Mereology and Ideology

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Abstract: Mereological nihilism is the thesis that composition never occurs. Sider has defended nihilism on the basis of its relative ideological simplicity. In this paper I develop the argument from ideological simplicity, and defend it from some recent objections. Along the way I discuss the best way to formulate nihilism, what it means for a theory to exhibit lesser or greater degrees of ideological simplicity, the relationship between the parthood relation and the identity relation, and the notion that we should judge the ideological simplicity of competing theories on the basis of the kinds of ideological commitments required by those theories.

1 Introduction

Mereological nihilists (henceforth "nihilists") believe that composition never occurs. So, according to nihilists, nothing is ever a proper part of anything else. Following Sider (2013), in this paper I aim to clarify and defend the notion that nihilism's ideological simplicity gives us some reason to think nihilism is true.

Here's Sider's argument for nihilism. Quine famously distinguished between the ontology and the ideology of a theory (Quine 1951). It is ideology which concerns us here. By Sider's lights the ideology of a theory includes the primitive (that is, undefined) predicates and logical apparatuses (e.g., quantifiers, connectives) required by the theory (Sider 2013: 238-239). Theories can be compared on the basis of the simplicity of their ideological commitments. So, for example, if two theories are identical, except that one of them requires a primitive predicate which the other theory does not require, then the theory without the primitive predicate in question enjoys greater ideological simplicity than the other theory. Nihilism, Sider argues, enjoys greater ideological simplicity than its competitors, since nihilists incur the same ideological commitments as everyone else, except the nihilist doesn't think the primitive parthood predicate is never satisfied. Since theoretical simplicity

(which includes ideological simplicity) gives us some reason to think that a theory is true, nihilism's ideological simplicity gives us some reason to think nihilism is true. That, in a nutshell, is Sider's argument for nihilism (Sider 2013: §1). Let's call Sider's argument "the argument from ideological simplicity."

Here is an important caveat: Sider's argument assumes that relative ideological simplicity is relevant only when we're judging the merits of competing *fundamental* theories (Sider 2013: 240). Sider's argument, then, isn't strictly for the thesis that a primitive parthood predicate is never satisfied. Rather, his argument is an argument for the thesis that *fundamentally* speaking a primitive parthood predicate is never satisfied, in his own sense of "fundamental" according to which something is fundamental only if it carves reality at the joints (cf. Sider 2011). I don't think that those who wish to endorse Sider's argument from ideological simplicity need take on board Sider's broader metametaphysical framework regarding, e.g., fundamental vs non-fundamental discourse. The argument from ideological simplicity as *I* understand it will be an argument for nihilism conceived as the thesis that a primitive parthood predicate is never satisfied (with certain further qualifications, to be made shortly), rather than an argument for the narrower thesis that *fundamentally* speaking a primitive parthood predicate is never satisfied, a thesis which carries with it the baggage of Sider's broader metametaphysical framework. The nihilist in my sense may nevertheless think that some sentences which seem to say or imply that there are composite objects are in some sense "correct" or "almost as good as true," even if they are false (cf. Merricks 2003). Or the nihilist may think that some such sentences are true (in certain conversational contexts), and do not, despite appearances, commit us to the existence of composite objects (cf. van Inwagen 1990, Horgan, Potrč 2008: Ch.7, Contessa 2014, Goldwater 2015). Perhaps Sider would say that if either of these possibilities obtains then we should say that a primitive parthood predicate *is* satisfied, even if (per nihilism) it is not the case that *fundamentally* a primitive parthood predicate is satisfied. I don't think we need to evaluate this broader metametaphysical point in order to endorse the argument from ideological simplicity, as long as we bear in mind the caveat that the nihilist need not be committed to thinking that talk of composite objects and parthood is irremediably flawed, in the sense that both *fundamentally* and *non-fundamentally* speaking a primitive parthood predicate is never satisfied, and there isn't any sense in which it is "correct" or "almost as good as true" to say that there are composite objects. When the nihilist says that we should remove parthood (or any other mereological primitive) from our ideology they do not mean to suggest that the notion of composition or parthood is flawed in the latter very strong sense.

Let's assume theoretical simplicity is truth-conducive, in the sense that simpler theories are, all other things being equal, more likely to be true (cf. Brenner 2017b). While it is difficult to provide a *general* account of what theoretical simplicity amounts to, it does seem correct to say that ideology is part of the picture, so that a theory's ideological components contribute or detract from a theory's overall theoretical simplicity – (other things being equal) less ideological simplicity gets you less theoretical simplicity overall. After all, if a theory requires some ideological theoretical component (i.e., some predicate, operator, or logical apparatus) in order to provide a true and complete description of the world, then, *prima facie*, it presents us with a less simple picture of the world insofar as it requires further theoretical resources to describe that world. For example, a world which is such that we need the primitive notion of the "parthood" predicate to describe it is, other things being equal, a more complex world than one which does not require that we make use of the primitive notion of the "parthood" predicate to describe it. Here's how Sider makes the point, although here he is talking particularly about the predicates employed by theories (remember, ideology, as Sider understands it, also includes components of a theory other than predicates employed by the theory): "A theory's one-place predicates correspond to the kinds of things it recognizes, and its multi-place predicates to the kinds of connections between things that it recognizes; cutting down on kinds or connections is one way of making a theory structurally simpler" (Sider 2013: 239).

So far I have presented Sider's argument in terms of the nihilist getting rid of the primitive parthood *predicate*. I do not think that we must think of ideology in these terms, however. I take it that ideology, especially of the sort which concerns us here (i.e., with respect to mereological notions like parthood), can be cashed out in terms of linguistic entities (predicates) or in terms of worldly entities like properties or relations. Sider too officially aims to remain neutral on this point in his presentation of the argument from ideological simplicity (Sider 2013: 240). So, in what follows I will not confine myself to discussing the ideological commitment to parthood as a commitment to a parthood *predicate* rather than, say, a parthood *relation*.

Throughout this paper I say that theories "require" or are "committed to" predicates or relations. There are at least two ways to understand such language. First, we might think that a theory "requires" or is "committed to" some predicate or relation only if the predicate is satisfied or the relation is instantiated according to the theory. Alternatively, we might think that a theory "requires" or is "committed to" some predicate or relation only if the predicate is *possibly* satisfied or the relation is *possibly* instantiated according to the theory. I'm not sure which conception of ideological commitment Sider

has in mind. But in any case, I don't think we need to decide between these competing notions of ideological commitment, in order for the argument from ideological simplicity to get off the ground. Worlds where some primitive predicate is not satisfied, or where some primitive relation is not instantiated, are, all other things being equal, simpler than worlds where the predicate is satisfied, or the relation is instantiated, since there are fewer kinds of connections in those worlds. Similarly, if some primitive predicate is not even possibly satisfied, or some primitive relation is not even possibly instantiated, then, all other things being equal, modal space is simpler, insofar as there are fewer *possible* kinds of connections.

For Sider, ideological complexity only concerns "primitive" (that is, undefined) notions. This assumption is widely shared by those discussing ideological complexity (or the ideological complexity of nihilism in particular), and it is an assumption which I accept here. Intuitively, notions which can be defined in terms of other notions represent no additional cost in ideological complexity. As Cowling (a critic of the argument from ideological simplicity) puts it: "...only primitive ideology represents a potential cost to theories. After all, non-primitive ideology admits of definition in terms of primitive ideology and therefore 'comes for free' once granted the *analysans*. So understood, the only substantial questions about ideological commitments are questions about which *primitive* concepts occur within a theory" (Cowling 2013: 3893).[1]

Sider consistently writes of the fact that nihilism does without the primitive "parthood" relation, or the more general notion of "part." It would be more accurate, I think, to say that nihilism does without *any* mereological primitive. For example, the "parthood" relation is only one mereological relation, from which other mereological relations (proper parthood, overlap, disjointedness) can be defined. But we could, alternatively, take one of those other mereological relations as primitive instead, and define the remaining mereological relations (including parthood) in terms of that primitive (for details, see Simons 1987). For convenience, I'll generally follow Sider and write as if nihilism does without the "parthood" relation, but keep in mind what I've written in this paragraph, as it will become important below.

For the remainder of this paper I consider objections which have been made to the argument from ideological simplicity. Over the course of the paper I discuss the best way to formulate nihilism, what it means for a theory to exhibit lesser or greater degrees of ideological simplicity, the relationship between the parthood relation and the identity relation, and the notion that we should judge the ideological simplicity of competing theories on the basis

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[1]See also Schaffer 2015: 649-651.

of the *kinds* of ideological commitments required by those theories. While my overarching goal is to defend the argument from ideological simplicity (and, by extension, to defend nihilism), many of the subjects addressed along the way are philosophically interesting and worthy of discussion in their own right.

2 What Thesis Does The Mereological Nihilist Endorse?

In this section I address objections to the argument from ideological simplicity according to which the act of stating or endorsing mereological nihilism conflicts with the nihilist's endorsement of the argument from ideological simplicity. As we'll see, in order to respond to these concerns I will have to clarify what the nihilist thesis amounts to.

An initial challenge for the argument from ideological simplicity is the following: how do we *state* the thesis that mereological nihilism is true if "parthood" (and other mereological primitives) are not included in our ideology? After all, nihilism is often defined in terms which freely make use of mereological notions: *composition* never occurs, everything is *mereologically simple*, etc. Cowling alludes to this sort of worry when he writes "Strictly speaking, the view Sider defends cannot be stated using mereological vocabulary since Sider rejects commitment to the ideology of mereology" (Cowling 2013: 3905, n.49).

But this objection rests on an assumption which the nihilist is free to reject, namely that when we eliminate some primitive from our *ideology* we eliminate any attendant terms for that primitive from our *vocabulary*. To accept this assumption is to suppose that one cannot coherently explicitly reject some bit of ideology, since in doing so one will employ some term to refer to the ideology one rejects (e.g., in saying "I reject the parthood relation," one uses the word "parthood"). But surely it is possible to coherently explicitly reject some bit of ideology, as when the nominalist rejects the "is abstract" predicate, the atheist rejects the "is divine" predicate, and certain sorts of normative anti-realists reject normative predicates. The nihilist is free to maintain that when we eliminate the parthood relation from our ideology we need not remove the word "parthood" (or other mereological terms) from our vocabulary. To eliminate parthood from our ideology is just to say that no objects instantiate the parthood relation, or, perhaps, that *necessarily* no objects instantiate the parthood relation.

But in any case, the nihilist can also maintain that, in principle, we

can eliminate mereological vocabulary (and concepts) from our descriptions of the world.[2] This point gestures toward a general strategy for removing putatively objectionable vocabulary from our descriptions of the world. To remove some bit of ideology from our total theory is *ipso facto* to endorse some description of the world which does not make use of that ideology, or, more weakly, some disjunction of descriptions of the world which do not make use of that ideology. The nihilist thesis, then, could be thought of as a big disjunction of every minimal complete positive description of the world which does not advert to mereological notions – so that, for example, none of the minimal complete positive descriptions of the world will say something like "x is a proper part of y." Put another way: the nihilist endorses some thesis of the form "the world is either like *this*, or it's like *that*, or it's like such-and-such, or...", where 1. "this," "that," "such-and-such," etc., provides a minimal complete positive specification of what the world is like, and 2. "this," "that," "such-and-such," etc., do not make use of mereological concepts or vocabulary.

At this point four qualifications are in order. First, I do not mean to suggest that mereological nihilists have always taken themselves to endorse some massive disjunction of claims of the sort described above. I put forward this characterization of nihilism, however, as a potentially useful way of characterizing the distinctively nihilist thesis that "composition does not occur," insofar as it allows the nihilist to state her thesis without employing mereological vocabulary. Second, the disjunction in question must not include such sentences or propositions as "there are no objects with proper parts," or the disjunction will make use of mereological notions. This is why I restrict the disjunction to positive descriptions – the disjunction may say what there is, but not what there isn't. Such descriptions will no doubt still need clauses of the form "that's all" (i.e., there are such-and-such objects, and those are the only objects there are), and if such clauses count as "negative" claims, claims regarding what doesn't exist, then they are the only negative claims which must be included in the nihilist disjunction. A third qualification regards the requirement that the complete positive descriptions be "minimal." What I have in mind is that the complete positive descriptions are "minimal" in the sense that they do not contain extraneous information which isn't required to fully describe the world. So for example, even if the sentence or proposition "P or there are objects with proper parts" may be true of some world in which P is true, this sentence or proposition should not be included in the nihilist disjunction, because it is not required to give

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[2]An exception can be made for the improper parthood relation which, I argue below, is just the identity relation.

a full description of the world it partially describes. Given that P's truth is already included in our description of the world in question, we do not need to include any disjunction (e.g., "P or...") entailed by P to give a minimal complete positive description of that world. A fourth and final qualification is that none of the disjuncts in the nihilist disjunction should include modal claims regarding composition – e.g., claims of the form "it is possible that there is an object with proper parts." The entire disjunction itself may be necessarily true or contingently true, a distinction which will correspond to the distinction between nihilism as a necessarily true thesis and nihilism as a merely contingently true thesis. My characterization of nihilism as a disjunction of minimal complete positive descriptions of the world which do not make use of mereological notions is neutral, then, with respect to whether nihilism is contingently true or necessarily true.

So, given this construal of nihilism, the argument from ideological simplicity relies on the claim that minimal complete positive descriptions of the world which do not make use of primitive mereological notions will, other things being equal, be simpler than minimal complete positive descriptions of the world which do make use of primitive mereological notions. Similarly, *disjunctions* of minimal complete positive descriptions of the world which do not make use of primitive mereological notions will, other things being equal, be simpler than disjunctions of minimal complete positive descriptions of the world which do make use of primitive mereological notions. Of course, the nihilist will generally employ mereological terminology to specify *which* minimal complete positive descriptions of the world are included in the disjunction, but this is beside the point, since her thesis is not "a big disjunction of minimal complete positive descriptions of the world which do not make use of mereological notions is true" but rather her thesis is the big disjunction *itself*, which does not employ any mereological vocabulary or ideological commitments.

The points I've just made have implications more generally for how we should think of appeals to ideological simplicity. When we remove some primitive predicate, property, or relation from our ideology, what we are doing is, in effect, saying that our descriptions of the world need not make use of that predicate, property, or relation. To say that our descriptions of the world need not make use of some predicate, property, or relation is, in effect, to endorse the view that a true minimal complete positive description of the world need not advert to that predicate, property, or relation (or to any non-primitive predicate, property, or relation which is essentially defined in terms of that primitive predicate, property, or relation).[3] Take, for ex-

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[3]A caveat: you might think that no "complete" description of reality can be given,

ample, the plausible claim that certain sorts of normative anti-realism are ideologically simpler than normative realism, insofar as the normative realist will need to employ primitive predicates, e.g., "good" or "morally obligatory," which the normative anti-realist will not need to employ. When we say that the relevant sort of normative anti-realism has a simpler ideology than normative realism for this reason, what we are saying is in effect that 1.the normative anti-realist endorses a disjunction of minimal complete positive descriptions of the world, none of which employ primitive normative predicates, and 2.minimal complete positive descriptions of the world which do not make use of primitive normative predicates will, other things being equal, be simpler than minimal complete positive descriptions of the world which do make use of those predicates.

We can also see why another objection to nihilism fails to hit its mark. Smid (2017) claims that mereological nihilism must be a positive ontological thesis, some thesis of the form "there are Fs" or "everything which exists is an F." If the mereological nihilist does not take herself to be putting forward some positive ontological thesis of this sort, then her view will be indistinguishable from ontological nihilism, the view that nothing exists. Smid goes on to argue that the nihilist, since she must endorse some positive ontological thesis, must be committed to some primitive predicate F or other, in order to attribute this predicate to one or more of those things which exist according to the nihilist ontological thesis. The nihilist appeal to ideological simplicity, then, is not as straightforward as she would like – while she does without mereological relations, she must employ some primitive predicate F, a predicate which non-nihilists may or may not have to employ (Smid 2017: 2370-2371).

But it is relatively easy to distinguish mereological nihilism from ontological nihilism, without thereby being committed to thinking of mereological nihilism as a positive ontological thesis.[4] Mereological nihilism says that

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if, for example, you reject absolutely unrestricted quantification. In this case I think you can still appeal to ideological simplicity in favor of some thesis. The nihilist, for example, could maintain that although there can be no complete true minimal positive description of the world, it is nevertheless true that no true minimal positive statement need advert to primitive mereological notions (such as the parthood relation). So, the nihilist does not require a theoretical resource (e.g., primitive mereological relations) which the non-nihilist does require. The fact that the nihilist does not need the theoretical resource in question points toward the fact that the nihilist's picture of reality is, at least in one respect, simpler than the non-nihilist's picture of reality.

[4]Compare: the atheist says "there are no gods." The atheist clearly does not put forward a positive ontological thesis. It would be odd if, in response, someone were to object "but surely the atheist must be endorsing *some* positive ontological thesis, otherwise his view would be indistinguishable from ontological nihilism!"

there are no composite objects. Ontological nihilism says there are no objects of any sort. Mereological nihilism is clearly compatible with ontological nihilism, but it does not entail ontological nihilism. The mereological nihilist who is not an ontological nihilists will, of course, be committed to the existence of something or other. But it doesn't follow from the fact that the typical mereological nihilist thinks that something or other exists that they take on some distinctive ideological commitment (e.g., some primitive predicate F) to which the non-nihilist will not also be committed. The fact that most mereological nihilists will be committed to the existence of something or other simply follows from the fact that most mereological nihilists endorse a thesis endorsed by all non-nihilists, namely that ontological nihilism is false. If the non-nihilist does not take on some distinctive ideological commitment simply in virtue of the fact that they reject ontological nihilism, it is difficult to see why the mereological nihilist would.

3   Parthood vs Identity

An important objection to the argument from ideological simplicity is the following (Smid 2017).[5] We can retain the parthood relation, and define the identity relation in terms of the parthood relation like this: $x = y =_{df} x$ is part of y and y is part of x. The nihilist, by contrast, will have to take identity as a primitive.[6] So, whatever loss of ideological simplicity is incurred by the non-nihilist from including the parthood primitive in her ideology will be balanced out by the gain in ideological simplicity which results from removing the identity primitive from her ideology. In other words, the nihilist has the identity primitive, but no parthood primitive, while the non-nihilist has the parthood primitive, but no identity primitive. So, it looks like the nihilist doesn't win the ideological simplicity contest after all.

Here's Sider's response to this objection. In comparing the theoretical simplicity of competing theories, we take theoretical commitments into consideration other than the ideological commitments of the theories. One component of a theory will be the laws posited by the theory. The complexity of those laws is a factor which we must take into consideration when we judged the relative theoretical simplicity of competing theories. If the non-nihilist

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[5]The objection seems to have originated with Steve Steward (Sider 2013: 242 n.14).

[6]Or perhaps the nihilist can define identity in terms of distinctness, and take the latter relation as primitive. I'll ignore this complication below, since it wouldn't really affect the objection I'm considering to the argument from ideological simplicity. The objection would have to be rewritten as something like: the non-nihilist can define identity or distinctness in terms of parthood, while the nihilist will have to take either identity or distinctness as primitive.

defines identity in terms of parthood, then her laws will see an increase in complexity: "The savings in ideological parsimony would be outweighed by increased complexity in the laws, which I take to include laws of logic and metaphysics. The logical laws governing '=' must now be rewritten in terms of the proposed definition, making them more complex; and further, laws of mereology will be needed" (Sider 2013: 242 n.14).

I'm not sure what to think of Sider's response to the objection. The need to posit mereological laws surely will be a theoretical liability for those who believe in composition (cf. Brenner 2015: §3, Brenner 2017a: §2.3). I'm not sure, however, that laws which refer to identity will really have to be more complex if identity is reduced to parthood (cf. Smid 2017: §2). In any case, Sider overlooks what seems to me to be the chief defect of the objection currently under consideration. Spelling out what that defect is gives us a greater appreciation for what ideological simplicity amounts to, and how we should judge the relative ideological simplicity of competing theories.

As Sider himself points out, in a different context, when we're comparing the ideological simplicity of competing theories we don't simply count the number of primitive predicates (or primitive notions more generally) included in the ideologies of the theories: "Merely counting primitive notions is too crude a measure of ideological simplicity, since one can always replace many predicates with a single many-place predicate; the many-place predicate would be, in an intuitive but elusive sense, a highly complex notion despite being one in number" (Sider 2013: 241). Sider overlooks the fact that what's problematic about defining identity in terms of parthood, and taking "parthood" as a primitive rather than "identity," is that parthood is just this sort of relatively "complex notion despite being one in number." In other words, all other things being equal, a theory which takes parthood as a primitive (rather than identity) is more ideologically complex than one which takes identity as a primitive (rather than parthood). I'll now give two arguments for this contention.

First, parthood is a *stronger* relation than identity, in the sense that identity can be defined in terms of parthood, while parthood cannot be defined in terms of identity (without the aid of other primitive relations like proper parthood). This is one indication that parthood is a greater ideological liability than identity, in the sense that, all other things being equal, a theory which takes parthood as primitive (and does not take identity as primitive) enjoys less ideological simplicity than a theory which takes identity as a primitive (and does not take parthood as primitive). Remember, the reason ideological simplicity contributes to overall theoretical simplicity is because theories which require more ideological commitments in order to give an accurate description of the world are *ipso facto* committed to a more

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complex world. By an analogous line of thought we can see that *stronger* ideological commitments, in the sense described above, detract from a theory's total theoretical simplicity. A world which requires stronger ideological commitments to describe is, all other things being equal, a more complex place than worlds which can be described with weaker ideological commitments.[7]

Sometimes, I concede, it simplifies our total ideology if we accept a stronger primitive rather than a weaker one.[8] For example, consider a case in which we can define notions C and D from primitive A, but not from primitive B. The fact that there are notions which we can define using A, but not using B, might, on the basis of relative ideological simplicity, give us some reason to accept primitive A rather than primitive B. But I suspect that this will be the case only because if we accept B as primitive rather than A then we will have to take C and D as primitive. In this case we will be left with three primitives (B, C, D) rather than one (A). So, we may be left with a simpler overall ideology if we take A as primitive, even if it turns out that A is in some sense a stronger and/or more complex primitive than B. But notice that the comparison of primitives which concerns us here, the comparison of the identity primitive with the parthood primitive, is not analogous to the case of primitives A and B described above. It is true that the parthood primitive allows us to define more notions than the identity primitive does, but these will generally be notions which, the nihilist contends, we can do without. For example, we can use the parthood primitive to define the notion of mereological overlap (i.e., x overlaps y iff there is something which is both a part of x and a part of y), while we cannot use the identity primitive to define the notion of mereological overlap. But, the nihilist contends, our total ideology can do without mereological overlap. So, this is not a case where only by accepting some primitive A (in this case, parthood) rather than some primitive B (in this case, identity) can we avoid having to take some other notions as primitive (in this case, notions such as mereological overlap). The nihilist contends that we need not accept those latter notions

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[7]I should be clear that in this paragraph I am not appealing to the principle that whenever x can be defined in terms of y, and y cannot be defined in terms of x, then we should take x as a primitive. I am rather appealing to the principle that if x can be defined in terms of y, and y cannot be defined in terms of x, and we must take either x (and not y) or y (and not x) as primitive, and we have no other grounds for preferring one primitive to the other, *then* we should take x rather than y as a primitive, in virtue of the fact that x is less ideologically complex than y.

[8]This may be one reason why you can occasionally find philosophers who claim that we should prefer some primitive over another primitive because more notions can be defined in terms of the former primitive. Fine (2010: 565), for example, thinks that we should take composition as a primitive, rather than parthood, since we can define parthood in terms of composition, but we cannot define composition in terms of parthood.

into our ideology in the first place, and so we have no reason to try to define those notions from any primitives which *are* included in our ideology. The ideological options on the table, then, are the following: accept identity as a primitive (and do without any mereological notions), or accept parthood as a primitive (and define identity and various mereological notions from there).

A second reason to think that, all other things being equal, a theory which takes parthood as a primitive (rather than identity) is more ideologically complex than one which takes identity as a primitive (rather than parthood) is that identity is arguably a more *natural* relation than parthood. We can say that a predicate, property, or relation is more or less natural insofar as it more or less carves reality at the joints – think of the distinction between the less natural "grue" predicate and the more natural "blue" predicate. While the notion of a predicate's or property's being more or less "natural" has played a large role in recent metaphysics (see, e.g., Lewis 1983; Sider 2011), it is a notion which is notoriously difficult to characterize to the satisfaction of the skeptic.[9] Perhaps the more natural a predicate or property is, the less that predicate or property detracts from the ideological simplicity of theories which are committed to the satisfaction of that predicate or the instantiation of that property. I have no arguments for this last claim, and frankly I don't know whether it is true. It is, however, a claim which I suspect a number of philosophers will accept, which makes it worth mentioning here. Even if more natural predicates or properties do not thereby enjoy greater ideological simplicity, you might still think that, all other things being equal, theories which employ more natural predicates or properties are preferable to theories which employ less natural predicates or properties.[10] So, taking "identity" as a primitive, rather than "part," might still be desirable insofar as identity is more natural than parthood, even if identity's being more natural does not contribute to its ideological simplicity.[11]

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[9] Although for a detailed, and critical, attempt to make the notion more precise see Dorr and Hawthorne 2013.

[10] Cf. Bradley forthcoming, which argues that we should assign higher prior probabilities to more natural hypotheses, where the naturalness of a hypothesis is determined by the naturalness of the properties instantiated according to the hypothesis.

[11] Brown (2016) argues that, just as some predicates and properties are more or less natural than other predicates and properties, so too some *objects* are more or less natural than other objects. Mereologically simple objects are, on Brown's view, maximally natural, while composite objects are not. If Brown is correct about all of this, and if we assume that the extent to which a theory employs natural theoretical components (ideology *and* ontology) is a criterion of theory choice, then the fact that mereological nihilism only includes perfectly natural ontological posits (while its competitors do not) should count in nihilism's favor. Of course, the purported fact that nihilism's ontology is perfectly natural does not count in favor of the notion that nihilism's *ideology* is particularly natural, which

Why should we think that identity is more natural than parthood? I have two arguments. First, some support for the notion that the identity relation is more natural than the parthood relation (or, for that matter, the proper parthood relation) stems from the plausible thesis that identity is unanalyzable in a manner in which parthood and proper parthood are not unanalyzable.[12] Regarding the parthood and proper parthood relations it is sensible to ask "under what circumstances do these relations obtain?" – that is, to search for some biconditional of the form "x is a proper part of y iff [...]" It makes considerably less sense to search for this sort of biconditional regarding the circumstances under which *identity* occurs, some biconditional of the form "$x=y$ iff [...]" Of course, some philosophers will suggest that we *can* give a biconditional of this latter sort, and the suggestion is usually that the biconditional in question take the form "$x=y$ iff (Fx iff Fy)," that is, that x and y are identical iff they share all of the same properties, or just in case any predicate true of x is true of y. I don't think these sorts of biconditionals are very plausible, for standard reasons, namely doubts regarding the identity of indiscernibles.

My second argument in favor of the notion that the parthood relation is less natural than the identity relation is this. The "parthood" relation of ordinary English (and, I would argue, our ordinary conceptual scheme) is not the parthood relation of the philosophers. The parthood relation of the philosophers is trivially such that everything is a part of itself, while it is not trivial that, as the word "part" is used in ordinary English, everything is a part of itself (cf. Kearns 2011). I must constantly remind myself that the terms "part of" and "parthood," when used in philosophical contexts, or in discussions of formal mereological systems, correspond to (i.e., are extensionally equivalent to) the ordinary English language "part of *or* identical with" and "parthood *or* identity." We find it more intuitive, then, to make use of the proper parthood relation[13] in our ordinary mereological reasoning. What I have in mind here is that our cognitive practices *latch onto* the proper parthood relation, so to speak, more readily than the parthood relation, just as our cognitive practices tend to latch onto the "blue" predicate in our ordinary reasoning, rather than the "grue" predicate.[14] This point seems to me

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is our main focus here.

[12]Thanks here to an anonymous referee.

[13]Or perhaps some close analogue of the proper parthood relation. After all, as the proper parthood relation is understood by philosophers, it is trivially true that nothing is a proper part of itself. Arguably it is not trivially true that nothing is a "part" of itself, as the word "part" is used in ordinary English (cf. Kearns 2011).

[14]Of course, for some purposes it may be useful to take the parthood relation rather than the proper parthood relation as our primitive or starting point, in, for example, the

to count in favor of the notion that parthood is a less natural relation than proper parthood. I assume that identity is a maximally (that is, perfectly) natural relation. So, proper parthood is no more natural than identity, since identity is maximally natural. Since parthood is, I've argued, plausibly less natural than proper parthood, and proper parthood is at most as natural as identity, it follows that parthood is less natural than identity.

M. Eddon (2017) argues that parthood is perfectly natural. If they're correct, then parthood is at least as natural as identity. For my purposes here it is enough to note two points. First, Eddon's arguments assume that proper parthood is possible, something the nihilist may reject (although I remain neutral here regarding whether nihilism is contingently or necessarily true). Second, and more importantly, Eddon's arguments show at most that *some* mereological relation is perfectly natural, not that the *parthood* relation is perfectly natural. Eddon concedes this point (3165, footnote 6). Here I'm interested in whether *parthood* is a perfectly natural relation, not whether *some* mereological relation is perfectly natural. The proper parthood relation, for example, could be perfectly natural (if it were instantiated), and this wouldn't undermine anything I've intended to establish here.[15]

So, we can see that there is some reason to think that, if given the choice, we should choose to take identity as a primitive, rather than parthood. How significant is this conclusion? We were interested in whether we should take parthood or identity as a primitive because identity can be defined in terms of parthood, so that the nihilist (presumably) takes identity as a primitive, but does without a primitive parthood relation, while the non-nihilist has the option to take parthood as a primitive, and does without a primitive identity relation (since it can be defined in terms of parthood). Are there mereological primitives other than parthood by which we could also define the identity relation? Three obvious candidates are overlap, disjointness, and fusion:

$x=y =_{df}$ for all z, z overlaps x iff z overlaps y
$x=y =_{df}$ for all z, z is disjoint from x iff z is disjoint from y

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construction of formal mereological systems. But by the same token it may prove useful under some circumstances to take "grue" as our primitive or starting point, rather than "blue." It doesn't follow from this last observation that the grue predicate's naturalness is equal to or greater than the naturalness of the blue predicate. Cf. Simons (1987: 11): "With identity at our disposal, it is possible to define either 'part' or 'proper part' in terms of the other, so the choice as to which to take as a primitive in a mereological system is a matter of convenience. While 'proper part' is the more natural [read: intuitive] concept, 'part' is algebraically more convenient."

[15]Notably, while identity can be defined in terms of the parthood relation alone, it cannot be defined in terms of the proper parthood relation alone.

$x=y =_{df} x$ is the fusion of y[16]

In response I would note that overlap, disjointness, and fusion arguably contribute more ideological complexity to theories which take either of them as primitive than the identity relation contributes to the ideological complexity of theories which take it as a primitive. In support of this idea I could say more or less what I said above about the parthood relation. First, overlap, disjointness, and fusion are stronger relations than identity, in the sense that identity can be defined in terms of overlap, disjointness, or fusion, but neither overlap nor disjointness nor fusion can be defined in terms of identity alone. Stronger undefined relations contribute greater ideological complexity to the theories which employ them. Second, overlap, disjointness, and fusion are less natural relations than the identity relation, for more or less the reasons cited above in my discussion of parthood. For, first, identity is unanalyzable in a manner in which overlap, disjointness, and fusion are not unanalyzable. Second, in our ordinary language and conceptual scheme we find it more intuitive to employ the proper parthood relation than either the overlap, disjointness, or fusion relations, a point which counts in favor of the idea that the overlap, disjointness, and fusion relations are less natural than the proper parthood relation. Assuming that identity is maximally natural, this shows that overlap, disjointness, and fusion are less natural than the identity relation.

4   Nihilism and Ideological Kinds

In a recent article (Cowling 2013) Cowling argues that the ideological simplicity of a theory should not be understood entirely in terms of the number of ideological primitives required by the theory, but rather that the ideological simplicity of a theory should be understood in terms of the number of *kinds* of ideological primitives required by the theory.[17] More specifically, "minimizing the number of kinds of ideological primitives within a theory improves that theory's epistemic credentials" (Cowling 2013: 3891). For any primitives of the same ideological kind, as far as the ideological simplicity of

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[16]Thanks to an anonymous referee for suggesting fusion as a potential mereological primitive whereby we define identity. The referee also notes that Kleinschmidt (2019) defends this sort of "fusion first" approach to mereology.

[17]An anonymous referee informs me that Cameron (2012: 18) earlier briefly discussed the notion of simplicity with respect to ideological kinds, and Cameron notes that the preference for simplicity with respect to ideological kinds may be implicit in Sider (2003: 185). The anonymous referee also suggests that the preference for simplicity with respect to ideological kinds was implicit in Quine's rejection of intensional ideology.

the theory is concerned, accepting one primitive is as good as accepting the other, and "we can take each as a primitive without incurring any ideological cost over and above accepting only one of them as a primitive" (Cowling 2013: 3899). Here's an example: "Consider, for example, the interdefinability of the box and diamond in modal logic and the resulting question: which operator should be the one chosen primitive? Intuitively, neither is more privileged than the other, so the choice, if forced upon us, is arbitrary and therefore *prima facie* objectionable" (Cowling 2013: 3899). Either choice, between the box or the diamond, is as good as the other as far as the ideological simplicity of the resulting theory is concerned, because "it is necessarily the case that" (corresponding to the box of modal logic) and "it is possibly the case that" (corresponding to the diamond of modal logic) are ideological primitives *of the same kind.*

From these general considerations regarding the manner in which we should judge the ideological simplicity of a theory, Cowling goes on to argue that nihilism is no more ideologically simple than its rivals. This is because composition and identity are, Cowling argues, of a common ideological kind: "If identity and composition are of a common ontological [sic – in context it's clear that Cowling means 'ideological'] kind, there is no ideological benefit to eliminating composition without also dispensing with an ideological commitment to identity (or, alternatively, distinctness)" (Cowling 2013: 3906). Since everyone, whether or not they're nihilists, should be all right with an ideological commitment to identity (or distinctness), the nihilist's theory is not ideologically simpler than the mereological theories of her rivals.

Cowling takes it for granted that when we compare the ideological simplicity of competing theories, we simply count the number of kinds of ideological primitives required by the theories (see especially Cowling 2013: 3897). He contrasts this view with what he takes to be the received view, that comparisons of ideological simplicity are judged by counting the number of ideological primitives required by the theories. But, as I note in §3 above, it seems implausible that we measure the ideological simplicity of a theory by simply counting the number of ideological primitives required by that theory. Some primitives are better than others, as far as concerns the ideological complexity which those primitives contribute to theories which make use of those primitives. A similar point can be made regarding Cowling's view: whether or not comparisons of ideological simplicity crucially involve comparing the *kinds* of ideological primitives required by some competing theories, it will not simply amount to *counting the number* of kinds of ideological primitives required by those theories.

But let's leave that difficulty aside. I do think Cowling may be on to something with the notion of "kinds" of ideological primitives, and with

his suggestion that we should judge the ideological simplicity of a theory by considering the kinds of ideological primitives required by the theory. I am not convinced, however, that composition and identity are of "the same ideological kind." It would be helpful if we had some definite list of traits, joint satisfaction of which was sufficient to establish, or at any rate suggest, that two relations are of the same ideological kind. If we had such a list I could argue that identity and composition (or parthood or proper parthood) fail to satisfy some sufficient number of shared traits. Unfortunately, Cowling gives us no such general criteria for sameness of ideological kind, other than the plausible idea that if two relations are interdefinable this gives us grounds for thinking they are of the same ideological kind (Cowling 2013: 3897-3898). Parthood (or composition, or any other distinctively mereological notion) and identity are not interdefinable – for example, while identity can be defined in terms of parthood alone, parthood cannot be defined in terms of identity alone.[18] Cowling does not argue that composition and identity are of the same ideological kind because they are interdefinable. Rather, his brief argument for composition and identity being of the same ideological kind consists entirely in his enumerating several respects in which composition and identity are analogous. I'll provide brief commentary on each of these purported analogies.

"on the nihilist conception of composition, improper parthood – the lone kind of composition – is just the relation of identity" (Cowling 2013: 3906)

Taking "x is a proper part of y" as primitive,[19] we can go on to define parthood and improper parthood in the standard way, like this:

x is a part of y $=_{df}$ x is a proper part of y, or $x=y$
x is an improper part of y $=_{df}$ x is a part of y, and it is not the case that x is a proper part of y

On this definition, for x to be an improper part of y is just for x to be a part of y, but to fail to satisfy the first disjunct of the definition of the

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[18]In a recent publication Peter Finocchiaro argues that two terms of are of the same ideological kind *only* if they are interdefinable (Finocchiaro 2019: §3). On this view, parthood and identity would turn out not to be of the same ideological kind since, I've noted, parthood and identity are not interdefinable. If Finocchiaro is right about what it takes for two terms to be of the same ideological kind, that would provide further grounds for rejecting Cowling's arguments for the view that parthood and identity are of the same ideological kind.

[19]It is not uncommon to take proper parthood as our primitive and to define the other mereological terms from there. See, for example, Simons 1987, a standard text on formal mereology. In any case, my basic point would remain unchanged regardless of the mereological primitive I employ.

parthood relation. So, for x to be an improper part of y is for x to satisfy the only *other* disjunct of the definition of the parthood relation – i.e., for $x=y$. On this account, the improper parthood relation is just the identity relation.[20]

For *everyone*, then, on the standard way of characterizing the improper parthood relation, it is the relation of identity.[21] What makes the improper parthood relation a "kind of composition" (as Cowling puts it) is, I take it, that improper parthood can be defined in a manner which involves mereological relations, as in the definitions above. Does that mean composition (or the "proper parthood" relation) is of the same ideological kind as identity? I don't think so. If it did, then it would be far too easy to make *any* multi-place predicate of the same ideological kind as identity. Consider the meaningless relations "gyres," "gimbles," and "imgimbles." Gimbles is our primitive. So, we say that

x gyres $y =_{df} x$ gimbles y, or $x=y$
    and
x imgimbles $y =_{df} x$ gyres y, and it is not the case that x gimbles y

For *everyone*, then, the imgimbles relation is the relation of identity. But then, by Cowling's line of thought, we should concede that "gimbles," partially in terms of which we defined the imgimbles relation, is of the same ideological kind as identity, since these were the same grounds on which he concluded that proper parthood (and composition more generally) is of the same ideological kind as identity. But at this point we should have no tendency to say that gimbles is of the same ideological kind as identity. After all, we could replace "gimbles" with *any* two place predicate in our definitions above, in which case Cowling's line of thought would lead us to conclude that the relation in question is of the same ideological kind as identity. Here's an example:

x gyres $y =_{df} x$ eats y, or $x=y$
    and
x imgimbles $y =_{df} x$ gyres y, and it is not the case that x eats y

The imgimbles relation is just the identity relation, for reasons which should be familiar by now. But then, by Cowling's line of thought, we should concede that "eats," partially in terms of which we defined the imgimbles relation, is of the same ideological kind as identity, since these were the same grounds on which he concluded that proper parthood (and composition more

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[20]See also Simons (1987: 11), who gives the following definition of improper parthood: "If x and y are identical, then we say that x is an *improper* part of y (and vice versa)."

[21]We may, however, take on a nonstandard conception of improper parthood. See below.

generally) is of the same ideological kind as identity. Plausibly, the eating relation and the identity relation are not of the same ideological kind.

So far I've assumed that the conception of improper parthood at issue is one according to which "x is an improper part of $y =_{df} x$ is a part of y, and it is not the case that x is a proper part of y." This conception of improper parthood is standard, and presumably what Cowling has in mind when he writes that "on the nihilist conception of composition, improper parthood – the lone kind of composition – is just the relation of identity," but this conception of the improper parthood relation is not universally held.[22] Cotnoir (2010: 401), for example, suggests that, while we can only give a "rough and informal characterization" of improper parthood, we can think of improper parthood in such a manner that it is definitely not equivalent to the identity relation. Cotnoir writes that "the basic idea is that improper parts are *mereologically equivalent*: they are indistinguishable using purely mereological predicates, but distinguishable using non-mereological ones. If one assumes that mutual parts are *topologically* indistinguishable as well, then improper parthood can be thought of as a kind of collocation" (Cotnoir 2010: 401). Cotnoir gives as an example of improper parthood a lump of clay which constitutes a statue. The lump of clay is not identical with the statue, but the lump and the statue nevertheless share all of the same parts (both proper parts and improper parts). In fact, "They are 'mutual parts': the clay is an improper part of the statue and the statue is an improper part of the clay" (Cotnoir 2010: 401).[23]

If the improper parthood relation, as conceived by Cotnoir, is of the same ideological kind as composition or proper parthood, then this would undermine the argument from ideological simplicity only on the assumption that the nihilist will include the improper parthood relation (as conceived by Cotnoir) in her ideology. But I don't see any reason why the nihilist should feel compelled to include the improper parthood relation (as conceived by Cotnoir) in her ideology.[24]

"More generally, composition has a strong claim to being viewed as a broadly logical relation. Like identity, it contributes nothing to the non-structural,

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[22]Thanks to Michael Rea for bringing this point to my attention.

[23]This idea that the lump and the statue are parts of one another is endorsed by other philosophers as well (see, e.g., Thomson 1998; for a general discussion of this topic see Walters 2019). Cotnoir's work on this subject is of particular interest, however, since he explicitly connects the lump and statue case with the sort of nonstandard conception of improper parthood which interests me here.

[24]True enough, the nihilist will concede that any particular thing is "mereologically indistinguishable" from itself, but this is true only because every thing is trivially indistinguishable from itself in *every* respect, mereological or otherwise.

qualitative character of the world, and, like identity, facts about its general nature seem to be a non-contingent matter" (Cowling 2013: 3906)

These points of comparison between composition and identity seem to me to be very easy to satisfy. For example, a fact's being necessary, rather than contingent, also "contributes nothing to the non-structural, qualitative character of the world," and (assuming S5) a fact's being necessary seems to be a non-contingent matter. Neither of these rather weak similarities between necessity and identity seems to me to have much to do with whether they are of the "same ideological kind." It's also up for debate whether facts about composition *are* non-contingent (cf. Cameron 2007, Miller 2010), and whether composition "contributes nothing to the non-structural, qualitative character of the world." Regarding the latter point, for example, van Inwagen has argued (plausibly, I think) that whether some xs compose a y determines whether the activities of the xs cause or give rise to the instantiation of certain sorts of mental states (van Inwagen 1990: §12; see also Bailey 2016, Dowland 2016).[25] Van Inwagen's idea is that the xs cannot collectively instantiate those mental states – the only sense in which the xs might jointly instantiate the mental states is by composing some single object which instantiates those mental states.

"Furthermore, regardless of whether one endorses nihilism, classical extensional mereology demands certain conceptual ties between these relations. Most notably, the uniqueness of composition precludes distinct entities being composed of the very same objects" (Cowling 2013: 3906)

This point of comparison between composition and identity seems to me to be particularly odd. So what if classical extensional mereology posits the uniqueness of composition? Formal mereological systems can be developed in any number of ways. In particular, there's no conceptual requirement that such systems maintain the uniqueness of composition. In his defense Cowling might suggest that classical extensional mereology is *true*, and so we have reason to take its commitments seriously. But, of course, the nihilist won't concede that classical extensional mereology is true.

That completes Cowling's case that composition and identity are of the same ideological kind. It seems to me that Cowling gives us, at best, several respects in which composition and identity are very weakly analogous.[26] More specifically, the criteria which Cowling appeals to here (that is, with respect to the issue of whether composition and identity are of the same

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[25]Thanks to Peter Finocchiaro for bringing to my attention the relevance of van Inwagen's view for Cowling's argument.

[26]For further arguments to the effect that composition and identity are only weakly analogous, see van Inwagen 1994.

ideological kind) are either very easy to satisfy or, in the case of Cowling's point regarding classical extensional mereology, irrelevant to whether composition and identity are of the same ideological kind. I conclude that Cowling has failed to provide convincing grounds for the view that composition and identity are of the same ideological kind.

5   Conclusion

I hope to have accomplished two goals. First, I have defended Sider's argument from ideological simplicity against several objections. In doing so, I hope to have accomplished my second goal, which is to clarify what Sider's argument is (and what it *should* be), and more generally to clarify what it means to say that theories (and mereological nihilism in particular) exhibit greater or lesser degrees of "ideological simplicity."

While nihilism's relative ideological simplicity provides some support for nihilism, it does not settle the matter. Even if nihilism enjoys some support from its relative ideological simplicity, there may be other respects in which nihilism falls short, and I have made no attempt here to address those various respects in which philosophers have sometimes thought nihilism is objectionable. A full evaluation of nihilism's prospects is beyond the scope of a single paper.[27]

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