THE VAGUENESS ARGUMENT FOR MEREOLOGICAL UNIVERSALISM*

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Mereological universalism—hereafter universalism—is the thesis that necessarily, any (material) objects whatsoever compose another (material) object.[1] Universalists have found it necessary to argue for their position and it is not hard to see why. Pretheoretically, while it is plausible to believe that *there are* composite objects, it is also plausible to *deny* that the Taj Mahal, the Stanley Cup, and Michael Jackson's nose compose something. But if universalism is true, there is something composed by the Taj Mahal, the Stanley Cup, and Michael Jackson's nose. Pretheoretically, then, it is plausible to believe mereological restrictivism—hereafter restrictivism—the thesis that there are composite objects and possibly, some objects fail to compose something. Surely, some *reason* is needed for believing universalism. In this paper, I investigate one of the more influential reasons for so believing, what I will call 'the Vagueness Argument'.[2] The argument has been defended by David Lewis (1986) and more recently by Theodore Sider (1997, 2001).[3] The Vagueness Argument, so I argue, fails to adequately support universalism.

Throughout, I assume the falsity of mereological nihilism, the thesis that necessarily, there are *no* composite objects. An argument for nihilism—and an argument is surely needed here, as well—would also serve to defeat universalism and thereby falsify some premise of the Vagueness Argument. Moreover, my aim here is to defend *restrictivism*—the intuitive view about composition—against an influential argument.

1. The Vagueness Argument

Proponents of the Vagueness Argument think that *if* restrictivism is true, then it can be vague whether composition occurs *and* that it cannot be vague whether composition occurs. Given the assumption that composition occurs—that nihilism is false—it follows that universalism is true. Here, then, is the Vagueness Argument:

(1) If restrictivism is true, then it can be vague whether composition occurs.
(2) It cannot be vague whether composition occurs.
Therefore,
(3) Restrictivism is false.
(4) Composition does occur.
Therefore,
(5) Universalism is true.

The Vagueness Argument is valid. And since I am assuming that nihilism is false, I am left with premises (1) and (2) to consider. I will take aim at premise (1). In section 2, I consider Lewis' and Sider's defenses of (1) and argue that they are inadequate. Of course, this will not show that (1) is false. It will, however, support the claim that restrictivists (and non-restrictivists alike) are not committed to (1). More importantly, in section 3, I

will argue that the inadequacy of Lewis' and Sider's defenses of (1) clears the way for restrictivists to plausibly deny (1).

2. Lewis' and Sider's Defenses of (1)

I begin with Lewis' "intuitive *desiderata* defense". Quoting Lewis:

> We are happy enough with mereological sums of things that contrast with their surroundings more than they do with one another; and that are adjacent, stick together, and act jointly. We are more reluctant to affirm the existence of mereological sums of things that are disparate and scattered and go their separate ways…
>
> The trouble with restricted composition is as follows. It is a vague matter whether a given class satisfies our intuitive *desiderata* for composition. Each *desideratum* taken by itself is vague, and we get still more vagueness by trading them off against each other. To restrict composition in accordance with our intuitions would require a vague restriction… But if composition obeys a vague restriction, then it must sometimes be a vague matter whether composition takes place or not. (1986, 211-212)

Lewis is offering here the following two claims in support of (1):

> (1a) If composition is restricted, then composition obeys a restriction in accordance with our intuitive *desiderata*, relations such as adjacency, cohesion, and joint action, etc.
>
> (1b) If composition obeys a restriction in accordance with our intuitive *desiderata*, then—since those *desiderata* are vague—it can be vague whether composition occurs.

Before assessing either (1a) or (1b), some clarificatory remarks about each are in order. What, for instance, is it for composition to obey a restriction? Lewis does not explicitly say, but here is a sensible understanding of composition obeying a restriction.[4] In his book, *Material Beings*, Peter van Inwagen asks what he calls "the Special Composition Question", hereafter "the SCQ":

> (The SCQ) What are the *informative* necessary and sufficient conditions for some things to compose another thing?

By 'informative conditions' I mean 'conditions that do not *presuppose* that some things compose another thing'. For instance, the condition of *composing another thing* is obviously necessary and sufficient for composition, but just as obviously, it is not informative; it simply presupposes that some things compose another thing.

With the SCQ in mind, we can say that what it is for composition to obey a restriction is for there to be a *true composition restricting answer to the SCQ*—i.e. a true answer that entails restrictivism. And we can also say that what it is for composition to

obey a restriction in accordance with our intuitive *desiderata* is for there to be a true composition restricting answer to the SCQ that can be formulated in terms of our intuitive *desiderata* for composition.

Before assessing Lewis' intuitive *desiderata* defense of (1), I would like to summarize another defense of (1), Sider's "compositional sorites defense". I do this before criticizing Lewis' defense because Sider's shall turn out to be significantly similar. We shall see that the two defenses are similar enough that my objection to Lewis' defense applies to Sider's compositional sorites defense as well.

Sider (2001, pp. 122-124) thinks that if restrictivism is true, then there can be a sorites series involving composition. An example: Suppose we have some material simples arranged in such a way as to determinately compose a human body. Further suppose that those simples are ever so slowly and slightly pulled away from one another until they are so arranged that restrictivists would say that the simples determinately fail to compose something. Throughout the process, suppose we take snap shots of the simples at one second intervals. Our simples, then, will be arranged in extremely similar ways in any pair of consecutive snap shots. Now, say that a sharp cut-off in such a compositional sorites series is a pair of consecutive snap shots one of which is a snap shot of simples determinately composing something and the other a snap shot of simples determinately failing to compose something. Unless there is a sharp cut-off in our compositional sorites series, somewhere in the series it will be vague whether composition occurs. And Sider (2001, p.124) also maintains that it is implausible to believe that such a sharp cut-off exists. Sider thinks, then, that somewhere in our compositional sorites series, it is vague whether composition occurs. In summary, here are the premises of Sider's compositional sorites defense:

> (1d) If restrictivism is true, then there can be a compositional sorites series.
>
> (1e) If there can be a compositional sorites series, then it can be vague whether composition occurs.

Here too clarificatory remarks are in order. In particular, more needs to be said about our compositional sorites series above. I said that adjacent arrangements of simples will be extremely similar, but extremely similar with respect to what? In a typical sorites series, there is a feature that orders the members of that series. *Number of hairs*, for instance, can order the members of a sorites series for *baldness*, *height* for *tallness*, etc.[5] What, then, orders the members of a compositional sorites series? According to Sider, a compositional sorites series is a series,

> in which each case…is extremely similar to its immediately adjacent cases in *all respects that might be relevant to whether composition occurs* [my emphasis added]: qualitative homogeneity, spatial proximity, unity of action, comprehensive of causal relations, etc. (2001, p. 123)

Salient similarities with Lewis' intuitive *desiderata* defense now appear. For Sider tells us that the members of a compositional sorites series are ordered by those relations—whatever they are—that are relevant to determining whether composition

occurs. More precisely, the members are ordered by whatever relations *would be so relevant if restrictivism were true*. And Sider goes on to suggest what the relevant relations are—again more precisely what they would be if restrictivism were true—viz., qualitative homogeneity, spatial proximity, unity of action, comprehensiveness of causal relations, etc. But we are already familiar with these relations; they just are what Lewis cites as our intuitive *desiderata*.

What we have seen is that Sider's compositional sorites defense presupposes that if composition is restricted, then there are informative composition determining relations and these informative composition determining relations just are what Lewis calls our intuitive *desiderata* for composition.[6] So, Sider's compositional sorites defense presupposes:

> (1a') If restrictivism is true, then composition is determined by relations such as qualitative homogeneity, spatial proximity, unity of action, comprehensive of causal relations, etc.—i.e. our intuitive *desiderata* for composition.

As noted earlier, Sider also thinks that somewhere in a compositional sorites series it is vague whether composition occurs. So, he must also think that the composition determining relations involved in a compositional sorites series are vague. Accordingly, Sider's compositional sorites defense also presupposes:

> (1b') If composition is determined by relations such as qualitative homogeneity, spatial proximity, unity of action, comprehensive of causal relations, etc.—i.e. our intuitive *desiderata* for composition—then it can be vague whether composition occurs.

Without much reflection, one can see that (1a') and (1b') in so many words say what (1a) and (1b) above say. At the very least, (1a') and (1b') are logically equivalent to (1a) and (1b). So, Sider's compositional sorites defense presupposes the essential elements of Lewis' intuitive *desiderata* defense; an objection to one is an objection to the other. And we are now in a position to assess both Lewis' and Sider's defenses of (1).

The problem with Lewis' intuitive *desiderata* defense and with Sider's compositional sorites defense is that there is no compelling reason to believe either (1a) or (1a'). There is no compelling reason to believe that it is a consequence of restrictivism *per se* that composition obeys a restriction in accordance with our intuitive *desiderata*. Similarly, there is no compelling reason to believe that it is a consequence of restrictivism *per se* that composition is determined by our intuitive *desiderata*. Indeed, it is not even clear that there is a compelling reason to believe that it is a consequence of restrictivism that composition obeys *any* restriction or that composition is determined by any (informative) relations. There are restrictivists, e.g., Ned Markosian (1998), who maintain that there is no correct answer to the SCQ because there are no informative necessary and sufficient conditions for composition. Such restrictivists, brutal restrictivists, believe that when some things compose another thing it is a *brute fact* that they do so.

For the sake of argument, however, I will assume that *if* restrictivism is true, then composition obeys *some* restriction and similarly that composition is determined by some

(informative) relations. Even assuming this, though, there is no good reason for thinking that a true composition restricting answer to the SCQ must be in terms of our intuitive *desiderata* or that our intuitive *desiderata* must constitute the composition determining relations. But surely a reason is needed here; (1a) and (1a') are not obviously true.

Someone might maintain that *unless* composition obeys a restriction in accordance with our intuitive *desiderata* (or alternatively, *unless* our intuitive *desiderata* constitute the composition determining relations) then restrictivism is wholly unmotivated. And so, the argument might continue, if someone is to be justified in believing restrictivism, then such a person ought also to believe that composition obeys a restriction in accordance with our intuitive *desiderata*.[7] Lewis suggests something like this line of reasoning when he says:

> No restriction on composition can be vague. But unless it is vague, it cannot fit the intuitive *desiderata*. So no restriction on composition can serve *the intuitions that motivate it* [my emphasis added]. (1986, p. 213)

In reply, it is false that restrictivism is unmotivated unless also coupled with the belief that composition obeys a restriction in accordance with our intuitive *desiderata*. There are plenty of other ways to motivate restrictivism. Indeed, I doubt that any restrictivist has *motivated* restrictivism by appealing to intuitive *desiderata* for composition. Here are just a few ways a restrictivist might motivate her position.

A restrictivist might point out that restrictivism is the initially plausible and pre-theoretically preferable view about composition. Ned Markosian (1998) motivates restrictivism in this way. Of course, this is a defeasible motivation. We may come across reasons for believing that restrictivism is false. But that is beside the point. The initial plausibility of restrictivism is *a* motivation for the view. Alternatively, a restrictivist might motivate restrictivism by way of considering certain puzzles about material coincidence. Peter van Inwagen (1981) motivates restrictivism in this way with his argument against the doctrine of arbitrary undetached parts. In a similar vein, a restrictivist might motivate restrictivism as Trenton Merricks (2001) does by arguing against the existence of inanimate macrophysical objects while maintaining that such an argument does not apply to animate macrophysical objects. And there are no doubt other motivations for restrictivism. Of course, it is controversial whether van Inwagen draws the right conclusion from puzzles about material coincidence and it is controversial whether Merricks' arguments are cogent. The important point, however, is that there are sources of motivation—and so sources of *justification*—for restrictivism that do not require believing that composition obeys restrictions in accordance with our intuitive *desiderata* (or even that composition obeys any restriction).

Someone might say that we often make compositional judgments—judgments about when some things compose another thing and when some things fail to compose another thing—on the basis of our intuitive *desiderata*. For instance, when considering my head, your left foot, and the moon someone might say that those things are too scattered to compose something. And this, so the argument might continue, strongly suggests that (1a) is true.

In reply, suppose we do sometimes make compositional judgments on the basis of intuitive *desiderata*. How exactly does this strongly suggest that (1a) is true? It certainly

does not entail (1a). At the very most, it suggests that intuitive *desiderata* are sometimes used as evidential guides for when some things compose another thing. But making compositional judgments on the basis of our intuitive *desiderata*, does not suggest that those *desiderata* provide the informative and metaphysically necessary and sufficient conditions for composition. Note that even universalists must concede this since they take mere co-existence, not our intuitive *desiderata*, to be metaphysically necessary and sufficient for composition. A final parting shot on this score: Consider an analogy with knowledge. The condition of *justified true belief* can be used—and probably is used by us—as an evidential guide to when a belief counts as knowledge. But, as we learned at Gettier's (1963) knee, *justified true belief* is not sufficient for knowledge.

The prospects for a cogent argument for (1a) and (1a') look dim. As far as I can see, there is no compelling reason to think that restrictivists should believe that composition obeys a restriction in accordance with our intuitive *desiderata* or that composition is determined by such *desiderata*. Accordingly, Lewis' and Sider's defenses fail to adequately support (1). At this point, restrictivists are in a good position to resist the Vagueness Argument. For they can simply reply that (1) is at best unsupported. Again, this doesn't show that (1) is false or that there is good reason to deny it. But, we shall now be able to see that restrictivists have a good reason for *denying* (1). Indeed, I will argue that restrictivists have *two* such reasons.

3. Precise Restrictivism and the Vagueness Argument

I begin by noting that premise (2) of the Vagueness Argument and Lewis' intuitive *desiderata* defense provide the resources for restrictivists to accept that *if* restrictivism is true, then composition obeys a restriction, *but not in accordance with our intuitive desiderata*. This, in turn, gives restrictivists a reason to deny (1a). (Similar points could be made about premise (2), Sider's compositional sorites defense, and (1a').) First recall (2) and (1b):

> (2) It cannot be vague whether composition occurs.
>
> (1b) If composition obeys a restriction in accordance with our intuitive *desiderata*, then—since our intuitive *desiderata* are vague—it can be vague whether composition occurs.

Notice that (2) and (1b) entail:

> (6) It cannot be that composition obeys a restriction in accordance with our intuitive *desiderata*.

Recall that I am assuming that *if* restrictivism is true, then composition obeys *some* restriction. For ease of reference call this 'Assumption'. A consequence of Assumption and (6) is:

> (7) If restrictivism is true, then composition obeys a restriction but not one in accordance with our intuitive *desiderata*.

So, as I noted at the beginning of this section, restrictivists who accept Assumption, (2), and (1b), have a good reason for believing (7).

Moreover, since such restrictivists also believe the antecedent of (7), then they have a good reason for *denying* (1a), the antecedent of which also states that restrictivism is true. Note well that there is nothing dialectically inappropriate about restrictivists denying (1a) for this reason. For again, restrictivists have yet to see a compelling reason for believing (1a). However, restrictivists do have a good reason to believe (7) provided they also believe Assumption, (2), and (1b). Accordingly, dialectically speaking, it is perfectly appropriate for such restrictivists to conclude that (7) is true and (1a) is false. After all, universalists are the ones attempting to establish the falsity of restrictivism; they assume restrictivism and then attempt to draw out certain consequences of this assumption. What we can see thus far is that while (1a) does not represent a genuine consequence of restrictivism, (7) does—at least given Assumption, (2), and (1b).

That restrictivists can plausibly accept (7) and plausibly deny (1a) is significant. For it paves the first way for restrictivists to plausibly deny premise (1) of the Vagueness Argument. Restrictivists who accept (7) and deny (1a) should ask: Given that composition does not obey a restriction in accordance with our intuitive *desiderata* but does obey some restriction, what sort of restriction could it obey? A defensible answer is this: A precise, non-vague, restriction. And here is one way precise restrictivists, as we might call them, can defend their answer.

Not all properties and relations are created equal. Some properties and relations are *more natural* than others with some properties and relations being *perfectly natural*.[8] As the distinction is often put: Some properties and relations carve reality at its objective joints and others do not. Features of fundamental physical particles seem perfectly natural as do the various relations such particles bear to one another. But *composition* is also a good candidate for being considered perfectly natural; it too carves reality at its objective joints. After all, composition is a relation such that when some things stand in it one to another a numerically distinct object exists. And if composition is perfectly natural, then the informative necessary and sufficient conditions for composition—whatever they turn out to be—will be constituted by perfectly natural properties and relations. Given this, the following is eminently plausible:

> (8) If restrictivism is true, then composition obeys a perfectly natural restriction, i.e., a restriction constituted by perfectly natural properties and relations.

The precise restrictivist may continue by pointing out another feature of perfectly natural properties and relations: They can serve as perfectly determinate meanings. Given the view of vagueness presupposed by the Vagueness Argument, the vagueness of say ‘bald’ partly consists in its having multiple candidate but less than perfectly natural meanings. Expressions with perfectly natural meanings exhibit a kind of semantic stability and fail to be vague—again, assuming the view of vagueness shared by proponents of the Vagueness Argument. Hence, a restriction on composition constituted by perfectly natural properties and relations will also fail to be vague. Accordingly, the precise restrictivist can plausibly accept:

(9) Perfectly natural restrictions on composition are precise.

And what follows from (8) and (9) is:

(10) If restrictivism is true, then composition obeys a precise restriction.

Clearly, though, if composition obeys a precise restriction, then—contra premise (1)—it *cannot* be vague whether composition occurs. On the basis of the above argument, precise restrictivists can sensibly and plausibly deny (1). This too, dialectically speaking, is perfectly appropriate. Precise restrictivists have not been given a good reason to believe (1). However, there is a strong case for believing that while (1) does not represent a genuine consequence of restrictivism, (10) does. This concludes the first reason for restrictivists to deny (1). Here is another.

First, note that a proposition typically cited in support of (2)—that it cannot be vague whether composition occurs—is that *existence* cannot be vague. Given this assumption, precise restrictivists may reason as follows: If restrictivism is true, then composition is a relation such that when some things bear it to one another, *a numerically distinct object comes into existence*. Hence, the informative necessary and sufficient conditions for composition—whatever they turn out to be—will be conditions the obtaining of which brings about the existence of a numerically distinct object. That is:

(11) If restrictivism is true, then composition obeys a restriction the obtaining of which brings a numerically distinct object into existence.

But, since existence cannot be vague, the informative conditions by virtue of which something comes into existence cannot be vague. So, the informative conditions by virtue of which something comes into existence must be precise. In short:

(12) If composition obeys a restriction the obtaining of which brings a numerically distinct object into existence, then composition obeys a precise restriction.

Since (11) and (12) also entail (10), on the basis of this latest argument, restrictivists can once again plausibly deny (1). This concludes the second reason for restrictivists to deny (1).

In closing, it should be noted that in denying (1), a restrictivist is accepting the existence of a sharp cut off in a compositional sorites series. And as noted earlier, Sider believes that such a cut off is objectionable and somehow arbitrary. The two arguments above, however, reveal that such a cut off is neither objectionable nor arbitrary. According to the first argument, a cut off in a compositional sorites series is determined by perfectly natural properties and relations. But since such properties and relations represent the objective joints of nature, there is nothing arbitrary about such a cut off. According to the second argument, a cut off in a compositional sorites series represents a point at which a new material object comes into existence and there is nothing metaphysically arbitrary about that.

In summary: Lewis' intuitive *desiderata* defense and Sider's compositional sorites defense fail to adequately support premise (1) of the Vagueness Argument. Furthermore, there are at least two good reasons for restrictivists to deny (1) and so believe that restrictivism entails that it *cannot* be vague whether composition occurs. Perhaps there is some compelling reason for believing universalism; the Vagueness Argument, however, is not it.[9]

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[1] Henceforth, I drop the qualifier 'material' when discussing theories of composition. The reader should keep in mind, though, that in this paper, I am restricting composition and cognate mereological notions to material objects.

[2] There are other arguments for universalism. See, for instance, (Rea 1998) and (Hudson 2001). These arguments also deserve careful consideration, but such consideration is beyond the scope of this paper.

[3] Mark Heller (1990) also defends something akin to the Vagueness Argument. And others have endorsed the Vagueness Argument in conversation.

[4] What follows is similar to Sider's (2001, p. 121-122) proposed interpretation of composition obeying a restriction.

[5] Of course, a sorites series can also be ordered by multiple features.

[6] Sider does not explicitly say that these relations are informative. But clearly none of them presupposes that composition occurs. They are not, for instance, relevantly like the relation of composing an object.

[7] Thanks to Ted Sider for suggesting this objection.

[8] For more on this distinction between properties and relations see (Lewis 1983, 1984) and (Sider 2001, xxi-xxii).

[9] Sider (1997, 2001, pp. 134-139) has developed an argument for four-dimensionalism—roughly, the thesis that objects persist by virtue of having temporal parts—that directly parallels the Vagueness Argument. The arguments of this paper, if cogent, also serve to undermine that argument. Accordingly, the arguments of this paper, if cogent, serve to defend three-dimensionalism—a rival of four-dimensionalism—against an important objection.