

Mereological Nihilism and Theoretical Unification

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Contents

1	Introduction	2
2	Nihilism and Theoretical Unification (I)	2
3	Nihilism and Theoretical Unification (II)	9
4	Composition as Identity to the Rescue?	17
5	Conclusion	21

Abstract: Mereological nihilism (henceforth just “nihilism”) is the thesis that composition never occurs. Nihilism has often been defended on the basis of its theoretical simplicity, including its ontological simplicity and its ideological simplicity (roughly, nihilism’s ability to do without primitive mereological predicates). In this paper I defend nihilism on the basis of the *theoretical unification* conferred by nihilism, which is, roughly, nihilism’s capacity to allow us to take fewer phenomena as brute and inexplicable. This represents a respect in which nihilism enjoys greater theoretical simplicity than its rivals which has not yet been explored, and which is immune to many of the objections which have been leveled against previous arguments for nihilism from nihilism’s theoretical simplicity. Composition as identity might be thought to confer a similar degree of theoretical unification as nihilism. I end the paper by arguing that this is not the case.

1 Introduction

Mereological nihilism (henceforth just “nihilism”) says that composition never occurs. So, tables, chairs, dogs, tennis balls, and so on, don’t exist, under the assumption that these things are composite objects if they exist. Recent debates over mereological nihilism have largely turned on the alleged relative theoretical simplicity of nihilism vs its rivals¹ (see, e.g., Dorr 2002; Schaffer 2007; Horgan, Potrč 2008: Ch.7; Bennett 2009; Sider 2013; Cowling 2013, 2014; Kriegel 2013; Woodard 2013; Tallant 2014; Hawley 2014; Korman 2015; Smid 2015). Nihilism’s relative theoretical simplicity is important because it gives us some reason to think that nihilism is *true*.

In this paper I’d like to draw philosophers’ attention to several respects in which nihilism is simpler than its rivals which have been underappreciated (in most cases, not acknowledged at all) in extant discussion of the issue, and their implications for the manner in which we judge the theoretical merits accrued to nihilism in virtue of its relative theoretical simplicity. While extant discussions of nihilism discuss nihilism’s ontological and ideological simplicity (I’ll say what that means below), I’ll defend nihilism on the basis of a different sort of theoretical simplicity, the *theoretical unification* conferred by nihilism. As we’ll see, an argument for nihilism from the theoretical unification conferred by nihilism is immune to the objections which have been leveled against previous arguments for nihilism.

2 Nihilism and Theoretical Unification (I)

The extent to which a theory can offer a *unifying* explanation of otherwise unrelated facts is widely regarded as a theoretical virtue. Thus, “science increases our understanding of the world by reducing the total number of independent phenomena that we have to accept as ultimate or given. A world with fewer independent phenomena is, other things equal, more comprehensible than one with more” (Friedman 1974: 15). This theoretical virtue can arguably be reduced to the virtue of *simplicity*: insofar as a theory offers a unified explanation of otherwise brute phenomena, it offers us a simpler picture of the world. In particular, unifying explanations of the sort cited by Friedman increase our “overall understanding of the world” insofar as “our total picture of nature is simplified via a reduction in the number of independent phenomena that we have to accept as ultimate” (Friedman 1974: 18).

¹By nihilism’s “rivals” I mean, of course, any alternative theories according to which composition occurs.

Similarly, rather than offering a *unifying* explanation of some otherwise independent phenomena, a theory might *remove* any need to posit that phenomena, which in turn eliminates any attendant need to explain those phenomena or take them as “ultimate or given.” All other things being equal, if a theory is capable of eliminating the need to posit otherwise independent phenomena in this manner, it thereby offers a simpler theory of the world, just as a theory which offered a unifying explanation of that phenomena would, other things being equal, offer a simpler picture of the world.

An example might illustrate the sort of distinction I’m getting at. For decades cosmologists have recognized respects in which our universe appears to be “fine-tuned” for life (two classic discussions of the subject include Tipler and Barrow 1986; Leslie 1989). In other words, various features of the universe (constants, boundary conditions) are such that if they were even minutely changed, life, as far as we can tell, would be unable to develop. How should we respond to this fact (assuming, for a moment, that it is a fact)? One very bad response would be to suppose that there is no need for explanation, to just take the fine tuning as brute and inexplicable. A much more popular response is to replace the inexplicable fine tuning with some less surprising brute fact. For example, perhaps there are many universes (a multiverse), the features of which vary from universe to universe in such a manner that it would be unsurprising if at least one of the universes was fine tuned for life. Or perhaps God is responsible for the fine tuning (this explanation is, of course, compatible with the previous explanation of the fine tuning in terms of a multiverse). In either case we may still be left with something brute and inexplicable (a multiverse or multiverse generating mechanism, or God), but at least we’ll have *fewer* brute facts than we would if we offered no explanation for the large combination of features which appear to be fine-tuned for life.² So, these are two examples where we replace

²This claim should be qualified. I say that we will have “fewer” brute facts, but it’s not obvious that that’s true. As Michael Rea has pointed out to me, perhaps everyone is committed to positing an infinite number of brute facts, in which case the fact that theory A avoids positing brute facts which theory B must posit (and doesn’t incur commitments to additional brute facts which B will not require) will not leave A saddled with fewer brute facts – whichever theory you adopt, you’ll still be left with an infinite number of brute facts. This concern needs to be addressed, since throughout this paper I claim that nihilists are committed to “fewer” brute facts than their competitors. I have two responses. First, nihilists (or most nihilists) may very well be committed to only a finite number of brute facts, in which case the fact that they manage to avoid positing brute facts which their competitors will have to posit (without incurring additional theoretical commitments) will result in the nihilist having to posit fewer brute facts. Second, even if the nihilist and the non-nihilist will both be stuck positing an infinite number of brute facts, it is still plausible that if theory A (nihilism, or some nihilist friendly theory) does

one set of brute facts with some smaller set of brute facts. An alternative response to the alleged fine tuning is to show that, as a matter of fact, there isn't any fine tuning after all – for example, perhaps intelligent life is compatible with a broader range of constants and boundary conditions than we thought. This way we eliminate the need to believe in the puzzling features of the world in question, and any need to take them as brute or inexplicable, or to try to replace them with some smaller, less puzzling, set of brute facts (a multiverse, or God).

It is in *this* respect – its ability to eliminate the need to posit several otherwise independent phenomena, and any attendant need to either explain them or take them as brute and inexplicable – that I claim nihilism is far simpler than its competitors, *besides* its ontological parsimony, and its ideological parsimony.³

I'll go into the details in a moment, but in outline what I'm claiming is this. The mere concept of composition or parthood doesn't tell us everything we'd like to know about the way composition works. For example, there is an ongoing debate regarding the nature of *constitution*, a relationship that's alleged to obtain between two composite objects which share all of the same proper parts.⁴ (Whether other conditions must be met as well for us to have a genuine case of constitution is itself one of the points of contention.)⁵ The

not require that we posit one or more brute facts, while theory B does require that we posit those brute facts, and theory A does not incur any additional theoretical commitments which are not incurred by theory B, then theory A is simpler than theory B.

³I'm really developing a line of thought which is implicit in most peoples' rejection of Markosian's "brutal composition" (Markosian 1998). According to Markosian composition sometimes occurs, and it sometimes doesn't occur, but there's no reason *why* it occurs in some circumstances but not others. In other words, when composition does and doesn't occur is just a *brute fact*. Probably the main reason most philosophers think Markosian's view is implausible is because it is wildly unparsimonious, precisely because it posits so many brute facts. It is in this same respect – its ability to do without certain brute facts – that nihilism is simpler than any of its competitors.

⁴It is sometimes claimed that "constitution is identity" (see, e.g., Noonan 1993). What this means is that two objects which are allegedly such that one of them constitutes the other (for example, the lump and statue mentioned in the footnote below) are in fact identical with one another – there aren't actually *two* objects to stand in a constitution relationship. Given the way I'm using the term "constitution," the view which goes under the slogan "constitution is identity" is just the view that constitution never occurs (while, of course, identity *does* occur). "Constitution is identity," then, is not one view among several regarding the manner in which constitution works. Rather, it's just the view that constitution doesn't happen. I include this note to forestall confusion below. When I say, for example, that such-and-such a philosopher doesn't believe constitution is possible, I am not suggesting, of course, that he or she thinks *identity* is impossible, despite the fact that constitution is sometimes said to "be identity."

⁵One of the more famous examples of constitution is in the case of the alleged statue

bare concept of parthood does not tell us whether constitution is possible – it is not *analytically* true, or true by definition, that constitution is or is not possible. Nor does the concept of parthood settle some of the debates regarding the manner in which constitution is alleged to work (details below). So, if we believe in composition, then in addition to the bare ideological primitive of parthood, we’ll also need one or more attendant principles regarding the manner in which constitution works, or indeed whether constitution is possible. This will be a theoretical cost (in particular, a loss of theoretical simplicity) *in addition* to that incurred by the acceptance of the primitive parthood relation and composite objects. I should be clear that the theoretical cost in question will be incurred even by those who do not believe that constitution is possible. The question for them will be: *why* is constitution impossible? It does not appear to be *analytically* true that constitution is impossible – that is, it isn’t included in the mere concepts of parthood or composition that two or more objects cannot share all of the same proper parts.

There are, in fact, several theoretical costs of this sort (described in greater detail in the next section below) that will have to be incurred by those who believe in composition, costs that go beyond the theoretical cost already incurred by accepting composition in the first place. Any theories regarding the nature of composition that are able to offer a unifying explanation of all of these otherwise disparate mereological principles/laws/whatever will, other things being equal, be simpler, and therefore more likely to be true, than competing theories of composition which leave these disparate phenomena brute and unexplained. Importantly, nihilism has an edge on every theory of composition, since nihilism is capable of *eliminating* the need to posit the otherwise disparate phenomena in question, and any attendant need to explain them. This is because, even if some competing theory of composition is capable of offering a unifying explanation of one or more of the disparate mereological phenomena in question, such an explanation will not fall out of the mere concept of parthood – in other words, the explanation in question will not merely cite the fact that such-and-such features of parthood relations are *by definition* features of any relation worthy of the name “parthood.” So, the believer in composition will, at best, believe in a primitive parthood relation, *as well* as whatever feature of the world is supposed to offer a unifying explanation of one or more of the items cited below.

Here’s what my argument *isn’t*. It is sometimes suggested that one moti-

which is coincident with, and shares all of its proper parts with, a lump of bronze. Despite the fact that the lump and the statue share all of their proper parts, they’re not identical, since they have different historical properties, or modal properties, or whatever.

vation for accepting nihilism is that it does away with puzzles and paradoxes regarding the existence or persistence conditions of composite objects. For example, accept nihilism and you've got an easy solution to the Ship of Theseus puzzles: there is no Ship of Theseus, and there never was, so there's nothing to be puzzled at. This sort of argument for nihilism bears some superficial resemblance to the argument I'm defending in this paper, but it is *not* the same argument. For starters, some of the brute facts nihilism helps us avoid haven't generally been thought of as puzzles or paradoxes regarding composite material objects. Second, I'm defending nihilism on the basis of its *theoretical simplicity*, not on the basis *merely* of its purported ability to help us avoid puzzles/paradoxes regarding material objects. The latter consequence of nihilism might at best amount to a pragmatic motivation for accepting nihilism. Third, other metaphysical theories are equally capable of helping us avoid the puzzles and paradoxes in question, even if such views do not result in the sort of theoretical unification offered by nihilism.⁶

How is my argument for nihilism on the basis of the theoretical unification afforded by nihilism related to other arguments for nihilism? In particular, how does it relate to arguments for nihilism on the basis of nihilism's ontological or ideological simplicity? Before ending this section I'd like to describe these distinct arguments for nihilism, with the hope that this will indicate the manner in which my argument for nihilism differs from these previous arguments.

First, you might think that nihilism is true because of nihilism's *ontological* simplicity (nihilism is defended at least in part on the basis of its ontological simplicity in Horgan, Potrč 2008). There are actually two points here which might be thought to count in nihilism's favor. First, adopting nihilism allows us to quantify over fewer things, since nihilism says there aren't any composite objects. A theory which allows us to quantify over fewer things is, all other things being equal, more likely to be true (cf. Nolan 1997). Second, adopting nihilism allows us to quantify over fewer *kinds* of things, since, while nihilists might still quantify over objects, they don't quantify over *composite* objects. A theory which allows us to quantify over fewer *kinds* of things is, all other things being equal, more likely to be true. The argument for nihilism from the theoretical unification conferred by nihilism does not cite the relative ontological parsimony of nihilism as a reason to think that nihilism is true. What's more, while several objections have been raised against arguments for nihilism from nihilism's ontological parsimony

⁶Sider (2001: Ch.5), for example, defends four-dimensionalism from the purported fact that it is "the best unified theory of the paradoxes of coincidence." Four-dimensionalism might very well offer a potential solution to these paradoxes. Nevertheless, it does not give us the sort of theoretical unification which nihilism gives us.

(see, e.g., Schaffer 2009, 2015; Smid 2015), such objections do nothing to undermine the argument for nihilism from the theoretical unification conferred by nihilism.

Here's an example to illustrate this point. Schaffer (2015) commends the principle "do not multiply fundamental entities beyond necessity" on the basis of a "get the most bang for the buck" methodological principle. For Schaffer, the "buck" is the number of fundamental entities, while the "bang" is the number of derivative entities which follow from, or are grounded in, the fundamental entities. This sort of methodological principle, if it replaces (as Schaffer thinks it should) more general principles commending ontological parsimony, might be thought to undermine arguments for nihilism from nihilism's ontological simplicity, insofar as nihilists will not enjoy greater economy than their competitors with respect to *fundamental* entities (Schaffer 2015: §6; see also Schaffer 2009). But "bang for the buck" principles seem to me to be most appealing when they are construed broadly, to mean something like "get the most explanatory work (explain *as much of what needs to be explained*) out of the least theoretical commitments." The latter sort of methodological principle is part of what's going on in appeals to theoretical unification as a theoretical virtue (or as a special case of simplicity as a theoretical virtue). It is in part because we can get more "bang for the buck" that we should be inclined to accept theories which confer theoretical unification. So, far from counting against nihilism's total theoretical simplicity,⁷ Schaffer's methodological inclinations may actually count in nihilism's favor.

A second argument for nihilism is from nihilism's *ideological* simplicity. A touchstone of recent discussions of nihilism's simplicity (vs its rivals) is Sider's "Against Parthood" (Sider 2013), wherein Sider's positive argument for nihilism consists almost entirely⁸ in enumerating the respects in which nihilism is "ideologically" simpler than competing theories. A theory's ideology is to be contrasted with its ontology (see, e.g., Quine 1951). Sider's characterization of the distinction is most relevant here: "A theory's ontology consists of the objects that the theory posits – the range of its quantifiers, if the theory is to be true. Its ideology consists of the undefined notions it employs, both logical and extra-logical" (Sider 2013: 238-239).⁹

⁷And I should emphasize that Schaffer is specifically concerned with nihilism's alleged *ontological* simplicity, rather than its total theoretical simplicity.

⁸On the "almost" qualification, see footnote 12.

⁹The ideology/ontology distinction is intimately related to similar distinctions cited in discussions of non-empirical theoretical virtues. For example, as Baker (2013) suggests, we might think of the ideological complexity of a theory as the theory's "elegance" or "syntactic simplicity," and the ontological complexity of a theory as the "parsimony"

While Sider recognizes the significant ontological simplicity of nihilism, insofar as nihilists forgo quantification over composites, he doesn't think this sort of simplicity is much of a theoretical virtue (Sider 2013: 239). By contrast, however, the *ideological* simplicity of nihilism is considerable and noteworthy, insofar as it allows us to do without mereological primitives.¹⁰ Recently several philosophers have published objections to Sider's argument (see, for example, Bennett 2009; Cowling 2013, 2014; Tallant 2014), but none of these objections does anything to undermine the argument for nihilism from the theoretical unification afforded by nihilism. For example, Bennett (2009) and Tallant (2014) argue that the ideological parsimony which nihilism gains from eliminating mereological primitives is counterbalanced by the fact that nihilists will need to take on new "arranged F-wise" predicates (for example, while the nihilist will deny that there are any tables, she will still say that there are "simples arranged table-wise").¹¹ This objection does nothing to undermine my argument for nihilism, since my argument does not rely on nihilists' purported ability to make do with fewer primitive predicates than their competitors.

I hope it's clear, then, how my argument for nihilism, from the theoretical unification afforded by nihilism, differs from previous arguments for nihilism on the basis of its theoretical simplicity. My argument for nihilism is from the theoretical unification afforded by nihilism, which in practice amounts to the brute facts which nihilism allows us to do without. This argument doesn't seem to have anything to do with the ontological commitments which nihilism helps us do without, or with the ideological commitments (construed as undefined n-ary predicates, or logical apparatuses) nihilism helps us do without. My argument for nihilism, then, is, as far as I can tell, a genuinely new argument for nihilism, albeit one which has important similarities to other arguments for nihilism on the basis of its theoretical simplicity.

exhibited by the theory.

¹⁰Sider consistently speaks of nihilism's ability to eliminate the "parthood" relation, where presumably the term "parthood" here refers to its standard use among philosophers discussing composition (so that, for example, everything is trivially a part of itself). But, of course, there are several interdefinable mereological relations, any one of which we might choose to take as primitive. These include, for example, parthood, proper parthood, overlap, and disjointedness (for more details regarding the manner in which these relations are interrelated/interdefinable, see Simons 1987). It would be more accurate, therefore, to say that nihilism allows us to get rid of any of these mereological primitives. That being said, at several points in this paper, for ease of exposition, I've followed Sider in writing simply of nihilism's ability to do without the "parthood" relation.

¹¹For a response to Bennett's and Tallant's objection, see Brenner 2015.

3 Nihilism and Theoretical Unification (II)

In this section I go into greater detail regarding the respects in which nihilism offers theoretical unification. There are various phenomena which those who believe in composition will need to take as brute and inexplicable. Nihilism does without the phenomena, thereby allowing us to avoid having to take them as brute or inexplicable.

Principles of composition.

Let's start with what van Inwagen calls "principles of composition," that is, "principles ... that govern the ways in which the properties of a composite object are determined by the properties of and the relations that hold among its parts" (van Inwagen 1990: 43).¹² These include, for example, the purported facts that wholes weigh as much as the sum of the weight of their (non-overlapping) parts, have volumes that are the sum of the volumes of their (non-overlapping) parts, are located where their parts are, etc.¹³ In short, properties of composites are very widely regarded as supervening on the properties of their parts. I argue momentarily that principles of composition are brute – they resist further explanation in terms of some other property instantiated by wholes or parts. Nihilists, however, can do without principles of composition, since nihilists don't believe in composite objects. So, insofar as nihilism allows us to do without brute principles of composition, nihilism enjoys greater theoretical simplicity than its competitors.

The supervenience relationship between part and whole is sometimes regarded as somewhat mysterious. Cameron (2014), for example, asks "Why are your parts always where you are? ... why does the whole inherit properties from its parts? ... How can you share exactly the same space as your parts at the same time?" (Cameron 2014: 90). He comments: "when one relatum drags along the other(s), it calls out for explanation; when some facts supervene on others, it calls out for explanation" (Cameron 2014: 91; see also Sider 2007: 75).

What, then, accounts for the relationship between a whole and its parts? Cameron gives the following answer:

¹²You might think of principles of composition as *mereological laws*. Perhaps this is what Sider refers to when, in a brief parenthetical remark, he writes that nihilism's ability to eliminate "the need for fundamental laws of mereology is a further epistemic benefit of nihilism" (Sider 2013: 242), in addition to the ideological simplicity afforded by nihilism's elimination of mereological primitives.

¹³I don't mean to suggest that everyone who believes in composition will accept all of these purported principles of composition. I provide these examples of some purported principles of composition just to give a sense of what I mean by the phrase "principles of composition."

Because, in general, a derivative object inherits its properties from what gives ground to it, in that the properties of the derivative thing supervene on the properties of the things that ground its existence. And this is true because the derivative object has its properties *in virtue of* the features of its grounds (Cameron 2014: 97)

Of course, some believers in composition will reject grounding (for example, van Inwagen 2014). I think this rejection is mistaken, but whether or not you call it “grounding,” if you believe in composition then you will almost certainly admit that there’s *some* relation between parts and wholes such that the properties of one explain the fact that the other has some of *its* properties.¹⁴ This is because those who believe in composition invariably believe in the supervenience in question, and it’s implausible that the properties of wholes and their proper parts would just *happen* to correlate with one another in such a systematic manner.¹⁵ What’s important here is the point Cameron goes on to concede:

Is this just shifting the problem? Don’t we simply now need an explanation for *why* derivative objects have their properties in virtue of the features of their grounds? Well, *te quoque* for composition as identity (Cameron 2014: 97)

I’ll discuss composition as identity below. The important point to note here is that whether or not believers in composition who accept composition as identity are, as far as principles of composition go, in the same boat as those who *don’t* believe in composition as identity, *nihilists* are not. Nihilists don’t need to explain principles of composition because they do not *believe* in principles of composition.

There are really two things crying out for explanation here: (i) why does the supervenience between properties of parts and properties of wholes obtain? and (ii) why does the supervenience obtain in the manner it does? After all, if, say, some objects ground (or explain more generally, if you’re not a fan of grounding) the set of those objects, and the properties of the set supervene on the properties of the objects, this doesn’t tell us *how* they supervene. Few people would want to say that the set is *located* where its

¹⁴One exception is if you’re a proponent of composition as identity, which I discuss in §4 below.

¹⁵It’s widely assumed that the direction of explanation here will always proceed from parts to wholes, although this isn’t universally accepted. According to Schaffer’s priority monism, for example, at least one whole (the cosmos) grounds its parts. See in particular Schaffer 2010.

member are, for example. So, there isn't *that* sort of supervenience here – the locations of sets don't supervene on the locations of their members, and indeed sets are not supposed to be located at all. By contrast, the locations of (located) mereological wholes *are* generally thought to supervene on the locations of their parts. Interestingly, this latter point isn't universally endorsed by philosophers who believe in composition. For example, Saucedo (2011) argues, on the basis of certain combinatorial principles, that mereological facts are independent of locational facts. So, for example, it's possible that the region in which a composite object's proper parts are located entirely fails to overlap with the region in which the composite is located (Saucedo 2011: 263, 279-280). That Saucedo takes this possibility very seriously underscores the fact that the manner in which the properties of composites supervene on the properties of their proper parts is not settled by the mere concepts of parthood or composition.

So, how should we answer (i) and (ii)? As far as I can tell Cameron has no answer: it's just a brute fact that these supervenience relationships obtain, and that they have the characters that they do. He writes, for example, "Plausibly, ... when there are some things, they collectively have the properties they do *in virtue of* of the things each having the properties they have. This *in virtue of* claim, I think, is of the same status as that concerning derivative objects having their properties in virtue of how their grounds are: both claims are massively plausible, and resist further explanation" (Cameron 2014: 98). Cameron is actually talking about composition as identity here, but in the next sentence he says that this means composition as identity is "on a par with composition as a superinternal [grounding] relation," implying that given a grounding conception of composition, there's no explanation for the supervenience relationships between a whole and its parts – those supervenience relationships "resist further explanation."

The supervenience relations cited in (i) and (ii), then, will be brute contingent facts, or, if facts regarding composition are necessary, brute necessary facts. They plausibly aren't included in the mere *concept* of composition or parthood – that is, it is not analytically true, or anything like that, that such supervenience relations obtain if composition occurs. Nihilism, by contrast, eliminates the need to posit supervenience relationships between wholes and their parts, thereby eliminating any need to answer (i) and (ii).

Here's a related issue. Some philosophers think that the properties of a whole are not always determined by the properties of its proper parts. There's "holism," for example, which, as van Inwagen (who doesn't accept holism) puts it, is

The thesis that the properties of organisms are not wholly deter-

mined by, do not wholly supervene upon, the properties of their parts.... According to holism, even a complete and correct list of principles of composition would not enable a perfect reckoner – the Laplacian Intelligence, say – to reckon the properties of wholes from the complete truth about the intrinsic properties of and the relations that hold among the parts that compose the wholes (van Inwagen 1990: 90)

There are other views in the neighborhood of holism, that of Merricks (2003) among them, since Merricks thinks some composite objects (namely, us) can cause events which are not causally overdetermined by their proper parts. Whether or not holism or any view very much like holism is correct is *not* settled by the mere concept of composition, a point which van Inwagen tacitly concedes: “Whether holism is correct, I do not know. Like most of my contemporaries, I am strongly inclined to think it is not correct, though I can’t put my finger on what my reasons for thinking so are” (van Inwagen 1990: 90). I suspect that many philosophers share van Inwagen’s sentiment here. The important point to note in the present context is that whether or not holism is true seems as if it would be a brute fact. Again, nihilism can do without this brute fact, since nihilism settles the issue *against* holism.

So, to repeat the main claim I’m making in this section, it seems to me that nihilism is significantly simpler than its competitors insofar as nihilism eliminates the need to posit brute principles of composition. It’s interesting to compare this point to a similar point that’s often made against mind-body dualism. Dualism (both property and substance dualism) is often rejected because it is a less simple theory than its competitors. One of the respects in which dualism is more complex than its competitors is insofar as dualists will need to posit psychophysical laws which correlate brain states and mental states. J.J.C. Smart writes

If it be agreed that there are no cogent philosophical arguments which force us into accepting dualism, and if the brain process theory and dualism are equally consistent with the facts, then the principles of parsimony and simplicity seem to me to decide overwhelmingly in favor of the brain-process theory. ... dualism involves a large number of irreducible psychophysical laws ... of a queer sort, that just have to be taken on trust, and are just as difficult to swallow as the irreducible facts about the palaeontology of the earth with which we are faced on Philip Gosse’s theory (Smart 1959: 156)

(According to “Gosse’s theory” the Earth was created in 4004 B.C. with all the signs of an old Earth inexplicably present.) So, one reason people reject dualism is because it requires these brute psychophysical laws.¹⁶ When faced with the prospect of these psychophysical laws, there are two ways you might respond. First, you might try to simplify the laws, deriving them from some smaller number of brute laws or correlations (this is a large part of what Chalmers tries to accomplish in Chalmers 1996: Part 3). A second way to respond is what the physicalist does: reject psychophysical laws entirely. This is certainly the more parsimonious route, something the dualist should concede – what the dualist should claim is that we have reason to be dualists, and so reason to posit some psychophysical laws, *despite* the fact that positing those laws makes dualism less theoretically simple than its competitors. The nihilist is like the physicalist in this respect, insofar as the nihilist rejects principles of composition outright.

Modal properties of composite objects.

Moving along, here are some further questions the believer in composition will have to deal with. Do composite objects (all of them or some of them?) exist “automatically” when their proper parts exist (Lewis 1986), or do the proper parts have to instantiate certain properties, for example, be shaped in a certain manner, in order to compose (Fine 1999; Koslicki 2008)? More generally, does whether or not some *xs* compose a *y* supervene merely on the intrinsic properties of the *xs* and the relational properties they instantiate with respect to one another (van Inwagen 1990: 12), or might it also supervene on relations the *xs* instantiate with respect to something else, a sculptor for example (Baker 1997)? *What* sorts of changes in the existence or distribution of its parts could some composite object survive? These are all questions regarding the *modal properties* (broadly construed) of composite objects. These questions certainly seem as if they should have answers, but the mere *concepts* of parthood or composition do not seem to

¹⁶As Bennett puts it: “To refuse to answer the question at all [of how to account for psychophysical correlations] is to say that every single psychophysical correlation holds as a matter of brute fact. And that is an awful lot of brute correlations. Physical process P is reliably accompanied by a sweet taste. Quite similar physical process P* is reliably accompanied by a slightly less sweet taste. And so forth ... It would be very strange indeed if each such correlation were a fundamental law! That would commit the dualist to an enormous stock of fundamental laws and properties beyond those that the physicalist endorses” (Bennett ms: 8). Perhaps the believer in composite objects will not require this many principles of composition or mereological laws. My point is simply that if you find this sort of consideration compelling (dualism is less plausible insofar as it is less parsimonious insofar as it posits irreducible psychophysical laws which alternative theories will *not* need to posit), then you should find the same sort of consideration to count against belief in composition.

settle the issues. It is not true *by definition*, for example, that the fact that some x s compose a y supervenes on the intrinsic properties of those x s, as well as the relational properties they instantiate with respect to one another, regardless of the relational properties they instantiate with respect to any other objects. The answers to the sorts of questions posed above, then, seem as if they would be brute facts, either contingent or necessary. Or at any rate this is true if nihilism is false. Nihilism, by eliminating altogether the need to posit composition relations, provides immediate answers to all of those questions.¹⁷

The mereological pairing problem.

Why is it the case that a particular composite object is associated with *these* particular proper parts, rather than some other proper parts? We might think of this as a mereological pairing problem, in light of its similarity with so-called pairing problems for substance dualism.¹⁸ To give a concrete example, if I make two qualitatively indistinguishable tables, Table₁ and Table₂, which are such that their parts do not overlap, why is it the case that Table₁ is associated with *these* proper parts, and Table₂ is associated with *those* proper parts? It seems to me that there can be no answer to this question,¹⁹ and therefore that the tables' being associated with their respective parts is inexplicable and brute.

¹⁷As Meghan Sullivan has pointed out to me, ontological nihilism (the thesis that nothing exists) would apparently also avoid having to explain, or take as brute, the “modal properties of composite objects,” but this doesn't seem like a good reason to be an ontological nihilist. My response is that this actually *does* count in favor of ontological nihilism. What's wrong with ontological nihilism is that it's manifestly false (whereas mereological nihilism is not), so that any theoretical virtues exhibited by ontological nihilism are outweighed by the fact that it conflicts with all of the evidence we have that there is something rather than nothing. That ontological nihilism receives some sort of support from its theoretical simplicity shouldn't come as too much of a surprise. After all, the reason questions like “why is there something rather than nothing?” are so interesting is because it is commonly thought that it would be *simpler* or somehow “easier” if there were nothing. This is why it can strike us as surprising that anything exists.

¹⁸In the course of discussing Kim's (2005) version of the pairing problem for dualism, Bennett (2007: 321) connects the pairing problem for dualism with a similar problem for some of those who believe in composition. Her mereological pairing problem, however, asks, for colocated composite objects, which of those objects enters into any particular causal relation, and why? The mereological pairing problem I formulate here is different. I do not ask why some particular composite object is a relata in some causal relation. Rather, I ask why a particular composite object is associated with such-and-such particular proper parts.

¹⁹Actually, I can think of one possible answer, that God issues a decree according to which Table₁ will be associated with these parts, and Table₂ will be associated with those other parts. Some dualists (e.g., Swinburne 1986: 198-199) make a similar move, and think that God decides which souls are associated with which bodies. If believers in composition

Two potential responses to this concern immediately come to mind. First, the believer in composite objects might suggest that Table₁ is associated with such-and-such parts because it is *located* where those parts are located.²⁰ But this doesn't actually address the concern I raise above, since it replaces one demand for explanation with two others. First, we'll now be left asking why Table₁ is located where such-and-such parts are located, and second, we'll be left asking why it is the case that composite objects are always located where their parts are located (recall the discussion of this latter subject above). Answers to either of these questions seem as if they will be inexplicable. A second potential response to the mereological pairing problem is origin essentialism (Kripke 1972), according to which Table₁ essentially has its origin in these particular proper parts. Even if this sort of origin essentialism is correct, however, it still leaves us with a brute fact, insofar as we will now wonder *why* it's the case that Table₁ is essentially made from the proper parts of which it is actually composed. (Similarly, if the dualist claims that each soul is *essentially* associated with its body, this won't really solve the pairing problem for dualism, since we'll still be able to ask *why* each soul is essentially associated with its body.)

Nihilism allows us to sidestep this entire issue. For the nihilist, there is no mereological pairing problem, and so there's no need to view the pairing of *these* parts to *these* wholes as mysterious or inexplicable.

Constitution.

Let's move on to a more detailed treatment of constitution than the one which I gave above. A point of contention among believers in composition regards the nature of *constitution*, and indeed whether constitution ever occurs. One of the more famous examples of such alleged constitution is in the story of the lump and the clay. Here's a story we might tell: I want to make a statue of Goliath. Here's how I do it. I sculpt Goliath's upper half with one piece of clay, his lower half with a different piece of clay, and then I finish the statue by putting the two halves together. In joining the two pieces of clay I simultaneously bring into existence a new lump of clay *and* a statue of Goliath. A few days later, I smash the statue, simultaneously destroying the statue and the lump of clay. Here's one way of looking at the story I've just told: we want to say that the lump is identical with Goliath, since they are made up of the same proper parts from the moment they are created to the moment they are destroyed. But we *also* want to say the lump is not iden-

would like to make a similar claim, fine. Nevertheless, it seems to me that their view will thereby be more complex, insofar as it will now be committed to theism, as well as a claim regarding God's activities.

²⁰A similar point is made by Lycan (2009) in response to the pairing problem for dualism.

tical with Goliath, since they have different modal properties. For example, I could squish the lump into a ball, in which case the lump would still exist, but the statue would cease to exist. In other words there are some changes the *lump* could survive that Goliath *couldn't* survive. (For variants of the story given above, and similar commentaries on them, see, for example, Rea 1995 and Baker 1997.)

Let's say that x constitutes y only if x and y have all of the same proper parts. It's controversial whether this represents a *sufficient* as well as a necessary condition for constitution to obtain. Some philosophers, for example, insist that constitution is *asymmetric* (Baker 1997), a fact which wouldn't be captured if we said that constitution occurs if and only if two objects share all of the same proper parts. If constitution is asymmetric then we might say, for example, that the *lump* constitutes the *statue*, rather than the other way around. One way to make sense of asymmetry here is in terms of ontological dependence or grounding, so that the *lump* grounds the existence and properties of the statue. Rea (1995: 527 n. 5), by contrast, maintains that constitution is symmetric: x can constitute y even if y constitutes x . More specifically, two objects can share all of the same proper parts, without instantiating any sort of asymmetric dependence/grounding/whatever relationship with respect to one another. And, of course, other philosophers maintain that constitution is impossible (for example, van Inwagen 1990: 5). Those who believe in composition will plausibly be left here with one or more brute contingent or necessary truths, for example regarding whether constitution is possible, and whether it's symmetric. Nihilists, by contrast, won't be left with any such brute unexplained facts: constitution doesn't happen, since composition more generally doesn't happen.

The Weak Supplementation Principle.

The Weak Supplementation Principle (WSP) is a component of classical extensional mereology. The WSP states that if x is a proper part of y then there is a z such that z is a proper part of y and z does not share any parts with x (Simons 1987: 28). Put more informally, the WSP says that if an object has a proper part, then it has more than one (non-overlapping) proper parts. Why should we think that the WSP is true, or, for that matter, false? It doesn't seem to be true by definition, which is why in classical extensional mereology it is an independent axiom, rather than a deductive result of any mereological definitions defined in terms of parthood (or whatever mereological primitive one is employing) (Simons 1987: §1.4). So, unless the truth value of the WSP follows from something other than the meaning of the terms involved in its definition, whether or not the WSP is true would seem to be a

brute fact.²¹ Nihilism eliminates the need to attribute a (non-vacuous) truth value to the WSP, and any attendant need to posit brute facts.

Before ending this section, I'd like to address a reaction I suspect some readers may have had to some of the material above. I've made a number of claims to the effect that such-and-such an alleged feature of composition is not included in the mere concept of composition. I've claimed, for example, that the WSP is not analytically true. These sorts of claims are always subject to the response that I'm confused about the concept of composition, and that such-and-such feature of composition *is* analytically contained (i.e., contained by definition) in the concept of composition. Simons, for example, says that the WSP is "analytic – constitutive of the meaning of 'proper part'" (Simons 1987: 116). Here's an important point: If Simons is correct about this, it only renders nihilism's competitors all the more theoretically complex, since they'll all be committed not only to the notion that proper parthood relations obtain, but also to the notion that such relations satisfy the WSP. This point generalizes: try to build some alleged feature of composition into the *concept* of composition, and any theory according to which composition occurs will have more content, and so be less theoretically simple. The loss of theoretical simplicity in such cases seems to me to be a relatively clear case of loss of *ideological* simplicity, although the resulting theory will arguably require fewer brute facts. Still, the important point to notice is that there's a trade off for proponents of any of nihilism's competitors: build some alleged feature of composition into the concept of composition, and you *may* end up with fewer brute facts (and so more theoretical unification), but at the cost of an attendant increase in the ideological complexity of your theory.

4 Composition as Identity to the Rescue?

I've argued that nihilism is capable of eliminating the need to posit several brute facts and primitive relations which those who believe in composition are not able to eliminate. Nihilism therefore confers theoretical unification on our overall account of the world, theoretical unification consisting (at least in part) in just this sort of reduction in the number of phenomena we'll need to take as brute and inexplicable. In light of the arguments above, we might wonder whether those who believe in composition might be able to reduce the complexity of their view by offering one or more unifying explanations of the brute facts or primitive relations cited above. Earlier I argued that even

²¹For some defenses of the view that the WSP is not true by definition, see Smith 2009, Donnelly 2011, Kleinschmidt 2011.

if they're able to do so, they'll still end up with a view that is more complex than nihilism, insofar as they'll be left with a primitive parthood relation *as well* as whatever theoretical commitment they'll employ to try and unify the otherwise brute facts or primitive relations cited in the previous section of this paper (since, as I've argued above, none of *them* seem to be included in the mere concepts of parthood or composition). Here I'll provide a further illustration of this point by considering perhaps the best candidate view of composition capable of responding to the challenge of the previous section, composition as identity (CAI). When I refer to "composition as identity" I mean the thesis that composition really is a variant of *identity* (i.e., the "moderate" or "strong" variants of CAI in Cotnoir 2014: 9). Lewis (1991), by contrast, merely argues that composition and identity are importantly *analogous*, although Lewis is nevertheless frequently cited as a proponent of "composition as identity."

CAI has the potential to offer a unifying explanation of much of the phenomena cited in the previous section, insofar as CAI sees composition as a variant of the identity relation, a relation which everyone should find unobjectionable.²²

CAI potentially eliminates the need to offer explanations for the principles of composition cited above, or to regard them as brute facts without further explanation. Why, for example, is a whole always where its parts are? Because the whole *just is* the parts – that is, the whole is identical with its parts. More generally, why does a whole inherit some of its properties from its parts? Again, because the whole *just is* its parts. That the instantiation of some objects' properties supervene on themselves is not at all mysterious. Similarly, if a whole is identical with its parts, it is not at all mysterious that the whole's properties should supervene on the properties of the parts. CAI also settles whether or not the properties of the parts, in conjunction with relevant principles of composition, settle the properties of the whole, or whether some sort of holism or emergence obtains. If CAI is true, then *of course* the properties of the parts settle the properties of the whole, since the whole *just is* the parts, and the properties of the parts trivially entail themselves.²³

CAI also might be thought to settle various modal properties of composite objects, in which case facts regarding the modal properties in question would

²²Plausibly, proponents of CAI also have ready responses to arguments for nihilism from nihilism's ontological and ideological simplicity, since CAI arguably requires no new ontological commitments, and for proponents of CAI mereological relations can be reduced to some combination of the identity and inclusion relations.

²³See also McDaniel 2008, for a more detailed argument that CAI is incompatible with composite objects having emergent properties.

not be brute or inexplicable. In particular, CAI promises to tell us what sorts of changes in the existence or distribution of its parts a composite object could survive. Since a composite object y will be identical with the x s which compose it, y could not survive the loss of any of of the x s (in other words, mereological essentialism would be true). If it *could* survive the loss of any of its parts, then the x s (which are identical with y) could continue to exist even if one of the x s does not continue to exist. That's not possible. Merricks gives a more precise rendition of this sort of argument:

...suppose that O , the object composed of $O_1...O_n$, is identical with $O_1...O_n$. From this, the fact that $O_1...O_n$ are identical with $O_1...O_n$ in every possible world, and the indiscernibility of identicals it follows that O is identical with $O_1...O_n$ in every possible world. Therefore, if composition as identity is true, there is no world in which O exists but is not composed of $O_1...O_n$. So composition as identity implies that O —and, of course, every other composite object—must, in every world in which it exists, be composed of the parts that actually compose it. Composition as identity entails mereological essentialism (Merricks 1999: 192-193)²⁴

Whether the whole y could survive a change in the relative positions of any of its parts, or more generally could survive its parts instantiating different properties from those which they presently instantiate, will be settled by CAI as well: y can survive any changes the x s can survive.²⁵

Proponents of CAI also avoid the mereological pairing problem. Why do the x s compose y , rather than z (where $y \neq z$)? Because the x s are *identical* with y , whereas they are not identical with z . (You might as well ask why the x s are identical with the x s.)

CAI also might remove any need to explain the nature of constitution. If CAI is correct, then constitution is just impossible, since there won't ever be two distinct objects which share all of the same proper parts. Identity is transitive. Ergo, if some whole y is identical with its proper parts the x s, then any z which is identical with the x s (and which is composed of the x s) will be identical with y , in which case y and z will not be two *distinct* objects sharing all of the same proper parts.

²⁴See also Cameron 2014 and Wallace 2014.

²⁵Of course, we'll still be left with questions regarding the modal properties of the x s, but (arguably) any theory of composition (nihilism included) will have to countenance such properties. The point I'm making here is that CAI might be able to do without those distinctive modal properties of wholes regarding those changes to their parts which they could survive.

Finally, CAI seems to settle the truth value of the WSP. Plausibly, if CAI is true, then we should be able to replace talk of x being a part of y with talk of x being included in the x s with which y is identical (for details, see Sider 2014: §6). Consider some x which is a *proper* part of y . In this case $x \neq y$, by definition. Nevertheless, since x is a part of y , x is included in the x s with which y is identical. But, since $x = y$, and $x \neq y$, $x \neq xs$. So, if x is included in the x s, it can't be because $x = xs$. So, there must be a z which is included in the x s, and such that $z \neq x$, and $z \neq xs$ (in other words, there's another one of the x s which is not identical with x). But since z is included in the x s, but $z \neq xs$, z is a proper part of y . So, it looks like, for any x which is a proper part of some object y , there is some *other* object z which is also a proper part of y , and which is such that $z \neq x$ (in other words, if y has a proper part, then it has more than one proper part). But that's just what the WSP says. So, if CAI is true, then the WSP is (non-vacuously) true.

So, in terms of the theoretical unification brought about by adopting the view, CAI is a close competitor to nihilism. Nevertheless, nihilism still seems as if it will exhibit greater theoretical simplicity than CAI, for at least two reasons.

First, CAI does not actually settle as many of the modal properties of composite objects as you might think, nor the modal relationship between composite objects and their proper parts. Earlier I suggested that those who believe in composition will have the following questions to deal with: (a) Do composite objects exist “automatically” when their proper parts exist, or do the proper parts have to instantiate certain properties, for example, be shaped in a certain manner, in order to compose? (b) Does whether or not some x s compose a y supervene merely on the intrinsic properties of the x s and the relational properties they instantiate with respect to one another, or might it also supervene on relations the x s instantiate with respect to something else? Proponents of CAI will have to answer these questions just like every other believer in composition will have to. Just because some x s exist, it does not follow automatically that there is any one thing to which those x s are identical, even if CAI is true.²⁶ If CAI is true then it only follows that, *if* some x s compose a y , then those x s are identical with y (this is a point emphasized in van Inwagen 1994 and Cameron 2012). If the answers to (a) and (b) are, for those who believe in composition, brute facts, as I've argued earlier in this paper, proponents of CAI will be stuck with those brute facts as well.

Second, CAI will plausibly require significant and otherwise unmotivated

²⁶This is why CAI does not entail mereological universalism, according to which any disjoint objects compose some further object.

revisions of non-mereological logical and metaphysical principles. For example, we'll need one-many identity, as well as, plausibly, a modified version of Leibniz's law, with additional primitive ideology (see Cotnoir 2013). According to Cotnoir's proposal, for example, we shouldn't ask merely whether some x s, and some y which they compose and with which they're identical, have all of the same properties (*simpliciter* – that is, not relative to any sort of index). If we did, then they clearly *wouldn't* have the same properties: the y is *one* thing, while the x s are *many* things. This is a classic problem for composition as identity. To avoid this problem, we should have a version of Leibniz's law which compares the properties of identical objects *relative to a way of counting*. (For a couple of ways this might go, see Cotnoir 2013: §3.2.) So, the same *portion of reality* will be one thing (y) according to this (permissible) way of counting, and multiple things (the x s) according to some other (permissible) way of counting. The “portion of reality” and “ways of counting” apparatuses may amount to new ideological commitments of the theory, depending on how exactly they're spelled out. These additions to the logical and metaphysical relations/principles we'll need to employ may represent a significant increase in the ideological commitments required to make sense of CAI (and in any case will likely be a *dialectical* setback for the proponent of CAI, insofar as she'll have to convince those of us who reject CAI to accept these *other* revisions to our conceptual scheme as well).

5 Conclusion

I've defended nihilism on the basis of the theoretical unification afforded by nihilism, a point which counts, it seems, in favor of nihilism's theoretical simplicity. But I'm only interested in nihilism's theoretical simplicity because, as I've mentioned, I think that it gives us some reason to believe that nihilism is *true*. This is an assumption which I do not have space to defend here.²⁷

Where does all of this leave us? In particular, given nihilism's theoretical simplicity, should we be nihilists? Simplicity considerations are generally brought in to decide between competing theories which are equally capable (or very nearly equally capable) of explaining our evidence. Is there significant evidence counting against nihilism, or in favor of any of nihilism's competitors? I don't think so. This need not have been the case. There *might* have been evidence of some sort for composition, but as a matter of fact there

²⁷It's controversial, of course, whether simpler *scientific* theories are more likely to be true (see, e.g., van Fraassen 1980), but the notion that theoretical simplicity might function as a criterion of theory choice in *metaphysics* is even more controversial (see, e.g., Huemer 2009, Kriegel 2013, Willard 2014).

isn't. Given that nihilism and its competitors, then, are at worst on a par with respect to their prediction of our evidence, nihilism's (much) greater theoretical simplicity seems to me to count strongly, and probably decisively, in its favor. I doubt there is affirmative evidence in nihilism's favor (it's not like composition is just incoherent, for example, or there are experiments which show that composition does *not* occur), so the decision in nihilism's favor is made on the grounds of the theoretical virtue of simplicity.²⁸

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