. If God decided not to create, then there would be nothing (save truthbearers if there is to be truth), and so <There are no Martians> would be true and, intuitively, nothing would make it so.[13] But the world in which God creates nothing just is the empty world. So the empty world provides us with a non ad hoc reason to think that at the empty world, negative existential truths do not require truthmakers.[14]

Here is another way of looking at it. Suppose that God has before him all the truth-bearers. Now God wants to make some of these truthbearers, like <Some humans exist>, true. But in order to do so, God has to populate the world. In particular, God has to

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[11]And I am not alone. Armstrong (1997: 107) employs this method when discussing particulars, noting its usefulness.

[12]I do not like using the term 'empty world' since I do not think that at the empty world, a world exists. I prefer something like 'empty way' or 'empty possibility'. However, since 'empty world' is the standard way of referring to that non-actual way where no concrete thing exists, I will follow suit.

[13]Indeed, if God decided not to create, then there would be no concrete world. But there would still be true negative existentials! So concrete worlds as truthmakers for negative existentials fail in the empty world.

[14]Mumford (2007: 69) argues that the empty world is consistent with Max by denying that negative existentials are true at it (indeed, he denies that negative existentials are in fact true). This is a big bullet to bite (though Mumford, of course, argues that it is not as big as we might think). Better, I say, if we preserve the truth of negative existentials and deny Max, as I am doing, in a non ad hoc way.

populate the world with humans. But what does God have to do to make <There are no Martians> true? Nothing. No effort is required on behalf of God here. Negative existentials come true for free. They are had on the cheap. Or as I like to put it, that they are true is the default position, the default truth-value. Nothing has to exist in order for them to be true. But something has to exist in order for them to be false.

Suppose though that you think the empty world is impossible (see below for more on this objection). That's fine. I only asked you to focus on small worlds. So let's move from the empty world to a world just slightly more populated than the empty world, electron world, where the only concrete thing that exists is an electron.[15]   At this world, does it seem like we have a truthmaker for <There are no Martians>? If it does, then the electron must be, in some sense or other, relevant to the existence or non-existence of Martians. But this is implausible. The existence of one electron is not relevant to the truth or falsity of <There are no Martians>. To use the theological metaphor again, it would be strange to say that all God had to do to make <There are no Martians> true is create an electron. God's creating an electron is neither here nor there when it comes to the truth or falsity of <There are no Martians>.

I claim then that these small worlds make the asymmetry between positive existentials like <Some humans exists> and negative existentials like <There are no Martians> plain. If there were nothing, or only a very little something, then <There are no Martians> would be true and intuitively nothing would make it so. But it is obviously incorrect to say that <Some human exists> could be true and yet nothing would make it so. And so generalizing, there appears to be a truthmaker asymmetry between positive and negative existentials. It is precisely this asymmetry that is needed in order to show that Truthmaker theorists are not obligated to accept Max; in order to show that there is nothing ad hoc in affirming the existence of truthmakers for positive existentials but denying them for

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[15]The reader may be wondering what it takes for a world to be small. I do not know. And I doubt anyone else does. But I am certain that both the empty world and electron world will count as small worlds on any precisification of 'small world'.

negative existentials. And so, I claim, it does not follow that if one embraces Truthmaker, then one ought to, on pain of doing something ad hoc, embrace Max.

Notice that reflecting on small worlds, like the empty and electron worlds, brings to the surface what I believe is our already existing intuition concerning negative existentials and truthmakers for them. I agree with Joseph Melia (2005: 69) when he says

> Intuitively, what makes a sentence true such as 'There are no *F*s' is a *lack* of *F*s
> ... it is just confused to think that we must account for a *lack* by postulating
> the *existence* of something else ... Such truths are true because certain things
> *don't* exist, and it is wrong to try and understand this in terms of the *existence*
> of something new.[16]

The reason that, given Truthmaker, many have not agreed with Melia is due to our considering only big and complex worlds, such as the actual world, in trying to decide if negative existential truths are the type of truth that intuitively require truthmakers. Since these worlds are heavily populated and already filled with existing concrete truthmakers for all sorts of truths, the lure of thinking that there must be truthmakers for negative existentials is quite strong. Small worlds do away with this lure by getting rid of those distracting concrete truthmakers in big and complex worlds, thereby making it easier for us to focus our attention solely on the negative existential truths, allowing us to see that which seems to be the case: that truth about what is not is not made true by what is. On now to the objections.[17]

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[16]Trenton Merricks (2007: 64) says something similar when he says "For it is implausible that a claim asserting that a thing *fails to exist* is made true by — and so is appropriately about — some other *existing thing*."

[17]Upon finishing the first draft of this paper, I came across a recent article by David Efird and Tom Stoneham (2009) which also recognizes the problem that the empty world provides for Max. However, the conclusions to which Efird and Stoneham arrive at, and the intent of their paper, are different from mine. Firstly, Efird and Stoneham seem to equate Truthmaker with Max. But that Truthmaker should be so equated is precisely what I am disputing. Secondly, Efird and Stoneham invoke a totality fact in order to overcome the problem that the empty world provides for Max. But that there are, or could be, totality facts is implausible. Thirdly, I claim that even non-empty worlds (provided that they are small enough) provide us with just as good a reason as the empty world does to deny Max. But Efird and Stoneham only concern themselves with the empty world. And fourthly, Efird and Stoneham are primarily interested in the

2.4 Objections

Objection 1. Small worlds are not metaphysically possible. But then using them to motivate a rejection of Max is illegitimate.

Response. Are small worlds metaphysically impossible? I don't think so. And I am not alone. Indeed, some think that the smallest of all worlds, the empty world, is possible.[18] For those who do, my argument gives them a straightforward reason to deny Max while preserving Truthmaker. But suppose you are convinced that small worlds are metaphysically impossible.[19] If you think this, then I claim that these kinds of worlds still give you reason to deny Max. Here is why.

Consider Kit Fine's (1994) argument against a modal account of essence which says that an object is taken to have a property essentially just in case it is necessary that the object has the property if it exists. Fine argues against this account by considering Socrates and Socrates' singleton set. If an object has a property essentially just in case it is necessary that the object has the property if it exists, then since it is necessary that Socrates belong to his singleton if Socrates and sets exist, then belonging to Socrates' singleton is part of the essence of Socrates. But intuitively, this is wrong. Paraphrasing Fine, there is nothing about the nature of any person that they belong to any set or that sets exist at all (1994; 4-5). Since this seems right, then we have reason to reject the modal account of essence. And we have reason to reject the modal account *even if we reject the existence of sets*. That is, even if sets are metaphysically impossible, the fact that the modal account of essence has the consequence that if sets existed, then they would be part of our essence seems

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modal status we should accord to the empty world, hence the title of their paper "Is Metaphysical Nihilism Interesting?" In §2.4 I argue that whether or not the empty world is possible, and thus what modal status we should accord it, has little to no bearing on whether it give us a reason to deny that negative existentials have truthmakers.

[18]In defense of the empty world's being metaphysically possible, see, *inter alia*, Baldwin (1996) and Rodriguez-Pereyra (1997).

[19]Notice that a world's being metaphysically impossible is not tantamount to its being logically impossible. This is important since we can make sense of and reason with purported metaphysical impossibilities whereas this is not obviously so with logical impossibilities. Looking at the debates between nominalists and platonists, theists and atheists, modal realists and modal ersatzists, etc., makes this abundantly clear.

problematic. And so Fine's objection does not require the actual existence of sets in order to have the impact it does.

"But what explains" you may ask "why Fine's Socrates' singleton set example gives us reason to reject the modal account of essence if the existence of sets is metaphysically impossible?" The answer just is that whether or not the modal account of essence is true should not depend on whether or not sets are metaphysically possible. That is, the following conditional is true:

> (1) If the modal account of essence is true, then it *should* be true whether or not sets are metaphysically possible.

It sure would be strange to say that the modal account of essence is true only if sets are metaphysically impossible. The modal account of essence should be neutral with respect to the modal status of sets. (1) thus explains why even if sets are metaphysically impossible, considering scenarios where they exist gives us reason to reject the modal account of essence. But now we are in a position to explain why small worlds, even if metaphysically impossible, give us a reason to reject Max. Max's truth just should not depend on whether or not they are metaphysically possible. Its truth should be neutral with respect to the modal status of small worlds. That is, the following conditional is true:

> (2) If Max is true, then it *should* be true whether or not small worlds are meta-physically possible.

The modal status of small worlds should not, *in and of itself*, give us any reason to think that Max does not hold at these worlds. For our reasons for thinking that Max is true have to do with the nature of the relation between truth and being. That is, our reasons for thinking that some type of truth depends (or does not depend) on being in the actual world are reasons to think of that type of truth that it depends (or does not depend) on being in small worlds. So if you think that Max is actually true, then you should think

that Max is true at small worlds. But I've argued that you should not think that Max is true at small worlds. And so you should not think that Max is actually true.

Objection 2. I would deny your conditional (2), for it is somewhat analogous to: "If General Relativity is true, then it should be true whether or not our world is a Newtonian world." Given that Newtonian worlds are physically impossible, then going to a Newtonian world is going to a world that conflicts with the laws of nature. Similarly, given that small worlds are metaphysically impossible, then going to a small world is going to a world that conflicts with the laws of truthmaking. But then we have no reason to expect Max to continue to hold.[20]

Response. But why think that at small worlds, the laws of truthmaking do not hold simply because small worlds are metaphysically impossible? If you are a theist, then worlds where atheism is true are metaphysically impossible. But this should not give the theist reason to think that at atheistic worlds, the laws of truthmaking do not hold. But if not, why should we think, simply because small worlds are metaphysically impossible, that the laws of truthmaking do not hold at them? It cannot be that we think Max is true, since this would be question-begging. So there must be something about small worlds, other than there being metaphysically impossible, that would explain why the laws of truthmaking do not hold at them. But what could it be?

Objection 3. But the laws of truthmaking include Max. This is not question-begging, but is independently motivated by the argument that, metaphysically speaking, semantic features of reality are not the sorts of features of reality that can go ungrounded. It explains why we need truthmaking and why maximality must hold, in one fell swoop. And it explains why going to worlds where Max is false is to go to a world that conflicts with the laws of truthmaking.

Response. Here we have a new argument for Max: semantic features of reality are not

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[20]I would like to thank Jonathan Schaffer for discussion of both this objection and the one to follow.

the sorts of features of reality that can go ungrounded, so Max is true. I would reply that small worlds give us a reason to reject this argument's premise, and that they do so in such a way that should not bother us. For, as I've argued above, there seems to be nothing incoherent or nonsensical, with respect to considerations having to do with truth's dependence on being, in saying that at small worlds, <There are no Martians> is true and nothing makes it so. This is unlike metaphysically impossible worlds where <Some humans exist> is true but nothing makes it so. This does strike us as, at the very least, bordering the incoherent and nonsensical with respect to considerations having to do with truth's dependence on being. And so in these latter worlds, we do have reason to think that we are going to worlds where the laws of truthmaking do not hold. But, as far as I can see, no such reason is available when we go to worlds that are small. So, I claim, small worlds provide us with good reason to reject the claim that *all* semantic features of reality are grounded. For small worlds are, with respect to considerations having to do with truth's dependence on being, sensible, even if (and this is a big 'if') metaphysically impossible, worlds.

Objection 4. You are only considering small and simple worlds in arguing that negative existentials do not require truthmakers. But why think that negative existentials do not require truthmakers in large and complex worlds?

Response. Why think that they do? Why think that merely adding a lot of entities to a world, resulting in a large and complex world, constitutes a reason to require truthmakers for negative existentials? If the existence of one electron is not relevant to the truth or falsity of <There are no Martians>, why think that worlds more heavily populated, like ours, require truthmakers for negative existentials?

Objection 5. One reason to believe in Truthmaker is its ability to catch cheaters, where a cheater is someone who posits ungrounded truths.[21] Truthmaker has been used to catch

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[21] For example, Ted Sider says that "the point of the truth-maker principle and the principle that truth supervenes on being is to rule out dubious ontologies" (2001: 40).

Rylean behaviorists, phenomenalists, molinists, and presentists.[22] But once we allow negative existentials to go ungrounded, then we have opened the door to all sorts of cheats, for it is open for them to claim that their kinds of truth are ungrounded as well.

Response. This only follows if we have no independent, non ad hoc reason to allow negative existentials to go ungrounded. I have argued that we do have an independent, non ad hoc reason, to wit, small worlds. Insofar as Rylean behaviorists, phenomenalists, molinists, and presentists do not have independent, non ad hoc reasons to allow propositions they claim are true to go ungrounded, then they will be caught.

2.5   Conclusion

A number of truthmaker theorists think that if you accept Truthmaker, then you ought to accept Max. I have argued against this conditional by considering worlds where we have good reasons to doubt Max but do not have reasons to doubt the intuition undergirding acceptance of Truthmaker. And so consideration of these worlds shows us that it is not ad hoc to accept Truthmaker but deny Max. I have also argued that there are problems in appealing to concrete worlds as truthmakers for negative existentials. In particular, I have argued that of the two different appeals to concrete worlds in the literature, one seems to posit suspicious properties while the other has not given us any compelling reasons to think that non-concreta depend on the concrete world.

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[22]For truthmaker arguments against Rylean behaviorists and phenomenalists, see Armstrong (2004: 1-3); against molinists, see Adams (1977) and Hasker (1989); against presentists, see Parsons (2005: 170-4) and Sider (2001: 35-42).

Chapter 3

Truthmakers and Truthgrounders

A number of truthmaker theorists claim that truth*makers* are truth*grounders*. They claim that truthmaker theory just is the theory that says that truthmakers ground, and so explain, truth.[1] For example, truthmaker theorists say things like "Must there not be something about the world that makes it to be the case, that serves as an ontological ground, for this truth?" (Armstrong, 1997: 115), "To believe in truthmaking is, basically, to believe that truth is grounded in the world or reality" (Rodriguez-Pereyra 2006: 186), "the truthmaking relation is the relation of grounding between substance and truth" (Schaffer, 2010a: 310), and "Truthmaker theory says that what is true is grounded in what there is" (Cameron, forthcoming a). Consider Julian Dodd describing what truthmaker theorists are committed to:

> Truths must be grounded in reality and grounding, she will insist, is a relation.
> Given that this is so, this grounding relation must hold between a true proposition and an entity in the world, and what else could this worldly entity be but the proposition's truthmaker? (Dodd, 2007: 396)

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[1]These truthmaker theorists therefore accept *truthmakers*, things in the world that make truths true. There are, however, *truthmaking* theorists who reject the existence of truthmakers. According to them, there is truthmaking without truthmakers (Melia 2005; Schnieder 2006). The theory of truthmaking this paper is concerned with is the orthodox one, the one that accepts truthmakers and a relation that obtains between truthmakers and truth.

Since these quotes are taken in the context of trying to tell us what truthmaking is, I think it implausible to dismiss them as mere *façons de parler*. These philosophers are speaking strictly when they seek to understand truthmaking in terms of grounding. Now, in agreement with the above quotes, I think that truthmaking should be understood in terms of grounding. However, it is important to get clear on the extent to which grounding plays a role in making sense of truthmaking. The above quotes seem to to support the claim that truthmakers *fully* ground truth; that truthmakers are *complete* truthgrounders. But even if the intention behind these quotes was not to claim that truthmakers fully ground truth, the claim that truthmakers are complete truthgrounders is still worth investigating.[2] For as I will attempt to show, such an investigation will lead us to a clearer picture of both the relationship between truth and the world and between truthmaker theory and various theories of truth.

Now it is my contention that the position which says that truthmakers fully ground truth, that truthmakers are truth grounders (a position I will henceforth call *TTG*), is false. My reason for thinking this is simple: truthmakers *partially* ground truth. That is, truthmakers stand in the partial grounding relation, and not the full grounding relation (henceforth simply *grounding*), to truth. Truthmakers partially, but not fully, explain truth. And as we will see, that they do has some interesting implications.

The structure of this paper is as follows: In §3.1 I argue that the truthmaking relation is best seen as a relation that holds, not between a truthmaker and a proposition, but between a truthmaker and a fact about a proposition's being true. In §3.2 I give two arguments against TTG. In §3.3 I argue for an analysis of truthmaking that appeals to the correspondence relation and has it that truthmakers partially ground facts about a proposition's being true. In §3.4 I discuss what implication this has for the correspondence theory of truth. In §3.5, I respond to an objection, based on truthmaker considerations,

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[2]As it turns out, it was not the intention behind every one of these quotes that truthmakers fully ground truth. Jonathan Schaffer has told me, in personal correspondence, that what he has in mind when he says that truthmakers ground truth is that truthmakers partially ground truth.

against the correspondence theory.

First, a few things about grounding and the notation I will be using in this paper. I take grounding to be a kind of non-causal metaphysical dependence relation that resists analysis in terms of modal notions (Schaffer 2009; Rosen 2010; Audi 2012a). It is the kind of relation that is referred to in the following kinds of claims: wholes *depend* on their parts and how those parts are arranged; there are moral properties *because* there are natural properties; what is possible is *explained* by what is actual; intrinsic properties exist *in virtue of* how their bearers are; hosts are *prior* to holes, etc.

I will assume that the logical form of grounding statements is best captured by the *predicate view*, which treats 'ground' as a relational predicate. This is in contrast with the *operator view* which treats 'ground' as a non-truth-functional sentential connective.[3] I will also remain neutral on whether 'grounding' is a catch-all word that denotes a determinable with various non-causal metaphysical dependence relations as its determinates. (Whether grounding is or is not a determinable should not matter. All that matters is that grounding is the kind of metaphysical dependence relation(s) that is referred to in the above claims.)

I will assume that entities of any kind can stand in the grounding relation in order not to beg the question against TTG. For many who accept TTG will say that individuals, properties, and facts are all truthmakers. But then individuals, properties, and facts stand in the grounding relation. Now, as I am understanding it, a fact is something along the lines of Armstrongian (1997, 2004) states of affairs. This is in contrast with Plantingian (1974) or Chisholmian (1976) states of affairs. The latter, unlike the former, necessarily exist, are essentially abstract, are quasi-representational in nature, and do not have individuals and properties as parts or constituents. So in this paper, an ontology of facts will be assumed.[4]

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[3]For a brief introduction to this debate over the predicate and operator views, see Trogdon (forthcoming).

[4]That I am assuming facts here is not at all uncommon. That facts are needed to make true some propositions, and that facts are among the relata of the grounding relation, is often assumed in the literature on

Finally, I will take grounding to be such that many things can ground one or many things, and one thing can ground many or one thing (however, for simplicity's sake, my official formulation of statements of ground is 'the xs ground y').

3.1   What are the Relata?

It is quite common for philosophers to say that the truthmaking relation holds between a truthmaker and a proposition. Here is Rodriguez-Pereyra (2006: 188)

> For those who believe in truthmakers truthmaking is a relation. The *relata* are truthmakers and truthbearers ... Truthmaking is a cross-categorial relation in the sense that it can obtain between entities belonging to different kinds: an entity that is not a proposition and a proposition.

And Kit Fine (2012: 43) says

> The relation of truth-making relates an entity in the world, such as a fact or state of affairs, to something, such as a statement or proposition, that represents how the world is.

Armstrong (2004: 6) himself, a champion of truthmakers, has also stressed that the relata of truthmaking are truthmakers and propositions.[5] However, *pace* Rodriguez-Pereyra, Fine, and Armstrong, I do not think that the *relevant* relata here are truthmakers and propositions. Rather, they are truthmakers and facts about proposition's being true. For example, in addition to truthmakers, we also have *bluemakers* (and *goodmakers*, and *wrongmakers*, and *possiblemakers*, etc.). That this ball is cobalt *makes blue* this very ball. The ball's being cobalt is the bluemaker of the ball. But we should not conclude from this that the relevant relata is a bluemaker and a ball. This becomes obvious once we recognize that

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both truthmaking and grounding. See, *inter alia*, Armstrong (2004), Merricks (2007), Rosen (2010), Audi (2012a), and Trogdon (forthcoming).

[5]Indeed, some have criticized truthmaker theory on the grounds that the truthmaking relation has as one of its relata a proposition (see Liggins 2012).

the *making* relation at work here is a kind of explanatory relation. Bluemakers do not explain the existence of blue objects. Rather, they explain the blueness of those very objects. But this just means that they explain an object's being blue. That is, their existence explains the existence of facts involving an object that is blue. So saying that something makes blue something else is elliptical for saying that something makes it the case that (or explains that) something is blue. And this latter way of expressing what is really going on makes it clear that the making (or explaining) holds between a bluemaker and a fact involving something that is blue and not between a bluemaker and whatever it is that is blue.

The same should be said for truth and truthmakers. That the ball is blue makes true <this ball is blue>.[6] But we should not conclude from this that the relevant relata is a truthmaker and a proposition. As with the bluemaking example above, this becomes obvious once we recognize that the making relation at work here is a kind of explanatory relation. Truthmakers do not explain the existence of propositions. Rather, they explain (or, as I argue below, partially explain) the truth of propositions. But this just means that they explain a proposition's being true. That is, their existence explains the existence of facts involving a proposition that is true. So saying that something makes true something else is elliptical for saying that something makes it the case that (or explains that) something is true. And this latter way of expressing what is really going on makes it clear that the making (explaining) holds between a truthmaker and a fact involving a proposition that is true and not between a truthmaker and a proposition.

So given that the relevant relata are truthmakers and facts involving a proposition that is true, TTG amounts to the following: Truthmakers ground facts of the form '<p> is true'. That is, TTG says that the making relation that holds between a truthmaker and a fact about a proposition's being true just is the grounding relation. I will now argue that TTG, so understood, is false.

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[6]I will use '<p>' to stand for 'the proposition that p' where a proposition is that kind of thing that is a primary bearer of truth or falsehood.

3.2 Truthmaking is not Grounding

In this section, I will give two arguments against TTG. The first focuses on the relation between grounding something and explaining certain kind properties while the second focuses on the relation between grounding facts about truth and grounding truth itself.

Argument 1

An Intuitive Gloss of the Argument: It appears to be a feature of grounding that if x grounds y, then kind facts constitutive of y are explained by appealing to facts about x. If x grounds y, then that y belongs to some kind, where belonging to this kind is part of what it means to be y, is explained by appealing to how x is. So if truthmakers grounds facts of the form '<p> is true', then kind facts constitutive of facts of the form '<p> is true' are explained by facts involving how truthmakers are. But kind facts constitutive of facts of the form '<p> is true' are not explained by facts involving how truthmakers are. So truthmakers do not ground facts of the form '<p> is true'. (I will, from here on out, use 'K_c' to refer to kind facts constitutive of the things that belong to such kinds.) Now for a detailed account of this argument.

Grounding, Explanation, and Kinds

A K_c just is a fact involving some thing belonging to some kind where belonging to this kind is part of what it is to be the thing in question. For example, part of what it is to be the number 2 is to be abstract (to belong to the kind *abstracta*). And so the fact that 2 is abstract is a K_c of 2. Part of what it is to be a chair is to be concrete (to belong to the kind *concreta*). And so the fact that King Edward's Chair is concrete is a K_c of King Edward's Chair. Part of what it is to be a proton is to be composed of three valence quarks (to belong to the kind *composita*). And so the fact that proton P is composite is a K_c of P.

Consider the following conditional:

Kind. If the xs ground y, then the K_c's of y are explained by facts involving how the xs are

Should we accept Kind? I think so, and for at least two reasons. Here is the first, which is an appeal to intuition. Suppose that the xs ground y but fail, for example, to have anything to do with the kind of thing y constitutively is. Then it seems that the xs have missed something about y. The xs, or at least how the x's are, have failed to explain something about y as y is in itself (namely, the K_c's of y). But then how can the xs be a ground of y? Doesn't our notion of ground require that what does the grounding also explain, ground, or bring about, in virtue of how they are, that the thing grounded belongs to a kind constitutive of that thing? It would seem so.[7]

But in addition to this appeal to intuition, we also have the following argument: Suppose that the xs, and only the xs, ground y but that the K_cs of y are not explained by facts involving how the xs are. Then either facts involving something other than how the xs are, say how the zs are, explain the K_cs of y or nothing explains the K_cs of y. But if the first disjunct, then why is it not the zs, as opposed to the xs, that ground y? If the K_cs of y are explicable solely by appeal to facts involving how the zs are, then why not say that it is the zs, and not the xs, that ground y? Why privilege the xs here? In the absence of some principled reason, denying that the zs ground y even though facts about them explain the kind of thing y constitutively is appears unmotivated. But that the zs ground y contradicts our assumption that the xs are the sole ground of y.

Turning to the second disjunct, if nothing explains the K_cs of y, then it follows that the K_cs of y are fundamental facts since such facts, lacking an explanation, are brute and therefore ungrounded. But if the K_cs of y are fundamental facts, then y has a foothold in the fundamental since y is a constituent of fundamental facts. y features in those facts that tell the fundamental story of the world, and so y is a part of such a story. But y does

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[7]Wilson (2012: 12) agrees with this. Focusing on the modal features of a thing, she says "A supposed "ground" for some entity which failed to provide a metaphysical basis for modal facts constitutive of the entity would be an *incomplete* ground, at best." See also deRosset (2013: 4), who accepts a principle he calls 'Link' that entails Kind.

not have a foothold in the fundamental. y is not a part of the fundamental story of the world. y is instead grounded, and grounded things are not constituents of, or among, fundamental facts.[8] Grounded things are not parts of the fundamental story of the world. So that the K$_c$s of y are fundamental contradicts our assumption that the xs ground y. So the K$_c$s of y are not fundamental, and are therefore explained.

Since both disjuncts result in something that contradicts our assumption (namely, that the xs, and only the xs, ground y), we have reason to believe that if the xs ground y, then the K$_c$s of y are explained by facts involving how the xs are. And so we have reason to accept Kind.

We can now show that the following conditional is true:

1. If TTG is true, then kind facts constitutive of facts of the form '<p> is true' are explained by facts involving how truthmakers are

If TTG is true, and so if truthmakers ground facts about a proposition's being true, then given Kind, it follows that the K$_c$s of facts of the form '<p> is true' are explained by facts involving how truthmakers are. So 1 is true.

The Second Premise

There are K$_c$s of facts of the form '<p> is true' that cannot be explained by facts involving how truthmakers are. Here are two of them.

Suppose that facts are concrete.[9] Then part of what it is to be a fact of the form '<p> is true' is to be concrete. And so a K$_c$ of the fact that <p> is true is the fact that the fact that <p> is true is concrete. But facts involving how truthmakers are do not explain that the fact that <p> is true is a concrete entity. For example, Clinton makes it that <Clinton exists> is true, and so according to TTG, Clinton grounds the fact that <Clinton exists> is

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[8]See Sider (2011: 106-109) for acceptance of a similar principle he calls 'Purity'.
[9]The line of reasoning to follow works just as well if we take facts to be abstract or mixtures of both the abstract and concrete.

true. But facts involving how Clinton is do not explain that the fact that <Clinton exists> is true is concrete. This fact's belonging to the kind *concreta* is not due to how Clinton is. There is nothing about Clinton that makes it that the fact that <Clinton exists> is true is a concrete entity.

Or take the kind *composita*, a kind that is constitutive of any fact, and so part of what it is to be a fact. So a K_c of the fact that <p> is true is the fact that the fact that <p> is true is a composite entity. But if the xs ground the fact that <p> is true, then since the fact that <p> is true is composite, it follows from Kind that facts involving how the xs are explain that the fact that <p> is true is composite. But facts involving how truthmakers are do not explain that the fact that <p> is true is composite. Again, Clinton makes <Clinton exists> true. But what is it about how Clinton is that explains that the fact that <Clinton exists> is true is a composite entity? What facts involving how Clinton is explain that the fact that <Clinton exists> is true is composite? I do not know. Indeed, asking this question is silly. How Clinton is has nothing to do with the compositeness of the fact that <Clinton exists> is true. If it did, then we could, simply by having an exhaustive list of the ways Clinton is, conclude that the fact that <Clinton exists> is true is composite. But I do not see how we could. None of the ways Clinton is seems relevant with respect to doing the explaining we want here.

So we have two examples showing that there are K_cs of facts of the form '<p> is true' that cannot be explained by facts involving how truthmakers are. And so it is not the case that facts involving how truthmakers are explain the K_cs of facts of the form '<p> is true'. So the following would seem to be true:

2. Kind facts constitutive of facts of the form '<p> is true' are not explained by facts involving how truthmakers are

And from 1 and 2, that TTG is false follows.

Argument 2

An Intuitive Gloss of the Argument: Truthmaker theory's central concern is to explain truth (there is a reason it is called 'truthmaker theory'). Truthmaker theorists are after what grounds truth. They are not after what grounds, say, propositions (truthmaker theory is not called 'proposition-maker theory'). So, in the context of truthmaker theory, a full ground of facts of the form '<p> is true' should include a ground of truth since a ground of truth is precisely what truthmaker theorists, *qua* truthmaker theorists, are after. But truthmakers do not include a ground of truth. So truthmakers do not ground facts of the form '<p> is true'. Now for a detailed account of this argument.

The Question Being Asked

Truthmaker theorists ask 'what makes it that something is true?' But what, in truthmaker circles, is this question asking? Consider another circle, the wrongmaking circle. Suppose that wrongmaking theorists want to know what makes it that some action is morally wrong. In particular, suppose that wrongmaking theorists want to know what makes it that hitting a toddler is wrong. They want to find a ground for the fact that hitting a toddler is wrong. Now suppose that I gave them the following answer: what makes, at least in some cases, hitting a toddler wrong is the wrongness of using excessive force on a toddler; hitting a toddler is wrong because using excessive force on a toddler is wrong. Will the wrongmaker theorist be satisfied with my answer? Will I have given the wrongmaker theorist, *qua* wrongmaker theorist, an apt answer? No. There is a reason why wrongmaker theory is called 'wrongmaker theory'. Wrongmaker theory is looking for what makes something *wrong*. Wrongmaker theorists are looking for an explanation of the wrongness of the action and not an explanation for the action that is wrong. They want to know why wrongness attaches to this action, not why this action is attached to wrongness. In short, when wrongmaker theorists ask 'what makes it that some action is

wrong?', they are asking 'what makes it that some action is *wrong*?' Wrongmaker theorists, *qua* wrongmaker theorists, want an answer that includes at least a partial ground of wrongness. Since an answer appealing to the fact that using excessive force on a toddler is wrong does not include even a partial ground of wrongness, then such an answer is not the kind of answer wrongmaker theorists are looking for.

This line of reasoning applies to truthmaker theory. Suppose that truthmaker theorists want to know what makes it that <the ball is red> is true. They want to find a ground for the fact that <the ball is red> is true. Now suppose that I gave them the following answer: what makes, at least in some cases, <the ball is red> true is the truth of <the ball is crimson>; <the ball is red> is true because <the ball is crimson> is true. Will the truthmaker theorist be satisfied with my answer? Will I have given the truthmaker theorist, *qua* truthmaker theorist, an apt answer? I doubt it. There is a reason why truthmaker theory is called 'truthmaker theory'. Truthmaker theory is looking for what makes something *true*. Truthmaker theorists are looking for an explanation of the truth of a proposition and not an explanation for the proposition that is true. They want to know why truth attaches to propositions, not why propositions attach to truth. In short, when truthmaker theorists ask 'what makes it that some proposition is true?', they are asking 'what makes it that some proposition is *true*?' Truthmaker theorists, *qua* truthmaker theorists, want an answer that includes at least a partial ground of truth. Since an answer appealing to the fact that <the ball is crimson> is true does not include even a partial ground of truth, then such an answer is not the kind of answer truthmaker theorists are looking for.

Suppose now that truthmaker theorists want to know what fully grounds facts of the form '<p> is true'. As I just argued, since, in truthmaking circles, emphasis is put on explaining why something is true, on what it is that, at least in part, grounds truth, then in truthmaking circles, if a full ground of facts about truth is sought for, then a full ground of truth will be sought for. That is, in the context of truthmaker theory, if we want a full ground of the fact that <p> is true, then this full ground must involve, or include

(presumably by having as a constituent), a ground of truth. Any full ground of the fact that <p> is true, where an explanation of the truth of a proposition is what is sought for, will include a ground of truth. And so it follows, in the context of truthmaker theory, that if truthmakers are truth grounders, then truthmakers must include a ground of truth. If, in truthmaker circles, the question asked is 'what makes it that some proposition is *true*?', then it follows that whatever it is that fully grounds facts of the form '<p> is true' is such that it includes a ground of truth. But then if TTG is true, then it follows that truthmakers are such that they include a ground truth, giving us

    1. If TTG is true, then (all) truthmakers include a ground of truth

The Second Premise

Unfortunately for TTG, not all truthmakers include a ground of truth. For example, the fact that the ball is red makes <something is red> true. But the fact that the ball is red does not, in any sense, include a ground of truth. It is a category mistake to say that objects like basketballs and bowling balls, properties like being red, and facts about basketballs and bowling balls being red, ground truth. These things are just not the right kinds of things to ground truth. But then we have a case where a truthmaker does not include a full ground of truth. Or take Clinton and what Clinton makes true, <Clinton exists>. Clinton does not, in any sense, include a full ground of truth. So we have another case where a truthmaker does not include a full ground of truth. The following is therefore on good footing:

    2. It is not the case that (all) truthmakers include a ground of truth

And from 1 and 2, that TTG is false follows.

    We therefore have two arguments against TTG which point to its chief problem: that the existence of truthmakers are not entirely *relevant* to the existence of semantic facts like

a proposition's being true. Another way of putting it is to say that the existence of truth-makers, even if partially relevant, are not relevant *enough* with respect to the existence of semantic facts like a proposition's being true. And that truthmakers do not (in virtue of how they are) explain why facts about a proposition's being true have certain kind features, and do not include a ground of truth, are symptoms of this lack of entire relevance. If the *x*s are supposed to ground *y* and yet are not entirely relevant to *y*, then there will be some principle or fact about grounding that *the xs ground y* will violate.

3.3   An Analysis of Truthmaking

I have argued that truthmakers are not truthgrounders, and so have argued that TTG is false. None of this, however, is meant to undermine the claim that truthmakers partially ground facts about a proposition's being true. Indeed, truthmaker theory is driven by the strong intuition that truthmakers are relevant (even if, as I have been arguing, not relevant enough) with respect to grounding facts involving a proposition's being true. So if we are to preserve this intuition, then truthmakers need to be included in the grounds. Truthmakers play an important role (even if they do not play the entire role) in grounding facts of the form '<p> is true'. Since I think this intuition undergirding truthmaker theory is correct, I accept that truthmakers are partial grounds of facts of the form '<p> is true'.

Grounding Truth

I argued above that a full ground of facts of the form '<p> is true' must, in the context of wanting to know what makes something true, include a ground of truth. So if, in the context of wanting to know what makes something true, we are looking for a full ground of facts of the form '<p> is true', then we need to know what grounds truth. Now the only plausible candidate grounds of truth are those found in the literature on theories

of truth: coherence, usefulness to believe, identity, and correspondence.[10] Truth is either grounded in coherence, usefulness to believe, identity, or correspondence; <p> is true either because <p> coheres with something, is useful for someone to believe, is identical with something, or corresponds with something. But, from the perspective of truthmaker theory, how should we go about choosing which ground of truth is the correct ground? Answer: Let truthmakers choose it for you! If truthmakers are partial grounds of facts of the form '<p> is true', then truthmakers must be included in a full ground of facts concerning a proposition's truth. And if either coherence, usefulness to believe, identity, or correspondence are what grounds truth, then the most natural way for truthmakers to be included in a full ground of facts concerning a proposition's truth is to have truthmakers stand as one of the relata in these candidate grounds of truth (the other being a proposition). A truthmaker is included in a full ground of facts of the form '<p> is true' by standing in either the coherence relation, the usefulness to believe relation, the identity relation, or the correspondence relation with a proposition. Once this is granted, then we can let truthmakers choose in favor of grounding truth in one of these candidates and not the others. Here is how.

Insofar as truthmakers can be non-representational entities like you, me, or some fact (recall that by 'fact' I have in mind something along the lines of Armstrongian states of affairs), then it literally makes no sense for a proposition to cohere with its truthmaker. All three of these things are just the wrong kinds of things to stand in the cohering relation. But then what grounds that some proposition is true cannot be that such a proposition coheres with truthmakers.[11]

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[10]Notice that neither deflationary theories nor primitivism about truth furnish us with a potential ground of truth.

[11]Jonathan Schaffer suggested that if you are working with coherence relations, and you have entities like facts that have a clear "translation" into a unique proposition, then you can have a kind of proxy coherence among the translating propositions. Two worries: 1) Insofar as we think of facts as worldly, then there will be no clear "translation" into a unique proposition. For example, the fact that water is clear is identical to the fact that H_2O is clear. So we have one fact here. But which proposition should we "translate" this fact into? Does the "translation" go from this fact to <water is clear> or from this fact to <H_2O is clear>, where <water is clear> and <H_2O is clear> are not identical propositions? 2) There are truthmakers that are not factual entities (individuals and properties). So there are entities where no such clear "translation" is

Usefulness to believe is likewise unable to do the job. For this relation takes on one side a proposition, and on the other side a believer. But truthmakers need not, and most of the time are not, believers. So truthmakers are, by and large, just not the kinds of things that are believers, *a fortiori*, are just not the kinds of things that can stand in the usefulness to believe relation.

Finally, if the relation were identity, then it follows that, say, <the ball is red> makes itself true, and that the fact that <the ball is red> is true is grounded in a fact about identity, namely, the fact that <the ball is red> is identical to <the ball is red>. But both of these implications are patently false. The proposition that the ball is red does not make itself true, and what grounds the fact that <the ball is red> is true is not a fact concerning the self-identity of any proposition.

It is therefore a bad idea to identify the relation that holds between propositions and truthmakers with either the coherence, the usefulness to believe, or the identity relation. All involve a relation that often times does not have a truthmaker as one of its relata. This worry is absent when it comes to correspondence. The correspondence relation can, in principle, take any kind of entity as one of its relata (with the other being a proposition).[12] The correspondence relation is such that there is no problem with it relating a proposition and a truthmaker. So it would seem that if truthmakers are partial grounds of facts of the form '<p> is true' and are such that there is no in principle problem with their standing in the correspondence relation with propositions, then they tell in favor of thinking that correspondence, and not coherence, usefulness to believe, or identity, grounds truth.[13]

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possible.

[12]But doesn't the correspondence relation hold only between propositions and facts? No. As Künne (2003: 107-9) has made clear, that correspondence holds only between propositions and facts is the historically less popular version of correspondence. Philosophers such as Aquinas, Descartes, Spinoza, Leibniz, Wolff, Kant, Hegel, and Heidegger, to name a few, all appeared to have as the relata of the correspondence relation a proposition (statement, belief, etc.,) and anything that can bear a property, which includes things other than facts (such as individuals and properties).

[13]But what does correspondence amount to? I do not know, and I do not need to know. This is a paper on truthmaking, and realizing that truthmakers motivate thinking that correspondence grounds truth is, with respect to this paper's purpose, informative enough. I will therefore leave the question of what correspondence amounts to un-answered (for some recent work on what correspondence amounts to, see Sher (1998, 2004, forthcoming) and Rasmussen (2013)).

Truthmaking and Correspondence

If truth is grounded in correspondence, and if truthmakers are included in a full ground of facts of the form '<p> is true' by means of standing as one of the relata of correspondence, then it would seem that we have a candidate to play the role of *analysans* in an account of truthmaking. Here is the account:

The xs make <p> true $=_{d.f.}$ <p> corresponds with the xs.

This account says that truthmaking *is* correspondence and therefore that truthmakers are truth*corresponders*. So this position has it that truthmaking can be analyzed *solely* in terms of the converse of the correspondence relation. This suggestion has been made before by Ross Cameron (2008c: 108)

the truthmaker for p is just the portion of reality that p corresponds to: if we can find either the correspondence or the truthmaker relation we can define the other as its converse.

But this account of truthmaking is problematic, whatever initial plausibility it has from our above considerations concerning what grounds facts about truth. For 'makes' is an explanatory notion. If the xs make <p> true, then the xs play some role in explaining the truth of <p>. But 'corresponds to' does not seem to be an explanatory notion. If <p> corresponds with the xs, it does not follow that the xs play any role in explaining the truth of <p>. Correspondence does not capture the explanatory features of making that a metaphysical analysis of making should capture. Correspondence does not account for the explanatory oomph of making present in truthmaker theory. So the above analysis of truthmaking cannot be right.

Truthmaking and Correspondence Redux

One way to capture the explanatoriness of making in truthmaking is to appeal to a fact about grounding. Notice that we now have before us a ground of facts of the form '<p>

is true', namely, <p> corresponds with <p>'s truthmaker. Where the *x*s are what makes <p> true, <p> is true because <p> corresponds with the *x*s; <p> is true in virtue of <p> corresponding with the *x*s; that <p> is true is grounded in <p> corresponding with the *x*s. So we have a fact about grounding, and we have a fact about grounding that can serve as the analysans in an account of truthmaking. Here is the analysis:

> **TM.** The *x*s make <p> true $=_{d.f.}$ <p>'s being true is grounded in <p> corresponding with the *x*s.[14]

Notice that appealing to this fact about grounding as the analysans of truthmaking has it that making in truthmaking is explanatory. Grounding is an explanatory notion, and that the *x*s are among the grounds of the truth of <p> tells us that the *x*s, at least partially, explain that <p> is true. And so TM captures the explanatory feature of making that an analysis of truthmaking should capture. TM accounts for the explanatory oomph of making present in truthmaker theory. So it is better that we understand truthmaking as TM does and not merely as the converse of the correspondence relation.[15]

Avoiding the Problems

In addition to being able to account for the explanatoriness of making in truthmaking, TM is also able to avoid the above problems with TTG, and this counts in its favor.

Avoiding Argument 1: TM has is that what fully grounds facts of the form '<p> is true' are facts of the form '<p> corresponds with the xs'. So in order to avoid the first problem with TTG, it must be that kind facts constitutive of facts of the form '<p> is true' can be explained by how facts of the form '<p> corresponds with the xs' are. And they can.

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[14]In light of this analysis, it is natural to ask if we can construct an analysis of falsemaking. I think we can. Here is the analysis: the *x*s makes <p> false $=_{d.f.}$ <p>'s being false is grounded in <not-p> corresponding with the *x*s.

[15]Here it may be helpful (or perhaps just confusing) to distinguish between *narrow* truthmaking and *wide* truthmaking. The *x*s narrowly make <p> true iff the *x*s make <p> true. So a narrow truthmaker just is what we all mean by 'truthmaker'. The *x*s widely make <p> true iff the *x*s ground the fact that <p> is true. So in the case of wide truthmaking, the *x*s just are the full grounds of the fact that <p> is true, and therefore include whatever goes into this full ground.

Suppose, as I did, that the fact that <p> is true is concrete. What is it about how the fact that <p> corresponds with the xs is that explains this? Notice that both the fact that <p> corresponds with the xs and the fact that <p> is true share their first constituent and that the former has a constituent (the correspondence relation) that grounds a constituent of the latter (truth). Now suppose that the correspondence relation is concrete. Then we've explained why truth is concrete since correspondence grounds truth.[16] Also suppose that <p> is concrete. Then it follows that the first constituent of the fact that <p> is true is concrete. So it follows that the constituents of the fact that <p> is true are concrete. And if the constituents of a fact are concrete, then that fact is concrete. So if the fact that <p> corresponds with the xs is such that <p> is concrete and the correspondence relation is concrete, then the fact that <p> is true is also concrete. But then it is natural to think that the fact that <p> corresponds with the xs is such that <p> is concrete and correspondence is concrete explains that the fact that <p> is true is concrete.

The fact that <p> is true is composite. Can how the fact that <p> corresponds with the xs is explain this? Yes. For the fact that <p> corresponds with the xs is such that <p> corresponds with the xs. And that <p> corresponds with the xs explains that <p> and truth "come together" in such a way that they compose the fact that <p> is true (since correspondence grounds truth). But this is just to say that <p> corresponding with the xs explains that <p> and truth are constituents of the fact that <p> is true, which is to explain that the fact that <p> is true is composite. So how the fact that <p> corresponds with the xs is, namely, that <p> corresponds with the xs, explains why the fact that <p> is true is composite.

Avoiding Argument 2: TM has is that what fully grounds facts of the form '<p> is true' are

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[16]This is relying on the following principle:

> If the xs grounds y, then if the xs are concrete, that the xs are concrete explains that y is concrete.

This principle strikes me as true. Some will think it is not. After all, can't a concrete object (me) ground an abstract object (my singleton)? No. So cases of a concrete object grounding an object purported to be abstract are either cases where the latter object is not abstract (so I think it is a mistake to think that all sets are abstract) or cases where the grounding relation does not obtain.

facts of the form '<p> corresponds with the xs'. So in order to avoid the second problem with TTG, it must be that facts of the form '<p> corresponds with the xs' include a ground of truth. And they do. Correspondence grounds truth. Something is true in virtue of corresponding with something. So, as TM has it, correspondence must be included in a full ground of facts of the form '<p> is true'. So TM , unlike TTG, has the full grounds of facts of the form '<p> is true' including a ground of truth.

3.4   The Correspondence Theory

TM has it that correspondence grounds truth. And so if we accept both TM and that there are truthmakers, then we have to accept that a proposition is true is virtue of its corresponding with something. But what implications does this have with respect to the correspondence theory (notice that up until now, my focus has been on the correspondence *relation* and not the correspondence *theory*). If the fact that <p> is true is grounded in the fact that <p> corresponds with the *x*s, what does this say about the correspondence theory of truth? Well, it does not entail the correspondence theory.[17] That the fact that <p> is true is grounded in the fact that <p> corresponds with the *x*s does not entail that we should give an analysis of truth in terms of correspondence. Not all grounds are anal-yses of what is being grounded.[18] For example, that Jill is taller than Bill is grounded in Jill's being 6′ 2″ and Bill's being 5′ 8″ and yet the latter do not constitute an analysis of Jill's being taller than Bill (they might, however, be instances of this analysis). One obvious reason for this is that the left-hand side of an analysis both necessitates, and is necessitated by, the right-hand side. But that Jill is taller than Bill does not necessitate that Jill is 6′ 2″ and that Bill is 5′ 8″. So one cannot simply move from *x* being grounded in *y* to *x* being analyzed in terms of *y*. But then one cannot simply move from truth being

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[17]Thanks to Alex Skiles for emphasizing this point to me.

[18]See de deRosset (2013), who emphasizes this point, though he speaks in terms of reduction rather than analysis.

grounded in correspondence to truth being analyzed in terms of correspondence.

Nonetheless, there is an argument for thinking that if facts of the form '<p> is true' are grounded in facts of the form '<p> corresponds with the xs', then truth is analyzed in terms of correspondence. The argument is abductive in form: what theory of truth best explains that facts of the form '<p> is true' are grounded in facts of the form '<p> corresponds with the xs'? What theory of truth would we expect to be true if facts of the form '<p> is true' are grounded in facts of the form '<p> corresponds with the xs'? There seems to be a clear winner. If truth is analyzed in terms of correspondence, then it follows that for any proposition whatsoever, that proposition is true in virtue of its corresponding with something.[19] This entailment does not hold if we accept other theories truth. If truth is analyzed in terms of coherence, usefulness to believe, or identity, then it does not follow, on these grounds alone, that for any proposition whatsoever, that proposition is true in virtue of its corresponding with something. Or if there is no analysis of truth, as in both primitivism and deflationism about truth, then it does not follow, on these grounds alone, that for any proposition whatsoever, that proposition is true in virtue of its corresponding with something. Assuming then that facts of the form '<p> is true' are grounded in facts of the form '<p> corresponds with the xs', we have reason to accept the correspondence theory of truth since if the correspondence theory of truth is true, then that facts of the form '<p> is true' are grounded in facts of the form '<p> corresponds with the xs' is precisely what we would expect. This is not so for other theories of truth. So acceptance of both TM and that there are truthmakers furnishes us with an abductive reason to think that the correspondence theory of truth is true.

If this argument from truthmaking considerations to the correspondence theory of truth is successful, then it tell against those who think we can abandon the correspondence theory while preserving a theory of truthmakers. Consider what Dummett (1959:

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[19]Consider: If knowledge is analyzed as justified true belief, then for any S that knows <p>, S knows <p> in virtue of S believing <p>, S being justified in believing <p>, and <p> being true. Or if moral rightness is analyzed as maximizing utility, then A is a morally right action in virtue of A's maximizing utility.

157) has to say:

> Baffled by the attempt to describe in general the relation between language and reality, we have nowadays abandoned the correspondence theory of truth ... nevertheless, the correspondence theory expresses one important feature of the concept of truth which is not expressed by the law "It is true that p if and only if p" and which we have so far left quite out of account: that a statement is true only if there is something in the world *in virtue of which* it is true.

Dummett is saying that we should reject the correspondence theory of truth and preserve the claim that truths have truthmakers (though Dummett does not use the word 'truthmaker', it would seem that he is referring to them when he says "a statement is true only if there is something in the world *in virtue of which* it is true"). But if the above argument from truthmaking considerations to the correspondence theory of truth is successful, then Dummett is wrong to divorce them.

It is also a mistake to think, as Oliver (1996: 69) does, that truthmaker theory is a version (albeit a sanitized version) of the correspondence theory of truth. He says

> The truth-maker principle is a sanitised version of a correspondence theory of truth, shorn of the unworkable idea of truth as a kind of pictorial resemblance, but retaining the doctrine that the world is independent of linguistic description and must be a certain way in order for a given sentence to be true of it ... The intuitive idea is that there must be something in the world which, in some sense, is responsible for or grounds the truth of a sentence.

Again though, if the above argument from truthmaking considerations to the correspondence theory of truth is successful, then truthmaker theory is not "a sanitised version of a correspondence theory of truth". On the contrary, truthmaker theory would seem to require a full-blooded version of it.

3.5 A Problem

Trenton Merricks has provided an argument against the correspondence theory of truth on truthmaker grounds. Merricks's (2007: 181) argument is as follows:

> Some truths are not true in virtue of how they are related to any existing entity or entities [truthmakers]. So we should reject any theory of truth that implies that every truth is true in virtue of how it is related to some existing entity or entities. So we should reject any theory that implies that *what it is* to be true is to be appropriately related to some existing entity or entities. (brackets mine)

Compactly put, Merricks's argument is that since some truths lack truthmakers, then such truths are not true in virtue how they are related to some existing thing (otherwise such truths would have truthmakers). So relational theories of truth, such as the correspondence theory of truth, should be rejected since such theories imply that all truths are true in virtue of how they are related to some existing thing. So truth should not be analyzed in terms of a relation. Therefore, truthmaker considerations tell against, and not in favor of, the correspondence theory of truth, contrary to the argument in the previous section.

Now it is important to notice that Merricks's argument from some truths lacking truthmakers to the falsity of the correspondence theory of truth is successful only if we assume *truth monism*, the thesis that truth has one underlying nature or essence. For if truth monism is true, then if some truths have no truthmakers, and therefore if some truths are not true in virtue of how they are related to some existing thing, then any metaphysical analysis of truth in terms of a relation is false. Suppose however that *truth pluralism* is true, where truth pluralism says that truth has more than one underlying nature or essence. If truth pluralism is true, then one cannot infer from the mere fact that not all truths are true in virtue of standing in some relation to an existing entity that for no truths, truth should not be metaphysically analyzed in terms of a relation. At most, all one can infer is that for some truths, truth is not metaphysically analyzed in terms of a relation. But this is

perfectly consistent with its being the case that for some other truths, truth is metaphysically analyzed in terms of a relation. So Merricks's argument against the correspondence theory of truth holding for any truth assumes the falsity of truth pluralism.

Is Merricks right in assuming the falsity of truth pluralism? There is an increasing body of literature sympathetic to truth pluralism, and this alone is reason enough to take it seriously.[20] More importantly, there is an argument for truth pluralism from some of the very premises that Merricks uses to argue against relational theories of truth. Suppose that we agree with Merricks (which some will not) in thinking that although some truths have truthmakers, not all do.[21] Now if some truths lack truthmakers, then they are brute truths. That these truths instantiate *being true* is a brute, ungrounded fact. Nothing explains why they are true. And so in these cases, nothing grounds truth. Not so for the truths that have truthmakers. That these truths instantiate *being true* is not a brute, ungrounded fact. Something explains why they are true. And so in these cases, something grounds truth. So in some cases, truth is grounded and in other cases, it is not. And once we admit this, truth pluralism becomes rather plausible. For unless we are willing to put up with contradictions, truth cannot be both grounded and ungrounded. But there is no contradiction if we say that there is more than one nature or essence of truth, and so more than one kind of truth. For that one kind of truth is ungrounded is perfectly consistent with another kind of truth being grounded. So that some truths do, and other truths do not, have truthmakers motivates truth pluralism since truth pluralism, unlike truth monism, avoids the contradiction.[22]

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[20]See Wright (1992) and Putnam (1994) for some early work on pluralism. For some more recent work, see Lynch (2009) and Pedersen and Wright forthcoming.

[21]And agreeing with Merricks on this is not at all un-motivated. For some recent work in favor of thinking that not all truths have truthmakers, see, *inter alia*, Melia (2005), Parsons (2005), Tallant (2010), and Saenz (2014).

[22]Suppose that one avoided the contradiction by indexing truth to propositions. So truth is, with respect to some propositions, ungrounded but is, with respect other kinds of propositions, grounded. There is no contradiction here. Still though, we have a rather implausible view. That something can be, within the same possibility, grounded in some instances but not others appears false (Correia 2005: 62). So it is better to think that there are at least two kinds of truths here, one that is grounded and one that is not. But then better to accept truth pluralism.

Now notice that if we accept truth pluralism, then the problem disappears. With respect to one kind of truth (the kind of truth that is grounded), truthmaking considerations can motivate the correspondence theory of truth and with respect to another kind of truth (the kind of truth that is ungrounded), truthmaking considerations can tell against the correspondence theory of truth. At most then, what some truths lacking truthmakers shows us is that not all truth is to be analyzed in terms of correspondence. It does not show us that no truth is. So truth pluralism is not only motivated from some of the very premises Merricks accepts, it also undercuts this Merricks-style objection in favor of thinking that truthmaking considerations completely do away with the correspondence theory of truth. So on the assumption that some truths lack truthmakers (which, again, some will reject), truthmaker considerations can tell in favor of thinking that for a restricted domain of truths (those truths that have truthmakers), truth is to be analyzed in terms of correspondence.

3.6 Conclusion

TTG appears to be, if not the standard account of truthmaking, an increasingly popular account of truthmaking. And even if it is not, it is worth investigating whether or not it is true. For such an investigation can lead us to a clearer picture on the relationship between truth and the world. And such an investigation *has* led us to a clearer picture of this relationship. For we can now see that truthmakers are not truth grounders, but are instead partial truth grounders. Such an investigation has also led us to a clearer picture of the relationship between truthmaker theory and both the correspondence and pluralist theory of truth. An analysis of truthmaking favors accepting the correspondence theory while considerations from truths that lack truthmakers (if such there be) at most motivate pluralism about truth. Of course, it remains to be seen what further relations exist between truthmaker theory, the nature of the grounds of truth, and theories of truth.

But I hope that what I have said with respect to some of the relations that exist between these separate, though intertwined, areas will do for now.

Part II

Groundmaking

Chapter 4

Two Accounts of Groundmaking

Assume that wholes are grounded in how their parts are arranged. So the cylinder, represented below on the right, is grounded in its parts arranged in a cylindrical fashion, represented below on the left. That is, the cylinder is grounded in the fact that its parts are cylindrically fashioned ('c-fashioned' for short). I will depict this grounding fact, with the arrow representing grounding, thusly:
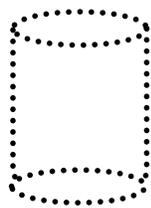
C-Fashioned Parts   Cylinder
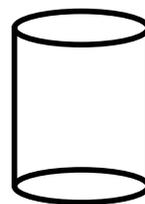
Important question: Is this fact about grounding itself grounded? That is, is there something that makes it that the parts being c-fashioned ground the cylinder? In other words, does the fact that the parts are c-fashioned have a *groundmaker*? There are reasons to think it must. Generalizing, there are reasons for thinking that something must ground facts about grounding. Here are three of them

1. Theodore Sider (2011:106-109) has recently argued in favor of the following principle:

> Every truth that involves at least one nonfundamental notion holds in virtue
> of some truth that involves only fundamental notions.[1]

This principle is expressed in terms of 'truth', 'notion', and 'in virtue of'. I want to express it in terms of 'fact', 'constituent', and 'ground'. So let's reformulate it by substituting the former set of terms for the latter. The result is

> Every fact that involves at least one nonfundamental constituent is grounded
> in some fact that involves only fundamental constituents.

Now it follows from this that if a fact involves some nonfundamental constituent, then it is not fundamental. And so, by contraposition, if a fact is fundamental, then it does not involve any nonfundamental constituents. So we have

> The fundamental facts involve only fundamental constituents.

Now if we accept this principle, then it follows that facts about grounding must have grounds since such facts have constituents that are not fundamental (all such facts have constituents that are grounded, and so have constituents that are not fundamental). Indeed, if this principle is true and facts about grounding were not grounded, then what deRosset (2013) calls *the collapse* would follow. Here is the collapse: Assume that facts about grounding are fundamental and that fundamental facts involve only fundamental constituents. From these two assumptions it follows that every entity that is a constituent of facts about grounding, and therefore every grounded entity, is fundamental. So every grounded entity collapses into the fundamental layer. But this is false. Grounded entities are not part of the fundamental layer. Indeed, if being fundamental implies being ungrounded (as I, and many others, think), then that any grounded entity is fundamental implies a contradiction. So, assuming the Sider-inspired principle, it must be that facts about grounding are grounded.

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[1]For the purposes of this paper, 'fundamental' will mean 'ungrounded'.

2. Another worry, raised by Shamik Dasgupta (ms), has to do with the tenability of physicalism.[2] Here is the worry: It is a necessary condition on global physicalism that all non-physical facts are grounded in physical facts. Now some facts about grounding are not physical facts since not all facts about grounding concern physical matters. For example, that I am conscious is grounded in P (where P is a physical fact) is not a physical fact since it concerns non-physical matters such as my being conscious. So if facts about grounding are ungrounded, then it follows that not all non-physical facts are grounded in physical facts. But then it follows that global physicalism is false, and that merely because facts about grounding are fundamental! Even if you think that global physicalism is false, it should not be false for these kinds of reasons. As Dasgupta says

> And [that general considerations about the nature of ground suggest that physicalism is false] (I claim) is unacceptable. To be clear, physicalism may be false. It might be that thinking about the nature of consciousness—e.g. in conceivability arguments, knowledge arguments, and so on—reveals that physicalism is false. But this should not be revealed *just* by thinking about ground. That is: (4) If physicalism is false, this is because of first-order considerations (e.g. about the nature of consciousness or value), not general considerations about the nature of ground itself.

So on pain of inappropriately doing away with a substantive theory about the world, it had better be that facts about grounding are grounded.[3]

3. There is a fairly plausible modal principle that implies that facts about grounding cannot be fundamental. The modal principle says that fundamental entities are freely

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[2]Really though, this worry is not so much about physicalism proper as it is about any theory that seeks to ground everything in one kind of fact — physical facts, natural facts, theistic facts, mental facts, etc. Physicalism is just being used by Dasgupta to illustrate the worry.

[3]It is worth nothing that Dasgupta himself does not use the fact that certain facts about grounding seem to entail the falsity of theories like physicalism as a reason to think that facts about grounding are grounded. Indeed, his proposed grounds for facts about grounding themselves seem to entail the falsity of theories like physicalism (Dasgupta, of course, is more than aware of this and goes to great lengths to show why he thinks they do not).

recombinable. There are no necessary connections between fundamentalia. Why think this? Bennett gives us the answer, saying

> [this principle of free recombination is] particularly plausible given the understanding of 'fundamental' on the table—namely, 'ungrounded'. Consider the reason that nonfundamental entities are not freely recombinable. It is precisely that they are grounded, and thus supervene upon their grounds. There can be no change to the grounded entities without change to that which grounds them. This reason does not apply to ungrounded entities. In the absence of a reason to constrain their possible combination, it should be assumed that there is no such constraint; they are freely recombinable. (2011, 38)

Suppose then that this principle of free recombination governing the fundamental is true. Also suppose that x is fundamental and that the fact that x grounds y is fundamental. Then possibly x exists and does not ground y (this follows from this principle of free recombination). So possibly, x exists and either y does not exist or y is fundamental. So even though x in fact grounds y, if we grant these assumptions, then possibly either x exists and y does not, or x exists and y is fundamental. But these possibilities seem dubious once we grant that x in fact grounds y (after all, it is plausible that if x grounds y, then necessarily, if x exists, then x grounds y). Since this principle of free recombination appears true, then on pain of accepting these dubious possibilities, it must be that facts about grounding are not themselves fundamental.

Thinking that facts about grounding are grounded is therefore well motivated. So let us assume that they are. That is, let us suppose that there are groundmakers — entities that make it that some entity grounds another. And once this assumption is made, difficult questions concerning the nature of groundmakers emerge. After all, what kind of entity could possibly make it that one entity grounds another?

Recently, two very different sorts of answers have been given to this question. The first

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answer has it that what grounds facts about grounding is the first relatum in such facts. That is, the first answer has it that if x grounds y, then what grounds that x grounds y is x. Let us call this account of groundmaking *Subtractionism* since such an account has it that the ground of facts about grounding is a subtraction of such facts. The second answer has it that what grounds (or at least partially grounds) facts about grounding are essentialist facts. To go back to our example of the c-fashioned parts and the cylinder, what grounds that the parts are c-fashioned grounds the cylinder is a fact about the essence of the cylinder. It is that the cylinder is essentially thus-and-so that grounds why it is grounded in the parts being c-fashioned (as we will see, what exactly this essentialist fact amounts to will vary). Let us call this account of groundmaking *Essentialism* since such an account has it that the ground (or partial ground) of facts about grounding is an essentialist fact.

The goal of this paper is to show that both Subtractionism and Essentialism are implausible accounts of groundmaking. In §4.1, I argue that two arguments in favor of Subtractionism fail. In §4.2, I argue that Subtractionism cannot satisfy a sensitivity constraint governing grounding. In §4.3, I argue that one version of Essentialism, what I call *Grounding Essentialism*, cannot satisfy an absence constraint governing grounding and that another version of Essentialism, what I call *Sufficiency Essentialism*, illegitimately appeals to intensional notions. Finally in §4.4, I argue that in grounding facts about grounding, we should not appeal to (as versions of Essentialism do) what are called 'connectivist explanations'.

4.1 Two Arguments

Karen Bennett (2011) and Louis deRosset (2013) have both provided an argument in favor of Subtractionism; they have both given an argument in favor of thinking that if x grounds y, then x grounds that x grounds y. Let us look at Bennett's argument first.

Bennett's Argument

Bennett begins by distinguishing between an *internal* and *superinternal* relation, where R is an internal relation just in case whenever we have a fact of the form xRy, such a fact is grounded in facts involving how x and y intrinsically are. For example, the fact that Jill is taller than Bill is grounded in the following two facts: Jill is H+, Bill is H~. And so Jill is taller than Bill in virtue of Jill being H+ and Bill being H~. So *being taller than* is an internal relation since a fact involving its obtaining is grounded in facts involving intrinsic features of its relata. Now a superinternal relation is just like an internal relation except that it requires appealing to the intrinsic nature of only *one* of the relata. So R is a superinternal relation just in case whenever we have a fact of the form xRy, such a fact is grounded, and only grounded, in a fact involving how x intrinsically is.[4]

Now Bennett thinks that it is the mark of grounding that it is superinternal.[5] Grounding is such that it holds in virtue of the intrinsic nature of one of the relata. From this she argues in favor of Subtractionism as follows:

> If grounding is superinternal, then wherever it obtains, it obtains in virtue of the intrinsic nature of the first relatum(a). This is equivalent to the claim that all grounding facts are grounded in their first relatum ... Suppose that A grounds B. By the superinternality of grounding, that fact is grounded in A. (2011, 33-34)

Here is the argument formalized:

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[4]These characterizations are meant to be consistent with many things flanking the sides of such relations. So both internal and superinternal relations can hold, in addition to one-one, many-one, many-many, and one-many. For ease of exposition, I will continue to use the one-one formulation.

[5]Bennett has recently made a slight change. In her forthcoming book *Making Things Up*, she claims that building relations, like the grounding relation, are one-sided relations, where R is a one-sided relation just in case whenever we have a fact of the form xRy, such a fact is grounded, and only grounded, in a fact involving how x intrinsically or extrinsically is. So one-sided relations differ from superinternal relations in that certain extrinsic features of one of the relata are (or at least can be) relevant with respect to grounding a fact involving the obtaining of the relation. However, and as Bennett makes clear, the end result is the same. Moreover, and as we will see, whether or not grounding is superinternal or one-sided, the position Bennett puts forward is one according to which if x grounds y, then x grounds that x grounds y. It is this claim that will be the target of this, and the next, section.

1. If grounding is superinternal, then if x grounds y, then that x grounds y is grounded in the intrinsic nature of x. (follows from the definition of 'superinternal')

2. Grounding is superinternal and x grounds y. (assumption)

3. That x grounds y is grounded in the intrinsic nature of x. (from 1. and 2.)

4. That x's grounding y is grounded in the intrinsic nature of x is equivalent to, and so entails, that x's grounding y is grounded in x (Bennett's claim of equivalence in the above quote)

5. That x grounds y is grounded in x. (from 3. and 4.)

What should we think of this argument? I think we should think it unsound. In particular, I think we should reject 4. In order to see why, consider that 4 has it that being grounded in the intrinsic nature of x is equivalent to, and so entails, being grounded in x. But this is false. For example, suppose that Jill is taller than Bill and that Jill's being taller than Bill is grounded in Jill being H+ and Bill being H~. So that Jill is taller than Bill is grounded in the intrinsic nature of Jill and Bill. But of course, it does not follow from this that Jill being taller than Bill is grounded in Jill and Bill. Jill and Bill alone cannot, and so do not, ground that Jill is taller than Bill. Rather, it is facts about how tall Jill and Bill are, and not Jill and Bill themselves, that ground that Jill is taller than Bill. So 4 is false. But then this argument in favor of Subtractionism is unsound.[6]

So Bennett's argument in favor of Subtractionism does not get us to it. But we should never have expected it to. For according to Subtractionism, grounding is not a superin-

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[6]It has been suggested to me that I am, perhaps, not being charitable here and instead ought to think that when Bennett says that if x grounds y, then x grounds that x grounds y, what Bennett means is that when x grounds y, how x intrinsically is grounds that x grounds y (this interpretation is reasonable since according to Bennett, grounding is superinternal). But if I am being uncharitable here (and I hope I am not since it is a bad thing to be uncharitable), I should like to see what, according to Bennett, it is about how x intrinsically is that is relevant to grounding the fact that x grounds y. Surely, if x's intrinsic nature is relevant to grounding that x grounds y, an elucidation of x's intrinsic nature is needed in order to provide an informative account. But as far as I can tell, no details concerning x's intrinsic nature are mentioned by Bennett when stating that x grounds that x grounds y. It is because of this absence, and the fact that Bennett states her position as one according to which x *alone* grounds that x grounds y, that I have presented Bennett's position as I did.

ternal relation. It is rather a super*duper*internal relation, where R is a superduperinternal relation just in case whenever we have a fact of the form xRy, such a fact is grounded, and only grounded, in x (as opposed to how x intrinsically is).[7] However, and unfortunately for Subtractionism, I see no reason to accept that grounding is superduperinternal. Moreover, as I will argue later on below, I think that there is good reason to think that it isn't.

deRosset's Argument

deRosset's (2013) argument in favor of Subtractionism is an argument by elimination. deRosset wants to avoid what was referred to above as *the collapse*, the claim that every grounded entity is itself fundamental. Here is his argument

> Suppose for illustration that Beijing's cityhood is explained by some fundamental fact ψ. Consider the question of how to ground
>
> (2) Beijing is a city because ψ.
>
> Explaining (2) requires explaining the relationship between Beijing's cityhood and ψ. There are, in principle, only four ways to go: (*i*) appeal to both of the relata, (*ii*) appeal only to Beijing's cityhood, (*iii*) appeal to some fact involving neither ψ nor Beijing's cityhood, or (*iv*) appeal only to ψ. Appealing to both relata or to Beijing's cityhood alone appears not to avoid the collapse. Appealing to Beijing's cityhood alone is also a clear non-starter, as, it seems to me, is appealing to some fact involving neither ψ nor Beijing's cityhood. The best salient alternative, it seems, is to appeal to ψ alone. (2013, 14)

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[7]Are there any examples of superduperinternal relations? Perhaps. Suppose that the only kind of mereological whole you accept in your ontology are mereological sums — unstructured mereological blobs. Then it is plausible to think that the xs compose some y simply in virtue of the xs (though the terminology used is different, for some discussion of this see, Cameron forthcoming b). That is, it is plausible to think that what grounds that the xs compose some y is simply the xs. The xs are all you need to compose y. So the xs are that in virtue of which they compose y. But then the composition relation is superduperinternal since it obtains in virtue of one, and only one, of its relata, *viz.* the xs.

Let's go through each step of this argument. deRosset accepts that if a fact is fundamental, then it only has fundamental constituents. So if we want to ground facts about grounding, such as deRosset's (2), in something fundamental, then this fundamental something cannot involve non-fundamental entities. So it cannot involve Beijing's cityhood. Therefore, options (*i*) and (*ii*) will not do. Moreover, it would seem that whatever grounds (2) must have something to do with one of the relata. So option (*iii*) will not do. This leaves us with (*iv*). ψ alone grounds (2), and so we should accept Subtractionism.

But deRosset's argument relies on a false tetralemma. In addition to the four options, there is a fifth: (*v*) appeal to some fact involving how ψ is. That is, instead of appealing to both of the relata, to Beijing's cityhood, to some fact involving neither of the relata, or to ψ itself, we can appeal to how ψ is. Nothing deRosset says has ruled this out. Moreover, anyone who finds plausible Bennett's claim that grounding is superinternal will think it plausible that (2) holds in virtue of, not ψ, but how ψ is. So until deRosset shows why this fifth option is a bad option, his argument in favor of Subtractionism is unsound, relying on a false premise concerning the options one has in grounding facts about grounding.

Now admittedly, both Bennett and deRosset provide other, less direct, reasons to favor Subtractionism. For example, Bennett argues that Subtractionism can avoid what she calls 'The Fact Regress' and 'The Relation Regress', and deRosset argues that Subtractionism avoids the collapse and can meet the requirement of upward necessitation (if x grounds y, then necessarily, if x exists, then y exists). That Subtractionism has these results counts in its favor. But of course, these are nothing like direct arguments on its behalf. They are, at best, virtues of Subtractionism that can potentially be outweighed by vices or matched by competing accounts. What I have attempted to show in this section is that when it comes to arguments in favor of Subtractionism that do not appeal to theoretical virtues, there are, at least for now, none that compel.

4.2 Against Subtractionism

I have attempted to show that two arguments in favor of Subtractionism fail in establishing that Subtractionism is true. I will now attempt to show that there is good reason to reject it.

In order to see why I think this, consider the following constraint on grounding that has it that grounds are modally sensitive to what they ground

> **Sensitivity.** If x is F grounds that y is G, then for any kind of way k where y fails to be G, if k were the case, then x would not be F

Notice that Sensitivity does not say that for any way where y fails to be G, if that way were the case, then x would not be F. That is to say something much stronger. Rather, it says that of the *kinds* of ways y can fail to be G, if we go to the worlds closest to us where those kinds of ways obtain, then in those worlds x would not be F. Or what amounts to the same thing, suppose that $kind_1$ and $kind_2$ are the two kinds of ways where y fails to be G. Then Sensitivity says that if x is F grounds that y is G, then if either $kind_1$ or $kind_2$ were the case, then x would not be F.

Now I take Sensitivity to be evident upon reflection. Grounds either are, or back, explanations. But what kind of explanation would we have if what explains exists in those worlds closest to us which are the kinds of worlds where what is explained can be missing? Explanations must force a kind of sensitivity constraint between them and what they explain. Sensitivity captures this constraint by having it that a not so strong modal tie exists between explanans and explanandum.[8]

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[8]Why do I say 'a not so strong modal tie'? Because Sensitivity does not require that we accept the following, much stronger, necessitation principle:

> If x is F grounds that y is G, then necessarily, if x is F, then y is G.

That is, supposing that x is F grounds that y is G, Sensitivity is consistent with the existence of the possibility where x is F but y is not G. In general,

> Necessarily, if p then q

does not follow from

Now one kind of way for y to fail to be G is for y to exist but fail to instantiate G. Another kind of way is for y to fail to exist altogether.[9] Focusing only on the first kind of way, it follows from Sensitivity and that x is F grounds that y is G that

    1. If y were to exist but not instantiate G, then x would not be F.

So anyone who accepts Sensitivity and that x is F grounds y is G should accept instances of 1.

    Let us illustrate all this with a concrete example. Suppose that determinables are grounded in determinates and that some ball is crimson.[10] So the ball's being crimson grounds its being red, which is a determinable of crimson. Filling the antecedent of Sensitivity with this information entails

    2. For any kind of way k where the ball fails to be red, if k were the case, then the ball would not be crimson.

This seems right. Continuing, since one of the kinds of ways the ball can fail to be red is for it to exist but not instantiate redness, then 2 entails an instance of 1, namely

    3. If the ball were to exist but not instantiate redness, then the ball would not be crimson.

This also seems right.

    Now suppose, as I asked you to at the beginning of this paper, that a cylinder is grounded in the fact that its parts are c-fashioned. So the following is true: the fact that

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    If q were not the case, then p would not be the case.

Consider the truth: if kangaroos were to lack tails, then kangaroos would topple over. This truth does not entail: necessarily, if kangaroos do not topple over, then they have tails. There are possibilities where kangaroos do not topple over and yet lack tails. So Sensitivity is weaker than the above necessitation principle and, because of this, more plausible.

    [9]It should be noted that whether or not there are these two ways for y to fail to be G will depend on whether or not G = to the property of existing (I would like to thank Dan Korman for pointing this out). For if we grant that existence is a property, and if G = to this property, then there is only one way for y to fail to be G, namely, by failing to exist. It is not the case that y can exist but fail to instantiate G if G = to the property of existing. I will, from here on out, assume that whatever G is, it is not identical to the property of existing.

    [10]For someone who thinks that determinables are not grounded in determinates, see Wilson (2012).

the parts are c-fashioned grounds a cylinder. Moreover, suppose that the fact that x is F grounds that the fact that the parts are c-fashioned grounds a cylinder; suppose that the fact that x is F is that in virtue of which the parts being c-fashioned grounds a cylinder. Filling the antecedent of Sensitivity with this information entails

> 4a. For any kind of way k where the parts being c-fashioned fails to ground a cylinder, if k were the case, then x would not be F.

As with 2, 4a seems right. Continuing, since one of the kinds ways the fact that the parts are c-fashioned can fail to ground a cylinder is for the fact that the parts are c-fashioned to exist but not instantiate *grounding-a-cylinder*, then 4a entails an instance of 1, namely

> 5a. If the fact that the parts are c-fashioned were to exist but not instantiate *grounding-a-cylinder*, then x would not be F.

As with 3, 5a also seems right. Now it will be helpful here to represent the world 5a takes us to with the below picture (notice that, in this picture, unlike the one at the beginning of this paper, there are parts that are c-fashioned but there is no arrow representing grounding and there is nothing that represents a cylinder):

C-Fashioned Parts   No Cylinder
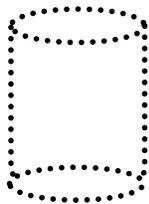
The world 5a takes us to where x is not F

What I now want to do is test Subtractionism by replacing the above groundmaker, the fact that x is F, with Subtractionism's groundmaker. Since Subtractionism has it that if x

grounds *y*, then *x* grounds that *x* grounds *y*, then Subtractionism has it that if the parts being c-fashioned ground the cylinder, then the parts being c-fashioned ground that they ground the cylinder. So we should replace the fact that *x* is F with the fact that the parts are c-fashioned. This gives us the following variant of 4a:

> 4b. For any kind of way *k* where the parts being c-fashioned fails to ground a cylinder, if *k* were the case, then the parts would not be c-fashioned.

Now just as 5a follows from 4a, where 4a is an instance of 1, so 5b follows from 4b, where 5b is an instance of 1. So we have

> 5b. If the fact that the parts are c-fashioned were to exist but not instantiate *grounding-a-cylinder*, then the parts would not be c-fashioned.

As we did with 5a, it will be helpful here to represent the world 5b takes us to with the following picture, which is identical to the previous picture except that is replaces 'x is not F' with 'the parts are not c-fashioned':

C-Fashioned Parts   No Cylinder
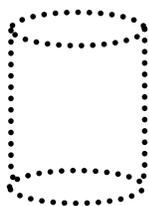
The world 5b takes us to where the parts are not c-fashioned

Now brief reflection on 5b and on the picture that represents the world 5b takes us to should make it clear that 5b is false. Contra 5b, any world where the fact that the parts are c-fashioned exists but does not instantiate *grounding-a-cylinder* is a world where the parts are c-fashioned. The world that the antecedent of 5b takes us to is a world where

the parts are c-fashioned. It cannot be a world where they are not c-fashioned. Therefore, 5b is false.

In light of this, we must choose one of the following three options: (*i*) reject that 5b follows from 4b, (*ii*) reject 4b (which, assuming that the parts being c-fashioned ground a cylinder, is tantamount to rejecting Sensitivity), or (*iii*) reject Subtractionism. But (*i*) is above reproach since 5b follows from 4b with logical necessity. Neither should (*ii*) be rejected. For one, if 4b, and therefore if Sensitivity, are rejected, then I have lost my grasp on what grounding is since it is part of my notion of grounding that it obey Sensitivity. Grounds are sensitive in the way Sensitivity says they are. For two, if we reject Sensitivity, then what would prevent the following false claim from being true: that the ball is crimson grounds that it is red and yet in the nearest possible world where the ball exists but does not instantiate redness, the ball is crimson? On pain of allowing false claims of this sort to be true, we should not reject Sensitivity, and therefore should not reject 4b. So, we are left with (*iii*), and are therefore left with rejecting Subtractionism. Subtractionism, and not 4b or that 4b follows from 5b, is the culprit. So Subtractionism must go.[11]

Now before I give a diagnosis of Subtractionism's shortcoming, let me first consider an objection I have often heard against this argument.

Objection. Your argument against Subtractionism works only on the assumption that the world 4b's antecedent takes us to is possible. But it is not. If the fact that the parts are c-fashioned grounds a cylinder, then there is no possible world where the fact that the parts are c-fashioned exists and yet fails to ground a cylinder. So a world where the fact that the parts are c-fashioned exists and yet fails to ground a cylinder is an impossible world.

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[11]This argument against Subtractionism is different from an argument that Dasgupta (ms) gives. Suppose that p grounds p $\lor$ q and that p grounds $\neg\neg$p. According to Subtractionism, p grounds both of these facts about grounding. But Dasgupta argues that this cannot be. Shouldn't disjunction figure in the grounds of the first fact about grounding? And shouldn't negation figure in the grounds of the second fact about grounding? Now notice that Dasgupta's argument is different from mine. This can be seen by noticing that Dasgupta's argument does not rely on Sensitivity. All it relies on is the claim that disjunction and negation are surely relevant to grounding that something grounds a disjunctive, or negative, fact. So Dasgupta's argument and the present argument are different.

But impossible worlds are not relevant with respect to how we should think of the actual world. So your argument against Subtractionism fails since it involves an impossible, and therefore irrelevant, world.

Response. This objection rests entirely on the idea that impossible worlds are irrelevant with respect to how we should think of the actual world. This, however, is false. The modal status of the world 4b's antecedent takes us to should not, in and of itself, matter. Here is why.

Suppose again that determinables are grounded in determinates, that (as is true) the Eiffel Tower is 7.3 million kilograms, and that its being 7.3 million kilograms grounds its having mass. Now it is a necessary truth that the Eiffel Tower has mass; the Eiffel Tower is necessarily *massy*. But this should not call into question the truth of the following:

6. If the Eiffel Tower were to exist but not instantiate *having-mass*, then the Eiffel Tower would not be 7.3 million kilograms.

If determinates explain determinables, and if explanations force a kind of sensitivity constraint between them and what they explain (as they surely do), then it must be that, on pain of lacking this constraint, if the Eiffel Tower were to exist but lack mass, then it would be the case that it is not 7.3 million kilograms.[12] We can bolster this by realizing that it would be awfully odd, and rather unprincipled, if we restricted Sensitivity to facts involving things contingently being some way. Sensitivity is a constraint put on explanation in general. Since facts involving things necessarily being some way (the Eiffel Tower having mass, something grounding something else) can be parts of explanations, then prohibiting Sensitivity from applying to them would be ad hoc. So Sensitivity should apply to any kind of fact involved in explanations. But then the antecedents of the counterfactuals involved in instances of Sensitivity can take us to impossible worlds.

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[12]This shows us that sensitivity constraints are not just constraints having to do with possibilia. A sensitivity constraint can involve impossibilia as well when necessary truths, necessarily existing facts, or facts about things necessarily being some way are involved.

A Diagnosis

Where did Subtractionism go wrong? It went wrong in failing to provide enough structure in the groundmakers; in failing to providing a groundmaker rich enough to do the groundmaking work it is supposed to do. According to Subtractionism, if x grounds y, then x itself grounds that x grounds y. But that x alone grounds that x grounds y is the source of Subtractionism's trouble. In order to see why, suppose we give groundmakers more structure. One way of doing this is to make, not x, but a fact concerning how x is, the groundmaker. What grounds that x grounds y is some fact involving x. Or to turn to the example I have been using, what grounds that the fact that parts are c-fashioned grounds a cylinder is a fact about the fact that the parts are c-fashioned, say, that the fact that the parts are c-fashioned is F. This, in conjunction with Sensitivity, gives us the following variant of 4a:

> 4c. For any kind of way k where the parts being c-fashioned fails to ground a cylinder, if k were the case, then the parts being c-fashioned would not be F.

Now just as 5a follows from 4a, where 4a is an instance of 1, so 5c follows from 4c, where 5c is an instance of 1. So we have

> 5c. If the fact that the parts are c-fashioned were to exist but not instantiate *grounding-a-cylinder*, then the fact that the parts are c-fashioned would not be F.

Notice that, unlike 5b, 5c is unproblematic. That the fact that the parts are c-fashioned is not F is perfectly consistent with worlds where the fact that the parts are c-fashioned exists but does not ground a cylinder. So incorporating more structure in our groundmakers avoids the present worry with Subtractionism. This tells us that Subtractionism posits groundmakers that are too sparse. It posits groundmakers that are not structured enough to do the grounding work they are supposed to do. So what we need are groundmakers

that come with more structure. Of course, how we should go about incorporating this structure is a very difficult question and not one I will attempt to answer in this paper.

4.3 Against Essentialism

The first half of this paper has been concerned with one account of groundmaking. The second half will be concerned with another. In order to begin to understand this latter account, consider the following:

> It is necessary that blue is a color *because* it is part of the essence of blue that it is a color.

Here we are grounding the *necessity* of a fact by appealing to the *essence* of something. And so essence grounds, and therefore explains, necessity (Fine 1994). Let us consider another use of essence

> All blue things are colored things *because* it is part of the essence of blue that it is a color.

Here we are grounding the *universality* of a fact by appealing to the *essence* of some thing or things. And so essence grounds, and therefore explains, universality (Rosen 2010). Now let us consider one more use of essence

> The fact that the ball is blue grounds that it is colored *because* the ball is blue and it is part of the essence of being colored that something's being colored is grounded in its being blue.

Here we are grounding the *groundedness* of a fact by appealing, in part, to the *essence* of some thing or things. And so essence partly grounds, and therefore partly explains, grounding. Now the account of groundmaking that puts essences to this task of, at least partly, grounding facts about grounding is Essentialism.

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Two versions of Essentialism have been developed in the literature. One version, Grounding Essentialism, appeals to grounding (Rosen 2010, Fine2012). Another version, Sufficiency Essentialism, appeals to material sufficiency (Dasgupta ms). Now I think that both Grounding and Sufficiency Essentialism are problematic. Starting with the former, here is why.

Grounding Essentialism

Here is an instance of Grounding Essentialism (henceforth *G-Essentialism*):

> That the ball is blue grounds that it is colored because (*i*) it is a fact that the ball is blue and (*ii*) the fact that the ball is colored is essentially such that it is, for any color *c*, grounded in the fact that the ball is *c* if it is indeed *c*.[13]

Here is a worry with G-Essentialism that I find particularly problematic.

Consider that in wanting to provide the kind of ground that is supposed to explain why things are F, such a ground cannot, in any sense, involving being F. The thought here is that you only have a good explanation of some phenomenon if the phenomenon does not appear in what is explaining it. Explaining the phenomenon by appealing, even in part, to it is to use the very thing in need of an explanation to explain. But what progress has been made if what is in need of an explanation figures in its own explanation?[14] So in wanting to provide the kind of ground that is supposed to explain why things are F, we must eliminate, in the entity doing the grounding, any appeal to F. So we have the following, which has it that F must be absent in the kind of ground that is supposed to explain why things are F:

> **Absence.** In providing the kind of ground that is supposed to explain why things are F, F cannot appear in this kind of ground.

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[13]This instance of G-Essentialism follows Fine's account of it and not Rosen's. But this is neither here nor there since my criticism of G-Essentialism applies just as much to Rosen's account as it does to Fine's.

[14]The reasoning here is awfully close (though not quite identical) to the reasoning involved in thinking that explanation is irreflexive.

Let me illustrate Absence with a concrete example involving essence. Suppose I want to explain why it is that some things, the *x*s, are abstract. That is, I want to know why, for some things, those things are abstract. Further suppose that we are given the following two candidates as grounds for the fact that the *x*s are abstract:

7. It is part of the essence of the *x*s that the *x*s are abstract.

8. The *x*s are non-spatial and acausal.

Which candidate is the candidate that is able to properly ground that the *x*s are abstract? This is, which of 7 or 8 should go in the following blank: the *x*s are abstract because _____? The answer, I think, is 8. After all, that the *x*s are non-spatial and acausal tells me what makes it that they are abstract. They are abstract in virtue of being non-spatial, acausal entities. 8 provides a ground of being abstract (namely, being non-spatial and acausal) and therefore explains why anything, and so why the *x*s, are abstract. 7 is unable to do this since 7 does not provide a ground of being abstract and therefore does not explain why anything, and so why the *x*s, are abstract. And the reason for this is the very appearance of being abstract in 7. In grounding why the *x*s are abstract, 7 includes, as it should not, being abstract. This explains why 7 does not provide a ground of being abstract and therefore explains why 7 does not ground that the *x*s are abstract. If we want to ground that the *x*s are abstract, then, as Absence says, being abstract must be absent from the ground. Failure to do this is failure to provide an adequate ground.

Objection. This cannot be correct, for it is obvious that there is something right in saying that the *x*s are abstract because it is part of the essence of the *x*s that they are abstract.

Response. I agree. But this does not take us to the right kind of explanation, much less the right kind of ground. Assume that God exists and consider the following: Why is it that God exists? Answer: Because God *must* exist. God exists because it is necessary that God exists. But it does not follow from this, nor does it seem true, that God's existence is grounded, or is explained in the right kind of way, in God's necessary existence

(in fact, actualists will, if anything, seek to reverse the grounding order here). Rather, in such cases, 'because' appears to signal an inference and not an explanation of the kind in mind.[15] Necessarily God exists, *therefore* God exists. I think something rather similar is going on in the present case of essence. It is part of the essence of the *x*s that they are abstract, *therefore* they are abstract (notice how in both cases we have a factive operator — it is part of the essence of ____ that, it is necessary that — which explains why the inference is obvious and successful). If this is right, then the relevant 'because' fact involving essence is not a fact about the kind of explanation desired in instances of grounding. If it is a fact about explanation at all, then the kind of explanation involved is intimately tied to inference and not grounding. This explains why there is something right in saying that the *x*s are abstract because it is part of the essence of the *x*s that they are abstract without having 7 ground, even if it entails, that the *x*s are abstract.

How does all this apply to G-Essentialism? In order to see how it does, it is important to notice that all accounts of groundmaking are seeking to provide the kind of entity needed in order to explain why things ground other things. Providing the kind of entity that explains why things ground other things just is to provide an account of groundmaking; just is to provide an account that tells us what things make other things ground other things. Since all versions of Essentialism are accounts of groundmaking, then it follows that what all versions of Essentialism are after is the kind of entity needed in order to explain why things ground other things. All versions of Essentialism are concerned with providing a universally quantified truth of the form 'if x grounds y, then ... grounds that x grounds y'. Now it follows from this and Absence that in order for versions of Essentialism to provide the kind of ground that is an appropriate ground for why things grounds other things, grounding has to be absent from the entity doing the grounding. That is, all versions of Essentialism had better be such that their candidate groundmaker

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[15]This should not be surprising. We have all come across elementary logic textbooks that tells us to look for words such as 'because' as indicators of conclusions in arguments. For more on this difference, see Liggins 2012: 262-3.

does not, in any sense, involve grounding. But G-Essentialism's candidate groundmaker does involve grounding since G-Essentialism has it that (*ii*) above, namely

> the fact that the ball is colored is essentially such that it is, for any color *c*, grounded in the fact that the ball is *c* if it is indeed *c*,

partially grounds that the ball is blue grounds that it is colored. So grounding appears in that which is grounding a fact about grounding. In grounding a fact about grounding, appeal is made, in part, to grounding itself. But if we want to know what grounds why things ground other things, then as Absence tells us, no mention of ground should occur. Since G-Essentialism has it occur, and therefore since G-Essentialism violates Absence, then G-Essentialism fails to provide us with an adequate ground for facts about grounding; G-Essentialism fails to provide us with an adequate groundmaker.

It is worth contrasting this to cases where appeal to essence does not violate Absence, and therefore to cases where appeal to essence is an appropriate (even if controversial) move to make if one wants essences to ground certain facts. Fine (1994) has famously given essences the job of grounding necessity. Recall

> It is necessary that blue is a color *because* it is part of the essence of blue that it is a color.

Generalizing, the claim is that all necessary facts are grounded in facts about essence. Necessity bottoms out in essence. Necessity is because essence is. Whether or not you agree with Fine, it is clear that Fine's ground of necessity does not, unlike G-Essentialism, violate Absence. Here, that which is trying to be explained (necessity) does not appear in the fact doing the grounding. Necessity has completely left the picture, it is absent, being replaced by essence (just as above, being abstract has completely left the picture, it is absent, being replaced by being non-spatial and acausal). This is why Fine's proffered ground for facts about necessity, but not G-Essentialism's proffered ground for facts about grounding, works. The former, unlike the latter, obeys Absence.

Sufficiency Essentialism

Dasgupta (ms) offers, without endorsing, Sufficiency Essentialism (henceforth *S-Essentialism*) where appeal is made, not to grounding, but to material sufficiency. Here is an instance of S-Essentialism:

> That the ball is blue grounds that it is colored because (*i*) the ball is blue, and
> (*ii*) it is essential to the property of being colored that whenever a thing is blue,
> it is colored.

Important here is the existence of an essence that involves a kind of material sufficiency. Being colored is essentially such that being blue is, in some sense or other, materially sufficient for being colored. It is precisely because of this that if something is blue, its being blue grounds its being colored. So what is doing the work here is material sufficiency and not grounding.

Unfortunately, appealing to material sufficiency in this manner is problematic. In order to see why, consider that grounding is supposed to be a *hyperintensional* notion (Schaffer 2009, Fine 2012). I ground my singleton. However, necessarily, my singleton exists if and only if I exist. So if there is grounding in one direction but not the other, grounding had better be hyperintensional. Or, assume that 2 is grounded in being the successor of 1. But 2 is the successor of 1 if and only if 5 is the successor of 4. But 2 is not grounded in 5 being the successor of 4. So grounding outstrips intensional notions.

Now this fact alone should begin to raise doubts about S-Essentialism. That material sufficiency, which is an intensional notion (no matter how it is understood, specified, or formulated), should play such a large role in grounding facts about grounding goes against the spirit of one of the main reasons to accept a grounding relation. As we saw in the previous paragraph, intensional notions, like material sufficiency, are just not fine-grained enough to capture what we want to say about metaphysical dependence. But then it should strike us as odd that an essential property involving an intensional notion

should play the chief role in grounding facts about grounding.[16] That is, we should have doubts about the adequacy of any theory that has intensional notions doing most of the important work in cases of metaphysical dependence.[17]

In order to make this complaint stick, it will help to look at actual cases. Members ground their sets. So I ground my singleton. So we have the following instance of S-Essentialism:

> I ground my singleton because (*i*) my singleton exists, and (*ii*) it is essential to
> my singleton that whenever I exist, it exists.

So far, so good. But consider that it also seems to be part of my singleton's essence that if it exists, I exist. My singleton is essentially such that its' existence requires, and so is materially sufficient for, my existence. But we do not want to conclude from this that because my singleton exists, and that it is part of my singleton's essence that if it exists, then I exist, that I am grounded in my singleton. The fact that it is part of the essence of my singleton that it is materially sufficient for my existence should not lend any credence to the idea that I am grounded in it. But then why should the fact that it is part of the essence of my singleton that I am materially sufficient for it lend any credence to the idea that it is grounded in me? Or going back to our example of the blue ball, why should the fact that it is part of the essence of being colored that being blue is materially sufficient for being colored lend any credence to the idea that the ball is colored is grounded in its being blue?

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[16]Indeed, if an intensional notion, like material sufficiency, can help to ground facts about grounding, then why even bother with the latter? Why not just replace, and so eliminate, facts about grounding with essentialist facts concerning material sufficiency? Why not just replace, and so eliminate, the fact that the ball's being colored is grounded in its' being blue with the fact that the ball is blue and the fact that it is part of the essence of being colored that whenever a things is blue it is colored? If we accept S-Essentialism, what work is grounding doing that essentialist facts involving an intensional notion like material sufficiency are not? None. But as we have now realized, intensional notions cannot do the work that grounding can (even when, as we will see below, such notions are embedded in essences).

[17]In the present context, G-Essentialism fares better than S-Essentialism. For according to G-Essentialism, what does most of the important work in grounding facts about grounding is grounding itself. But grounding is a hyperintensional notion. So even though S-Essentialism does better than G-Essentialism in that it does not violate Absence, G-Essentialism does better than S-Essentialism in that it does not appeal to intensional notions.

Consider another example. Suppose that a teleological view is the correct view about right and wrong action. Actions exemplifying deontic properties, such as being right and being wrong, are to be ultimately explained in terms of actions exemplifying evaluative properties, such as being good and being bad. That is, right and wrong actions are grounded, and only grounded, in good and bad actions.[18] But then it would seem that it is essential to the property of being right that whenever an action is right, it is good. But, assuming that a teleological view is the correct view, we do not want to conclude from this that because action A is a right action, and that it is essential to the property of being right that whenever an action is right, then it is good, that A's being good is grounded in its being right. The fact that it is part of the essence of the property of being right that its instantiation is materially sufficient for the instantiation of being good should not lend any credence to the idea that A's being good is grounded in A's being right. But then why should the fact that it is part of the essence of being colored that being blue is materially sufficient for being colored lend any credence to the idea that the ball is colored is grounded in its being blue?

Finally, as a last example, suppose that God possibly exists and that, as seems right, it is essential to the property of necessarily existing that whatever has it is such that if it possibly exists, then it necessarily exists.[19] Here we have an essentialist fact involving a kind of material sufficiency. God's necessary existence is essentially such that God's possible existence is, in some sense or other, materially sufficient for God's necessary existence. It would, however, be much too quick to infer from this that, assuming that God possibly exists, God's necessary existence is grounded in God's possible existence. Perhaps God's necessary existence is grounded in God's existing in every possible world (as the Lewisian modal realist might say), or in its being part of God's essence that God exists (as

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[18]Consequentialism, certain versions of egoism, and natural law theory all count as teleological views of right and wrong action.

[19]This is surely plausible. It may not be plausible that it is essential to the property of necessarily existing that whatever is supposed to have it exists (God is supposed to have it but it is controversial whether or not God exists). But it is plausible that it is essential to the property of necessarily existing that whatever has it is such that if such a thing exists in one possibility, then it exists in all.

the Finean about essence might say), or in its being a conceptual truth that God exists (as the ontological argument perhaps says). But that God's necessary existence is grounded in God's possible existence will strike most of us as false despite the fact that it is essential to the former that it is materially sufficient for the latter. So material sufficiency (even when embedded in an essence) is, in some cases, just not the right notion to help ground why something grounds something else since it gives us the wrong results. But then why think that it is ever the right notion to help ground why something grounds something else. What is the needed difference here such that in some cases, but not in others, an essentialist fact concerning material sufficiency is the right notion to help ground something else? Until this difference is given, it is unclear why appealing to some instances of material sufficiency are appropriate when it comes to grounding facts about grounding whereas others are not.

It is important to emphasize that I have not overlooked the hyperintensional nature of essence. This is important because I have attacked S-Essentialism by pointing out its use of an intensional notion. But if essences are hyperintensional, then it is also true that S-Essentialism makes use of a hyperintensional notion.[20] However, as the above makes clear, the hyperintensionality of essences does not help S-Essentialism. Nor should we have expected it to. To say that essence is hyperintensional is not to say that intensional notions do not figure in something's essence. To say that essence is hyperintensional is simply to say that one cannot understand essence in purely intensional terms (consider: I am a member of my singleton if and only if my singleton has me as its member and yet it is part of my singleton's essence that it has me as its member but not part of my essence that I am a member of my singleton). So even if essences are hyperintensional, this does not rule out, in agreement with S-Essentialism, intensional notions from being parts of essences (in addition to the examples that S-Essentialism provides, consider: it is part of God's essence that God necessarily exist). But it is precisely that intensional notions are

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[20]The *locus classicus* for thinking that essences are hyperintensional is Fine (1994). See also Dunn (1990). For intensional accounts of essence, see Plantinga (1974), Forbes (1985), and Mackie (2006).

appealed to in essences that causes trouble for S-Essentialism.

It is also important to emphasize that I have not overlooked the distinction between constitutive and consequential essence (Fine 1995a, 1995b), where a constitutive essence of something is a description or a property (or properties) detailing what that thing is in its most central respect (we can, as Fine does, liken constitutive essences to real definitions of objects or kinds).[21] This is to be contrasted with consequential essence which does not detail, by way of a description or a property, what that thing is in its most central respects. An example of this kind of essence is anything that is a logical consequence of a constitutive essence. So if F is constitutively essential to x, then so is F $\vee$ G, and that F is self-identical, and that if x is F & ~F, then x is F, etc.[22]

Now one might accuse me of using consequential essences in the above examples when what S-Essentialism is concerned with are not consequential, but constitutive, essences. That is, the kind of essence appealed to in S-Essentialism are constitutive essences and not consequential essences. But I have not appealed to consequential essences in the above examples. Looking at my first example, it is surely a central part of what my singleton is that it cannot exist unless I exist. Part of what it is to be my singleton is to require my existence; to not be able to exist unless I do. Leaving this out while including that I am sufficient for its existence is to leave out a very important part of what it is to be my singleton. Turning to my second example, if a teleological view of right and wrong action is correct, and so if right and wrong action are grounded, and only grounded, in being good and being bad, then it would seem to be a central part of what rightness and wrongness are that they cannot exist unless goodness and badness exist. Part of what it is for rightness to be instantiated is to require that goodness is instantiated; to not be able to be instantiated unless goodness is. Leaving this out while including that the instantiation

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[21]In fact, Fine (1995a) seems to identify constitutive essences to real definitions. For a reason not to, see Koslicki (2012: 196-7).

[22]This is to take constitutive essence as primitive and to define consequential essence in terms of it. Fine (1995a) appears to do the opposite, taking consequential essence as primitive and defining constitutive essence by way of a generalization procedure involving consequential essence. For a problem with taking consequential essence as primitive, see Koslicki (2012).

of goodness is sufficient for the instantiation of rightness is to leave out a very important part of what it is to be the property of being right. It is to leave a central part of what a teleological view of right and wrong action is. But then that being right is materially sufficient for being good is part of the constitutive essence of being right. So these two examples cannot be faulted for appealing to consequential, as opposed to constitutive, essences.

It is worth mentioning other, non-essentialist, variations of the version of Essentialism presently considered in order to show that they fall prey to the same kind of objection.[23] These non-essentialist variations require replacing essentialist facts involving material sufficiency with either necessary, conceptual, or legal facts involving material sufficiency. Using the above example of the blue ball, here are the replacements:

Necessitism. It is *necessary* that if the ball is blue, then it is colored.

Conceptualism. It is a *conceptual truth* that if the ball is blue, then it is colored.

Legalism. It is a *metaphysical law* that if the ball is blue, then it is colored.

Now accounts of groundmaking that appeal to these variations fail for precisely the same reasons that S-Essentialism does. For example, it is both a necessary and conceptual truth that if my singleton exists, then so do I. But then why is that, according to Necessitism and Conceptualism, I ground my singleton but it does not ground me? With respect to Legalism, I cannot see how one can bar the following from being a metaphysical law: if something is a set, then its members exist. But then why is that, according to Legalism, I ground my singleton but it does not ground me?

Or turning to the teleological view of right and wrong action, it would seem to both a necessary truth and a metaphysical law that if an action is right, then it is good. But then why is that, according to Necessitism and Legalism, an action's being good grounds its being right but its being right does not ground its being good?

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[23]Dasgupta mentions, without endorsing, these variations.

Finally, it is both a necessary and conceptual truth that, with respect to necessarily existent beings, if such beings possibly exist then they necessarily exist. But then why does it not follow from Necessitism and Conceptualism that God's possible existence grounds God's necessary existence?

As with S-Essentialism, the difficulty in answering these questions is due to the fact that Necessitism, Conceptualism, and Legalism all have it that an intensional notion is doing important work. But intensional notions are just not fine-grained enough to do the work grounding is supposed to do. No wonder then that we have the above problem with S-Essentialism and its non-essentialist variations.

4.4 Connectivism

Assume for sake of argument that non-reductive physicalism is true. So mental states are grounded in physical states. So that x exemplifies some physical property P grounds that x is in pain. Now it is tempting to think that what grounds that x is P grounds that x is in pain has to do with the nature of pain. It is particularly tempting when we add emphasis and appeal to a contrast in the following manner:

9. Why does x being P ground that x is in *pain* (rather than, say, no mental state at all)?

Surely, the thought goes, the answer to 9 must have something to do with the nature of pain. In particular, the answer to 9 must involve a part of the nature of pain that posits a kind of *general connection* between pain and P, something like: part of what it is to be pain is to be such that when one exemplifies physical property P, one is in pain. The thought then is that it is natural to ground that x is P grounds that x is in pain in that part of the nature of pain that posits a general connection between P and pain. This is *Connectivism*. So Connectivism says that if you want to ground facts about grounding, if you want to find a suitable groundmaker, then such a groundmaker has to be connectivist in form: it

has to, at least in part, posit a kind of connection between what is grounded and what is grounding. Indeed, this is the insight behind the versions of Essentialism considered above, where for them, the connection is an *essential* connection. It is a connection of the form: it is part of the essence of pain that _____, where what goes in the blank is the connection between pain and P.

Connectivism, however, is false. Or at least, it is false if one's task is to give an account of groundmaking. In order to see why, we need to see why 9 is the wrong question to be asking for the groundmaker theorist. Consider that groundmaking is concerned with grounding facts about grounding; it is concerned with explaining why it is that some fact or entity grounds another. Groundmaking's concern is therefore about grounding. It is not so much concerned with first-order theses such as non-reductive physicalism. So the question groundmaking is concerned with answering is not 9, but

10. Why does *x* being P *ground* (rather than, say, fail to ground) that *x* is in pain?

10 makes it clear that the emphasis is on explaining the grounding aspect of the fact that *x* being P grounds that *x* is in pain. 9, on the other hand, makes it clear that the emphasis is on explaining the pain aspect of the fact that *x* being P grounds that *x* is in pain. This is why, in 9, emphasis is put on pain but, in 10, it is put on grounding.

Here is another way of putting it. Groundmaking theorists, *qua* groundmaking theorists, could care less about the question 9 is asking. They are not so concerned with whether *x* being P grounds that *x* is in *pain* (rather than, say, no mental state at all). They are, however, concerned with the following

11. Why does *x* being P *ground* (rather than, say, fail to ground) anything?

Notice that 11 makes no reference to pain or mental states. What *x* being P grounds is not so important as that *x* being P grounds something. It is that *x* being P grounds *something* that groundmaker theorists want a ground for. They are not so interested in *what x* being

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P grounds, which is a first-order dispute that is, strictly speaking, irrelevant to explaining why things ground other things.

In order to make this clearer, consider someone like David Chalmers (1996) who rejects non-reductive physicalism. So Chalmers rejects that x being P grounds that x is in pain. Instead, Chalmers thinks that mental properties are fundamental and are therefore not in need of a physical ground. Now Chalmers' gripe with non-reductive physicalism is not that it makes use of grounding in stating its view. Rather, Chalmers' gripe with non-reductive physicalism is what non-reductive physicalism posits as grounding mental properties. His problem with non-reductive physicalism is not that it has it that physical states ground some things, but with what it has physical states grounding, *viz.*, mental states. So we can understand Chalmers' here as both asking 9 and arguing that it cannot be answered. But Chalmers thinking that non-reductive physicalism cannot answer 9 does not mean that he thinks that grounding is doomed. It instead means that non-reductive physicalism is doomed. Chalmers worry is with non-reductive physicalism and not with grounding. On the other hand, thinking that 10 and 11 cannot be answered does mean that grounding, but not non-reductive physicalism, is doomed.[24]

So far, I have attempted to show that anyone who asks 9 is not so concerned with the tenability of groundmaking as they are with the tenability of non-reductive physicalism. So 9 is not what we should be asking if we are groundmaking theorists. It is rather 10 and 11 that take center stage. But this does not, in and of itself, show us that Connectivism is false. For it may be that in giving an adequate answer to 10 or 11, we have to say something about a connection between what is grounded and what is grounding. We therefore need one more step in the argument.

In order to make this step, it is important to realize, as I tried to make clear above, that x being in pain falls out of the picture when asking 10. For 10 does not emphasize explaining the pain aspect of the fact that x being P grounds that x is in pain. This is

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[24]Indeed, thinking that 10 and 11 cannot be answered, and therefore that grounding is doomed, is one way to understand Sider's (2011) objection to grounding.

precisely why 11, which omits any reference to pain, captures nicely what 10 is after. But then it should be clear that nothing is forcing us to appeal to what, in this case, is grounded; nothing is forcing us to appeal to pain and its nature. Generalizing, if the form of questions groundmaking theorists are after is 11 and not 9, then there is nothing forcing us to appeal to what is grounded in any instance of grounding. So no connectivist account is required in order to provide an adequate account of groundmaking.

In order to make what I am saying here as clear as possible, I will illustrate this point by using as an example a now familiar project in metaphysics: answering the Special Composition Question. One way of understanding the Special Composition Question is as follows

> In virtue of what is it the case that there is some y such that the xs compose y?[25]

Now it is worth noting that candidate answers to the Special Composition Question do not appeal to the nature of the composed object y stating some general connection between y and the xs. They instead appeal to the xs being in contact (Contact), or being fastened (Fastening), or cohering (Cohesion), or being fused (Fusion), or being F_1 and standing in R_1 (Serial), or constituting a life (Organicism), or satisfying certain formal constraints (Structuralism), or being one (Nihilism), or existing (Universalism). Now what explains this is simply that what the Special Composition Question is asking is the following

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[25]Though the Special Composition Question is often put in terms of necessary and sufficient conditions — what necessary and jointly sufficient conditions must the xs satisfy in order for it to be the case that there is an object composed of those xs — Peter van Inwagen (1990), the first to state the question in great detail, often states or understands it in terms of dependence. For example, he says

> Whether certain objects add up to or compose some larger object does not *depend* on anything besides the spatial and causal relations they bear to one another. (12) (italics mine)
>
> If you and I compose something, this is not *in virtue of* our being in contact. (35)
>
> Isn't there a great deal of plausibility in this principle: If there are xs that compose something just *in virtue of* the fact that they stand in R, then... (69) (italics mine)

So the understanding of the Special Composition Question in the main text is not in any way novel or deviant.

12. Why do the *xs* *compose* (rather than, say, fail to compose) anything?

As 12 makes clear, the Special Composition Question is concerned with the composition aspect of the fact that the *x*s compose *y*. That is why it is called 'the special composition question'. It is not concerned with the *y* aspect of the fact that the *x*s compose *y*. It would be concerned with this if the question were instead

13. Why do the *xs* compose a *table* (rather than, say, a chair)?

Here it is clear that what is at issue is not whether the *x*s compose anything, but whether they compose a table. This can be seen by realizing that the above candidate answers to the Special Composition Question utterly fail in answering 13. If we want an answer to 13, we need the answer to contain some general connection between the table and the *x*s. It must be something about the table that explains why the *x*s compose it as opposed to a chair.

This difference here between 12 and 13, and the kinds of answers appropriate to them, is precisely the difference between 9 and 11. And just as in answering 12 we do not need to appeal to the nature of *y* involving some general connection between the *x*s and *y*, so in answering 11 we do not need to appeal to the nature of what is grounded involving some general connection between what is grounded and what is grounding, contra Connectivism.

So connectivist-style accounts of groundmaking are a mistake. If one wants a connectivist-style answer, then one's concern is not grounding but something else. One's concern is in explaining why something grounds the things it does, not why something grounds anything. So all Connectivist accounts of groundmaking (such as G and S-Essentialism) are doomed from the start since they are asking, and trying to answer, the wrong kind of question.

4.5 Conclusion

I have argued that two accounts of groundmaking fail to provide us with adequate ground-makers. Central to this task was a battery of considerations showing that each account either violates some principle or feature of grounding. Now the following question arises: what are facts about grounding grounded in?

Answering this question requires getting clear on the nature of the grounding relation. Now in §4.1, we discussed three kinds of relations whose definitions are below:

R is an internal relation $=_{df.}$ if xRy, then xRy is grounded in the intrinsic nature of both x and y

R is a superinternal relation $=_{df.}$ if xRy, then xRy is grounded in the intrinsic nature of x (and not the intrinsic nature of both x and y)

R is a superduperinternal relation $=_{df.}$ if xRy, then xRy is grounded in x (and not the intrinsic nature of x)

In §4.2, I argued against thinking that grounding is superduperinternal. In §4.4, I argued that there should be no appeal to the grounded entity in facts about grounding. So my argument in §4.4 tells against thinking that grounding is internal since facts involving internal relations are partly grounded in both relata. Therefore, assuming that grounding is one of the three above relations (which is, perhaps, a controversial assumption), we are left with thinking that grounding is superinternal. So, assuming that x grounds y, the task of finding suitable groundmakers becomes the task of finding what part of x's intrinsic nature is relevant to grounding that x grounds y. What F is it of x that, when x is F, x's being F grounds that x grounds y? This is a hard question. But it is not intractable. Though I will not attempt to answer it, I will conclude by narrowing down, in two ways, the kind of answer needed.

That part of x's intrinsic nature that is relevant to grounding x's grounding y must be *general*. On pain of having a rather dis-unified account of groundmaking, whatever

property it is that is relevant to grounding that x grounds y must be such that if x_1 grounds y_1, if x_2 grounds y_2, and if x_3 grounds y_3, then each of x_1, x_2, and x_3 have this property. This property cannot be unique to x_1, or x_2, or x_3. Moreover, that part of x's intrinsic nature that is relevant to grounding x's grounding y must be *necessary*. Why? Because the following modal constraint on grounding is true: if x grounds y, then necessarily if x exists, then x grounds y. But then if we are to ground that x grounds y, it had better be that whatever property that x has, the instantiation of which grounds that x grounds y, is such that x cannot lack it. So x necessarily has this property. So this property cannot be a contingent property of x. So if we want an adequate account of groundmaking, we must find some *intrinsic* (this follows from grounding being a superinternal relation), *necessary*, and *general* property of those things that ground other things such that their instantiating this property grounds that they ground whatever it is that they ground.

Part III

Wholemaking

Chapter 5

Ungrounding the Grounding Problem

Consider what is now a familiar problem concerning the statue and the lump of clay that constitutes it. Both fail to share all of their kind and modal properties, and therefore, by Leibniz's Law, they are not identical. They are, however, very much alike. They share all of their proper parts (or at least all of their microphysical parts), are the same shape, same weight, have the same mass, etc. Question: What grounds the kind and modal differences between the statue and the lump? In virtue of what is it that the lump of clay, but not the statue, can survive being smashed? This is *the grounding problem*.[1]

Borrowing terms from Karen Bennett's 2004 paper, when it comes to the grounding problem, there are the *no-thingers*, the *one-thingers*, and the *multi-thingers*. The no- and one-thingers solve the problem by denying that there are two things.[2] The multi-thingers disagree. They think that both the statue and lump exist and that one is not the other. The grounding problem is therefore their problem. Unfortunately, many multi-thinger

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[1]Fine (2003) has developed a number of new Leibniz's Law arguments for thinking that the statue is not the lump which do not rely on kind and modal intuitions. I will discuss his examples in §5.4 and show why my solution to the traditional differences between the statue and the lump that motivate the grounding problem are also solutions to Fine's differences between the statue and the lump.

[2]Some no-thingers are, *inter alia*, van Inwagen (1990), Merricks (2001), and Rosen and Dorr (2002). Some one-thingers are, *inter alia*, Lewis (1986a), Burke (1994), Gallois (1998), Rea (2000), Sider (2001), and Wasserman (2002). (Though Wasserman's case is unique in that he claims that the statue and the lump are not identical if they do not temporally coincide, but identical if they do. Wasserman is what Kit Fine (2003) calls a *moderate monist*.)

solutions to the grounding problem require accepting a metaphysic that demands that we substantially revise how reality seems to be. Here are three such examples:

Some multi-thinger solutions advocate that material objects have non-material parts (McDaniel 2001; Paul 2002; Fine 2008; Koslicki 2008). But this is surely surprising. In breaking down a material object, such as a chair, into all of its material parts (at least at some level of decomposition), we would not expect to have left some part of the chair out. We would (and do) find it hard to believe someone if they told us that what we are missing is a non-material part (such as a trope or a form) of the chair. We would be inclined to respond by saying that chairs are material objects, and the only kinds of proper parts that material objects have are material as well.

Another solution argues that it is just brute that the statue and lump differ in their kind and modal properties (Bennett 2004). But, at least for complex objects, such bruteness is bizarre.[3] Perhaps the kind and modal properties of simple objects are brute, simple objects being such that they depend on nothing for their existence. But complex objects depend on their parts and how those parts are arranged, and so, it would seem, have the kind and modal properties they do in virtue of their parts and how those parts are arranged.[4]

Finally, a kind of modal property fictionalism has also been invoked to solve the

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[3]Bennett tries to show why it is not so bizarre that the statue's modal properties are brute by appealing to a principle of plenitude: for any region of space that is occupied by an object, there is an object for each possible combination of modal properties. And, or so the thought goes, "because each region is full in this way, there is nothing in virtue of which any particular object has the modal properties it does" (2004: 355). So, according to Bennett, the bizarreness of brute modal properties is not so bizarre after all. Here is a worry I have with Bennett's claim. That modal properties are not brute is perfectly compatible with Bennett's principle of plenitude. For suppose that her principle is true, that a and b are coincident, that a has modal profile M1 and b modal profile M2, and that M1 and M2 exhaust the possible combinations of modal properties in the region of space that a and b occupy. All this is consistent with a having M1 in virtue of N1 (where N1 is a non-modal profile of a), and b having M2 in virtue of N2 (where N2 is a non-modal profile of b). So that modal properties are not brute is perfectly compatible with Bennett's principle of plenitude. But then in what way does this principle make the bruteness of modal properties palatable? Given that Bennett's principle is consistent with non-brute modal properties, whether or not a modal property is had brutely does not depend on the number of instantiated combinations of modal properties. But then why should Bennett's principle of plenitude give us a reason to think that modal properties are had brutely?

[4]This claim is surely plausible if we restrict it to kind properties. After all, I belong to the kind *Human* in virtue of my parts being arranged such that DNA materials, organs, a nervous system, etc. are all parts of me. Therefore, the fact that I am a human is not a brute fact about me.

grounding problem with respect to the statue and lump's modal differences (Sider 2008). The thought here is that, strictly speaking, there are no monadic modal properties and therefore, strictly speaking, it is not true of the statue that it cannot survive being smashed and of the lump that it can. Rather, there are relational modal properties that i) are consistent with the supervenience of the modal on the non-modal and ii) justify speaking as if there are monadic modal properties. But that it is not, strictly speaking, true that the lump can survive being smashed seems false. And so accepting this solution requires that we revise how we all thought the lump modally is.

Now some think that multi-thingers must make some revisionary claim or other if they want a solution to the grounding problem. Here is Wasserman (2002: 212):

> But it does strike me as obvious that if such a theorist rejects counterpart theory and holds that [the statue] and [the lump] are distinct even in cases where they materially coincide (in the strong sense) throughout their careers, then radical claims must be made.

But I disagree. And so what I now want to do is provide a solution to the grounding problem that does not demand that we substantially revise our view of reality.[5] I will begin by making two reasonable assumptions about grounding and quickly argue for a particular way of grounding wholes in their parts by appealing to facts (§5.1). I will then show how to solve the grounding problem (§5.2), address two worries with my solution (§5.3), show how this applies to some new Leibniz Law arguments given by Kit Fine (5.4),

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[5]There are other solutions that, though I find them implausible, are not revisionary. For example, deRosset (2011) appeals to the identity of the statue and the lump in order to ground their different kind and modal properties, and such an appeal is not revisionary. However, I cannot accept it because contrary to what this solution would have us believe, a statue (lump) is a statue (lump) because of the existence of its parts and how those parts are arranged and not because of its identity. Moreover, even if the identity of the statue does ground its kind and modal properties, it would seem that something grounds its identity. For the identity of complex objects seems to depend, at least in part, on the identity of their parts and how those parts are arranged. But plausibly, both the statue and the lump have the same parts arranged in precisely the same way. So we are back to square one.

Baker (1995, 1997) has also provided a multi-thinger solution to the grounding problem by appealing to the surroundings of the statue and the lump in order to explain their differences. I do not think that this solution is revisionary. I do, however, find it unsatisfactory. For my reasons why, see Olson's (2001: 346-348) criticisms of Baker's account.

list some advantages of the present solution to similar solutions (§5.5), and show how this solution to the grounding problem can solve a related problem and answer an important question (§5.6).

5.1   Grounding

Two Principles

I take grounding to be a kind of non-causal metaphysical dependence relation that resists analysis in terms of modal notions (Schaffer 2009; Rosen 2010; Audi 2012a).[6] It is the relation that is appealed to in order to articulate a layered view of reality, with the more fundamental entities at the bottom and the less fundamental at the top, and it is the kind of relation that is referred to in the following kinds of claims: truth is grounded in reality; wholes are grounded in their parts; moral properties are grounded in natural properties; what is possible is grounded in what is actual; intrinsic properties are grounded in how their bearers are; holes are grounded in their hosts; hypothetical properties are grounded in categorical properties.

Now my aim here is not to give a theory of grounding. In fact, I will only assume the following two features of grounding. They are

> **Necessitation.** If x grounds y, then necessarily, if x exists, then y exists[7]

> **Link.** If x grounds y, then x (or at least the features of x) grounds the features of y.

Necessitation is, admittedly, not accepted by everyone (Wilson 2012) even if it is a default

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[6]This commits me to saying that the logical form of grounding statements is best captured by the *predicate view*, which treats 'ground' as a predicate. This is in contrast with the *operator view* which thinks that statements of ground are best regimented with a non-truth-functional sentential connective such as 'because'. For a brief introduction to this debate over the predicate and operator views, see Trogdon (forthcoming).

[7]The variables 'x', 'y', and 'z' are also meant to range over pluralities so that **Necessitation** could be read as saying that if the xs ground the ys, then necessarily, if the xs exist, then the ys exist.

position on grounding.[8] But it is not part of my goal to defend it. Rather, I will merely ask that you assume its truth, as seems reasonable, and see what we can do with such an assumption.[9]

Link is what, in large part, generates the grounding problem. For the grounding problem is a problem because what seems to ground the statue also seems to ground the lump. That is, the statue and the lump appear to have the same grounds because they have the same parts arranged in the same ways. But then what explains their different kind and modal properties given the identity of their grounds? If they have the same grounds, then, it would seem, they should have the same kind and modal properties. But this last sentence is reasonable to believe only if something like Link is true. So Link (or something quite close) is needed in order to generate the grounding problem. This justifies my using it.

Grounding Wholes in their Parts

Consider the two figures below, which represent, respectively, a pyramid shaped statue (henceforth *Pyra*) constituted by a lump (henceforth *Lumpy*) in World 1 and Lumpy, but not Pyra, in World 2:

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[8]Wilson's (2012: 9) skepticism over Necessitation is voiced in the following

> Consider, for example, a theistic metaphysics according to which we live and move and have our being in—that is, are grounded in—God. On such a view, I am non-fundamental, but I asymmetrically necessitate God: my existence entails God's existence; but assuming that God has a choice about who or what to create, God's existence does not entail my existence.

Now if such a scenario were the case, then Necessitation would be false. But it seems that there is no reason to deny Necessitation here. For plausibly, when such a metaphysic says that we live, move, and have our being in God, the relation between God and us is not that of grounding, but causing. God's choice about who or what to create is a choice about what God causes to exist. It is not a choice about what God grounds.

[9]For more on the nature of grounding, see, *inter alia*, Schaffer (2012), deRosset (2010, 2013), Raven (2012), Fine (2012), and Trogdon (forthcoming).
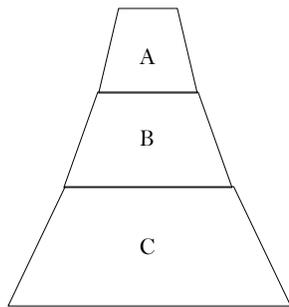
World 1
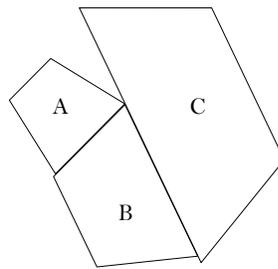
World 2

Pyra is not identical to Lumpy despite the fact that they have the same proper parts. For Pyra has kind and modal properties that Lumpy lacks. Pyra belongs to the kind *Statue* and cannot survive being squashed unlike Lumpy. Now it seems right to think that complex wholes are grounded in their parts; that complex wholes exist because their parts do. After all, in some sense or other, complex wholes are nothing over and above their parts. But that *all* complex wholes are grounded in their parts is false. For if wholes like Pyra and Lumpy were grounded in their parts, then according to **Necessitation**, if A, B, and C exist, then both Pyra and Lumpy exist. But it is not the case that Pyra and Lumpy exist if A, B, and C exist since if A, B, and C were wildly scattered across space, then neither Pyra nor Lumpy would exist. What then is needed in order to ground either Pyra or Lumpy?

In order to answer this, let's look at the relations that obtain between A and B and B and C in World 1. And one of the first things we notice is that A is in contact with B and B is in contact with C. But that A is in contact with B and B is in contact with C is not enough to ground Pyra. For notice that World 2 is such that A is in contact with B and B is in contact with C and yet Pyra does not exist in World 2. Lumpy, on the other hand, does exist in World 2. Indeed, it is plausible to think that in order for a lump to continue to exist, every one of its proper parts has to stand in the ancestral of the contact relation to any other disjoint part. The thought then is that a lump can survive any arrangement of its proper parts so long as each part stands in the ancestral of the contact relation to any

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other disjoint part. So it is natural to think that what grounds Lumpy is not A, B, and C but rather that A is in contact with B and B is in contact with C.[10]

But how about Pyra? As we just saw, it is not enough that Pyra's parts are in contact. What we need here are Pyra's parts to be in contact *in a certain way*. Something like the wider base of A is roughly in full contact with the narrow base of B, and the wider base of B is roughly in full contact with the narrow base of C.[11] Let's call this relation that stands between A, B, and C in World 1 'kontact' and define it as follows: x is in kontact with y iff the wider base of x is roughly in full contact with the narrow base of y. So what grounds Pyra is A's being in kontact with B, and B's being in kontact with C. And observe that this relation holds between A and B and B and C no matter how Pyra is positioned (right side up, up side down, on her side, etc.). This relation is invariant with respect to Pyra's position, and this is precisely the kind of relation we should be looking for in seeking a ground for Pyra.

Now that there is this difference between the grounds of Pyra and the grounds of Lumpy is a good thing. For the mereological structure of a lump is less rigid than the mereological structure of a statue. No matter how you arrange the parts of a lump, the lump continues to exist so long as its parts stand in the ancestral of the contact relation. Not so for statues. Statues need to be arranged in precise ways in order to continue to exist, and so their mereological structure is more fragile than that of a lump.

So what grounds Pyra and what grounds Lumpy are certain *arrangements* of their parts. And this gets things right since wholes like statues and lumps exist not just in virtue of their parts, but in virtue of how those parts are arranged.[12] Grant me then that this is true. And further grant me, as is plausible, that arrangements of objects just

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[10]This is, of course, to simplify matters a bit. For notice that what A, B, and C are is important. Suppose that A, B, and C are each blades of grass. Then their being in contact with one another would not seem to ground their composing a lump. But if A, B, and C are bits of clay, then their being in contact with one another would seem to ground their composing a lump.

[11]I say 'roughly' since, presumably, Pyra could survive A's (B's) moving slightly to the side in such a way that A's (B's) wider base is no longer in full contact with B's (C's) narrow base.

[12]For someone who thinks that, ultimately speaking, parts do not exist in virtue of how their parts are arranged, see Schaffer (2010b).

are facts with objects and relations as constituents (so facts are things like Armstrongian states of affairs). If all this is granted, then what grounds Lumpy are the following two facts: [A is in contact with B] and [B is in contact with C].[13] And what grounds Pyra are the following two facts: [A is in kontact with B] and [B is in kontact with C]. And notice that we get the right result if we apply **Necessitation** to these facts: once these facts exist, then so do Lumpy and Pyra.[14] Now for my solution to the grounding problem.

5.2 Solving the Grounding Problem

What is the Grounding Problem?

I think it is easy to confuse the grounding problem with another similar problem. Focusing on Pyra and its modal properties, the other problem is the problem of showing *how* the grounds of Pyra ground Pyra's modal properties. Generalizing, the other problem is the problem of how to ground the modal properties of objects by appealing to the grounds of those objects. Now it needs to be stressed here that I am not going to attempt to show how to ground the modal properties of Pyra, and therefore I am not going to attempt to show how Pyra's modal properties are grounded in Pyra's grounds. And I do not need to do this in order to solve the grounding problem. For the grounding problem is not the problem of how to ground the modal properties of objects by appealing to their grounds. This is everybody's problem and it is a hard one. Rather, the grounding problem is the problem of specifying the relevant difference between, say, the statue and the lump such that this difference explains *how it can be* that the statue and the lump differ with respect to their kind and modal properties. But in order to solve this problem, all that needs to be shown is that the statue and the lump have different grounds. If the statue and lump have

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[13]I am using '[p]' to stand for 'the fact that p'.

[14]Some may be inclined to think that statues are essentially artifacts, and so we should include among the grounds of Pyra *being made by such and such*. But I argue in §5.6 that artifacts are not essentially artifacts, and so statues are not essentially artifacts.

different grounds, then that they have different modal and kind properties is no longer mysterious. For their having different grounds is relevant with respect to whether they have different kind and modal properties since the kind and modal properties of objects is grounded in either those object's grounds or how those object's grounds are (this is Link). And this is so even if *how* these grounds ground their kind and modal properties is mysterious. And so to show that they *do* have different grounds for their kind and modal properties, and therefore to show how they can have different kind and modal properties, is not to show *how* these properties are grounded. This is something else altogether and it is not my present project.

Pyra and Lumpy

So, focusing on World 1, how can Pyra and Lumpy differ in their kind and modal properties? We've already seen that what grounds Pyra is not what grounds Lumpy. For [A is in kontact with B] and [B is in kontact with C] is a different plurality from [A is in contact with B] and [B is in contact with C]. Now as I stressed above, this is enough to claim that whatever it is that grounds Pyra's kind and modal properties is not what grounds Lumpy's kind and modal properties. For given Link, what grounds an object (or how the grounds of an objects are) grounds what that object is (its kind properties) and how that object can be (its modal properties). And so there is no longer the problem of explaining how Pyra and Lumpy can have different kind and modal properties. Since Pyra and Lumpy have different grounds, then given Link, Pyra and Lumpy do not have the same, but different, grounds for their kind and modal properties. So that they have different kind and modal properties is no longer mysterious. Problem solved.[15]

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[15]Still though, it would be nice if we could show *how* these different grounds explain their kind and their modal properties (which is to engage in the project I said I would not engage in). Here is a try: Focusing on their modal properties, Lumpy can survive Pyra being smashed because were Pyra smashed, Lumpy's grounds, [A is in contact with B], [B is in contact with C], would still exist. But then, given Necessitation, Lumpy would still exist. And Pyra cannot survive being smashed because were Pyra smashed, then nothing resembling what Pyra's grounds are — [A is in kontact with B] and [B is in kontact with C] — would exist. At best we would be left with a partial, and not a full, ground of Pyra. And if Pyra is not fully

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A potential worry. Consider the relations *being-in-kontact-with* and *being-in-contact-with*. I defined the former, in part, in terms of the latter, saying that *x* is in kontact with *y* iff the wider base of *x* is roughly in full contact with the narrow base of *y*. And in light of this, it is plausible to identify the relation between these two relations with the *species-genus* relation. For we explain why something is in kontact (the species) with something else by showing that the two are in contact (the genus) in a certain way (the differentia). So *being-in-kontact-with* is the species and *being-in-contact-with* the genus. Now since we can explain the existence of the species in terms of the existence of the genus and the differentia, which I take to be another way of saying that the existence of the species is grounded in the existence of the genus and differentia (see Rosen 2010), then we should say that *being-in-kontact-with* is grounded, at least in part, in *being-in-contact-with* and not vice-versa. And so [A is in kontact with B] and [B is in kontact with C] is grounded, at least in part, in [A is in contact with B] and [B is in contact with C]. But since the former facts ground Pyra, then one might think that the latter facts ground Pyra as well. But if so, then it follows that what grounds Lumpy grounds Pyra, thereby losing the difference we needed in their grounds in order to solve the grounding problem.

But this objection involves sleight of hand. For Pyra is *fully* grounded in [A is in kontact with B] and [B is in kontact with C], whereas [A is in kontact with B] and [B is in kontact with C] are only *partially* grounded in [A is in contact with B] and [B is in contact with C].[16] And in order for this to create problems, the following principle would have to be true

> If *x* partially grounds *y*, and *y* fully grounds *z*, then *x* fully grounds *z*

But it is not. My right hand partially grounds me. I fully ground the singleton whose sole member is me. But my hand does not fully ground this singleton. And so that Pyra is fully grounded in [A is in kontact with B] and [B is in kontact with C], and that [A is in

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grounded, then Pyra does not exist.

[16]In addition to [A is in contact with B] and [B is in contact with C], we need the differentia in order to fully ground [A is in kontact with B] and [B is in kontact with C].

kontact with B] and [B is in kontact with C] are only partially grounded in [A is in contact with B] and [B is in contact with C], is perfectly unproblematic with respect to explaining how Pyra and Lumpy have different kind and modal properties.

Lumpy and Sumy

We can extend the above reasoning to cases involving mereological sums. Consider Lumpy and the mereological sum, Sumy, that constitutes it.[17] Both Lumpy and Sumy have the same parts (A, B, and C) arranged in the same fashion (A is in contact with B, which is in contact with C). But Sumy, unlike Lumpy, belongs to the kind *Mereological Sum* and can survive being scattered. What grounds this difference between Lumpy and Sumy? Let's begin answering this question by first saying what a mereological sum is: S is a mereological sum of the xs just in case S has as parts all of the xs and nothing is a part of S unless it overlaps one of the xs. Notice that in this definition of what it is to be a sum, no appeal is made to the relations that hold between the xs. All it takes to be a sum of the xs is the existence of the xs. It is therefore natural to identify the grounds of sums with the pluralities that are their parts. What grounds S are the xs. Once the xs exist, so does their sum. So if mereological sums are grounded in their parts, then so is Sumy. So Sumy is grounded in A, B, and C.

But now we can show that Sumy and Lumpy have different grounds. We've already seen that A, B, and C do not ground Lumpy (see §5.1). So what grounds Sumy does not ground Lumpy. Alternatively, [A is in contact with B] and [B is in contact with C] does not seem to ground Sumy *even if it necessitates the existence of Sumy*. Why? For one, the relation *in-contact-with* that holds between A and B and B and C has nothing to do with the grounding of Sumy. The manner in which A, B, and C are related to each other is not relevant to whether Sumy exists as we saw above. What *is* relevant is that A, B, and C

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[17]If you do not believe in sums that's fine. I am not, in this paper, assuming that sums in fact exist. I am only showing that, on the assumption that sums do exist (which is contestable), we can explain how sums and the objects they constitute can have different kind and modal properties.

exist. But then [A is in contact with B] and [B is in contact with C] includes something (the relation *being in-contact-with*) that is not relevant to the existence of Sumy, and therefore would seem not to ground Sumy. For another, it does not follow that if x necessitates y, then x grounds y. My singleton necessitates me but does not ground me. [A is in contact with B] and [B is in contact with C] necessitate that $2 + 1 = 3$ but do not ground that $2 + 1 = 3$. And so on. So that [A is in contact with B] and [B is in contact with C] necessitates the existence of Sumy gives us very little reason to believe that they ground Sumy. Therefore, in light of all this, it is reasonable to believe that what grounds Lumpy does not ground Sumy.

So Lumpy and Sumy have different grounds. And if Lumpy and Sumy have different grounds, and therefore have different grounds for their kind and modal properties (see **Link**), then we have all that we need to explain how they can have different kind and modal properties. So that they have different kind and modal properties is no longer mysterious. Again, problem solved.[18]

Notice what this solution brings out: that it is not merely what parts an object has and how those parts are arranged that is relevant to what it is and how it could be. What is relevant to what an object is and how it can be is, many times, how *some and only some* of the arrangements of its parts are. For objects like statues and lumps, there are some arrangements of their parts that are relevant with respect to what kinds of objects we have and how those objects could be and there are some arrangements of their parts that are irrelevant with respect to what kinds of objects we have and how those objects could be. It is precisely because of this that we can have two objects with all the same parts, arranged in precisely the same way, that differ in their kind and modal properties.

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[18]Very similar reasoning will show why it is that Pyra and Sumy have different kind and modal properties.

5.3 Two Worries

I have been given the following objection: In appealing to the grounds of Pyra and Lumpy in order to explain how it is that they can have different kind and modal properties, I am appealing to kind properties of Pyra and Lumpy. Which kind properties? The kind properties *being grounded in such-and-such*. Pyra has the kind property *being grounded in [A is in kontact with B] and [B is in kontact with C]* while Lumpy has the kind property *being grounded in [A is in contact with B] and [B is in contact in C]*. But if I am appealing to these kind properties (call them 'Grounding Properties') in order to explain how it is that Pyra and Lumpy can have different kind and modal properties, then I have not explained how it is that Pyra and Lumpy can have *these* distinct Grounding Properties. And so how Pyra and Lumpy can differ in *these* Grounding Properties still needs explaining.[19]

My response is simple. I have not appealed to any Grounding Properties of Pyra and Lumpy. I have instead appealed only to their grounds, [A is in kontact with B], [B is in kontact with C], [A is in contact with B], and [B is in contact with C]. It is these facts, which are the grounds of Pyra and Lumpy, that I have appealed to in order to explain how it is that Pyra and Lumpy can have different kind and modal properties. Now admittedly, that these facts ground Pyra and Lumpy entail that they have the Grounding Properties they do. Indeed, it is reasonable to believe that these facts (or at least their natures) ground that Pyra and Lumpy have their Grounding Properties.[20] But their having these properties is consistent with appealing, and only appealing, to the grounds of Pyra and Lumpy in order to explain how it is that they can differ in their kind and modal properties. So the worry disappears.

The second worry concerns whether the present solution to the grounding problem is revisionary.[21] Consider A, B, and C. In World 1, A stands in both the contact and the

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[19]I would like to thank Kathrin Koslicki for this objection.

[20]This is controversial. For more on what grounds facts involving Grounding Properties, see Rosen (2010), Bennett (2011), and deRosset (2013).

[21]Thanks to an anonymous referee for this worry.

kontact relation to B, and B stands in these relations to C. But surely these do not exhaust the relations that obtain between them. For example, A stands in the above-than relation to B, and B stands in this relation to C; A stands in the above-or-smaller-than relation to B, and B stands in this relation to C; A stands in the more-pointy-than relation to B, and B in the less-flat-than relation to C. And so on and so forth. Now given these pairs of facts concerning relations between A, B, and C in World 1, why not think that each such pair grounds a distinct object? After all, if [A is in contact with B] and [B is in contact with C] ground Lumpy, and if [A is in kontact with B] and [B is in kontact with C] ground Pyra, then why doesn't [A is above B] and [B is above C] ground some other object, Abovy? And why doesn't [A is above or smaller than B] and [B is above or smaller than C] ground yet some other object, Smally? The worry here is obvious. The present solution may well require the existence of a great many objects that materially coincide with Pyra and Lumpy. This is, admittedly, revisionary.

Can anything be said to alleviate this worry? I think so. First, notice that it is not a part and parcel feature of this solution that A, B, and C stand in a myriad of relations to each other. This becomes evident when we notice that acceptance of a sparse theory of relations is consistent with this solution.[22] And if one were to accept such a theory (as many do), then, at least in comparison to the number of facts an abundant theory of relations would generate, the number of facts involving the arrangements of A, B, and C is significantly small (unlike an abundant theory of relations, a sparse theory would not admit the existence of [A is above or smaller than B] and [B is above or smaller than C]). From this it follows that the number of objects that materially coincide with Pyra and Lumpy is much smaller on a sparse theory of relations than it would be on an abundant theory (unlike an abundant theory of relations, a sparse theory would not admit the existence of Smally).

Second, suppose we accept what Peter van Inwagen (1990) calls 'Contact' as an answer to the Special Composition Question: the xs compose something if and only if they

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[22]I would like to thank an anonymous referee for suggesting a sparse theory of relations as a way to alleviate the present worry.

are in contact. So we only have an object (or objects) when the parts of that objects are in contact. Now notice that since the grounds of Pyra and Lumpy require that A, B, and C are in contact, then Contact gives us no reason to deny that Pyra and Lumpy exist. However, Contact entails that neither Sumy, Abovy, nor Smally exist since their grounds do not require that their parts are in contact. That is, if Contact is true, then it is a necessary condition on any object that its parts are in contact. But, and focusing on Abovy, the grounds of Abovy — [A is above B] and [B is above C] — can exist without A being in contact with B and B being in contact with C (A can be above B, and B can be above C, without A, B, or C being in contact). So [A is above B] and [B is above C] do not ground Abovy since their existence is not sufficient for the existence of Abovy (since their existence is not sufficient for A, B, and C to compose an object) as it should be if Necessitation is true.

Or suppose we accept Ned Markosian's (1998) brutal composition answer to the Special Composition Question: For any *x*s, if there is an object composed of the *x*s, then it is a brute fact that there is an object composed of the *x*s. One of brutal composition's main virtues is its being consistent with our pre-theoretical beliefs about composition. As Markosian (1998: 233) says

> [brutal composition] alone is consistent with my pre-theoretical views about the world's composite objects.

Now suppose, for sake of argument, that brutal composition is not only consistent with out pre-theoretical beliefs about composition, but that what composite objects exist according to it and what composite objects exist according to our pre-theoretical beliefs largely coincide. Now in World 1, we have [A is above B] and [B is above C]. Do these facts ground an object? Not if brutal composition (under its present characterization) is true. That A is above B and B is above C is not, according to our pre-theoretical beliefs about composition, and therefore according to brutal composition (under its present characterization), sufficient to guarantee an object composed of A, B, and C as it should be if

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Necessitation is true. Generalizing, if brutal composition (under its present characteriza-tion) is true, than there will be many facts involving relations that obtain between A, B, and C that will not ground an object. And what explains why some facts fail to ground an object composed of A, B, and C while others do not fail is simply that, according to brutal composition (under its present characterization), the former facts, unlike the latter, do not necessitate (as they should if Necessitation is true) that A, B, and C compose an object.

Therefore, what answer to the Special Composition Question we opt for can restrict which facts ground objects in a principled, non-arbitrary manner. Indeed, anyone who favors a non-revisionary answer to the Special Composition Question will favor an an-swer that does not allow all sorts of objects to exist. But then there will be many facts involving relations that obtain between A, B, and C that simply fail to ground any objects since they fail to require that A, B, and C compose an object.

So, unlike the two-thinger solutions mentioned at the beginning of this paper, where it is part and parcel of such theories that one accept a revisionary metaphysic, it is not (or at least not obviously) part and parcel of the present solution that one accept a revisionary metaphysic. And this is what I claimed on behalf of my solution at the beginning of this paper.[23] One will, however, most likely get a revisionary metaphysic if they combine the present solution with either an abundant theory of relations or a liberal answer to the Special Composition Question. But in these cases, the source of having a solution to the grounding problem that is revisionary is in large part due to accepting something other than the present solution; it is in large part due to accepting either an abundant theory of relations or a liberal answer to the Special Composition Question, neither of which is essential to the present solution.[24]

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[23]I said that "what I now want to do is provide a solution to the grounding problem that does not demand that we substantially revise our view of reality."

[24]It is worth noting that someone who accepts either an abundant theory of relations or a liberal answer to the Special Composition Question will, in all likelihood, have no problems with a revisionary metaphysic since such positions (especially one that accepts a liberal answer to the Special Composition Question) already commit one to metaphysically revisionary claims.

5.4 Finean Differences

Fine (2003) has showed us that the kind and modal differences between Pyra and Lumpy do not exhaust their differences.[25] For example, Pyra is well-made but Lumpy is not. Pyra is admired but Lumpy is not. Pyra is beautiful but Lumpy is not. Can appealing to the grounds of Pyra and Lumpy explain why they have these distinct properties? I think so. In order to show why I think this, let me begin by showing why some might think that if Pyra is well-made, admired, and beautiful, then so is Lumpy.

Pyra is well-made because of certain feature of Pyra's parts. So, Pyra is well-made because Pyra's parts were arranged by hand, with careful attention to fine details and where the ratios of the size of the parts are as they should be, etc. But of course, the same is true of Lumpy. When Lumpy constitutes Pyra, Lumpy's parts are arranged by hand, with careful attention to fine details and where the ratios of the size of the parts are as they should be, etc. But then it should be equally true of Lumpy that Lumpy is well-made since Lumpy has those properties that Pyra has in virtue of which Pyra is well-made. And similar things can be said with respect to the other supposed differences between Pyra and Lumpy. For example, suppose that Pyra is admired because it is both well-made and molded by some famous sculptor. But it is equally true of Lumpy, when Lumpy constitutes Pyra, that Lumpy is well-made (as I just argued) and molded by some famous sculptor. So it would seem that if Pyra is admired, then so is Lumpy since Lumpy has those properties that Pyra has in virtue of which Pyra is admired.

However, Pyra, and not Lumpy, is well-made, admired, and beautiful. And if so, then it is not entirely correct to say that Pyra is well-made because Pyra's parts were arranged by hand, with careful attention to fine details and where the ratios of the size of the parts are as they should be, etc. After all, as I just argued, Lumpy has these properties as well. What then is needed in order to make it the case that Pyra, but not Lumpy, is

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[25]See both Frances (2006) and King (2006) for responses to Fine's argument that the one-thingers have to adopt implausible positions in the philosophy of language in order to resist these non-kind and non-modal differences between statues and lumps. See Fine (2006) for a counter-response.

well-made? Something along the following lines: Pyra is a statue and Lumpy is a lump of clay, and statues, unlike lumps of clay, are the kinds of things that can be made well. We can meaningfully predicate of statues that they are well-made. But the meaningfulness of such predications are at best strained, and at worst non-existent, when applied to lumps of clay. There is, at the very least, a kind of oddity in saying that lumps of clay are well-made that does not exist when we say that statues are well-made. So the relevant difference between Pyra and Lumpy in virtue of which one is, but the other is not, well-made is that one is, but the other is not, the kind of thing that it is natural to claim is well-made. So Pyra is well-made because Pyra's parts were arranged by hand, with careful attention to fine details and where the ratios of the size of the parts are as they should be, etc., and because *Pyra is a statue*. Since Lumpy is not obviously the kind of thing that can be well-made, and therefore not a statue (since statues are obviously the kinds of things that can be well-made), then what, in large part, explains why Pyra is well-made but Lumpy is not is that Pyra is, and Lumpy is not, a statue. And the same goes for why Pyra is, and Lumpy is not, admired or beautiful. Since Lumpy is not obviously the kind of thing that can be admired or beautiful, and therefore not a statue (since statues are obviously the kinds of things that can be admired or beautiful), then what, in large part, explains why Pyra is admired or beautiful but Lumpy is not is that Pyra is, and Lumpy is not, a statue. And so it would seem that these Finean differences between Pyra and Lumpy depend, in large part, on the kind differences between Pyra and Lumpy.

In light of all this, it can be shown that appealing to the grounds of Pyra and Lumpy can explain these Finean differences between Pyra and Lumpy. For as I showed above, what grounds the kind of thing Pyra is (a statue) is not what grounds the kind of thing Lumpy is (a lump of clay). But then what explains why Pyra is well-made and Lumpy is not is, in large part, that the grounds of Pyra are distinct from the grounds of Lumpy. Since the difference in their grounds explains why they are of different kinds, and since their being of difference kinds, in large part, explains why, say, one is made well but the other is

not, then given, as seems reasonable, that partial explanation is transitive, the difference in their grounds, in large part, explains why one is made well but the other is not. So appealing to the grounds of Pyra and Lumpy can explain why they have their Finean differences. And so that they have these differences is no longer mysterious. Again, problem solved. Finean differences between Pyra and Lumpy are, just like the modal and kind differences, explained by appealing to the grounds of Pyra and Lumpy.

5.5 Improvements on Similar Solutions

Those familiar with the literature on the grounding problem will notice that the present solution to the grounding problem is a variant of previous attempted solutions (Levey 1997; Rea 1997). What I wish to do in this section is show that my solution constitutes an improvement over these solutions and is therefore to be preferred. Consider then Rea's (1997: 371) description of his solution:

> No one will deny that the stuff filling the region occupied by Socrates is arranged both humanwise and lumpwise ... Some of those properties and relations [of the stuff filling the region] make it the case that the stuff in that region is arranged lumpwise; others make it the case that the stuff in that region is arranged humanwise. Thus, it is quite reasonable to suppose that the properties that supervene on these properties and relations are distributed accordingly. Since the human being in the region supervenes on the humanwise arrangement of the microparticles ... his properties are just those that supervene on the human-determining properties and relations exemplified by those particles; and since the lump in the region supervenes on the lumpwise arrangement of the microparticles ... its properties are those that supervene on the lump-determining properties and relations exemplified by those particles. On this view, the human being and the lump will share some of their intrin-

sic qualitative properties … but there will be others that they won't share …
The explanation for the differences lies simply in the fact that the two objects
supervene on different events.

Now Rea's solution appeals to supervenience in order to explain why Socrates and the
lump have different properties. But appealing to supervenience here is problematic in
large part because the supervenience relation is not the grounding relation (Zimmerman
1995; Bennett 2004; deRosset 2011) . And if supervenience is not grounding, then it is
not clear why anyone should expect the subvening properties to ground the superve-
nient ones.[26] Better than, and hardly surprising, that we focus on grounding, and not
supervenience, in order to solve the grounding problem.

Rea's solution to the grounding problem does not tell us what those humanwise and
lumpwise arrangements of microparticles are that Socrates and the lump supervene on.
That is, Rea does not describe in any detail what these human and lump-determining
properties and relations are and how they are different. Now this might seem like a
rather insignificant omission on Rea's part. As an anonymous referee pointed out, if you
grant the underlying metaphysics of Rea's solution, then it would be crazy to deny that
there are different arrangements of the microphysical stuff on which Socrates and the
lump supervene on. And so the fact that Rea fails to say anything about the nature of
these arrangements is neither here nor there. I agree. However, not everyone does.[27] For
example, here is what Bennett (2004: 365) has to say about Rea's solution

Rea wants to solve the 'which is which' problem by combining a version of
coincident-friendly supervenience and an appeal to 'lump-determining' and
'statue-determining' microproperties. However, without further elucidation

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[26]This is no mark against Rea. He was, at this time, using the tools of the day, supervenience, whereas I
am working with the tools of today, grounding.

[27]Micheal Rea has told me, in conversation, that when his 1997 solution was discussed with other philoso-
phers at the time, a number expressed, in personal correspondence, skepticism over the claim that there are
these humanwise and lumpwise arrangements of microparticles that Socrates and the lump, respectively,
supervene on.

of just what those properties are supposed to be, I do not see how this move counts as saying that nonsortalish [non-modal, non-kind] properties are doing the work.

In other words, what Bennett wants from Rea is a description of what those humanwise and lumpwise arrangements of microparticles are in order to be in a better position to asses his solution. My solution should go some way in satisfying Bennett's worry since it *does* go into detail on what exactly the grounds of Pyra, Lumpy, and Sumy are (and it does so without appealing to sortalish properties, as the first part of §5.3 made clear).[28]

Rea is concerned with *microphysical* supervenience, which involves the intrinsic qualitative properties of macrophysical objects supervening on their microphysical structures. I did not concern myself with microphysical supervenience, and with good reason. For telling a detailed story about how microphysical objects have to be arranged in order to get the macrophysical objects and their properties is too difficult. (This, perhaps, explains why Rea did not tell such a story.) Telling such a story would involve a myriad of complex multi-grade relations holding between a plethora of microparticles. It would require that we have to do some serious biology and chemistry (and perhaps physics) in order to satisfy a Bennett-style skeptic who, as we saw above, claims that not enough has been said about what these human and lumpwise arrangements of particles are. But we do not have to tell such a story. For the real issue does not have to do with explaining the kind and modal differences of macrophysical objects by appealing to their *microphysical structures*. Rather, the real issue has to do with explaining the kind and modal differences of macrophysical objects by appealing to *some* structure *or other* of their parts. But then we are not required to ask questions about their microphysical structure. We are only required to descend to some level of decomposition and show that, at that level, we can explain their kind and modal differences. And this is much easier to do since it is

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[28]Indeed, even though I did not use a human and a lump of tissue in order to illustrate the grounding problem, I have, by going into some detail on what exactly grounds Pyra, Lumpy, and Sumy, shown that there is no *in principle* problem for cases that involve a human and a lump of tissue coinciding. A solution of the same *kind* can be given for a human and a lump of tissue that was given for Pyra, Lumpy, and Sumy.

much easier to describe how large proper parts of wholes have to be arranged in order to ground the wholes than it is to describe how microphysical parts of wholes have to be arranged in order to ground the wholes. So starting with the microphysical structure of wholes in order to explain why macrophysical objects differ in their kind and modal properties is to start at the wrong end. Better if we start, as I did with Pyra, Lumpy, and Sumy, with their macrophysical structure.

5.6   Related Issues

I have argued that the present solution constitutes an improvement (however big or small) over a similar solution. But, and this has not been pointed out before, this kind of solution is also fruitful. Why? Because the materials needed for this solution can solve another problem, and answer a question, related to the grounding problem.[29]

The Problem of Material Coincidence

In addition to the grounding problem, there is also the problem of how two objects, the statue and the lump, can share all of their proper parts. This is the problem of material coincidence. Many think that material coincidence is impossible because it would violate the following mereological principle:

> **Uniqueness.** For any material objects x and y, if x and y have the same proper parts, then $x = y$

I admit to finding Uniqueness appealing. However, we can see why it is both false and not implausible to reject by showing how the statue and the lump can share all of their proper parts. In §5.1 I argued that we should ground complex wholes in facts involving how their parts are related. Now notice that there is nothing problematic in saying that

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[29]For an overview of problems and questions related to the grounding problem, see Paul (2010).

two or more facts can share their *material* constituents. For example, [the ball is red] and [the ball is round] unproblematically have the same material object, the ball, as a constituent. Or [Obama is sitting] and [Obama is thinking] have the same material object, Obama, as a constituent. And so, assuming that there are facts, there is nothing problematic in saying that two or more facts share their material constituents. We will therefore say that facts materially coincide when they have the same material constituents. Taking a look again at the facts that ground Pyra, [A is in kontact with B] and [B is in kontact with C], and the facts that ground Lumpy, [A is in contact with B] and [B is in contact with C], we can see that Pyra's grounds and Lumpy's grounds materially coincide, having the same material constituents A, B, and C. But then we have a fairly straightforward explanation for why Pyra and Lumpy materially coincide: Pyra and Lumpy materially coincide because their grounds do. That is, what explains why Pyra and Lumpy share all of their proper parts is that their grounds share all of their material constituents. And since there is nothing objectionable in saying that two or more facts share their material constituents, then appealing to these facts in order to explain how Pyra and Lumpy can materially coincidence should be unproblematic. So we should accept the following principle:

> If material objects x and y are grounded in facts that materially coincide, then x and y materially coincide.

So we have an explanation for why Pyra and Lumpy materially coincide that also shows why it is not implausible to reject Uniqueness.[30] But can we also explain why Uniqueness is so appealing? Yes. Consider the following principle:

> If material objects x and y have all the same grounds, then $x = y$.

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[30]Unsurprisingly, we also have a rather straightforward explanation for why Pyra and Lumpy are co-located. For what grounds Pyra and what grounds Lumpy are co-located. And given the following plausible principle,

If material objects x and y are grounded in facts that are co-located, then x and y are co-located,

it follows that Pyra and Lumpy are co-located.

I think this principle is extremely plausible.[31] And it helps explain why Uniqueness is accepted by so many. Since it is natural to think that the proper parts of a whole are what grounds the whole, then of course, if two wholes, x and y, have all the same proper parts, then according to the above principle, they must be identical. So really (or so I am boldly conjecturing), the intuition that Uniqueness is getting at is that if x and y have all the same grounds, then they are identical. And this intuition seems, at least to me, correct. The problem though is that, with one exception (see fn. 32), the proper parts of a whole do not ground the whole. At best, they partially ground the whole. What we need, in addition to the parts, are facts involving how those parts are related. But once we see this, we can see why there is nothing problematic in rejecting Uniqueness.[32]

That my solution to the grounding problem can explain why material coincidence is unproblematic counts in its favor. Looking back at some of the two-thinger solutions to the grounding problem, we can see that some of them do not have the resources to explain how material coincidence is unproblematic. For appealing to brute kind and modal properties or modal property fictionalism seems to have nothing to do with how two objects can share all of their proper parts. Accepting that material objects have non-material parts is able to explain how material coincidence is unproblematic since it allows us to deny that the statue and the lump share *all* of their parts. So both my solution to the grounding problem and the non-material parts solution have the resources to explain why material coincidence is not much to worry about. This counts in their favor. Of course, my solution, and not the non-material parts solution, does not require that we believe that material objects have non-material parts. This counts in favor of my, but not the non-material parts, solution.

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[31]Priority monists (Schaffer 2010b) will most likely reject this principle since they think that everything that is grounded is grounded in the cosmos. But of course, this does not mean that this principle is not plausible.

[32]Mereological sums are the only kinds of wholes that Uniqueness is true of. Why? Because mereological sums are grounded in their parts. And so for any two mereological sums, x and y, if x and y have all the same proper parts, and therefore all the same grounds, then of course $x = y$.

The Constitution Question

Here is a good question: What is constitution? Here is an intuitive answer:

> *x* constitutes *y* just in case *y* is made out of *x*.

Pyra is a statue and Lumpy a lump of clay. And so Lumpy constitutes Pyra just in case Pyra is made out of Lumpy. But this answer to the above question is not very informative. For now we want to ask "what does it mean to be made out of something?" Here is my answer:

> *y* is made out of *x* just in case of all the possible ways of arranging *x*'s parts so as to preserve *x*, some *and only some* of those facts involving how *x*'s parts are arranged are such as to ground *y*.

So we have

> *x* constitutes *y* just in case of all the possible ways of arranging *x*'s parts so as to preserve *x*, some *and only some* of those facts involving how *x*'s parts are arranged are such as to ground *y*.[33]

Notice how this answer satisfies the following three conditions on constitution: constitution is *transitive*, *irreflexive*, and *asymmetric*. Consider Sumy, Lumpy, and Pyra. Sumy constitutes Lumpy and Lumpy constitutes Pyra. By the transitivity of constitution, Sumy constitutes Pyra. And my answer says it does since of all the possible ways of arranging Sumy's parts so as to preserve Sumy, some and only some of those facts involving how Sumy's parts are arranged are such as to ground Pyra.

My answer does not allow Pyra to constitute itself. For it is not true that of all the possible ways of arranging Pyra's parts so as to preserve Pyra, some and only some of those facts involving how Pyra's parts are arranged are such as to ground Pyra. For all

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[33]This answer is somewhat similar to an answer Doepke (1996) gives.

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the possible ways of arranging Pyra's parts so as to preserve Pyra are such that *all* of those facts involving how Pyra's parts are arranged, and not only some of them, ground Pyra.

My answer does not allow Pyra to constitute Lumpy and Lumpy to constitute Pyra. For if Pyra were to constitute Lumpy, then of all the possible ways of arranging Pyra's parts so as to preserve Pyra, some and only some of those facts involving how Pyra's parts are arranged are such as to ground Lumpy. But none of these facts involving Pyra's parts that preserve Pyra ground Lumpy. We've already seen some of these facts: [A is in kontact with B] and [B is kontact with C]. And we saw that such facts do not ground Lumpy (see §5.2). Are there other facts involving how Pyra's parts are arranged that preserve Pyra and appear to ground Lumpy? How about [A is in contact with B] and [B is in contact with C]? Do these facts both ground Lumpy and involve how Pyra's parts are arranged? Yes, but they are not facts that *preserve* Pyra. For these facts can exist even if Pyra does not (recall, in §5.1, the figure of Lumpy in World 2). Are there other facts involving how Pyra's parts are arranged that we could appeal to that both preserve Pyra and ground Lumpy? I cannot think of any. And so I think it reasonable to conclude that, according to my answer to the constitution question, Pyra does not constitute Lumpy.

Ryan Wasserman (2004: 700) has presented a potential counter-example to my answer to the constitution question. He says

> One might, for example, suggest that [Lumpy] is accidentally statue-shaped and that this fact explains the existence of [Pyra]. But this cannot be right. [Lumpy] could have gained its particular shape by the perfectly natural processes of erosion, for example. In such a case, [Pyra] would certainly not exist. So [Lumpy's] shape is clearly not *sufficient* for the existence of [Pyra]. And, on any ordinary notion of explanation, the *explanans* must be sufficient for the *explanandum*. So [Lumpy's] shape cannot be the property we are looking for. (brackets mine)

The thought here is that one of a number of ways of arranging Lumpy's parts ground Pyra. But such facts involving how Lumpy's parts are arranged could have taken place naturally, without the aid of an agent. And according to Wasserman, if this had happened, then Pyra would not have existed. And so these facts involving how Lumpy's parts are arranged do not ground Pyra since, according to **Necessitation**, if x grounds y, then necessarily, if x exists, then y exists. Now Wasserman's point is that statues are artifacts, and artifacts are essentially the creation of agents. But I disagree. I do not think that artifacts are essentially artifacts. Consider Michelangelo's *David* and a possible lump of clay whose parts are numerically identical to *David*'s parts and where *David* and the lump are qualitative duplicates. Now suppose that the lump took the shape it did naturally. Would that incline us to say that the lump, in this possibility, does not constitute *David*? It should if Wasserman is right. But these are not my intuitions. For it seems that we do have *David* in this possibility even though, in this possibility, *David* is not an artifact. And why think that *David* has to be shaped by an agent in order to exist? Indeed, with respect to whether *David* exists or not, why does it matter if *David* is shaped by an agent, nature, or a robot? Would *David* not exist if, say, it was da Vinci, and not Michelangelo, who molded the lump? This seems false. Is it then that a person has to shape the lump in order for the lump to constitute *David*? But why favor persons here over robots and nature? Is there an argument for this? If there is, Wasserman did not give it. So I think that in order for Wasserman's counter-example to succeed, much more needs to be said in defense of artifacts being essentially artifacts.

5.7 Conclusion

I have given a solution to the grounding problem that does not require that we substantially revise our view of reality. In this respect I claim that my solution fares better than the others mentioned at the beginning of this paper. Of course, that a solution is revi-

sionary is not a decisive blow against it. And that a solution is non-revisionary is not a decisive reason in its favor. Other theoretical virtues need to be taken into account. One of them is fruitfulness. Is a solution to the grounding problem able to solve and answer other questions in related areas? If so, then it is fruitful and this counts in its favor. The solution offered to the grounding problem in this paper is able to solve a related problem and answer an important question. And so in addition to not requiring a revisionary metaphysic, it is also fruitful. We therefore have a solution to the grounding problem that deserves to be taken seriously.

Chapter 6

Defending Facts from Mereology

A somewhat popular line on facts has it that facts are complex wholes composed of parts (Moore 1953: 303; Russell 1956; Taylor 1985; Mellor 1995; Armstrong 1997, 2010). In all cases, the parts involve both something that instantiates (typically an individual, but this need not be) and something that is instantiated. So, [*a* is F] has *a* and F as parts.[1] Following others, let's call this line on facts *Compositionalism*. Unfortunately for Compositionalism, there are a number of compelling arguments against it. Perhaps the strongest arguments are those that conclude that facts violate very plausible principles of mereology.[2]

Since I like Compositionalism, I want to defend facts against these charges. And I will. I will therefore start off by listing, in the order of weakest to strongest, four mereological objections to Compositionalism that employ four mereological principle. I will then argue that the intuitions undergirding these principles underdetermine them and conclude that, in light of this, the mereological objections against Compositionalism are ultimately question-begging.

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[1]From here on out, '[p]' stands for 'the fact that p'.

[2]Since Compositionalism says that facts are wholes with parts, and since 'mereological' simply mean 'of or pertaining to parts and wholes', then, given Compositionalism, mereological principles are principles that apply to facts.

6.1 Against Facts

Facts and Uniqueness

Let me get right to it. Assume Compositionalism and suppose that a is R to b, that b is R to a, and that R is a non-symmetric relation. So we have two non-identical relational facts [aRb] and [bRa]. Both facts are therefore composed of the same proper parts but not identical. But this violates Uniqueness:

Uniqueness. If x and y have the same proper parts, then $x = y$[3]

Again, assume Compositionalism and suppose that a is F, b is G, a is G, and b is F. So we have [Fa], [Gb], [Ga], and [Fb]. Now further suppose that we fused the first two facts and fused the second two facts, resulting in the following molecular facts [Fa + Gb] and [Ga + Fb].[4] Notice that, at least at the atomic level, both molecular facts are composed of the same proper parts. So we have another violation of Uniqueness.[5] So if Compositionalism is true and we have the above kinds of facts, then Uniqueness is false. But how can Uniqueness be false? As Achille Varzi (2008a, 108) says, Uniqueness reflects "the basic nominalistic dictum 'No difference without a difference maker,'" and surely this dictum is correct.

Lewis (1986b, c), the first to give this argument against Compositionalism, agrees, saying that if our choice is between facts (or as he refers to them, truthmakers) and uniqueness, then "we're left with a stark clash of principles: a truthmaker for every truth, versus uniqueness of composition. If that's the choice we face, I say it's no contest." (1986c, 93).

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[3]All formulas are to be universally closed.

[4]'+' denotes fusion.

[5]But things get worse. Given parts a, b, F, and G, given that we are rather permissive when it comes to when two or more facts compose another, and given that we have the facts [Fa + Gb] and [Ga + Fb], we can compose [Fa + Gb + Ga + Fb], [Fa + Gb + Ga], [Fa + Gb + Fb], [Fa + Ga + Fb], and [Gb + Fa + Gb]. So it would seem that we can compose seven distinct wholes out of the same proper parts (at least at the atomic level) if we admit facts. Conclusion: If you accept Uniqueness, then so much the worse for facts.

Facts and Weak Supplementation

Assume Compositionalism and suppose the property *being a fact* is located, as defenders of immanent universals would say. Call (in this paragraph) the property *being a fact* 'F' and the property *being located* 'L'. So F is L. So we have [F is L]. Suppose that we also have the conjunctive property *being a fact and located*. So we have the property F&L. Now [F is L] is both a fact and located. So we have [[F is L] is F&L]. But this violates Weak Supplementation:

> **Weak Supplementation.** If *y* is a proper part of *x*, then there's something, *z*, such that (*i*) *z* is a proper part of *x*, and (*ii*) *z* is disjoint from *y*.[6]

Since [F is L] is a proper part of [[F is L] is F&L], then there must be some *z* such that *z* is a proper part of [[F is L] is F&L] and is disjoint from [F is L]. But there isn't. For both F and L, and therefore F&L, overlap with [F is L].[7] So [[F is L] is F&L] violates Weak Supplementation. Supposing then that there facts with this structure, it follows that if Compositionalism is true, then Weak Supplementation is false. But how could Weak Supplementation be false? As Kathrin Koslicki (2008, 180) says, Weak Supplementation is "partially constitutive of the meaning of 'is a proper part of'". But if Koslicki is right, then any metaphysic which posits complex wholes that violates Weak Supplementation affirms an analytic falsehood — a vice of any metaphysic.

Facts and Strong Company[8]

Assume Compositionalism and suppose that *a* is F. So we have [*a* is F]. Suppose now that [*a* is F] is F, giving us [[*a* is F] is F]. [[*a* is F] is F] has as parts [*a* is F] and F. But F is a proper part of [*a* is F]. So [[*a* is F] is F] violates Strong Company:

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[6] *z* is disjoint from *y* iff there is no *w* such that *w* is a part of *z* and a part of *y*.
[7] I will assume that conjunctive properties have their conjuncts as parts. So F&L has F and L as parts.
[8] This objection and the one to follow has been forcefully made by Bynoe (2011).

> **Strong Company.** If y is a proper part of x, then there's something, z, such that
>
> (*i*) z is a proper part of x, and (*ii*) z isn't a part of y.

Now since, assuming Compositionalism, there are facts that instantiate universals that are parts of those very facts (e.g., [[a is located in L_1] is located in L_1]), and since such facts violate Strong Company, then it follows that if Compositionalism is true, then Strong Company is false. But Strong Company does not appear false. In fact, it appears, like Weak Supplementation, to be a conceptual truth concerning proper parthood. As William Bynoe (2011, 94), who gives this very criticism of Compositionalism, says, "if Compositionalism is to have content, it must involve the claim that the relation that holds between a fact and the entities it 'ties' together obeys [Strong Company]." Anything that fails to obey Strong Company is not, in any sense of the 'mereological', a mereological whole.

Facts and Weak Company

Assume Compositionalism and suppose that F is a self-instantiating universal. So we have [F is F]. According to Compositionalism, this fact has F, and only F, as a proper part. So F is the sole proper part of [F is F]. But this violates Weak Company:

> **Weak Company.** If y is a proper part of x, then there's something, z, such that
>
> (*i*) z is a proper part of x, and (*ii*) z is not identical with y.

Now there appear to be self-instantiating universals (e.g. being a property).[9] Supposing that this is right, then it follows that if Compostionalism is true, then facts of the form 'F

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[9]Perhaps there are no self-instantiating universals since the only kinds of properties that exist are sparse (or relatively sparse) and self-instantiating universals, if they exist, would not be sparse. But this seems implausible. Consider Armstrong, a champion of a sparse view of properties, who thinks that the universal *being a property* is sparse (1978: 145; 1983: 141-2). Or suppose that everything is in space, then the universal *being in space* is in space. Or suppose that everything is in time, then the universal *being in time* is in time. Or suppose that everything is located, then the universal *being located* is located. Or take the universal *being thought of* or *being liked*. Someone can think of the universal *being thought of* resulting in *being thought of* is thought of. Or someone can like the universal *being liked* resulting in *being liked* is liked. In all these cases, we have self-instantiating universals. And it seems plausible that at least some of these cases involve sparse (or relatively sparse) properties. (I would like to thank Graham Oddie for helpful discussion on this issue.)

is F' exist. And if facts of the form 'F is F' exist, then it follows that Weak Company is false. So if Compositionalism is true, then Weak Company is false. But how could Weak Company be false? As Peter Simons (1987: 26) says:

> How could an individual have a single proper part? That goes against what we mean by 'part'. An individual which has a proper part needs other parts in addition to *supplement* this one to obtain the whole

Indeed! And according to Bynoe (2011: 93)

> If [Weak Company] is denied, one loses one's grasp on what it means for a complex entity to be made out of other entities, i.e. its parts. It makes no sense to say that a thing has a part, but has only one.

So no one should deny Weak Company as a principle of anything deserving to be called a mereological system. Weak Company is a sacrosanct principle of mereology. And so, given the existence of self-instantiating universals, it follows from the truth of Weak Company that Compositionalism is false.

Since Compositionalism violates all of the above mereological principles, then it looks as if Compositionalism is bordering the incoherent in saying that facts are built up mereologically. But looks here are deceiving. In order to see why, a brief word on the notion of a *repeatable entity* is necessary.[10]

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[10]It should be noted that these four objections against Compositionalism are objections that rely solely on the *intrinsic* nature of facts. There are other mereological objections to facts that do not rely solely on the intrinsic nature of facts. For example, consider [*a* is F] and the mereological sum *a*+F. Given the existence of mereological sums, we have a violation of Uniqueness, and therefore have an objection against Compositionalism. But this objection i) depends on the existence of mereological sums, and so is an objection that does not rely solely on the intrinsic nature of facts, and ii) this objection does not have any of its source in the existence of repeatable entities (on what a repeatable entity is, see the next section). But as I will show in §6.3, three of the four objections against Compositionalism are generated precisely because facts have as parts repeatable entities. So this kind of objection to Compositionalism should be distinguished from the kind of objection that I am considering in this paper (thanks to David Liebesman for discussion on this issue).

6.2   In Defense of Facts

Repeatables

The view of properties typically accepted amongst compositionalists is one according to which properties are *immanent universals* (as opposed to transcendent universals and tropes). And such a view has it that properties wholly exist where they are instantiated. Such a view has it that if F is simultaneously instantiated, then F simultaneously exists *here* and *there* (or as I will often put it, exists more than once over).[11] And this notion, the notion of an entity simultaneously existing here and there, is the notion of a repeatable entity. And so an immanent view of properties is a view according to which properties repeat.[12] Now as we will see in §6.3, that Compositionalism has repeatables entering into the part-whole relation is what gets Compositionalism into much of the present trouble (or rather, as I will argue, it is what, in large part, saves Compositionalism). And in order to show why this is so, it will first be necessary to show that the intuitions undergirding the principles that Compositionalism violates underdetermine these very principles.

Weak Company

Simons (1987: 26), in motivating Weak Company, says that a whole with a proper part, *y*, "needs other parts in addition to supplement" *y*, while Varzi (2008b) says "one may consider the idea that whenever something has a proper part, it has more than one—i.e., that there is always some *mereological difference* (a remainder) between a whole and its proper parts." I have these intuitions. A whole with a proper part does need other proper

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[11]The 'here' and 'there' locutions need not imply the existence of different locations (although, of course, this is the most natural way of understanding it). For example, if spirits exist and exist outside of space, so that Michael is a spirit and Gabriel is a spirit, then the property *being a spirit* wholly exists "where" Michael exists and also "where" Gabriel exists but does not wholly exist in any location.

[12]It is worth noting that certain ontologies have it that individuals can repeat as well. For example, O'Leary-Hawthorne (1995), in defending the principle of the identity of indiscernibles, appeals to a theory of individuals where individuals are bundles of immanent universals. Whether or not you like bundle theories, O'Leary-Hawthorne shows that *if* you accept such an ontology, *then* you should accept an ontology that includes individuals that can repeat; that can exist here and there.

parts to supplement the first one. In some sense or other, it has to have more than one proper part. Some kind of supplementation principle has to be true for proper parthood. And that is precisely why I, along with Simons and Varzi, reject the part-whole model on the left, where x is the whole, y its proper part, and the line the proper parthood relation.
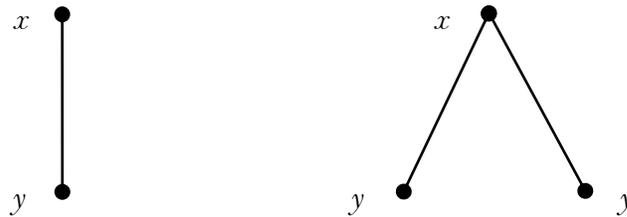
But the intuition that a whole with a proper part, y, needs a part to supplement y need not favor Weak Company since it is ambiguous between a strong and weak reading. "needs a part to supplement y" can mean (and when uttered, perhaps almost always means) "needs a *non-identical* part to supplement y."[13] But there seems to be no overriding reason to accept this stronger meaning for "needs a part to supplement y." For one can I instead gave it the meaning "needs *some* part to supplement y." That is, instead of interpreting "need a part" as "needs a non-identical part", we can reasonably interpret it with the weaker "needs some part." And this latter, and weaker, reading seems to capture well the intuition undergirding Weak Company. If y is a proper part of x, x does need some part to supplement y. But this is perfectly compatible with y being the sole proper part. For the part that supplements y can be y itself *if y is a repeatable*. So, I claim, we should distinguish between a whole being composed of a single proper part *simpliciter*, and a whole being composed of a single proper part twice, thrice, etc., over. Indeed, the above model on the right does not strike me as a problematic model of part and whole and

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[13]Consider the above quote by Simons, who says that a whole with a proper part, y, "needs other parts in addition to supplement" y, while Varzi, in the above quote, says "one may consider the idea that whenever something has a proper part, it has more than one—i.e., that there is always some *mereological difference* (a remainder) between a whole and its proper parts." The 'other' in 'needs other parts' and the 'more than one' in 'whenever something has a proper part, it has more than one' tell us that the parts that supplement y need to be distinct from y. So in motivating Weak Company, the part that supplements y for both Simons and Varzi has to be distinct from y.

satisfies the intuition undergirding Weak Company, unlike the one on the left, despite the fact that both are models of a whole with, in one sense, one proper part. Why? Because the left model is a model of a whole with a single proper part *simpliciter*. No repeatability is involved. But the model on the right makes clear the repeatable nature of the proper part and, in so doing, does away with what was problematic with the model on the left.[14]

So, I claim, the intuition undergirding Weak Company underdetermines it. And so if we want to get from the intuition undergirding Weak Company to Weak Company itself, something else is going to have to be assumed.

## Strong Company and Weak Supplementation

Now just as with Weak Company, I want to show that the intuitions undergirding both Strong Company and Weak Supplementation do not quite get us at them.

The intuition undergirding Strong Company and Weak Supplementation is the following: Every proper part of a whole is such that, if removed, it leaves a *remainder*. That is, every proper part of a whole is such that, if removed, there will remain a proper part of that whole.[15] As Varzi (2008b) says of Strong Company, "the idea is that the removal of a proper part should leave a remainder." And just as I agreed with the intuition undergirding Weak Company, so I agree with this intuition. But it is ambiguous in precisely the same way that the intuition undergirding Weak Company is. For the removal of a proper part, y, can leave a remainder by leaving something that is not identical to a part of y, or the removal of a proper part, y, can leave a remainder by just leaving something or other. But I see no reason to accept the former since the latter sufficiently captures the intuition undergirding Strong Company and Weak Supplementation. So long as something is left after removing y, then the above intuition is satisfied. But the latter is consistent with the

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[14]Thanks to Alex Skiles for helpful discussion on this section.

[15]It is well known that Strong Company fails to satisfy this intuition since it allows, in gunky worlds, wholes every one of whose proper parts overlaps every other proper part. For a model of this kind of whole, see the top right model in picture in the picture below.

remainder being a part of y on the assumption that either y, or a proper part of y, *repeats*. That is, if we remove y, then either y is left as a remainder (and so in removing y, we have removed y here but not y there), or a proper part of y is left as a remainder, and so a proper part of y repeats since it exists as a proper part of y and as a remainder of the whole y is removed from. In both cases then, something, z, exists twice over as a part of some whole but we have, in removing y, only removed z once over. But then we are still left with z as a part of that whole. And this is why the two models at the bottom do not strike me as problematic models of part and whole unlike the models at the top.
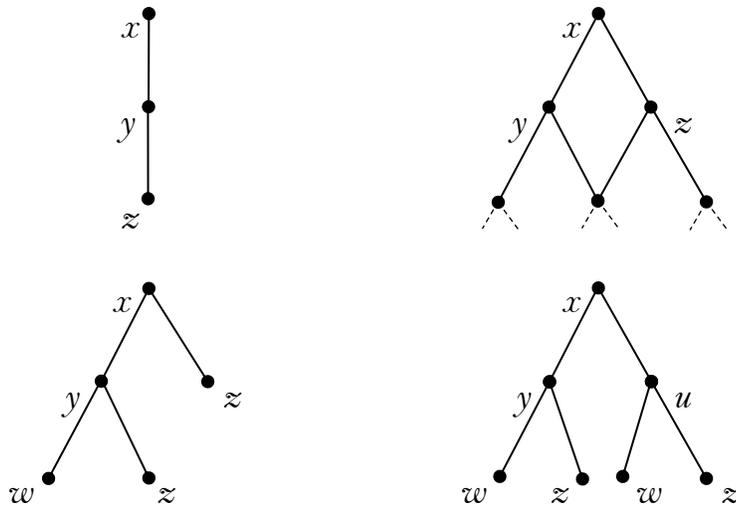
If you remove y, a proper part of x, from the models at the top, you are left with nothing.[16] But if you remove y, a proper part of x, from the models at the bottom, then you are clearly left with something, albeit something that exists once or more over as a part of x. But you are still left with something. So you are left with a remainder. And that is why the models at the bottom do not strike me as objectionable models of part and whole despite the fact that they violate Strong Company and Weak Supplementation.

And so, just as the intuition undergirding Weak Company underdetermines it, the intuition undergirding Strong Company and Weak Supplementation underdetermines them. And so if we want to get from the intuition undergirding these two principles to

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[16]Or at least in the case of the model at the top right, it is by no means clear what is left once you remove y.

these very principles, something else is going to have to be assumed.

Uniqueness

Uniqueness says that no two objects can have the same proper parts. And the intuition undergirding Uniqueness is the nominalist dictum 'no difference without a difference maker' which can be expressed mereologically as follows: There is no difference in the identity of two wholes without a difference in the identity of the things in virtue of which those wholes exist, i.e., their makers. In other words, two non-identical wholes cannot be "made up", or exist in virtue of, the same things. But this intuition, which I whole heartedly agree with, does not get us Uniqueness. For it is consistent with the existence of non-identical objects that have the same proper parts and yet do not exist or are made up, at least solely, in virtue of those proper parts. Facts are good examples of this since what is relevant to their existence is more than the existence of their proper parts. This point has been made abundantly clear by Armstrong (1997, 2004). Facts, such as [aRb] and [bRa], do not exist in virtue of a, b, and R. Facts are entities over and above their proper parts. Even if a, b, and R exist, it does not follow that either [aRb] or [bRa] does, as it should if these facts exist in virtue of their proper parts. And so what is relevant to the existence of facts is not so much the existence of their proper parts, but how those parts are arranged. So the existence of both [aRb] and [bRa] is consistent with the above intuition. So the above intuition is consistent with the falsity of Uniqueness since it is consistent with the existence of facts that violate it.

Now if all this right, then the intuition undergirding Uniqueness underdetermines it. And so if we want to get from this intuition to Uniqueness, something else is going to have to be assumed.

6.3   What has to be assumed?

The alert reader will have noticed two things with respect to the right model in the first picture and the bottom models in the second picture. The first is that the right model in the first picture and the bottom models in the second represent the mereological structure of the facts that, as we saw in §6.1, threaten Compositionalism. The right model in the first picture represents the mereological structure of [F is F], the model on the bottom left of the second picture represents the mereological structure of [[*a* is F] is F], and the model on the bottom right of the second picture represents the mereological structure of [[F is L] is F&L]. This is important since it shows that the facts that violate Weak and Strong Company, and Weak Supplementation, are all consistent with the intuitions undergirding them. And this goes some way in vindicating Compositionalism.

The second is that the nodes in these models no longer represent objects *simpliciter*, as they are typically portrayed as doing. Rather, they represent objects that *repeat* by representing objects that wholly exist at more than one *location*, *instance*, *occurrence*, or other. And what this shows us is that if the intuitions undergirding Weak and Strong Company, and Weak Supplementation are to properly motivate these very principles, then it is necessary to add to these intuitions that repeatable entities cannot enter into part-whole relations. It is necessary to add to them that things that exist wholly *here* and wholly *there* are not mereologically apt. For if we add this claim to these intuitions, then Weak and Strong Company, and Weak Supplementation do follow. However, and unfortunately for the opponents of Compositionalism, this addition is not only controversial, but also begs the question against the compositionalist.

How about Uniqueness? What needs to be added to the intuition that I suggested undergirded it? The answer is the claim that *all* composite objects exist in virtue of their proper parts. This, in conjunction with the intuition that I said undergirded Uniqueness, does give us Uniqueness. However, and unfortunately for the opponents of Compositionalism, this addition is not only controversial, but relying on it to motivate Unique-

ness, and then using Uniqueness to argue against Compositionalism, is question-begging. Why? Because anyone who accepts Compositionalism will reject that facts exist in virtue of their proper parts, as I made clear in the previous section.

Of course, none of this is meant to support the claim that for the compositionalist, proper parthood does not need to be obey any supplementation principles or principles obeying the nominalist dictum that there can be no difference without a difference maker. On the contrary, I think that proper parthood must obey some supplementation principle or other and that the nominalist dictum is correct. But the task of this paper is not to provide compositionalist friendly mereological principles. The task of this paper is simply to show that if the intuitions undergirding the four mereological principles we have looked at are to properly motivate these principles, then they are going to require accepting something no compositionalist will. But then it appears that any objection from these principles against Compositionalism will be question-begging.[17]

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[17]It is worth mentioning here a recent paper by Karen Bennett (2013) who provides a *role-occupant* mereology that effectively allows one to respond to the above objections. However, with respect to the above worries for Compositionalism, my response differs from a Bennett-style response in the following ways: (*i*) My response, unlike Bennett's, focuses on the repeatable nature of immanent universals in order to show why these mereological objections to Compositionalism fail. (*ii*) My response, unlike Bennett's, does not require accepting a controversial mereology that has it that mereology should be understood, at least in part, in terms of mereological roles. So my response requires accepting less. (*iii*) Bennett, unlike me, does not attempt to show that the intuitions undergirding the various principles we have looked at underdetermine them. At best, she provides principles that go some way in satisfying some of these principles. But, at least with respect to responding to the above mereological worries, this is to do more than is necessary. If my response to these worries is on target, then there is no need to posit controversial mereological principles that merely go some way in satisfying, say, Weak Supplementation in order to show why these arguments against Compositionalism fail.

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