

## DO WE NEED A THEORY OF METAPHYSICAL COMPOSITION?

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**I. Introduction**

Much of the recent work in contemporary metaphysics has been focused around the ontological problem of composition. One of the central issues in the debate has been coined the “special composition question”: the question of when and under what conditions objects combine so as to constitute or compose another object.<sup>1</sup> Or, put another way: under what circumstances is an object a proper part of another? Perhaps most generally, the question is this: when does composition occur? There have been a number of responses to this question. Universalists say “always,” Permissivists say “more often than we think,” Conservatives say “sometimes, and about as often as we think,” Eliminativists say “not very often, and only in special circumstances,” and Nihilists say “never.” Thus, some philosophers end up with trees and dogs in their ontology, some with trogs and trout-turkeys, some with persons and atoms-arranged-dog-wise, and some with not much of anything.

But philosophers are not the only ones concerned with something called “composition.” Scientists—physicists and chemists specifically—also study a phenomenon they call “composition.” This phenomenon (which I will call *p-composition*, for “physical composition”) occurs via electromagnetism, and it is the process by which atoms combine to compose chemical molecules and compounds, and by which those compounds compose cells and macroscopic objects.<sup>2</sup> This, at least structurally, seems very similar to the phenomenon that philosophers are interested in (which I will call *m-composition*, for “metaphysical composition”), though it’s less clear by what process this kind of composition is supposed to occur. Both phenomena seem to be processes by which entities or objects might come to compose further objects, and become parts of those further objects. But there is at least one key difference between the two apparently distinct conceptions of composition: *p-composition* is a natural, empirical phenomenon, whereas *m-composition* is generally taken to be a conceptual or *a priori* matter.

I will argue in this paper that having these two different conceptions of composition at play leads to some interesting puzzles, ones that raise questions about what is really being argued about, and what we *should* be arguing about, in the metaphysical composition debate. These puzzles, I will suggest, should at least *raise* the question of whether we really need a unique concept and theory of *m-composition*, or at least one that is not informed by scientific theories of *p-composition*.

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<sup>1</sup> van Inwagen, *Material Beings* (1990: 20, 31).

<sup>2</sup> This phenomenon is known in the sciences as *chemical* or *material* composition.

## II. One Too Many Kinds of Composition?

Initially, there seems to be no conflict between the two different conceptions of composition. And at least for those at the extremes of the debate (the universalist and the nihilist), they can simply say, “Yes, p-composition is all well and good, but we are talking about something completely different.” Thus, the universalist can hold that, according to p-composition, there are no trogs (because p-composition does not occur between spatially distant macroscopic objects), but according to the correct account of m-composition, there are such things. The two kinds of composition can imply the existence of inconsistent entities because they are not defined by the same principle of composition; that is, they don’t say the same thing about under what circumstances composition occurs. So: no problem. Similarly, the nihilist can admit that according to p-composition, there are composites like trees, dogs, and persons, but that under the right theory of m-composition, no such things exist.

However, things start to seem a bit more puzzling once we consider views on composition more towards the middle. Consider the conservative, perhaps one who defends a folk ontology of ordinary objects and familiar kinds. Her ontology will tell us that m-composition occurs about as often and in pretty much the same cases as p-composition will (since both will allow for the existence of dogs and trees, but not trogs, etc.). But if this is so, then it seems we have two categorically different kinds of composition occurring in basically all the same cases and under the same conditions. Both p-composition and m-composition occur such that there are chairs and baseballs, but not chairballs.

Notice that, while the conservative faces the most serious version of the problem, anyone except the nihilist will face a similar problem. For the universalist, all instances of p-composition will map onto a corresponding instance of m-composition (though not vice versa), with the resulting composite object occupying the exact same region of space. The permissivist will face a similar problem, though not in as many cases. The eliminativist will also face many instances of compositional crowding, since for any ordinary, composite object he allows into his ontology (like atoms, persons, or organisms generally<sup>3</sup>), there will be a corresponding instance of p-composition *also* indicating the existence of that object.

This seems like conceptual crowding. Why do we need two totally different conceptions of composition telling us the same things (in many cases) about which objects there are? Wouldn’t this constitute an obvious and perhaps serious violation of Ockham’s Razor? It also seems that it would imply that the existence of ordinary, composite objects is deeply overdetermined: both m and p-composition cause there to be such objects. This may seem like a strange way of talking about overdetermination, but I don’t think it is objectionable. Just as the shattering of a window may be overdetermined by the causal chain connecting it with a baseball *and* atoms-arranged-baseball-wise, so to the existence of composite objects may be overdetermined by the causal chain that connects them with p-composition and m-composition. Both of these things—lack of

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<sup>3</sup> Trenton Merricks advocates such a version of eliminativism.

parsimony and overdetermination—are often considered theoretical problems in their own right. Perhaps one is not bothered by either of these, though I think we should be.<sup>4</sup>

But perhaps the metaphysicians will simply say, “Well, it certainly is interesting that these two theories of composition seem to overlap. But this doesn’t seem like a serious problem, since the two theories are about different things.” Yet a more interesting, and likely more troubling, problem emerges when we consider that if the two theories of composition really are distinct, they seem to imply the systematic co-location of material objects. For all ordinary, composite objects countenanced by a given theory of m-composition (as well as things like molecules and atoms), there will be a second composite object (by p-composition) co-located with the first. And even more than causal overdetermination, the systematic co-location of material objects should (and I think does) seem like a problem. That is, after all, why the case of the statue and the lump of clay has received so much attention. Allowing that the two theories of composition are distinct seems to lead us to a bloated ontology, and while we may not all share Quine’s “preference for desert landscapes,” this should still appear troubling to metaphysicians concerned with such issues.

### III. P-Composition as a Domain Restriction of M-Composition?

One of the metaphysicians who I have suggested faces the problem of a bloated ontology might object that “p-composition” and “m-composition” denote the same phenomenon, or at least that they overlap. She might suggest that the metaphysician and the chemist are worried about the same basic issue: part-hood. Thus, it could be argued that p-composition is just a restriction of m-composition to a narrower domain (though what domain?), and that for every place where the two seem to indicate the co-location of material objects, they actually just agree on the existence of a single, common composite object. The eliminativist, for example, could then admit that her ontology (i.e., her theory of m-composition) allows fewer composite objects than a standard scientific theory of p-composition. But wherever the two theories agree on the existence of a composite object (as, perhaps, with atoms and persons), there is a *common* composite object they are indicating, not two distinct, co-located objects. So there is no problem of two distinct conceptions of composition leading to a bloated ontology.

This solution seems implausible. First, it seems dubious and *ad hoc* to hold that when the two theories of composition *agree*, there is no issue of systematic overdetermination or co-location (because they indicate the same object), but that when they *disagree*, there is no problem with that disagreement. If instances of agreement or convergence can buttress the claim that the two theories overlap, instances of disagreement should tell *against* that claim, unless there is a principled way of showing when and why the theories overlap in some cases and not others.

Second, if it really were the case that p-composition and m-composition were the same phenomenon, even only in some cases (i.e., a partial overlap), at least some issues in the composition debate would be resolved: m-composition occurs when (though not *only* when) p-composition does, and thus ordinary, composite objects exist. But eliminativists

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<sup>4</sup> See Sider, “What’s So Bad About Overdetermination?” (2003).

and nihilists deny this (the former doing so in most cases). So despite there being a robust scientific story to tell about when and how p-composition occurs, eliminativists and nihilists cannot allow that m-composition overlaps with p-composition even in some cases.

The issue is perhaps even stranger for the conservative. She either faces the problems of systematic overdetermination and co-location, or the problem of saying that she's actually concerned with something like p-composition. If she wants to understand herself as talking about the same thing as the chemist, namely p-composition, perhaps this will provide her with further theoretical resources to defend her position (she will be able to give a serious scientific account of when, why, and how composition occurs). But this would also likely imply that she is no longer talking about the same thing that the universalist, eliminativist, etc. take themselves to be talking about, since the chemist's story about p-composition occurring in some cases and not others will do nothing to persuade any of them that their views (ostensibly about m-composition) are mistaken. They will, I think, simply say, "Yeah, but we're talking about something else." And this, at least in part, is because m-composition is most often thought to be an *a priori* matter, while the p-composition investigated by the chemist is a straightforwardly empirical phenomenon.

#### IV. Which Composition Are We Talking About Here?

A final, epistemological problem raised by the issue of competing theories or kinds of composition is that of how we are to know which one is being talked about, which one we are having intuitions about, which one we take ourselves to have perceptual evidence for, etc. If there really are two different kinds of composition occurring out there in the world, and they may sometimes co-occur, we seem in need of a way to distinguish them.

Some approaches to defending a conservative ontology take us to have sense-perceptual (typically visual) evidence for the existence of ordinary objects. In the same way that we can see that an object is red or round, we can also *see* that there are ordinary, composite objects in the world (though the latter may be a more complex perceptual process). Elder employs such an approach, which holds that empirical observations of the world can teach us about that world's ontology, and that ontology must operate "under empirical load."<sup>5</sup>

Yet if we are supposed to have evidence for the occurrence of m-composition (as that of ordinary objects) via sense perception, how do we know that we are not simply perceiving the presence of p-composition? If both m-composition and p-composition are supposed to be empirically detectable through sense perception, how are we to know which one a given experience is revealing? Perhaps when one has an experience of a table *as a* composite object, rather than atoms-arranged-table-wise, this is because of the p-composition which bonds and holds the table's atoms, molecules, etc. together. Similarly, perhaps we don't have perceptual experiences of trogs because there is no p-composition occurring between the atoms and molecules of the dog and those of the tree.

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<sup>5</sup> See Elder (2004: ix, xi, and ch. 2; 2011, ch. 3).

If basic, empirical sense-perception can provide evidence for the existence of ordinary objects (i.e., instances of a certain kind of m-composition), then there seem to be two kinds of empirically detectable composition at play, since p-composition is clearly empirical. However, without a reliable way to tell which kind of composition is being revealed by a given perceptual experience, it seems epistemically dubious to suppose that such experiences justify our beliefs in the existence of some kinds of objects but not others. Such a worry might extend to more rationalistic or particularist defenses of a given ontology, where the problem would be a structurally identical one about how we are to know which kind of composition we having intuitions about. Perhaps we have the intuition that atoms-arranged-dog-wise compose a dog but not that my nose and the Eiffel Tower compose a further object because p-composition is occurring in the former case but not in the latter.

## V. Conclusion: M-Composition Replaced or Informed by P-Composition

It seems fair to think that one of the things, perhaps the primary thing, at stake in the composition debate is what our concepts of “object” and “part,” or “object-hood” and “part-hood” are, or what they should be. I have raised some puzzles concerning apparent conflicts between p-composition and m-composition. These puzzles seem to arise from having one too many conceptions of composition at play. Denying that the two kinds of composition are the same (that they indicated the existence of some of the same objects) leads to strange problems of systematic overdetermination and co-location of composite objects, and thus to a bloated and bizarre ontology. And admitting that the two kinds of composition might overlap, even in some cases, is inconsistent with the nature of the m-composition debate, since eliminativists and nihilists cannot allow for the kinds of objects indicated by p-composition.

So: do we need a theory of m-composition? Do we need a theory of “object-hood” and “part-hood” totally separate from one informed by the science of p-composition? If one were to answer “no,” this would hardly mean there is no more work to be done by philosophers concerning what it is to be an “object” and a “part.” Indeed, far from it. But, to begin a sketch, perhaps our concept of “object” should be something like this: when p-composition occurs in a certain way (i.e., out to a certain point or boundary) between and among a set of atoms or molecules, those things compose an object.

Or perhaps more precisely:

X is an object *iff* X is made up of a set of atoms or molecules among which p-composition occurs in a certain way.<sup>6</sup>

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<sup>6</sup> I say “in a certain way” here not to be vague or obtuse, but just to allow for the fact that composition can occur in different ways and under different circumstances. But generally, as I suggested above, what I mean by “in a certain way” is that for a given composite object (i.e., composite by p-composition standards) p-composition occurs out to a certain boundary of that object. We typically take objects to have physical boundaries, namely the one’s that common sense tells us they have; these are the boundaries I am referring to. These boundaries are why the atoms and molecules that we would typically take to belong to and to

This would entail:

Y composes an object *iff* Y is a set of atoms or molecules among which p-composition occurs in a certain way.

And perhaps our concept of “part” could be something like this:

Z is a part of X *iff* X is an object and Z is a subset of the set of atoms or molecules that compose X, where p-composition occurs among the entities in the subset Z.

Or perhaps we don’t need a theory of p-composition to effectively replace one of m-composition, but only that the former should inform or compliment the latter. This might lead to this:

M-composition occurs at place  $\psi$  at time  $t_1$

- (a) if P-composition occurs at place  $\psi$  at time  $t_1$ , or
- (b) if other specific conditions obtain at place  $\psi$  at time  $t_1$ , and
- (c) if and only if either (a) or (b)

(b) here would leave room for uniquely metaphysical conditions on composition, whatever those might turn out to be.<sup>7</sup> Yet (a) would allow for p-composition to at least inform, or act as a partial guide to, the philosophical question of when composition occurs.

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compose a baseball hold together in a way that they don’t with the atoms and molecules of another baseball. This is of course different, to a degree, for things like magnets.

<sup>7</sup> For instance, maybe it’s simply a matter of spatial location. For this suggestion, see Markosian (forthcoming).