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## THE RIGHT STUFF

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This paper argues for including stuff in one's ontology. The distinction between things and stuff is first clarified, and then three different ontologies of the physical universe are spelled out: a pure thing ontology, a pure stuff ontology, and a mixed ontology of both things and stuff. (The paper defends the latter.) Eleven different reasons for including stuff (in addition to things) in one's ontology are given (seven of which the author endorses and four of which would be sensible reasons for philosophers with certain metaphysical positions that the author does not happen to hold). Then five objections to positing stuff are considered and rejected.

**Keywords:** stuff, things, ontology, constitution, mereology

### 1. Introduction

There are a lot of good reasons to believe in things. For example, you probably think that you are one. (A thing, that is – not a good reason to believe in things.) And sure enough, the vast majority of philosophers throughout history have included things in their ontologies. But I think that there are also excellent reasons to believe in stuff, in addition to things. The aim of this paper is to make the case for such a dualist ontology. In order to make the case, I will first attempt to make the distinction between things and stuff sufficiently clear. Then I will outline the differences between a pure thing ontology, a pure stuff ontology, and a mixed ontology of things and stuff. Once I've accomplished those tasks, I will offer eleven different reasons for

positing stuff.<sup>1</sup> Finally, I will consider what I take to be the five main objections to including stuff in one's ontology, together with replies to those objections. (Note: Throughout the paper I'll be restricting my attention to the physical universe, and the physical things and stuff therein.)

Let me start by discussing the distinction between stuff and things. Stuff, as I understand it, is what things are made of. Think for example of a solid, homogeneous sphere. That's a thing. Now think of the region occupied by the sphere. That region is filled with stuff. (The very stuff that the sphere is made of, in fact.) Same with all the various subregions of the region occupied by the sphere: they're all filled with stuff, too. In general, stuff fills various regions of space, and some portions of stuff *constitute* things (like the portion of stuff that currently constitutes me), while other portions don't (like a random portion consisting of some stuff on the moon and the water in my glass). Meanwhile, things are also known as "objects" and "entities," and stuff is also known as "matter" and "material."

It is worth noting at the outset a difference between traditional stuff ontologies and the kind of stuff ontology that I am advocating. Many philosophers who write about stuff, perhaps following the lead of the Ancient Greek philosopher Anaxagoras, seem to endorse a stuff ontology that posits multiple, fundamentally different kinds of stuff, which are themselves distinct sub-categories of the broader ontological category of stuff. For Anaxagoras, these were "natural kind" varieties of stuff, like *water*, *gold*, and *wood*. For more recent writers, these tend to be more scientific-sounding varieties of stuff, like *quark stuff*, *boson stuff*, and *superstring stuff*.<sup>2</sup>

For me, however, the category of *physical stuff* is similar to the category of *physical things* in this respect: Just as there are no important ontological differences among physical things with different properties, so too there are no important ontological differences among physical stuffs with different properties. For example, although there are blue things and red things, these

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<sup>1</sup> Four of the eleven reasons are ones that I do not personally endorse, but seven are reasons that I do endorse. (For an additional reason for positing stuff, which I will not discuss here, see Lewowicz and Lombardi [2013], where the authors argue that although physics may require an ontological category for things, chemistry requires a category for stuff.)

<sup>2</sup> By 'quark stuff' I mean *the kind of matter that quarks are made of*, and not, say, *collections of quarks*.

are not distinct ontological categories. Instead, *blue* and *red* are just two different ways of being for representatives of the single ontological category of *physical objects*.

Similarly, although there is blue stuff and red stuff, these are not distinct ontological categories. Instead, *blue* and *red* are just two different ways of being for representatives of the single ontological category of *physical stuff*. And likewise with all other “stuff kinds”, including *water*, *gold*, *quark stuff* and *superstring stuff*. It’s all just stuff, which is capable of being arranged in different ways and exemplifying various properties.

It might be wondered whether there could be essential properties of stuff (such as *being metal stuff*, *being wood stuff*, *being quark stuff*, or *being boson stuff*), and whether such properties would have to correspond to different ontological categories within the category of stuff (such as *metal*, *wood*, *quark stuff* and *boson stuff*).<sup>3</sup> My view is that there could well be essential properties of stuff, so that, for example, it’s impossible for some matter to constitute a quark at one time and then a boson at a later time. But I can’t see any reason to think that such essential properties would have to correspond to different ontological categories. After all, many people think *being human* is an essential property of the things that are human, but very few philosophers would say that *humans* should be a special ontological sub-category of the category of *physical objects*.<sup>4</sup> And similarly, many of us think *being a quark* is an essential property of the things that are quarks, but few of us think that *quarks* should be a special ontological sub-category of the category of *physical objects*.

I take the notions of *thing*, *stuff*, and *constitution* to be unanalyzable. But here is a principle that, I think, sheds some light on the relations among these three concepts.

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<sup>3</sup> I am grateful to members of The Corridor Reading Group for raising this issue in conversation.

<sup>4</sup> It should be noted, though, that Lynn Rudder Baker holds the closely related view that *people* are an ontologically significant sub-category of the category of *physical objects*. See Baker [2000], especially Chapter 6.

**The Principle of Constitution:** For each physical object,  $x$ , and time,  $t$ , such that  $x$  is present at  $t$ , there is some stuff,  $s$ , such that  $x$  is constituted by  $s$  at  $t$ .<sup>5</sup>

Perhaps some examples here will help. Your body is constituted by a certain portion of matter right now, and my bicycle is constituted by a different portion of matter. These examples also illustrate another important fact about things and stuff, namely, that a thing is never identical to the stuff that constitutes it. My bicycle is not identical to the matter that constitutes it, since the matter could survive being melted, but my bicycle could not. And your body is not identical to the matter that constitutes it right now, for your body will soon be constituted by some different matter.

A terminological note. Some philosophers use the word ‘constitution’ to refer to a putative relation between a thing and a thing, as in the claim that I am constituted by my body but am not identical to my body.<sup>6</sup> I happen to reject the view that such philosophers are making when they claim that I am constituted by my body but am not identical to my body. But more importantly, I am not using the word ‘constitution’ in the way these philosophers are using it. For I use ‘constitution’ exclusively to refer to a putative relation between some stuff and a thing. (I will also sometimes express the same relation by saying that a certain thing is “made of” a particular portion of stuff.)

Given a rough understanding of the alleged distinction between things and stuff, we can identify three ontologies of the physical world. Each of the three ontologies amounts to a way of answering the question, *Is it fundamentally a world of things or a world of stuff?* First there is the standard ontology, with only things.

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<sup>5</sup> In most of what follows I will leave out temporal relativizations like those in The Principle of Constitution. But I mean for them to be there implicitly.

<sup>6</sup> See, for example, Burke [1992] and Baker [2000].

**The Pure Thing Ontology:** The physical world is fundamentally a world of things, rather than a world of stuff.<sup>7</sup>

Next there is the pure stuff ontology.

**The Pure Stuff Ontology:** The physical world is fundamentally a world of stuff, rather than a world of things.<sup>8</sup>

And finally, there is an ontology that combines things and stuff.

**The Mixed Ontology:** The physical world is fundamentally a world of both things and stuff.<sup>9</sup>

There are, of course, a number of different ways of understanding how fundamentality can be applied to ontological categories, and I do not wish to commit here to any one way of doing so. But perhaps it will be helpful, just for the sake of specificity, to mention the way of thinking about fundamentality that I happen to prefer. As I see it, the best way to think about fundamentality is in terms of the *in virtue of* relation, and the best way to think of the *in virtue of* relation is as a relation on facts. So, for example, there is the fact that my shirt is blue, which is just the instantiation of blueness by my shirt; and there is the fact that my shirt has a cool color, which is the instantiation by my shirt of a different property; and the fact that my shirt has a cool color obtains in virtue of the fact that my shirt is blue.

When the *in virtue of* relation is understood in this way, as a relation on facts, it's natural to think of *brute facts* as facts that do not obtain in virtue of other facts. And it's natural to think of the *in virtue of* relation as ordering the facts into a kind of hierarchy, with less fundamental facts above, more

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<sup>7</sup> The Pure Thing Ontology is very much the majority view. So much so, in fact, that it is a bit misleading to cite just one or three Pure Thing Ontologists (as if they somehow form a rare and distinctive class of philosophers). But if examples are required, one might mention Plato, Immanuel Kant, Gottfried Wilhelm Leibniz, W.V. Quine, and David Lewis.

<sup>8</sup> For examples of Pure Stuff Ontologists, see Curd [2011] and Jubien [2009].

<sup>9</sup> For examples of people who endorse The Mixed Ontology, see Markosian [2004a], Kleinschmidt [2007], Koslicki [2010], and Lewowicz and Lombardi [2013].

fundamental facts below, and brute facts as the most fundamental facts at the bottom of the hierarchy.<sup>10</sup>

This picture also gives us a natural way to think about fundamentality as applied to ontological categories: an ontological category whose representatives appear in the most fundamental facts is fundamental, and an ontological category whose representatives appear only in less fundamental facts is not fundamental.

This framework will also allow us to distinguish between two different ways of being non-fundamental. Sets are non-fundamental insofar as the facts about their existence obtain in virtue of facts about the existence of other things. For example, singleton Socrates exists in virtue of the existence of Socrates, so Socrates is more fundamental than his singleton set. But this does not mean that singleton Socrates does not exist, for it does. Societies, on the other hand, are (arguably) non-fundamental insofar as all talk about societies can be paraphrased into talk about individual people. So societies are (arguably) so non-fundamental that they don't even really exist.

Here, then, is how I am proposing to capture the difference between our different ontologists. The Pure Thing Ontologist says that there are things, and also that the most fundamental level of facts (consisting of the brute facts that determine everything else about the physical world) includes facts about things, and does not include any facts about stuff; the Pure Stuff Ontologist says that there is stuff, and also that the most fundamental level of facts includes facts about stuff, and does not include any facts about things; and, finally, the Mixed Ontologist says that there are things and there is stuff, and also that the most fundamental level of facts about the physical world includes some facts about things as well as some facts about stuff.

But I want to emphasize that the above is offered as just one scheme for understanding fundamentality as applied to ontological categories. The reader who prefers some other scheme for doing so is welcome to cash out the claims of The Pure Thing Ontology, The Pure Stuff Ontology, and The Mixed Ontology in terms of her own preferred way of understanding fundamentality. As far as I can tell, nothing I say below about the reasons for positing stuff should be affected by the choice of one such scheme over another.

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<sup>10</sup> This is the account of brute facts that is sketched out in Markosian [1998a].

## 2. Eleven Reasons for Believing in Stuff

The first reason for positing stuff that I want to discuss is that commonsense supports an ontology that includes stuff. Our pre-theoretical conception of the world involves thinking of it as containing a great many *things*: rocks, trees, individual animals, etc. But our pre-theoretical conception of the world also involves thinking of it as containing a lot of *stuff*: the stuff that a particular rock is made of, the wood of this tree, the meat from that mammoth, etc. We think of all this stuff as being unevenly distributed throughout the world, and also as possessing different properties in different regions. I suspect that this conception of the world as containing lots of stuff (in addition to a great many things) goes back at least as far as the caveman days. In fact, our favorite stuff, water, has no doubt figured prominently in the thinking of humans for as long as there have been humans. (And similarly with many other species of animal.)

Now that we're fancy-pants philosophers, it is possible, with some effort, to try to replace all of our thinking about stuff with alternative thinking about things. But since our commonsense ontology includes stuff, we'd have to have a good reason to motivate any conceptual shift toward a pure thing ontology. And, as I will argue near the end of this paper, we don't have any such reason. It's true that a *pure stuff* ontology is quite counterintuitive, insofar as it excludes things, but it turns out that there are no compelling reasons to *exclude* stuff from our ontology. So we should stick with what commonsense tells us: the universe contains a lot of stuff.<sup>11</sup>

The second reason for positing stuff is that doing so fits the way we talk. Ordinary language is filled with apparent references to stuff.<sup>12</sup> Here are some examples.

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<sup>11</sup> In fact, as I will argue below, the universe *is* a lot of stuff.

<sup>12</sup> There is a vast literature on the semantics of mass terms, and I will not have anything to add to that discussion. But for those who are interested, a good place to start is Koslicki [1999].

- (1) Water is good to drink.
- (2) The ice cream at Herrell's is better than the ice cream at Bart's.
- (3) This stuff is red.
- (4) There is some sticky stuff on the table.

There are of course ways of trying to eliminate all apparent talk about stuff. The most likely way involves replacing talk about stuff with talk about pluralities of things, as in the following paraphrases of (1)-(4).

- (1a) Pluralities of H<sub>2</sub>O molecules are good to drink.
- (2a) Pluralities of molecules that are arranged ice-cream-wise at Herrell's are better than pluralities of molecules that are arranged ice-cream-wise at Bart's.
- (3a) These objects collectively exemplify redness.
- (4a) There are some objects on the table that collectively exemplify stickiness.

But these thing-paraphrases of stuff sentences don't really seem to capture the original meanings, for several reasons. For one thing, the thing-paraphrases are more than a little bit convoluted, and seem to express propositions that are considerably more complicated than those expressed by the original sentences. For another thing, in many cases (including cases like (3) and (3a)), the thing-paraphrases have explicitly plural subjects, while the originals have what appear to be singular subjects. So the thing-paraphrases seem to be changing the subject in a significant way.<sup>13</sup> And for a third thing, it is doubtful that ordinary people who utter sentences like (1)-(4) really mean anything like the propositions expressed by these other sentences.

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<sup>13</sup> But perhaps little weight should be placed on this second reason for thinking that sentences like (3a) are inadequate paraphrases of sentences like (3); for the consensus among linguists is that mass terms like 'this stuff' and 'the clay' are actually, despite appearances to the contrary, non-singular terms. See, for example, Laycock [2006], Nicolas [2014], and Pelletier and Schubert [2003]. (For more on the adequacy of paraphrases like these, see the discussion of my eighth reasoning for positing stuff, below.)



So much for caveman ontology and ordinary language philosophy. Let's turn to some more purely philosophical reasons for positing stuff. The third reason for positing stuff (and my favorite) concerns the possibility of extended mereological simples. Mereological simples are objects that do not have proper parts. There are two main views about the nature of such simples. One view is that they have to be point-sized.

**The Pointy View of Simples:** Necessarily, for any physical object,  $x$ ,  $x$  is a mereological simple iff  $x$  is point-sized.

Another view about simples is that they can be extended.

**The Possibility of Extended Simples:** It is possible for there to be an extended physical object that is a mereological simple.<sup>14</sup>

Here is a quick argument for The Possibility of Extended Simples.<sup>15</sup> Ask yourself whether you can imagine a possible world with just one object: a perfectly solid, physically indivisible, and homogeneous sphere floating in otherwise empty space. Now, here is an interesting fact: if you can indeed imagine such a world (and I think you can), then it follows that The Pointy View of Simples is false and The Possibility of Extended Simples is true. Here's why. The Pointy View of Simples entails that the only possible worlds with just one object are worlds containing only a single point-sized object. For any non-point-sized object, like our solid, indivisible sphere, is not a simple, according to The Pointy View of Simples. Which means that according to The Pointy View any such object has proper parts. And that in turn means that it is not alone in the world.

But it seems like you were not kidding yourself when you thought you were imagining a possible world with just one object that happened to be a solid, indivisible sphere. For the phrase 'a world containing just one object, which is a solid and indivisible sphere' seems to be a perfectly good and literal description of a genuinely possible world. Moreover, there is reason to

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<sup>14</sup> For more on mereological simples, The Pointy View of Simples, and The Possibility of Extended Simples, see Markosian [1998b].

<sup>15</sup> This is a variation on an argument against The Pointy View of Simples that I give in Markosian [1998b].

reject a closely related and even more radical consequence of The Pointy View of Simples, namely, that whenever you imagine a possible world with a solid sphere in it, you are actually imagining a world with an infinite number of physical objects.<sup>16</sup> The conclusion to be drawn is that The Pointy View of Simples is false. Which means that The Possibility of Extended Simples is true. But anyone who believes The Possibility of Extended Simples should also believe in stuff. Here's why.

Suppose that, like Democritus and others, you believe that a perfectly solid and physically indivisible sphere would be a simple. (Democritus presumably thinks such a sphere would be a simple in virtue of being physically indivisible, while proponents of the Maximally Continuous View of Simples, or MaxCon, think it would be a simple in virtue of being spatially continuous.<sup>17</sup>) Now imagine such a sphere that is not homogeneous. For example, suppose it would be natural to describe it as having a blue half and a red half. Of course, someone who thinks the sphere is a simple cannot say that it literally has a blue half and a red half, since according to such a person the sphere does not have any proper parts. So what can such a person say?

One option is to say that the sphere has such spatially-indexed properties as *blue in region R1* and *red in region R2*. Another option is to say that the sphere stands in the *blue at* relation to R1 and the *red at* relation to R2. A third option is to ascribe to the sphere the property of having a certain half-blue, half-red pattern of colors, which pattern is a monadic, "distributional" property.<sup>18</sup> But none of these options seems very good at accommodating commonsense intuitions about color ascriptions. It would be nice if we could say that plain old *blueness* is a monadic property that is exemplified somewhere in our example involving the sphere, and similarly with plain old *redness*.

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<sup>16</sup> For The Pointy View of Simples entails that the sphere is not a simple; and The Pointy View of Simples also entails that if the sphere is composed of simples, then there are an infinite number of point-sized simples (since that is how many it would take to compose a solid sphere); and, finally, The Pointy View of Simples entails that if the sphere is not composed of simples, then each part of the sphere has parts, and so on all the way down, which means that there are infinitely many parts of the sphere.

<sup>17</sup> On both the view that mereological simples are physically indivisible and MaxCon, see Markosian [1998b].

<sup>18</sup> For a defense of the color-distribution-property view, see Parsons [2004].

Luckily there is a way of saying these things. For all we need to do is posit stuff. Then we can say that although the sphere does not have parts, the portion of stuff that constitutes it does have parts, and that one subportion of the stuff that constitutes the sphere is blue, while another subportion is red.

I don't expect everyone to be convinced by the above argument for The Possibility of Extended Simples. But the upshot of these considerations is that those who do endorse The Possibility of Extended Simples have an excellent reason to believe in irreducible talk, and facts, about stuff.<sup>19</sup>

The fourth reason for positing stuff has to do with Nihilism and the possibility of gunk. Nihilism is a response to Peter van Inwagen's Special Composition Question, which asks about the circumstances under which two or more objects compose a further object. The question can be put this way.

**The Special Composition Question:** What necessary and jointly sufficient conditions must any *x*s satisfy in order for it to be the case that there is an object composed of those *x*s?<sup>20</sup>

It is notoriously difficult to come up with an answer to The Special Composition Question that does not have a great many very counterintuitive consequences about when composition does and does not occur. In particular, a number of answers that have been proposed entail the existence of far fewer composite objects than commonsense allows. The most extreme view among these is Nihilism, according to which there are no genuinely composite objects.

**Nihilism:** It is never the case that two or more objects compose a further object.<sup>21</sup>

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<sup>19</sup> I mentioned above that the preceding reason for positing stuff (the one involving The Possibility of Extended Simples) happens to be my favorite one. The next four reasons for positing stuff that I will discuss do not motivate me personally, since they involve giving aid to various metaphysical positions that I do not happen to endorse. But I think they are interesting reasons that a sensible philosopher could have for positing stuff.

<sup>20</sup> For his (slightly different) formulation of The Special Composition Question, see van Inwagen [1990], Section 2.

<sup>21</sup> For a discussion of Nihilism, see van Inwagen [1990], Section 8.

Thus, the Nihilist says that the only physical objects that exist are mereological simples.

One main problem facing this view is that it entails that certain sentences that we would ordinarily take to be true are in fact on a par with other sentences that we would ordinarily take to be false. For example, consider this pair of sentences.

- (5) There is a chair in the room.
- (6) There is an elephant in the room.

Even though the Nihilist has to say that both (5) and (6) are always, strictly speaking, false (since in our world no simple is either a chair or an elephant), she would like to be able to accommodate our intuition that, at least in many normal situations, there is a sense in which (5) is true while (6) is false.

Fortunately, there is a way for the Nihilist to accommodate this intuition.<sup>22</sup> To see how, consider the following pair of sentences.

- (5a) There are some simples arranged chairwise in the room.
- (6a) There are some simples arranged elephantwise in the room.

In many normal situations, (5a) is true while (6a) is false. Thus the Nihilist can say that, in those situations, even though (5) is, strictly speaking, false, it nevertheless has a paraphrase – (5a) – that is true, whereas (6) does not. The Nihilist can thus claim that her view is not completely at odds with commonsense.<sup>23</sup>

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<sup>22</sup> The following method of using paraphrases in an attempt to show that a given “conservative answer” (see below) to The Special Composition Question is not as much at odds with commonsense as it at first appears is developed by van Inwagen in his [1990].

<sup>23</sup> This is actually a slight variation on van Inwagen’s paraphrasing strategy. On van Inwagen’s approach, the claim is not that sentences like (5) are literally false but have true paraphrases; instead, van Inwagen’s strategy is to say that sentences like (5) are in fact true because they express the same propositions as their paraphrases.

So far so good. But, unfortunately, it turns out that there is a problem (raised by Theodore Sider) facing this paraphrasing solution.<sup>24</sup> Suppose that there are no simples. I.e., suppose that every physical object has proper parts.<sup>25</sup> If every physical object has proper parts, then the parts must have parts, and so on *ad infinitum*. In that case the world consists of what David Lewis has called “atomless gunk”.<sup>26</sup> And in that case, there are no simples to be arranged chairwise, so that paraphrases like (5a) can never be true.

Fortunately for the Nihilist, there is a way out of this difficulty. If the Nihilist is willing to posit stuff, then she can offer the following alternative paraphrases of (5) and (6).

- (5b) There is some stuff arranged chairwise in the room.
- (6b) There is some stuff arranged elephantwise in the room.

And the Nihilist can then say that in many normal circumstances (even in a world of gunk), (5b) will be true while (6b) is false. The upshot is that those who endorse both Nihilism and the possibility of gunk should also believe in at least the possibility of irreducible stuff.<sup>27</sup>

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<sup>24</sup> See Sider [1993].

<sup>25</sup> It might be wondered how it could be that every physical object has proper parts. Here is one possible way. Suppose that The Pointy View of Simples is true, and that, as it happens, there are no point-sized objects. Then since every object is extended, no object is a simple. For each object, there is no limit to the number of times that object could be divided into smaller (but still extended) parts.

<sup>26</sup> See for example Lewis [1991], p. 20.

<sup>27</sup> More accurately: (1) a Nihilist who thinks that the actual world in fact contains some gunky objects in addition to some simples must also accept that The Mixed Ontology is actually true, (2) a Nihilist who accepts the possibility of a world that contains some gunky objects in addition to some simples must also accept that The Mixed Ontology could be at least contingently true, (3) a Nihilist who thinks it is necessarily true that there are both some gunky objects and some simples is committed to the necessary truth of The Mixed Ontology, (4) a Nihilist who thinks that the actual world contains only gunky objects must accept that The Pure Stuff Ontology is actually true, (5) a Nihilist who accepts the possibility of a world that contains only gunky objects must also accept that The Pure Stuff Ontology could be at

The fifth reason for positing stuff has to do with gunk and van Inwagen's own view about when composition occurs. Van Inwagen's view about composition entails that the only physical objects that exist are simples and living organisms.<sup>28</sup> Thus, for reasons similar to those just cited in connection with Nihilism, those who endorse both van Inwagen's view about composition and the possibility of atomless gunk should also believe in at least the possibility of irreducible stuff.<sup>29</sup> For otherwise such a person, like the Nihilist, will not always have a way of distinguishing between false sentences that can be paraphrased into true sentences, like (5), and false sentences that cannot be so paraphrased, like (6).

The sixth reason for positing stuff has to do with various other views of composition. Let's say that an answer to The Special Composition Question that entails fewer objects than commonsense would countenance is a "conservative" answer to that question. Thus Nihilism and van Inwagen's view will both count as conservative answers to The Special Composition Question (since according to those views there are no such things as atoms, rocks, tables, or stars), as will the view that in order for some *x*s to compose something, those *x*s must be in contact with one another (which also entails that there are no atoms, etc.). It should be clear that the above reasoning generalizes to any such view. That is, the proponent of any conservative view about composition has an excellent reason to believe in at least the possibility of irreducible stuff.

The seventh reason for positing stuff concerns the coincident-objects response to certain problems of material constitution. Recall the well-known problem of the statue and the lump.<sup>30</sup> We want to say that a statue made of a lump of clay is distinct from the lump, since (i) the statue could not survive being squashed, while the lump could, and (ii) the lump has existed for longer

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least contingently true, and (6) a Nihilist who thinks it is necessarily true that all objects are gunky is committed to the necessary truth of The Pure Stuff Ontology. Similar remarks apply to the connections between van Inwagen's view of composition and other "conservative" views of composition. (See below.)

<sup>28</sup> For the details, see van Inwagen [1990].

<sup>29</sup> For the record, van Inwagen himself rejects the possibility of atomless gunk. See van Inwagen [1990], p. 5.

<sup>30</sup> See Gibbard [1975], and Burke [1992].

than the statue. But it is odd to say that there are two objects right there in the same spatial location, made of exactly the same parts. So what should we do?

One popular response to this problem is the “coincident-objects” response. According to this response, the statue and the lump are indeed two distinct things, with different modal and temporal properties, despite sharing their location and their parts. Two such things, which are both colocated and composed of the same parts, are said by proponents of this view to be *coincident* objects.

The natural objection to such a view is that it is bizarre to posit coincident objects. For it seems awfully strange to say that it’s possible for two physical objects to be in exactly the same place at exactly the same time. And it seems equally strange to say that it’s possible for two physical objects to be composed of exactly the same parts at the same time.

Although I myself am not a fan of the coincident-objects response, I do want to point out that appealing to stuff can help the coincidence theorist reply to this objection.<sup>31</sup> The reply I have in mind does not involve saying that either the statue or the lump is identical to the stuff that constitutes them. Rather, the reply involves claiming that there is a single portion of stuff in the relevant region, and that each of the two objects is constituted by that same portion of stuff. Then the coincidence theorist can go on to say that it is not so strange after all to have two objects being colocated, as long as those objects are also constituted by the same portion of stuff. And similarly that it is no big deal to have two objects being composed of the same parts, as long as those objects are also constituted by the same portion of stuff. In short, the coincidence theorist can ease the counterintuitiveness of her view by appealing to stuff. And she can adopt this as her slogan: “No colocation without coconstitution!”

One likely objection to this view is going to be that it is bizarre for a single portion of stuff to constitute two different objects. I think the coincidence theorist has to bite the bullet on this one, and insist that examples like the statue and the lump demonstrate that this is not only possible but also actual. But I also think that this is not an extra cost for the coincidence theorist, since

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<sup>31</sup> In his [1997] Zimmerman considers the possibility of identifying the lump with some stuff. What I am offering the coincidence theorist is something different from the view considered by Zimmerman, insofar as the view I am offering does not involve identifying either the statue or the lump with the relevant stuff.

the main intuition behind the coincidence theory is that, in the case of the lump and the statue, for example, what we have is two objects made of the same stuff.<sup>32</sup>

Meanwhile, there are other objections to the coincidence view that I have not mentioned, and that the appeal to stuff does not appear to solve.<sup>33</sup> (I suppose the moral is that stuff can do a great deal for you, but you can't expect it to solve all of your problems.)

The eighth reason for positing stuff has to do with another problem of material constitution. Consider my bicycle and the matter that it is made of. We have some reason to think that they are not identical: the bicycle cannot survive being melted, or scattered all over the universe, but the matter can. I take it, then, that being able to account for the apparent truth of the following sentences is an important desideratum.<sup>34</sup>

- (7) The matter that constitutes the bicycle can survive being melted, but the bicycle cannot.
- (8) The matter that constitutes the bicycle can survive being divided into tiny bits and scattered all over the universe, but the bicycle cannot.

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<sup>32</sup> Another likely objection to this view will be that it is problematic to have two distinct things *and* a portion of stuff all located in the same region. For a response to a variation on this objection please see Section 3 below.

<sup>33</sup> The main objection is the "grounding" objection: How can the statue and the lump differ with respect to their temporal and modal properties if they are composed of exactly the same parts? What grounds the difference in their properties? The appeal to stuff does not seem to help here, since the claim is that the two objects are constituted by the same portion of stuff.

<sup>34</sup> It might be tempting to think that this reason is really the seventh reason restated. But I think that it's not. One important difference between the two is that the eighth reason (unlike the seventh) has nothing to do with helping the coincident objects view. Another important difference is that the commonsense intuitions behind Reason 8 (involving the claim that the bicycle cannot survive being melted while the matter can) are quite distinct from the commonsense intuitions behind Reason 7 (namely, whatever intuitions are meant to support the idea that the statue and the lump are two distinct objects).



The stuff solution to this “problem” is so straightforward that it hardly seems like a genuine problem. For the stuff theorist can say that there really is a bicycle, and there really is some matter, and they really are distinct. Thus, the stuff theorist can account for the apparent truth of (7) and (8) by saying that they are literally true. But of course the thing theorist cannot say this.

There are two main solutions available to the thing theorist. The first involves saying that sentences like (7) and (8) are really about *pluralities of things* rather than stuff. For example, according to this line, a sentence like (8) can be paraphrased as follows.

- (8a) The tiny objects that compose the bicycle can survive being separated and scattered all over the universe, but the bicycle itself cannot survive being divided into tiny bits and scattered all over the universe.

I have two objections to this pluralities-rather-than-stuff solution. The first, not surprisingly, is that I don’t like this proposed paraphrase of (8). For notice that the first conjunct of the original sentence appears to have a singular subject (‘The matter that constitutes the bicycle’), while its paraphrase has an explicitly plural subject (‘The tiny objects that compose the bicycle’). To me, this is a genuine case of changing the subject. For I take the first conjunct of (8) to express a proposition about some matter, while the first conjunct of (8a) expresses a proposition about some objects.<sup>35</sup> (This objection should of course not convince any hard-core thing theorists. But I think it might be enough to sway someone who was feeling neutral on the topic until now.)

My second objection to this pluralities-rather-than-stuff solution is that the relevant paraphrasing approach seems unable to handle certain variations on the problem. For example, consider this sentence.

- (9) It’s possible that some of the matter in the universe continues to exist even though none of the current objects in the universe continues to exist.

Here is the sort of case that leads me to think that (9) is true. Suppose we have a gigantic pasta maker. Suppose the pasta maker first blends everything put

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<sup>35</sup> But see footnote 13 above for a reason to distrust this appearance of a difference in subject between the two sentences.

into it into a continuous and homogeneous kind of primordial goop, and then it (the pasta maker) pushes the resulting matter out through a round opening, so that the result is like a long strand of spaghetti. Suppose we put every physical object in the universe into this pasta maker, so that we end up with one enormous spaghetti, and then annihilate the pasta maker itself. Then it would be natural to say that none of the original objects in the universe continues to exist, although much of the original matter does.

For another example that seems to cause problems for the pluralities-rather-than-stuff solution to our current problem of material constitution, consider this sentence.

- (10) It's possible to get an object to go out of existence by rearranging the matter that the object is made of in such a way that all of the object's smaller parts also go out of existence, but the matter does not.

Here I have in mind the following sort of case. Suppose we have an object composed of six mereological simples, each of which is shaped like a tiny sphere. Suppose we melt the tiny spheres and pour the resulting "molten matter" into a very long, very narrow channel, like a riverbed, so that we end up with a single, wire-shaped piece of matter. Then it would be natural to say that none of the parts of the original object continues to exist, while all of the original matter does.

It's clear that the thing theorist must reject (9) and (10) altogether. For the thing theorist must say that if any of the universe's current matter continues to exist, then that is because there are some (possibly very small) current objects that are collectively identical to that matter and that continue to exist. And the thing theorist must also say that every object is made of some very tough, "hard to kill" parts that will always exist as long as any of the matter that the object is made of continues to exist. These strike me as very bad things to have to say, for two reasons: (i) the two claims in question commit the thing theorist to some very implausible armchair metaphysics, and (ii) the two claims commit the thing theorist to some even less plausible armchair physics.

The second thing solution to our current problem is to say that sentences like (7)-(10) are really about *aggregates of things*, rather than portions of matter. Thus, for example, the aggregates-but-no-stuff theorist can offer this paraphrase of (8).

- (8b) The aggregate of objects that compose the bicycle can survive being divided into tiny bits and scattered all over the universe, but the bicycle itself cannot survive being divided into tiny bits and scattered all over the universe.

The good news about this approach is that it avoids the problem of replacing (what appears to be) a singular subject in the first conjunct of (8) with a plural subject. The bad news is that this paraphrase of (8) makes sense only if we assume that the smaller objects that compose the bicycle actually compose two things. One is a bicycle that will go out of existence if those smaller objects become scattered. And the other is a “mere aggregate” that will continue to exist no matter what, as long as all of its parts exist. But if this assumption is correct, then we have a strange coincidence of a “mere aggregate” and a bicycle.<sup>36</sup> And we also have a problem accounting for the difference in modal and temporal properties between the bicycle and the mere aggregate, considering that they are composed of exactly the same things and occupy exactly the same location.<sup>37</sup>

The ninth reason for positing stuff involves a notable way of resolving a powerful tension confronting students of the mereology of physical objects. Here is the tension. On the one hand, there are these two “pure” mereological principles.

**The Principle of Unrestricted Fusions (PUF):** Necessarily, for any physical objects, the *x*s, the *x*s have a fusion, which is also a physical object.

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<sup>36</sup> Needless to say, it will not help the proponent of The Pure Thing Ontology here to make the move that was recommended above for the coincidence objects theorist, namely, positing some stuff that both the bicycle and the mere aggregate are constituted by; for the whole point of The Pure Thing Ontology is to do without stuff.

<sup>37</sup> An appeal to the Four-Dimensionalist, “temporal parts” view of persistence (see Sider [2001]) will help with the difference in temporal properties, but it will not help with the difference in modal properties. For that, the proponent of The Pure Thing Ontology will most likely have to appeal to some form of counterpart theory.

**Mereological Essentialism (ME):** Necessarily, for any physical object,  $x$ ,  $x$  has each of its parts essentially.

(Together, these principles entail that each fusion of physical objects exists for exactly as long as all of its parts exist.)

Now, The Principle of Unrestricted Fusions is one of the traditional principles laid down by the founding fathers of mereology.<sup>38</sup> Since The Principle of Unrestricted Fusions says that fusions exist “automatically,” it is most natural to combine it with Mereological Essentialism, which says that a fusion exists for only as long as its parts exist.<sup>39</sup>

Of course, not every philosopher accepts Mereological Essentialism and The Principle of Unrestricted Fusions. But, speaking as one who rejects both of them, I have to admit that every philosopher should at least appreciate these two principles for their simplicity and elegance, as well as for the essential contribution they make to a “pure” version of mereology.

All of that was on the one hand. Meanwhile, on the other hand, there is the undeniable fact that commonsense does not accept either of these two principles. So the tension is between the philosophical appeal of the “pure” mereological principles, on the one hand, and the verdicts of commonsense regarding those principles, on the other hand.

Here is how positing stuff allows us to resolve this mereological tension. Suppose you have irreducible stuff in your ontology. Now consider these two mereological principles about stuff.

**The Principle of Unrestricted Fusions for Stuff (PUF for Stuff):** Necessarily, for any portions of physical stuff, the  $ps$ , the  $ps$  have a fusion.

**Mereological Essentialism for Stuff (ME for Stuff):** Necessarily, for any portion of physical stuff,  $p$ ,  $p$  has each of its parts essentially.

Here is what I take to be a beautiful thing. Neither PUF for Stuff nor ME for Stuff goes against commonsense. For example, although commonsense

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<sup>38</sup> See for example Lesniewski [1983], and Leonard and Goodman [1940].

<sup>39</sup> On the connection between The Principle of Unrestricted Fusions and Mereological Essentialism see Van Cleve [1986], and van Inwagen [1990], Section 8.

doesn't believe in an *object* composed of The Eiffel Tower and The Taj Mahal, commonsense has no problem with the idea of some *stuff* that is partly where The Eiffel Tower is located and partly where The Taj Mahal is located. For in general, although commonsense doesn't countenance widely scattered *things* whose parts are seemingly unrelated, commonsense does not have anything against widely scattered *portions of stuff*, even if their parts are seemingly unrelated. We are happy talking about all the gold in the world, and the stuff in my living room. We are even happy talking about such portions of stuff as all of the matter currently owned by you, which is a widely scattered and heterogeneous portion of stuff.

What this means is that if you believe in stuff, then you can endorse both PUF for Stuff and ME for Stuff, without going against commonsense. (Notice, by the way, that similar remarks apply to the stuff versions of several other controversial but "mereologically pure" principles, such as The Pointy View of Simples and the notorious Doctrine of Arbitrary Undetached Parts.<sup>40</sup>) There is much more to be said about the mereology of stuff, but for now the upshot is that anyone who believes in stuff has available a nifty way of resolving the mereological tension noted above. Such a person can be a mereological purist without going against commonsense. And I take that to be a major advantage of positing stuff.

Perhaps some readers will wonder whether we really need to posit stuff in order to reconcile our mereological purism with our commonsense. For it might be thought that we can simply say that there are two very different kinds of physical object, namely, those that are governed by pure mereological principles like The Principle of Unrestricted Fusions and Mereological Essentialism, on the one hand, and those that are not governed by such principles.<sup>41</sup>

I think this thought raises important and difficult questions about the best way to conceive of ontological categories, relations between objects within a single category, and relations between objects from different categories. Unfortunately for me, these are deep questions to which I don't have all the answers. But do I think that the following general picture is an extremely attractive one.

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<sup>40</sup> Van Inwagen formulates this principle and argues against it in van Inwagen [1981].

<sup>41</sup> I am grateful to Ted Sider for raising this point in conversation.

The central idea behind the picture I have in mind is that mereology is what divides the different ontological categories. Each category is governed by some set of mereological principles, but different categories can be governed by different mereological principles. So, for example, it is perfectly possible that The Principle of Unrestricted Fusions is false when applied to physical things, but true when applied to stuff. Moreover, one of the things that keeps the different ontological categories separate is that mereological relations like composition and parthood never relate objects from different ontological categories. So, for example, it is impossible that a number and a physical object should compose something, and it is likewise impossible for a physical object to be a part of a set.

Now, I realize that certain well-known theses (such as certain versions of the bundle theory of objects and the claim that the members of a set are parts of that set) will be automatically ruled out on this picture. But I am willing to accept these consequences of what seems (to me at least) to be a very appealing conception of the way mereology carves ontology at the joints. And of course, on this picture, it will not do to say, as was suggested three paragraphs ago, that objects to which The Principle of Unrestricted Fusions applies and objects to which it does not apply are just two different kinds of physical object.

The tenth reason for positing stuff is that doing so will save the universe. To appreciate how, one must first understand why the universe is in trouble. Here is an argument that I take to be sound.

#### **An Argument About the Universe**

- (1) If there is such a thing as the universe, then the universe is the fusion of all physical objects.
- (2) It's not the case that there is a fusion of all physical objects.

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- (3) There is no such thing as the universe.

Here is why I don't think there is such a thing as a fusion of all physical objects: The collection of all physical objects is a really large, widely scattered, and extremely disparate plurality of objects, and I think that, in general, really large, widely scattered and extremely disparate pluralities of objects fail to compose anything.

Now, there are two main reasons why one might think that such a large, scattered, and disparate plurality of objects would have a fusion: (a) one might endorse PUF (as applied to things), and so believe that any collection of objects – no matter how disparate and widely scattered – has a fusion; or (b) one might think that there is something special about this particular disparate and widely scattered plurality, namely, that it is the unique plurality of objects that happens to be *maximal* – it does not leave out any physical objects.

I have argued elsewhere against PUF (as applied to things), and won't repeat those arguments here.<sup>42</sup> And in any case I will return to PUF (as applied to things) shortly. So let us set aside for now that reason for believing that the relevant plurality has a fusion. That leaves the second reason – the thought that the relevant plurality has a fusion because it is the one maximal plurality of objects.

The problem with this line is that it makes composition depend on a strange and external factor. Here is an example to help you to appreciate the oddness of this. Consider a world with a bunch of objects (more or less like the actual universe) that also contains one lonely particle, far away from all of its worldmates. This lonely particle is outside the light cones of all the other objects, and each of them is outside of its light cone. The lonely particle, due to its remote location and insignificant size, cannot interact causally with any of the other objects in its world, and its presence makes no difference to them as far as the laws of nature are concerned. If we assume PUF is false, as we are currently assuming, then it doesn't seem like the plurality consisting of all the objects in the imagined universe minus the lonely particle will have a fusion. But now if we annihilate the lonely particle, then according to the current "maximality" approach it all of a sudden becomes true that those objects (all the objects minus the lonely particle) compose something. I want to suggest that this is too strange to believe. We cannot get this disparate and widely scattered plurality of objects to compose something simply by annihilating another object (the lonely particle) that has nothing to do with them. And this suggests that having the distinction of being the unique maximal plurality of objects is not enough to get a plurality of objects to compose something.

Upshot: since the widely scattered and extremely disparate plurality that is all the objects in the universe does not have a fusion due to the truth of PUF (for things), and also does not have a fusion in virtue of being maximal, it

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<sup>42</sup> See Markosian [2008].

appears that there is no such thing as the fusion of all the objects in the universe. I.e., there is no such thing as the universe.

Some may find it alarming that I have just endorsed an argument whose conclusion says that there is no such thing as the universe. But notice that I did not say that there is no universe. For I think there is a universe. What is the universe, then, if not the sum total of all things? It is the sum total of all portions of stuff. For recall that although The Principle of Unrestricted Fusions (as applied to things) is highly counterintuitive, PUF for Stuff is not. The upshot of these considerations is that if you don't believe The Principle of Unrestricted Fusions (as applied to things), but you do want to believe that there is a universe, then you should believe in stuff.<sup>43</sup>

So far I have given ten different reasons for positing stuff. Four of them (namely, (i) the reason having to do with Nihilism and the possibility of gunk, (ii) the reason having to do with van Inwagen's own answer to the Special Composition Question, (iii) the more general reason having to do with conservative answers to that question, and (iv) the reason involving the coincident-objects response to the problem of the lump and the statue) happen to involve philosophical positions that I do not personally endorse. Some of the relevant philosophical positions are inconsistent with one another, and some are inconsistent with theses I do happen to endorse. So let us set aside those four reasons for positing stuff. That leaves us with six reasons so far for positing stuff, each of which I take to be a good reason for believing in stuff. Nevertheless, it remains true that each one of these six reasons can be resisted. For example, the reason having to do with The Possibility of Extended Simples can be resisted by someone who endorses The Pointy View of Simples, and the reason having to do with the question of whether there is such a thing as the universe can be resisted by someone who endorses The Principle of Unrestricted Fusions (as applied to things).

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<sup>43</sup> It is worth noting that the stuff theorist who says that the universe is the fusion of all existing stuff must also say that 'the universe' might very well refer to different portions of stuff at different times. For at any given time, 'the universe' will refer to the unique maximal portion of stuff at that time (which has a fusion not due to the fact that it is maximal but, rather, due to the truth of PUF for Stuff). But notice that the thing theorist who holds that the universe is the fusion of all things must also say something similar.



Now I am going to make a bold claim, which I will not defend here (but do defend elsewhere<sup>44</sup>): Anyone who endorses The Pointy View of Simples and The Principle of Unrestricted Fusions (as applied to things), must also accept the Four-Dimensionalist view of persistence, as well as counterpart theory in modality (according to which modal truths about actual objects are grounded by truths about the counterparts of those objects in other possible worlds, as opposed to being grounded by truths about those very same objects in other possible worlds).<sup>45</sup> And there's more. I also claim – and this too is a claim that I will not defend here (but do defend elsewhere<sup>46</sup>) – that anyone who endorses The Pointy View of Simples and The Principle of Unrestricted Fusions (for things) must also accept the following, truly radical conception of the nature of physical objects and their persistence through time.

**Unrestricted Composition with Unrestricted Diachronic Identity (UCUDI):** Necessarily, for any non-overlapping  $x$ s, for any non-overlapping  $y$ s, and for any times,  $t_1$  and  $t_2$ , such that the  $x$ s are present at  $t_1$  and the  $y$ s are present at  $t_2$ , there is an object,  $z$ , such that  $z$  is composed of the  $x$ s at  $t_1$  and  $z$  is composed of the  $y$ s at  $t_2$ .

UCUDI has many bizarre consequences. Here is one.

**A Consequence of UCUDI:** There is, an object,  $z$ , such that at every moment during an even-numbered hour today,  $z$  is composed of whatever atoms compose you at that moment, and at every moment during an odd-numbered hour today,  $z$  is composed of whatever atoms compose me at that moment.<sup>47</sup>

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<sup>44</sup> See Markosian [1998a] and Markosian [2008].

<sup>45</sup> On the Four-Dimensionalist view, see Sider [2001], and on counterpart theory, see Lewis [1986].

<sup>46</sup> See Markosian [2008].

<sup>47</sup> Strictly speaking, UCUDI does not entail exactly this. But the same argument that gets us from The Pointy View of Simples and The Principle of Unrestricted Fusions to UCUDI can be adapted to get us from The Pointy View of Simples and The Principle

(Basically, *z* changes hourly from you to me and then back to you again, and it does this all day.) And I mention all of these alleged entailments of The Pointy View of Simples and The Principle of Unrestricted Fusions because I want to make the following point. A philosopher can resist all of the above reasons for positing stuff, but only at the cost of endorsing (among other things) The Pointy View of Simples, The Principle of Unrestricted Fusions, Four-Dimensionalism, counterpart theory, and UCUDI.

Now, The Pointy View of Simples, The Principle of Unrestricted Fusions, Four-Dimensionalism, counterpart theory, and UCUDI are all individually counterintuitive. That's one thing. (Or maybe five things.) But the conjunction of them is even more counterintuitive. (Or so it seems to me.) And yet, if I am right about the relevant entailments, that conjunction is what someone who refuses to include stuff in her ontology is committed to. In light of this, I suspect that many readers will agree with me that it is time to believe in stuff.

### 3. Five Objections to Positing Stuff

So much for the positive case for stuff. Now let's turn to some objections to including stuff in our ontology. I take it that the main objection to positing stuff is an objection from something like Ockham's Razor. According to Ockham's Razor, we should not multiply entities beyond necessity. We should instead strive for a desert ontology. And this suggests that we should resist adding stuff to our ontology.

Now, I could claim to be off the hook with respect to Ockham's Razor, since the principle tells us not to multiply *entities* beyond necessity, and I am saying we should add *stuff* to our ontology, not any entity. But I'm pretty sure that Ockham would not have been too crazy about multiplying stuff beyond necessity. So the main objection to my thesis is that in the interest of ontological parsimony, we should keep stuff out of our ontology.

I think the best reply to any objection based on Ockham's Razor is that including the relevant category in one's ontology is indeed required by important theoretical considerations. In this case, the relevant theoretical considerations are the eleven reasons for positing stuff (and in particular the seven that I actually endorse) discussed above.

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of Unrestricted Fusions to the sentence in the text. For more on this topic, see Markosian [2008] and Sider [2001].

I also want to point out that in positing stuff, we are really not going out on as much of an ontological limb as we might be in some other cases, since there is a way of dividing up all the stuff we are positing into portions such that each one of those portions constitutes an object, which is colocated with that portion of stuff. The idea is that, since the posited stuff is what the relevant objects are made of, if you have the objects in your ontology, then you don't need to make any extra room for the stuff: it goes right where the objects are.<sup>48</sup>

The second objection to positing stuff involves a worry that if we have both things and stuff in our ontology, then we have too much of a coincidence. For just as we are leery of allowing the possibility of two objects occupying a single location at a time, so too should we be leery of saying that some stuff and an object can be colocated. Put another way: if the collocation of objects is something to be avoided, then we should also avoid the collocation of an object and some stuff.<sup>49</sup>

Here is my reply. An object and the stuff that constitutes it are not like two objects that have nothing to do with each other, and that have to compete for position in the region they are both trying to occupy. Instead, an object and the stuff that constitutes it are very intimately related. For they are related by the constitution relation. And in virtue of their being so intimately related, it's not at all surprising or disturbing to find them located in the same region of space. In fact, what would be surprising and disturbing would be to find an object and the stuff that constitutes that object located in different regions.<sup>50</sup>

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<sup>48</sup> Just to be clear: Although you do not have to make any extra room in physical space for all the stuff, since it goes where the things are, you do need to make extra room in your logical space for stuff, if you accept The Mixed Ontology. A mixed ontology of things and stuff is not a pure desert ontology, but it's not a rain forest, either. It's more like Canberra.

<sup>49</sup> Compare Zimmerman [1997].

<sup>50</sup> I might be charged with giving a reply to the collocation objection for which there is an equally good (or equally bad) reply to the collocation objection to the coincident-objects response to the statue and lump problem. I plead guilty. I think that anyone who believes in both the statue and the lump should not be bothered by the collocation of these two putative objects; and such a person should point out that it would be weirder if there were both a statue and a lump that had different locations.

A third objection to the kind of mixed ontology that I am advocating concerns the worry that portions of stuff sound just like things. The objection comes in two different versions; here is the first. Some readers will have noticed that I have spoken freely of “portions of stuff,” and have at times quantified over such portions. And you might be suspicious that this talk about portions of stuff is really disguised talk about things. But of course if I’m really talking about things when I seem to be talking about portions of stuff, then I haven’t successfully argued for a mixed ontology of both things and stuff.

Here is my reply to this first version of the objection. All talk of portions, I say, can in principle be eliminated in favor of talk of just plain stuff. For example, here is a sentence about portions of stuff.

- (11) The portion of stuff that constitutes the sphere has a subportion that is blue and another subportion that is red.

And here is a way to express the same proposition without seeming to talk about portions of stuff.

- (11a) There is some stuff,  $s_1$ , such that  $s_1$  constitutes the sphere and there is some stuff,  $s_2$ , and some stuff,  $s_3$ , such that  $s_2 \neq s_3$ ,  $s_1$  is the fusion of  $s_2$  and  $s_3$ ,  $s_2$  is blue, and  $s_3$  is red.

In general, all we need in order to talk about portions of stuff (without those portions turning out to be things) are the resources to quantify over stuff and to predicate various properties and relations (including identity, diversity, and parthood) of stuff.

I mentioned that there is a second version of the objection based on the worry that portions of stuff sound just like things. Even if all the talk about portions of stuff can be eliminated in favor of talk about this stuff and that stuff, it might still seem to some people that all of these portions of stuff nevertheless sound suspiciously like things. They can after all be quantified

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(I also happen to think that there are other, more telling objections to the coincident-objects response to the problem of the statue and the lump.)

over; they take up space; they have properties; and they stand in various relations to one another. In general, they sound very thing-like.<sup>51</sup>

Here is my reply. First of all, I think it would be a really bad thing if we could talk about stuff, but could not use quantifiers when engaging in that talk, and could not attribute properties to stuff, or say that different portions of stuff stand in various relations to one another. So I think that any plausible theory involving stuff is going to have to include such ways of talking. (Just as any plausible theory involving any other ontological category – numbers, say, or universals – will have to include such ways of talking about the representatives of that category.)

Secondly, I think the objector is overlooking an important difference that the stuff theorist can point to between things and portions of stuff. The difference I have in mind concerns the mereology of stuff and the mereology of things. For as we have seen, it is quite reasonable for the positer of stuff to deny The Principle of Unrestricted Fusions (as applied to things) but to endorse PUF for Stuff. And similarly with Mereological Essentialism and ME for Stuff. To this list we can also add several other principles of “pure” mereology, the thing versions of which the stuff theorist should reject but the stuff versions of which she can happily accept, including The Pointy View of Simples and The Doctrine of Arbitrary Undetached Parts. Given that the mereological principles that apply to stuff are radically different from the mereological principles that apply to things, there should be no temptation to think that there is no clear distinction between stuff and things.

The fourth objection to positing stuff in addition to things involves the claim that doing so will require us to introduce special, new quantifiers – stuff-quantifiers – into our language, distinct from the quantifiers we already need for talking about things. For we will want to be able to distinguish between such different existential claims as the following.

- (12) There is a blue thing.
- (13) There is some blue stuff.

And ‘there is *an*  $x$ ’ seems to be a completely different expression from ‘there is *some*  $x$ ’. So it looks like we’ll need to have a distinct existential quantifier for each of these two expressions. For example, we might use ‘ $(\exists x)$ ’ and ‘ $(\exists s)$ ’,

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<sup>51</sup> McDaniel raises this objection to positing stuff in McDaniel [2003].

respectively. This will give us a perspicuous way of saying things like the following.

$$(14) \quad (\exists x)(\exists s)(Cxs),$$

i.e., there is a thing,  $x$ , and there is some stuff,  $s$ , such that  $x$  is constituted by  $s$ . (And, the thinking goes, we will likewise need a corresponding universal quantifier for expressing universal claims about stuff.)

My response to this objection comes in two parts. The first part is simply that it would not be so bad if positing stuff meant that we had to introduce a new pair of quantifiers to our logical toolkit. After all, considerations about plural quantification have led most metaphysicians to be happy with the idea of special plural quantifiers. And if there really are, as I have argued, good reasons to posit stuff as a separate ontological category, then we should be willing to add whatever logical machinery is required by that ontological commitment.

The second part of my response to the objection is that adding stuff to our ontology doesn't actually require us to add any special new quantifiers, in any case.<sup>52</sup> The reason is that the same quantifiers we already have for quantifying over things will suffice for quantifying over stuff. In general, adding a new category to one's ontology does not mean that one needs a new pair of quantifiers. For example, we don't have special quantifiers for abstract objects, in addition to the quantifiers we use for concrete objects. If the distinction between concrete and abstract objects is important to some claim that we wish to consider, we can always make that distinction explicit with the use of predicates rather than special quantifiers. For example, we can say,

$$(15) \quad (\exists x)(\exists y)(Ax \ \& \ Cy),$$

i.e., there is an  $x$  and a  $y$  such that  $x$  is abstract and  $y$  is concrete. Likewise, (14) above can be rephrased as follows.

$$(14a) \quad (\exists x)(\exists y)(Tx \ \& \ Sy \ \& \ Cxy).$$

I.e., there is an  $x$  and there is a  $y$  such that  $x$  is a thing and  $y$  is some stuff and  $x$  is constituted by  $y$ .

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<sup>52</sup> Contrary to what I claimed in Markosian [2004b].

But what about 'an' and 'some'? Well, I think that's just English being funny. And useful, too. But we could just as easily use 'there is some  $x$ ' for all existential claims, whether about things or stuff. After all, English lets us do that, too. The word 'an' is just a convenient way of letting us know early in the sentence that the quantifier is being restricted to things.

So, in short: (a) it would not be a bad thing if positing stuff required us to add a new pair of quantifiers, but (b) it doesn't.

Here is a fifth and final objection to including stuff in our ontology. It looks like all of the most familiar kinds of stuff really end up being pluralities of things. For common examples of stuff include such stuff kinds as *water* and *bronze*. But each of these kinds of stuff seems to be reducible to things: H<sub>2</sub>O molecules, in the case of water, and some other combination of molecules, in the case of bronze. And so it might be argued that our main intuitions supporting a belief in stuff, which are intuitions about the existence of such stuff kinds as water and bronze, are really intuitions that support a belief in pluralities of things.

Here is my reply. This objection would have some force against my view if I were the kind of stuff theorist I mentioned at the beginning of this paper who, like Anaxagoras, believes in a variety of fundamentally different kinds of stuff, each of which occupies a separate sub-category of the ontological category of stuff. For then the objection would involve the claim that since we have H<sub>2</sub>O molecules, we don't need to posit water stuff; and similarly for bronze and the other putative kinds of stuff. But since I am not that kind of stuff theorist and, in particular, since I do not believe in different sub-categories within the ontological category of stuff, I don't think the objection has any force against my view. After all, it's not the case that my reason for believing in stuff is that it seems like there is water, and also bronze, and that these seem to be fundamentally different from things, so that we should include separate categories in our ontology for water and bronze. Instead, my reasons for positing stuff are all of those cited above, which point to a belief in generic stuff rather than a belief in various special kinds of stuff.<sup>53</sup>

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<sup>53</sup> At this point it might be wondered what I think water is. The answer is that I think water is generic stuff arranged in subportions that constitute H<sub>2</sub>O molecules.

#### 4. Conclusion

I agree that an ontology of stuff without things would be a radical ontology. For it would leave out a great many entities that we believe in – including ourselves. But as I mentioned near the beginning of this paper, I am not advocating a pure stuff ontology. Rather, I am arguing for stuff in addition to things. And as I also mentioned near the beginning of the paper, I think that an ontology that includes both things and stuff is really our commonsense, pre-theoretical ontology. We begin with a pre-theoretical belief in stuff, and as it turns out we have good theoretical reasons to keep that belief and no good theoretical reasons to give it up. My conclusion is that we should all believe in stuff.<sup>54</sup>

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## REFERENCES

- Baker, Lynne Rudder 2000. *Persons and Bodies*, Cambridge: Cambridge University Press.
- Burke, Michael 1992. Copper Statues and Pieces of Copper, *Analysis* 52/1: 12-17.
- Cartwright, Helen Morris 1972. Chappell on Stuff and Things, *Nous* 6/4: 369-377.
- Curd, Patricia 2011. Anaxagoras, *The Stanford Encyclopedia of Philosophy* (Fall 2011 Edition), ed. Edward N. Zalta, URL = <<http://plato.stanford.edu/archives/fall2011/entries/anaxagoras/>>.
- Gibbard, Alan 1975. Contingent Identity, *Journal of Philosophical Logic* 4/2: 187-221.
- Jubien, Michael 2009. *Ontology, Modality and the Fallacy of Reference*, Cambridge: Cambridge University Press.
- Kleinschmidt, Shieva 2007. Some Things About Stuff, *Philosophical Studies* 135/3: 407-423.
- Koslicki, Kathrin 1999. The Semantics of Mass-Predicates, *Nous* 33/1: 46-91.
- Koslicki, Kathrin 2010. *The Structure of Objects*, Oxford: Oxford University Press.
- Laycock, Henry 2006. *Words without Objects: Semantics, Ontology, and Logic for Non-Singularity*, Oxford: Oxford University Press.
- Leonard, Henry S., and Goodman, Nelson 1940. The Calculus of Individuals and Its Uses, *Journal of Symbolic Logic* 5/2: 45-55.
- Lesniewski, Stanislaw 1983. On the Foundations of Mathematics, *Topoi* 2/1: 3-52. (This is an abridged English translation by Vito F. Sinisi of Lesniewski's 1927-1931 pioneering papers on mereology; see Lewis [1991] p. 72n for references to Lesniewski's Polish-language papers.)

- Lewis, David 1986. *On the Plurality of Worlds*, Oxford: Basil Blackwell.
- Lewis, David 1991. *Parts of Classes*, Oxford: Basil Blackwell.
- Lewowicz, Lucia, and Lombardi, Olimpia 2013. Stuff Versus Individuals, *Foundations of Chemistry* 15/1: 65-77.
- Markosian, Ned 1998a. Brutal Composition, *Philosophical Studies* 92/3: 211-249.
- Markosian, Ned 1998b. Simples, *Australasian Journal of Philosophy* 76/2: 213-226.
- Markosian, Ned 2004a. Simples, Stuff, and Simple People, *The Monist* 87/3: 405-428.
- Markosian, Ned 2004b. SoC it to Me? Reply to McDaniel on MaxCon Simples, *Australasian Journal of Philosophy* 82/2: 332-340.
- Markosian, Ned 2008. Restricted Composition, in *Contemporary Debates in Metaphysics*, ed. John Hawthorne, Theodore Sider, and Dean Zimmerman, Oxford: Basil Blackwell.
- McDaniel, Kris 2003. Against MaxCon Simples, *Australasian Journal of Philosophy* 81/2: 265-275.
- Nicolas, David 2014. The Logic of Mass Expressions, *The Stanford Encyclopedia of Philosophy (Spring 2014 Edition)*, ed. Edward N. Zalta, URL = <<http://plato.stanford.edu/archives/spr2014/entries/logic-massexpress/>>.
- Parsons, Josh 2004. Distributional Properties, in *Lewisian Themes: the Philosophy of David K. Lewis*, ed. Frank Jackson and Graham Priest, Oxford: Oxford University Press.
- Pelletier, Francis Jeffrey, and Schubert, Lenhart K. 2003. Mass Expressions, in *Handbook of Philosophical Logic, Volume 10*, ed. Dov Gabbay and Franz Guentner, Dordrecht: Kluwer Academic Publishers: 249-335.
- Sidelle, Alan 1998. A Sweater Unraveled: Following One Thread of Thought for Avoiding Coincident Entities, *Noûs* 32/4: 423-448.

- Sider, Theodore 2001. *Four-Dimensionalism*, Oxford: Oxford University Press.
- Sider, Theodore 1993. Van Inwagen and the Possibility of Gunk, *Analysis* 53/4: 285-289.
- Van Cleve, James 1986. Mereological Essentialism, Mereological Conjunctivism and Identity Through Time, *Midwest Studies in Philosophy* 11/1: 141-156.
- Van Inwagen, Peter 1981. The Doctrine of Arbitrary Undetached Parts, *Pacific Philosophical Quarterly* 62/April: 123-137.
- Van Inwagen, Peter 1990. *Material Beings*, Ithaca: Cornell University Press.
- Zimmerman, Dean 1995. Theories of Masses and Problems of Constitution, *Philosophical Review* 104/1: 53-110.
- Zimmerman, Dean 1997. Coincident Objects: Could a 'Stuff Ontology' Help?, *Analysis* 57/1: 19-27.