Philos Stud
DOI 10.1007/s11098-017-0903-8

Defending constituent ontology

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Abstract Constituent ontologies maintain that the properties of an object are either parts or something very much like parts of that object. Recently, such a view has been criticized as (i) leading to a bizarre and problematic form of substance dualism and (ii) implying the existence of impossible objects. After briefly presenting constituent and relational ontologies, I respond to both objections, arguing that constituent ontology does not yield either of these two consequences and so is not shown to be an unacceptable ontological framework.

Keywords Constituent ontology · Parthood · Composition

Many, though not all, philosophers believe that there are composite concrete individuals, i.e. objects that have proper parts. One metaphysical view claims that the only parts a concrete individual can have are other concrete individuals. A desk (if such there be) has pieces of wood and nails as its parts. However, another view claims that concrete individuals have their properties as either parts or something very much like parts. The former is usually labeled as a "relational ontology" and the latter as a "constituent ontology."

Objections to constituent ontologies usually come in the form of criticizing specific versions,[1] such as bundle or substratum (bare particular) theories of

[1] van Inwagen (2011) attempts to criticize constituent ontology generally, though his critique mainly rests on his claim that the terms or concepts employed by constituent ontologies are unintelligible or confused. I won't address van Inwagen's objection here, though it seems that his critique would only be an attack on specific versions of constituent ontologies that employ terms or concepts which are (allegedly) incoherent or unintelligible, whereas other versions may employ terms or concepts that are not.

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Published online: 05 April 2017

concrete individuals.[2] Recently, constituent ontologies have been criticized as leading to a bizarre and problematic form of substance dualism and implying the existence of impossible objects. After briefly presenting relational and constituent ontologies in greater detail, I respond to both objections, arguing that constituent ontology does not yield either of these two consequences and so is not shown to be an unacceptable ontological framework.

1 Constituent ontology and relational ontology

To better understand the difference between constituent and relational ontologies, consider Michael Loux's perspicuous characterization of each view:

> Constituent ontologists take [familiar objects] to have something like a mereological structure. Familiar objects, in their view, are wholes—complexes made up of components or parts, and they have the forms of character they do because their components nonderivatively have the character they do. These components have to be distinguished from a familiar object's commonsense parts…The Relational ontology, by contrast, rejects the framework of constituents and wholes…On this view, the only mereological structure familiar concrete objects exhibit is their commonsense mereological structure. So the only parts an object like Socrates has are things like his hands, feet, heart, and lungs (2005: 89).

Additionally, it is fairly common to take constituent ontology as having a distinct Aristotelian flavor whereas relational ontology is often regarded as Platonic.[3] As noted earlier, bundle theory and substratum theory count as constituent ontologies.[4] For the constituent ontologist, a composite object has a mereological structure (e.g., this box has atoms as parts), but it also has an ontological structure such that the properties of the box (e.g., its shape or size) are either parts of the box in a full-blown mereological sense or in some weaker, analogous relation of parthood (some use 'constituents' to designate this part-like relation). Relational ontologists, on the other hand, deny that objects have any ontological structure; rather, as Armstrong (1989: 76–77) put it, they are "blobs."[5] The properties of an object are not parts of it in any sense. Rather, they only bear an "abstract and bloodless relation utterly unlike that of part to whole." (Olson forthcoming: 2 typescript).

> Adding to the differences between the two ontologies, Eric Olson states: Constituent and relational ontologies are not just two competing views, but radically different ways of thinking about the metaphysics of concrete objects.

[2] For recent example of a critique of a specific version (viz. bare particular theory), see Bailey (2012). For replies, see Wildman (2015) and Connolly (2015).

[3] Though Lowe (2012) offers an Aristotelian framework that does not fit in either a relational or constituent ontological framework.

[4] Hylomorphism, which has seen a revival in recent metaphysical discussion, seems also to count as a constituent ontology, whether in its own right (Loux 2006) or as a species of substratum theory (Brower 2014).

[5] Armstrong (1989) includes both nominalism and relational ontology as being "blob" ontologies.

> Relationalists are largely concerned with the way material things relate to their parts—their concrete, particular parts, that is. They think about what changes of parts a thing can survive, if any…They ask whether the same parts can compose two different, "coinciding" objects at once…For the most part, constituent ontologists ignore these questions and ask entirely unrelated ones: whether concrete particulars conform to the identity of indiscernibles, what it is for several properties to belong to thing same thing, whether there is "more to" a particular than its properties, and how to avoid Bradley's regress…questions of no interest to most relationalists. The result is separate debates about the metaphysics of concrete objects with little common ground (Olson forthcoming: 2–3 typescript).

Although I think Olson is mostly right about the divide, his remarks are not entirely accurate. If we think of relational ontologies as being Platonic (or if Platonism about abstract properties counts as a relational ontology), then questions such as "how to avoid Bradley's regress" can be raised.[6] Nevertheless, these two approaches to the metaphysics of concrete objects do diverge considerably, and it would be worthwhile to figure out which ontological framework should be adopted, especially if one of the approaches is a non-starter. Olson argues that constituent ontologies are the ones to reject given that it leads to a problematic form of substance dualism and implies the existence of impossible objects.[7]

Before examining these objections, it is worth noting that I will be treating constituents as parts in the full-blown mereological sense. Although some constituent ontologists deny that properties are parts or hedge by treating properties as part-like or parts in a non-mereological sense, Olson rightly notes that the constituent ontologist should not regard the object-property relation as a non-mereological constituency relation merely because it violates some of the standard principles of classical extensional mereology. For there are those who accept a conception of parthood that violates uniqueness of composition (Wiggins 2001), unrestricted composition (van Inwagen 1990), weak supplementation principle (Smith 2009), or even transitivity (Johnston 2002). Whether or not the constituency relation between properties and their objects obeys all the standard principles of classical extensional mereology, I will treat properties as full-blown mereological parts of the objects that have them (and hence, I will use 'part' and 'constituent' as synonymous throughout).

[6] Olson's remarks are a bit overstated since the constituent ontologist can ask all of those questions raised for relational ontologists, for the constituent ontologist also accepts that concrete objects have a mereological structure.

[7] Olson also attempts to demotivate constituent ontology by suggesting that it cannot adequately account for character-possession of concrete individuals, and like relational ontologies, will have to ultimately allow for "brute character," i.e. the unanalyzable possession of character by some object. I won't contest Olson here given that the aim of this paper is not to motivate constituent ontology but to defend it from the criticisms that Olson raises. Nevertheless, constituent ontology can be motivated for reasons independent of character-possession, and this is especially true if hylomorphism counts as a constituent ontology—whereby reasons in favor of hylomorphism as the best analysis of material objects would thereby count as reasons in favor of constituent ontology.

2 Constituent ontology and dualism

> Here is Olson's first objection to constituent ontology:
> Consider the thing composed of all my constituents except my physical properties: shape, size, mass, temperature, atomic structure, and so on…According to the constituent ontology…it will lack any physical properties. It will be a wholly nonphysical or immaterial thing. Yet all my mental properties will be constituents of it, making it…psychologically indistinguishable from me. It will be an immaterial mind…This is not quite Cartesian dualism…[but] it implies that even if all mental phenomena have a physical basis, some of their *subjects*—some conscious, thinking beings—are wholly immaterial. It would mean that there are both material and immaterial human thinkers, and that for every human being there is one of each. It is an absurd amalgam of dualism and materialism (Olson forthcoming: 12 typescript).[8]

The argument is not to be understood as follows: constituent ontologies entail substance dualism, and substance dualism should be rejected; so, constituent ontologies should be rejected. After all, some may want to espouse substance dualism (as some philosophers indeed do), and so this would not be a reason for such philosophers to reject constituent ontology. Rather, the problem is similar to Olson's well-known "too many thinkers" argument for animalism. That is, this strange "quasi-abstract-object" (which is what Olson calls it) that is made up of only my mental properties would count as a thinker—for it is the literal bearer of thoughts insofar as it has them as parts.[9] However, I am a thinker too since I have those mental properties as parts, but I am not that strange quasi-abstract-object since I am made up of additional parts, viz. my physical properties. Therefore, we have too many thinkers thinking my thoughts.

Now there is an obvious response on behalf of the constituent ontologist: deny the existence of quasi-abstract-objects. There are no objects made up only of my mental properties (or objects only made up of anyone's mental properties).[10] Why would we reject the existence of such objects? One reason for denying the existence of my composite proper parts may be due to the rejection of the following principle:

> *Doctrine of Arbitrary Undetached Parts* (DAUP): For every material object M, if R is the region of space occupied by M at time t,and if sub-R is any occupiable sub-region of R, there exists a material object that occupies the region sub-R at t (van Inwagen 1981: 75).

[8] Even if mental properties were identical or reducible to physical properties, Olson notes that a similar problem would still arise due to the existence of an object composed only of physical properties except the non-mental physical properties, leaving us with a "massless, shapeless, colorless mind" (ibid.).

[9] Some might demur over this claim, suggesting that a property may be a part of an object without characterizing that object (cf. McDaniel 2001). I thank an anonymous reviewer for this point.

[10] Olson does consider restricting composition as a possible response to his objections (ibid., 15–16 typescript), but he mainly focuses on it as a response to his second objection (which I discuss below) and rejects such a move as failing to address *that* objection.

Denying DAUP may not be an available strategy for the constituent ontologist if properties do not occupy regions of space (though some claim that they do). Olson (1995, 2007), however, denies the existence of composite proper parts of me—such as my left-hand complement, my upper-half, my brain, and my cerebrum—because such objects would serve as competing candidates for being the subject of my mental states. And since I am the only conscious thinker here, it follows that these competing candidates do not exist. Moreover, there seems to be no principled or non-arbitrary reason for accepting the existence of my left-hand or my lower-half while denying the existence of my left-hand complement or my upper-half, and hence Olson concludes that I have no composite proper parts.[11]

Now Olson's very reason for denying that some proper parts of me exist can be used by the constituent ontologist to deny the existence of another proper part of me, viz. the object that is composed of only my mental properties, since it would also serve as a competing candidate for being the subject of my mental states. And Olson should not accuse this move as being too implausible given that he is willing to deny the existence of mundane objects (in fact, Olson (2007) claims that animalism is tied to a view of restricted composition such that there are no composites except for organisms—and so there are no statues, baseballs, rocks, planets, etc.). The denial of an object composed of only my mental properties then should not be regarded as any less plausible.

As we'll see later, an advantage for the constituent ontologist is that she can endorse DAUP, unrestricted composition, or other mereological principles that yield the existence of my proper parts, and she can do so while denying the existence of an object composed only of my mental properties. If so, then the constituent ontologist can accept the existence of ordinary composite objects while maintaining that her view neither yields substance dualism nor a "too many thinkers" problem.

3 Constituent ontology and impossible objects

The second objection to constituent ontology is the claim that such an ontological framework implies the existence of objects that we should regard as impossible, and hence we should believe that constituent ontology is false (and necessarily false, for that matter). To make the objection, we need the following definition:

> *Composition*: *x*s compose $y =_{df}$ each of the *x*s is a part of *y*, and every part of *y* overlaps at least one of the *x*s.[12]

[11] At some places, Olson seems to suggest that we have cells as parts (cf. Olson 1997: 137). If so, then the last clause should be amended as: "and hence Olson concludes that I have only cells and simple particles as proper parts." I thank an anonymous reviewer for this point. However, Olson's discussion of the link between animalism and sparse ontology (especially in Olson 2007: 222–223) seems also to suggest that he believes only animals and simple particles exist. On either view, however, he would deny the existence of the "problematic" proper parts.

[12] The *definiens* should include that the xs are non-overlapping, but Olson leaves that clause out to make the objection easier to state, and so I leave it out as well.

Given the last clause, when a plurality of objects composes some whole, there is no other part that (partially) composes the whole and is disjoint from that plurality of objects. With that, we can now state the objection.

Consider an object O that is composed of all of the fundamental particles that now compose me. Given *Composition*, if any property P is a part of O, then it must overlap the fundamental particles, and hence either (1) P is a part of one of the particles or (2) P is composed of parts distributed across several particles. (1) and (2) follow since a part of me cannot be disjoint from the plurality of objects that now compose me. But it seems that we can deny both (1) and (2). For there are properties that are parts of me but are not parts of one of the particles. For example, I have the property of having a certain size S, and the constituent ontologist claims that such a property is a part of me. But such a property is not a property of any of my fundamental particles (for they are much too small) and so is not a part of any of those particles; therefore, not-(1). Perhaps we might claim that one of my properties is composed of parts distributed across several particles. But this too fails. My size S would have to be composed of parts distributed across my particles, and so it would have to be composed of the sizes of the particles—as Olson (forthcoming: 13) notes, "how could a size be composed of anything other than sizes?" However, the sum of all of the sizes of my particles is not the same as my size; my size is greater "since most of its volume consists of empty space between atoms" (ibid.). Hence, the property of my size is not composed of parts distributed across my particles, and therefore not-(2).[13]

The result is that either properties are not parts, which is tantamount to the rejection of constituent ontology, or it maintains constituent ontology at the price of either claiming that wholes do not have many of the properties standardly ascribed to them (e.g., their size, shape, etc.) or claiming that atoms do not compose me (and since I'm not special, atoms do not compose anything at all).[14] But it would be absurd to suppose that I lack a certain size or a human-shape, and it would appear to be equally absurd to claim that atoms do not compose me or anything else.[15] Hence, Olson concludes that we should reject constituent ontologies altogether.

The main problem with Olson's argument is the assumption that the notion of parthood here is univocal. This can be seen by the way Olson even describes constituent ontology as a view where at "one level, a dog is made up of atoms, but on another level—a metaphysically deeper one—it is made up of the other things." (Olson forthcoming: 1 typescript). It is standard to talk about different levels of

[13] Olson thinks similar arguments can be employed when considering the shape or atomic structure of objects.

[14] At best, particles would partially compose me, but Olson rightly notes that this doesn't fit with the typical claim by constituent ontologists (forthcoming: 14 typescript).

[15] An anonymous reviewer points out that it might not be absurd to suppose that atoms do not compose me (or anything else), for McDaniel (2001) argues that ordinary objects are not composed of fundamental particles but are rather composed of fundamental particles and properties (though McDaniel does claim that there are sums composed of fundamental particles, but they are distinct from ordinary objects). Although I agree that it may not be absurd to claim that atoms do not compose ordinary objects, the proposal I am offering allows us to maintain with Olson that (there is a sense in which) I am composed of atoms.

composition, such that on one level, my body is composed of cells, but on another level, it is composed of fundamental particles. However, there is no competition of composition because there is overlap of the cells and the particles. But the composition by particles and the composition by properties would naturally be regarded as being different, especially given the radically different natures of both types of entities, where particles are concrete and properties (whether universals or tropes) are abstract.[16] The radical difference is well described by van Inwagen:

> [N]o two concrete things could differ more than God and an inanimate object. But (assuming for the sake of the illustration that all three things exist) the difference between God and this pen pale into insignificance when they are compared with the differences between this pen and the number 4…The difference between *any* abstract object and *any* concrete object would seem to be the maximum difference any two objects could display (2004: 110–111).

Given such a difference, it is reasonable to posit one parthood and composition relation (and its associated principles) governing particles and other concrete objects and another parthood and composition relation (and its associated principles) governing properties.

Parthood pluralism, as it is sometimes called, is not a stranger to discussions about material objects. Kris McDaniel (2004) posits distinct parthood relations for material objects and for regions of spacetime, and Daniel Korman (2007) proposes (though does not necessarily endorse) distinct parthood relations as a way of resolving the grounding problem for coinciding objects.[17] It may even be that Aristotle held to a version of parthood pluralism (Burkhardt and Dufour 1991), which would be fitting given the Aristotelian flavor of constituent ontology.

Now one may worry that parthood pluralism not only bloats the ideology but also multiplies problems. There would be two mereological primitives, and there would be a Special Composition Question (which asks for the conditions under which a plurality of objects compose some further object) for each of the distinct (fundamental) parthood relations. Additionally, Olson objects by suggesting that we can still provide a "more general notion encompassing both constitutive and mereological parthood," whereby the problems against constituent ontology "can be restated using these generic notions." (Olson forthcoming: 17).[18]

[16] The labels 'concrete' or 'abstract' are not always used in the same sense by different philosophers, such that some may hesitate to call properties, and especially tropes, as 'abstract.' Olson, however, is willing to call properties 'abstract' or at least 'quasi-abstract.' For this paper, what matters is that properties belong in a different ontological category than material objects, and let 'abstract' designate the former type and 'concrete' the latter type.

[17] See also Simons (1987) for a gesture towards parthood pluralism.

[18] He offers the following two definitions for the generic notions (where 'constituent' is used in a non-mereological sense that captures the relation between property and object asserted by constituent ontologists):

(a) x is a PART of y $=_{df}$ x is a part or a constituent of y, and

(b) the xs compose y $=_{df}$ each of the xs is PART of y, and every PART of y shares a PART with one or more of the xs.

But Olson offers no reason for accepting such a gerrymandered notion of parthood.

First, the ideological addition might be welcome if several metaphysical problems can be resolved by doing so (as argued by McDaniel and Korman noted above). Moreover, the constituent ontologist is not suggesting a multiplication of parthood relations in the same ontological category but instead is positing distinct parthood relations, one that governs the concrete individuals and another that governs abstract properties. Thus, the kind of parthood pluralism offered by McDaniel and Korman can be rejected by the constituent ontologist; the constituent ontologist does not need to posit a distinct parthood relation for regions of spacetime, especially if she accepts substantivalism (or super-substantivalism[19]) such that regions of spacetime are construed as concrete individuals. And the constituent ontologist does not have to accept distinct parthood relations for coinciding material objects. If so, then the constituent ontologist will not have double the mereological problems in the way that it might appear for those who accept distinct parthood relations for entities in the same ontological category (and hence, the constituent ontologist need not answer the Special Composition Question twice).

In response to Olson's more general notion of parthood and composition, the constituent ontologist has no reason to consider there even being such a generalized notion across radically different ontological categories. In fact, the Aristotelian tradition has long posited the distinction of parthood relations. Consider the following remarks concerning the ontological framework of Aristotelian hylomorphism:

> Our default theory of bodies today is…[to] take material substances to be constituted by their *integral* parts…On this picture, the bodies we are ordinarily acquainted with are just a collection of smaller bodies…To medieval philosophers working in the Aristotelian tradition, however, this analysis would seem so incomplete as to be laughable. On their model, *although bodies are composed of other bodies*, this sort of analysis never gets to the fundamental constituents of the material world, *however far down it goes*, because it *frames the analysis in the wrong way*. For an Aristotelian, the fundamental constituents of physical bodies are not *integral* parts, but the *metaphysical* parts (Pasnau 2010: 636) [italics mine].[20]

Note that under the Aristotelian framework, bodies are composed of other bodies, and hence we have at least one parthood relation. But note that the other parts cannot be found by the same sort of decomposition no matter how "far down it goes." Hence, Olson is mistaken in thinking that property-parts should overlap with the particles that compose me. They are not decomposed at different levels of composition. They are decomposed into different *kinds* of parts and entities. Under this picture, then, it would make no sense to search for a generalized notion of parts

[19] Regarding super-substantivalism, an object (which is identical to some space–time region) is composed (in one sense) by points of space–time, whereas it is also composed (in a distinct sense) by its properties.

[20] For more on the history of this kind of parthood pluralism, see Normore and Brown (2014).

(such as the kind offered by Olson forthcoming: 17 typescript) since such parts would never overlap because they are not even "parts" in the same sense.

The constituent ontologist should therefore distinguish between two types of parthood and composition relations. Let '$<_m$' stand for metaphysical parthood and '$<_i$' integral parthood, where metaphysical parthood is the relation that holds between an object and its properties and integral parthood is the relation that holds between an object and its particles (or other proper parts that are themselves concrete objects). We then have:

*x*s composes$_1$ $y =_{df}$ *x*s $<_m y$ and there is no z such that $z <_m y$ and z is disjoint from the *x*s.

*x*s composes$_2$ $y =_{df}$ *x*s $<_i y$ and there is no z such that $z <_i y$ and z is disjoint from the *x*s.

Thus, my particles compose$_2$ me and my properties compose$_1$ me, but my particles and my properties do not overlap (that is, they do not overlap$_1$ nor do they overlap$_2$, depending on which parthood relation is being employed). Contrary to Olson's contention, we can therefore maintain that atoms compose$_2$ me and that I have the property of having a certain size since it is a metaphysical part of me. Hence, the constituent ontologist is not saddled with the acceptance of impossible objects.

With such a compositional theory, it is possible that the distinct parthood relations are not governed by exactly the same principles. For example, it is possible that composition$_2$ be unrestricted but not so for composition$_1$ (and the same can be applied to uniqueness and transitivity). So an additional advantage in adopting parthood pluralism is that the constituent ontologist can, as stated earlier, deny the existence of "quasi-abstract-objects" such as the object composed$_1$ only of my mental properties by denying that composition$_1$ is unrestricted, whereas she can maintain (contra Olson) the existence of brains, hands, and statues because she accepts unrestricted composition$_2$.

4 Conclusion

I have argued that constituent ontology neither yields a problematic form of substance dualism nor implies the existence of impossible objects. But Olson's criticism has been fruitful in that it shows what kind of ideological framework is required by the constituent ontologist, which is to adopt a certain version of parthood pluralism. The parthood pluralism required will be distinct from some of the other versions currently offered (especially ones that posit distinct parthood relations in the same ontological category or for all concrete individuals). This, however, shouldn't be a problem for constituent ontologists, especially since their view already has an Aristotelian pedigree.[21] To avoid inconsistency, the constituent

[21] Of course, substratum theories and bundles theories can also be tracked back to Locke and Hume, respectively (and there is no clear evidence that either of them would endorse parthood pluralism).

ontologist will therefore have to be more thoroughly Aristotelian by adopting parthood pluralism (one parthood relation for properties and another for concrete individuals). As an Aristotelian, I find that to be no problem at all.

Acknowledgements Many thanks to an anonymous reviewer for helpful comments. Thanks also to Stephen T. Davis for helpful discussion on some of these issues.

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Footnote 21 continued
Nevertheless, I maintain that parthood pluralism (that distinguishes metaphysical parthood and integral parthood) should be adopted by any constituent ontology.