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Some Things About Stuff

In this paper I raise worries for the positing of *stuff* as a sufficient solution to the familiar puzzle of the statue and the bronze that constitutes it.[1] In §1 I present the puzzle. In §2 I discuss what stuff is, how we refer to it, and how it might seem to solve the puzzle. Finally, in §3 I argue that the stuff solution gives rise to the same problems it was brought in to solve.

1. The Problem

The Statue and Bronze Case: Consider a bronze statue that exactly occupies some region, *r*. We can also say of region *r* that there is some bronze that exactly occupies it (namely, the bronze that makes up our statue). But the statue is not identical to the bronze: if we were to crush the statue, the bronze would persist but the statue would not. Thus, the statue has a property that the bronze does not: it cannot survive being squashed. Conversely, the bronze has a property that the statue does not: the ability to survive being squashed. Since the statue and the bronze differ in their properties, they are distinct. If the statue and the bronze are distinct, and they both exactly occupy region *r*, then the statue and the bronze are "colocated": they are distinct and exactly occupy the same region of space. But colocation is often thought to be problematic. Thus, we have a puzzle.

There are two central intuitions behind the view that colocation is problematic. First, it seems that material objects are possessive of their locations; they don't like to share. If we try to fit two things, like a tabletop and a mirror, in exactly the same region, we will not be able to. One will always push the other out. Further, this doesn't seem to

[1] I do not posit irreducible stuff, or see the statue/bronze case as problematic. The assertion of either of these views should not be seen as part of my thesis. Rather, my thesis can be read as this conditional: if one posits stuff as a sufficient solution to one instance of the problem of colocation (or wants to posit stuff while avoiding colocated portions of it), then they face additional problems that will impact how they should characterise stuff.

depend on repulsive forces; it's simply that, once a region is filled up with something, there isn't room for anything more in it.

It may be claimed that things can colocate without overfilling a region when the things in question have exactly the same proper parts. This is where the second anti-colocation intuition comes up: if two things are made up of exactly the same things, and are in exactly the same region, what is it in virtue of that they are different? Why is it, for instance, that the statue cannot survive squashing and the bronze can, if they're just made up of the same atoms arranged in exactly the same way for each?

There have been various proposals for how to avoid having colocated entities, including: contingency of identity, relative identity, counterpart theory, temporal parts theory, and eliminativism about (at least) one of the entities taken to be colocated. I will not describe or criticize these proposed solutions (discussion of each of them can be found in Rea 1997). However, many philosophers find them either insufficient for solving the problem, or unacceptably costly. This is where the stuff solution becomes potentially helpful.

2. The *Stuff* Response

It has been claimed that distinguishing "stuff" from "things" solves the statue/lump puzzle.[2] According to this solution, (i) although colocation between two *things* is objectionable, it is not objectionable when it occurs between a thing and the stuff it's made of; (ii) while the statue is a thing, the bronze is a portion of stuff (not a thing), so (iii) the colocation between the bronze and the statue is unobjectionable. We'll look at this proposal more closely in this section.

The immediate question is, what is stuff? The quick answer is: stuff is the matter of which things are made. Vere Chappell says (describing "matter", which here refers to physical stuff): "Matter . . . is the stuff of which certain individual things are made . . . [it's that] which constitutes them."[3] As the quotation suggests, the *constitution* relation is the *made of* relation. But past telling us that stuff is what things are constituted by, his

[2] So far I have been using 'thing' and 'entity' interchangeably. Throughout the rest of the paper I will use 'entity' as a term that can refer to whatever can be quantified over. It applies to any member of any ontological category, including things, stuff, and pluralities. It is not meant to imply that the referent in question is a thing. I will use 'thing' in a narrow sense, as synonymous with 'object'.

[3] "Matter," p. 681.

description doesn't help us gain a deeper understanding of what stuff is. In order for it to be helpful, we'd need accounts of the terms used (like *made of*). As it is, we have nothing to distinguish portions of stuff from things. After all, we haven't been told anything to preclude things being made of things. (Many people speak of things constituting things; for example, a statue, which is a thing, can be said to be constituted by a lump of clay, which is another thing.) In talking about stuff I will follow the literature in stipulating that constitution is a relation between two relata, one of which is a thing, the other a portion of stuff (and hence not a thing). But this stipulation doesn't illuminate the concept of *stuff* for us.

Perhaps, to follow Ned Markosian's example[4], in order to get a better idea of what stuff is we should ostensively contrast it with things. Examples of things include: a table, a coffee pot, a balloon, a sidewalk, and a lump. Examples of stuff include the wood of which the table is made, the coffee in the pot, the air in a balloon, the concrete of the sidewalk, and the clay that constitutes the lump. We refer to the things and stuff in different ways: we use count nouns to refer to things, and mass-nouns to refer to stuff (though Peter Simons draws a distinction between mass terms, which refer to portions of stuff, and mass nouns, which refer to stuff itself. An example of the former is 'the water in the glass,' an example of the latter is 'water in the glass'). When we use mass nouns, we use phrases such as 'much' and 'a little' but not 'many' and 'a few' which are commonly used to describe things.[5] Also, when we use mass nouns, we can precede them with the indefinite article 'some,' but we cannot do this with count nouns unless we make the count noun plural - and it never makes sense to make a mass noun plural.[6] I

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[4] Markosian, 2004.

[5] Simons, *Parts: A Study in Ontology*, pp. 153-154.

[6] One might wonder about the statement "two coffees." It seems that 'coffee' is a mass noun, but it can be made plural. However, as Peter Simons points out, 'coffee' is ambiguous: it can refer to stuff, or to a thing, such as a cup of coffee (*Parts: A Study in Ontology*, p. 154). In the former case, 'coffee' is a mass noun, and in the latter it is a count noun. Also, one might worry about an instance where someone says "two clays." Again, 'clay' is a mass noun which has been made plural. But a statement like this would only make sense in a case like the one with the coffees, or in a case where someone is referring to two *types* or kinds of clay. But in that instance, the person is not really referring to the stuff, but rather to a kind, and thus is not using a mass noun.

However, I should mention the issue of counting here: Some may believe that, because of the strangeness in saying things like "two clays", we cannot count stuff, and thus we have a further difference between stuff and things. I do not think this is so: insofar as counting merely requires distinctness of the entities being counted, we can count stuff, because we can recognise some stuff and some distinct stuff, just as we can recognise distinct things. This suggests to me that there'd be nothing wrong with pluralizing references to stuff, and it's merely a matter of linguistic convention that we do not do so.

will follow Markosian in using 'a portion of stuff' as synonymous with 'some stuff'. So even though 'portion' is a count noun, it does not refer to things.[7]

None of this is to give an account of what stuff is, however. Markosian suggests we take the notion of *stuff* (as well as *thing* and *constitution*) as primitive. What's crucial for the stuff theorist is that stuff occupies an ontological category separate from (and not reducible to) those of things and pluralities. A portion of stuff is never identical to a thing or plurality, even though it can be referred to, is self-identical, and can be differentiated from other entities.[8] It's difficult to further cash out this talk of fundamental ontological difference, but the stuff theorist depends on it when they claim that colocation of members of the same fundamental ontological category is problematic, but colocation of members of different fundamental ontological categories (at the level of *thing*, *stuff*, and *plurality*) is not.

There is disagreement about when it is problematic for two entities to exactly occupy the same region. Some people believe it is never problematic. Others say that it is *always* problematic, regardless of which ontological categories the entities involved belong to.[9] The stuff response presupposes that each of these views is incorrect. For if the first response were correct, then there would be no need to posit stuff to respond to our original puzzle; and if the second view were correct, the positing of stuff wouldn't

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[7] I'm also going to remain neutral as possible on the persistence conditions of portions. When asserting that the bronze is actually a portion of stuff, however, it's important to consider that in order for this to be plausible the portion of stuff must have the same persistence conditions that we took the bronze to have. Thus, if the bronze does not have mereological constancy as a persistence condition but we think that any portion of stuff would have such a persistence condition, then we cannot use stuff to avoid colocation in this case. Another persistence condition which may vary from stuff to thing is the requirement of spatial proximity of an entity's parts. The proponent of the stuff-solution must be aware of these issues. Further, even if the stuff theorist's characterisations of bronze correspond to the characterisations we took it to have, there will still be worries about colocation involving the statue: for instance, what of the statue and the lump of bronze (which may have close spatial proximity of its parts as one of its persistence conditions)? However, the question addressed in this paper is not whether positing stuff can adequately address all instances of the problem of colocation in the vicinity (!), but rather whether it can solve even one, and how we would need to characterise stuff in order to achieve this. These other instances of the problem of colocation do raise an important concern, however: they must be addressed somehow, and if the way in which it's done can also address the statue and bronze case (or whatever case we're trying to address by positing stuff), it seems that avoiding colocation no longer gives us motivation to claim stuff exists.

[8] Zimmerman, "Coincident Objects: Could a 'Stuff Ontology' Help?" p. 22. Zimmerman evaluates this predication over stuff, and if he's right in thinking that it must be incorrect then the view I'm evaluating cannot get off the ground. But because I'm interested in drawing out other consequences of the view, I'll set this issue aside.

[9] This view has some strange consequences. For instance, it has the result that either events are not located, or they are problematically coincident with things that exactly occupy the same regions, given that those things are not themselves events.

help: the colocation of the statue and the bronze would remain problematic even if the bronze were a portion of stuff rather than a thing. The stuff view, in fact, seems to presuppose a third view of when co-location is problematic, namely the view that two entities exactly occupying the same region is problematic whenever the entities are of the same fundamental ontological category (*thing*, *stuff*, *plurality*, etc.), but not when they are of differing ontological categories. Proponents of this view take *problematic* colocation to occur when and only when two material entities of the same fundamental ontological category exactly occupy the same region.[10] The idea is that this is the kind of colocation common-sense takes issue with. Two things, like a tabletop and a mirror, won't share the same region. But a thing and the matter it's made of not only *will* share a region, they must. The special relation that stands between them, the relation of *constitution*, allows (and even requires) that its relata are in exactly the same region.[11]

There is a final possible view about when colocation is problematic: it is problematic when and only when both entities in the region are things. This claim, if defended, would be a successful response to the problems I raise in §3, where I claim that the proponent of a stuff solution must avoid colocation of portions of stuff. However, this view is unsatisfying: why would be problematic for two material things to exactly

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[10] Some, like David Wiggins, even define *colocation* to reflect this. That is, *x* and *y* are colocated iff (i) *x* and *y* are both material, (ii) *x* is not identical to *y*, (iii) *x* and *y* are of the same ontological category, and (iv) there is a region, *r*, such that any subregion of *r* is occupied by both *x* and *y*, and there is no region not within *r* which is occupied by either *x* or *y*. (Based on the account presented by David Wiggins in "On Being in the Same Place at the Same Time," p. 5 in Rea 1997. By his account, colocation (which he calls 'coincidence') occurs when "two things *of the same kind* (that is, . . . which satisfy the same sortal or substance concept) . . . occupy exactly the same volume at exactly the same time.") There are other definitions of colocation as well, however, such as a sharing of all spatial and temporal parts (Simons, *Parts: A Study in Ontology,* p. 210). The difference between these two definitions seems to be that the first allows two entities to exactly occupy the same region without being colocated if they are of different ontological kinds, whereas the second does not (another difference between the accounts arises when one denies DAUP). Also, what the relevant ontological kinds are differs across sources – that *stuff* and *thing* are (at least some of the) relevant kinds needs to be defended by the proponent of this solution.

[11] Obviously, further defence of this view of colocation is needed. For instance, the appeal to constitution is problematic. In much of the literature, 'constitution' is not used in the sense in which I will be using it in this paper. Thus there is a potential response with which someone can say that constitution, on their account, requires distinct entities of the same ontological category to be exactly located in the same region. Insofar as their account begs the question, perhaps the same can be said for the stuff theorist's appeal to constitution as allowing things and stuff to unproblematically exactly occupy the same regions.

Also, I do not intend to give the impression that I have given an exhaustive list of views about when colocation is problematic. One I didn't include, for instance, is the view that events can be colocated, but entities that are "more paradigmatically material" cannot.

occupy the same region, but it would not be problematic for two portions of stuff to do so?[12]

I will not argue for the stuff-theorist's view about what's required for colocation to be problematic; because endorsing it is part of the stuff-response to the problem of colocation, I will take it as a starting point and work from there.

Endorsing this view of when colocation is problematic, along with the stuff-theorist's picture of which kinds of ordinary entities are portions of stuff, is sufficient to deal with cases like that involving the statue and lump above. However, the solution will be utterly unhelpful if it gives rise to its own problematic colocation cases.

3. Puzzling Cases

The Water Case: Suppose a puddle exactly occupies region *r*, and is constituted by a portion of water, also exactly occupying *r*. The portion of water is constituted by H_2O molecules (hydrogen and oxygen atoms which bear specific relations to one another) the sum of which exactly occupies *r*. The atoms are each constituted by portions of stuff as well. We don't want to say the atoms are constituted by water, because the atoms are just too small for that. So we have some non-water stuff that constitutes each atom. This means that, for every region where the water is located (every region occupied by a hydrogen or oxygen atom which stands in the proper relations to other atoms), there is a portion of atom-constituting stuff that is distinct from the water.

So far, there is nothing problematic about this case. However, Tyler Burge points out that common mass nouns have the unique feature that any sum of portions of the referent of the noun can be referred to with the same noun. That is, the following statement will be true for any (common) mass noun *K*: Any sum of portions of *K* is a portion of *K*.[13] In our water case, there is a sum of the portions of atom-constituting stuff which constitute the atoms in *r*. Therefore, there is a portion of atom-constituting stuff

[12] Conceivably, this is defensible; the denial of the underlying general principle, that it is problematic whenever more than one material entity exactly occupies a certain region, is entailed, for instance, by the claim that events are material (due to having spatial location) and can be colocated. Once this claim (or one relevantly similar to it) is defended, the proponent of this response would need to show that portions of stuff are like these colocatable entities rather than like things in the relevant respect. I, however, do not see that second step as very promising.

[13] Burge, "Truth and Mass Terms," pp. 264 and 275. I will take it as understood that I am quantifying only over those stuff-kinds that are widely recognised (though perhaps not qua stuff), such as water, wood, energy, matter, etc.

which exactly occupies *r*. (One may worry that 'atom constituting stuff' is not a common mass noun, and so Burge's principle doesn't apply to it. However, we certainly think that each atom is made of matter. Feel free to substitute 'matter' for 'atom-constituting stuff' in what follows. Everything I say of atom-constituting stuff will be true of matter as well.)

Now we have a problem. The sum of atom-constituting stuff and the water are not identical. Therefore we have two distinct entities (portions of stuff) of the same ontological category, exactly occupying the same region. Thus, positing stuff has given rise to exactly the kind of problem we were using it to avoid. The argument can be stated this way:

1. Somewhere there is a puddle constituted by a portion of water, *w*, exactly occupying a region, *r*.
2. *w* is constituted by a group of H_2O molecules, $m_1, \ldots, m_n$, which together also exactly occupy *r*.
3. Each member of $m_1, \ldots, m_n$ is constituted by a portion of atom-constituting stuff (or matter); these portions, $s_1, \ldots, s_n$, exactly occupy *r*.
4. There is a sum of $s_1, \ldots, s_n$, *s*, exactly occupying *r*.
5. For any (common) kind, *K*, any sum of portions of stuff of kind *K* is itself a portion of kind *K*.
6. So, *s* is a portion of atom-constituting stuff exactly occupying *r*.
7. $s \neq w$.
8. So, there exist distinct portions of stuff which exactly occupy the same region.

Premise 7 is stands clearly in need of support. To that end:

The Revised Water Case: Once again consider the water and atom-constituting stuff. It's plausible to think that water has as an essential feature that it is entirely divisible into subportions which constitute hydrogen and oxygen atoms which bear certain relations to one another, but atom-constituting stuff (or matter) does not have this feature. Suppose that an endothermic reaction, such as a process of electrolysis, results in the hydrogen atoms within region *r* separating from the oxygen atoms in that region, so that the atoms no longer bear the relations to one another that result in H_2O molecules. In this case, we would say that there ceases to be water in the region occupied by the atoms, but we would not say that the atom-constituting stuff ceases to exist. So the persistence

conditions of the water and atom-constituting stuff are distinct. And since the atom-constituting stuff and the water are exactly located in the same region, we once again have colocation of distinct portions of stuff.

There are several ways to respond to my argument. One might respond by denying that the atoms in the region are constituted by stuff at all (rejecting premise 3). This response, while helpful in this case, will not help in other cases where denying that there are two types of stuff seems less plausible. For instance, consider *The Oatmeal Case*[14]: Suppose I'm cooking breakfast. When characterizing the stuff in my pot, I'd say that there is oatmeal exactly occupying region *r*, which is the sum of each of the regions occupied by a flake of oat in the pot, and I would also say that there is oat-stuff, which also exactly occupies *r*. The oat-stuff is entirely divisible[15] into portions which each constitute an oat flake, and these oat flakes constitute the oatmeal. The oatmeal is not identical to the oat-stuff because it is constituted by oats but the oat-stuff isn't. Thus, once again, we have colocation of portions of stuff. So there are cases in which denying that the atoms are constituted by stuff will not help to prevent the consequence of colocation.

One might reject the Oatmeal Case by claiming that the oat-stuff and the oatmeal aren't distinct. However, even if one rejects this case, denying that atoms are constituted by stuff is costly. First of all, it's implausible to think that there is not matter which atoms are made of (even if there isn't matter which simples are made of). And secondly, it will be problematic for anyone who posits irreducible stuff (i.e., stuff that is not reducible to things). One might posit irreducible stuff if they think our world is, most fundamentally, a stuff world (e.g., they think that matter and energy are what's most fundamental, and those aren't reducible to objects), or if they think that our world fundamentally contains a mix of things and stuff. If all portions of stuff are made of

[14] Perhaps other more common stuff kinds can be used in this example, for instance: water constitutes snowflakes, which constitute snow which constitutes a snowman. I did not use this example because there is some dissension in the literature about whether or not water and snow are identical stuff-kinds. I could also, more controversially, use analogous cases involving apple-stuff that constitutes apples, which constitute the food on the bottom shelf in my refrigerator, or oak which constitutes tables which constitute furniture.

[15] I'm using 'entirely divisible' as a technical term. *x* is entirely divisible into the *y*s iff *x* is a fusion of the *y*s.

atoms, and atoms are themselves not made of stuff, it seems that all talk of stuff can be reduced to talk of things.[16]

Another way to respond to my argument is to deny the existence of a sum of the portions of atom-constituting stuff in region *r* (rejecting premise 4).[17] This requires denying that for any two portions of stuff, there is a sum of those portions. However, this will not help to avoid colocation in all cases. For instance, consider a *Revised Oatmeal Case:* Suppose I am particularly ravenous one morning, and eat all but one oat flake of my breakfast. We'd want to say that I've still got some oatmeal left (exactly located in the region which is exactly occupied by the oat), and of course we still want to say that there is oat-stuff there (also exactly located in the same region as the oat). But, even without appealing to sums, this gives us colocation of distinct portions of stuff. Thus, the no-sums response to the water case will not be helpful in all cases to avoid the problem of colocation that results from our allowing constitution to go both ways.

Once again, one might respond to this case by denying that the oat-stuff and the oatmeal are distinct. But I think there's a more fundamental worry about the anti-sums response to my argument. The principle that for any portions of stuff, there's a sum of those portions, is very intuitive. If we're to reject it, we need a reason to. I fail to see a reason. It's especially hard to see why one would reject that there's a sum of the portions in my case; I'm not asking us to sum portions on opposite ends of the galaxy, or to sum portions of radically differing stuff kinds. At the very least, more would need to be said to make this response at all appealing.

There are also a couple of ways to attempt to deny that the matter and the water are distinct (rejecting premise 7). One way is to deny that there are ever two stuff kinds instantiated in exactly the same region[18]. Michael Burke's view has this result. Burke posits stuff only when the mass term in question refers to a homeomerous entity[19] (stuff of which every subportion is a portion of the same kind of stuff[20]). Because the water has

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[16] This point was suggested in conversation by Ned Markosian.

[17] This option, if successful, would help not only with this case but also with the revised water case, which is presented later in the paper.

[18] This would involve rejecting another premise in addition to premise 7 – such as 1 and 2, or 3, or 4.

[19] Burke, "Coinciding Objects: Reply to Lowe and Denkel."

[20] Zimmerman, "Coincident Objects: Could a 'Stuff Ontology' Help?" p. 19. Zimmerman's account of homeomerous stuff is as follows: "K is a homeomerous stuff =df Every mass x of K is such that every part of x has a complete decomposition into a set of masses of K" (Zimmerman, "Theories of Masses and

some subportions which are not water, Burke would avoid colocation in the water case by saying that the water doesn't exist. However, he would also respond to the statue/lump case by claiming that the bronze is not actually stuff; the bronze, too, has some subportions which are not bronze. Thus, Burke's view requires one to respond to the initial case with an appeal to pluralities instead of just stuff, and so with his response the positing of stuff is not sufficient to avoid colocation.

Burke's solution to the statue and bronze case is still relevant, however. He asserts that a piece of bronze goes out of existence as soon as the bronze (a plurality) constitutes a statue.[21] That is, a piece ceases to exist as soon as its parts constitute something with "more structure." Could we apply an analogue of this view to the revised water case? Perhaps there ceases to be atom-constituting stuff as soon as the things the stuff constitutes come to bear certain relations to one another, at which point water begins to exist. (It's the stuff with more structure that persists.) If this were the case, then at any time we would have only one portion of stuff exactly occupying the region. But is it plausible to think that there really ceases to be atom-constituting stuff when those atoms come to bear certain relations to other atoms? This is counterintuitive, as is Burke's view about the statue and bronze (which is its analogue). Burke deals with the counterintuitiveness of his view by saying that, although the piece goes out of existence, all of its parts persist, and this is why we want to say that the piece persists.[22] But this will not work for portions of stuff, because the only "parts" that portions have are subportions. If we were to say that a portion ceases to be of atom-constituting stuff,[23] but all of its sub-portions (also of atom-constituting stuff) continue to exist, and for any two portions of stuff there is a sum of those portions, we would be contradicting the claim that any sum of portions of stuff kind K is a portion of stuff kind K. There is a sum of the persisting sub-portions of the atom-constituting stuff in region *r*.[24] Therefore, there is a portion of atom-constituting stuff that persists and exactly occupies *r*. So, when water comes into existence, the atom-constituting stuff continues to exist as well, and we still

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Problems of Constitution," p. 62). That is, stuff of kind K is homeomerous iff "it is K 'through and through'" (Zimmerman, "Coincident Objects: Could a 'Stuff Ontology' Help?" p. 19).

[21] Burke, "Coinciding Objects: Reply to Lowe and Denkel," p. 12.

[22] Burke, "Preserving the Principle of One Object to a Place: A Novel Account of the Relations Among Objects, Sorts, Sortals, and Persistence Conditions," p. 596-597.

[23] Or, at least, that the portion ceases to be of atom-constituting stuff.

[24] Once again, this can be denied but it will not help avoid the underlying problem which will reappear in an analogue case involving the oat-stuff, oats and oatmeal.

have colocation. Burke's way of explaining away the counterintuitiveness of his view does not work for our analogue view, which remains immensely counterintuitive.

The most plausible rejection of premise 7 seems to be this: water *just is* atom-constituting stuff that has certain properties,[25] such as the property of constituting things that bear certain relations to one another (or having subportions that constitute those things). This response seems intuitive and plausible, but there are two worries. First, it's not clear how we should deal with the apparent difference in modal properties between the atom-constituting stuff and the water. Second, it leaves us with an odd result: no matter how small a portion of stuff is, its size alone is not enough to preclude its being water. That is, for any time that the water exists, since it is identical with atom-constituting stuff which has certain properties, at that time each atom is constituted by water. So an oxygen atom would be constituted by water, which is identical to H_2O! However, this consequence is not so counterintuitive when we remember that it is not water in virtue of the portion's being constituted by H_2O molecules (which it isn't).

In response to the second worry, those wanting to avoid colocated portions of stuff could also say instead: water is atom-constituting stuff that is entirely divisible into subportions (proper or improper) that constitute certain things (H_2O molecules). This view avoids the odd result that oxygen atoms can be constituted by water, because there's a "minimum size" requirement for the portions to be water. But this has the result that any portion of water is entirely divisible into subportions that are not water. This is not threatening to the view, however, because even though every sum of two portions of stuff kind K is a portion of stuff kind K, it is not the case that for any property ϕ that two portions of stuff have, the sum of those portions of stuff also has ϕ. So, one could plausibly deny that "stuff that isn't water" denotes a natural kind to which the sums principle would apply. But even if this were right, it wouldn't be the case that this stuff kind would have the property of *not being water* essentially.[26]

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[25] This alternative view was suggested by Ned Markosian in conversation. An anonymous referee made the following observation: if one accepts the identity of atom-constituting stuff and water (or of analogous pairs of stuff kinds), they cannot accept the view that things can constitute stuff as well as stuff constituting things without giving up the claim that two entities can't constitute one another (that is, saying constitution can be symmetrical).

[26] There's also an interesting question (brought to my attention by an anonymous referee) of where the water is located on this view. The referee pointed out that one can say that, though there's no water in any single atom (that is, there's no water such that all of its subportions are in a single atom), the water is located at the same regions the atoms are located at. To use Josh Parsons' terminology (Parsons, "Theories

So, the positing of stuff is one potential solution to the original problem of colocation in the case of the statue and the bronze. However, even if this solution is adequately defended (for example, by defending the stuff-theorist's view of when colocation is problematic), it gives rise to problems of exactly the kind it was trying to solve. In spite of having a whole extra ontological category to work with, we've made no progress on solving the puzzle of colocated entities.[27]

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of Location", p. 2-3), the water pervasively occupies each region exactly occupied by any atom that partially composes a H_2O molecule, but it does not entirely or exactly occupy any such region.

[27] I am grateful to Andrew Egan, Hud Hudson, William Kilborn, Ned Markosian, Kris McDaniel, Daniel Nolan, Michael Rea, Jonathan Schaffer , Ted Sider and an anonymous referee for helpful comments on earlier versions of this paper.

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