

# “No Composition, No Problem: Ordinary Objects as Arrangements”

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## 1. Introduction

Mereological nihilism (MN) is the view that there are no mereological composites.<sup>1</sup> MN is typically treated as tantamount to anti-realism about ordinary objects such as tables, chairs, and baseballs. Notice, though, that the following argument is invalid as stated:

- i) Mereological composites do not exist
- ii) Therefore, ordinary objects do not exist.

Interpreted charitably, the argument is an enthymeme; with the missing premise added, the argument – now valid – looks like this:

- i) Mereological composites do not exist
- i') Ordinary objects are (identical to) mereological composites
- ii) Therefore, ordinary objects do not exist.

By and the large, debates over the existence of ordinary objects have concerned the truth of *i* – that is, whether there are mereological composites. Yet this may be a mistake: for if *i'* is false – that is, if ordinary objects are not (identical to) mereological composites – then ordinary objects may well exist- even if mereological composites do not.

Showing this to be the case is a central goal of this paper: I argue that ordinary objects are not (identical to) mereological sums. Instead, I propose and defend a novel account of the nature of ordinary material objects: that ordinary objects are *arrangements* rather than *composites*. Moreover, because arrangements exist (I argue), so do ordinary objects- even if mereological nihilism is true.

## 2. Motivating Realism

Not every metaphysical debate concerns existence. For instance, Plato and Aristotle disputed whether universals are transcendent or immanent- but agreed they exist. Idealists and materialists dispute whether tables depend on the mind- but agree there are tables. In brief, some metaphysical debates concern the nature of something – *what* something is – rather than existence- *whether* something is.

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<sup>1</sup> For defenses of nihilism, see Rosen and Dorr (2002), Dorr (2005), and Cameron (2008, 2010).

In practice, one often gives an account of something's nature by identifying it with one *candidate* over another. Consider propositions. There are various candidates for what propositions are, including sets of worlds (or functions from sets of worlds to truth-values), non-mereological ("Russellian") complexes of concrete constituents, and abstract entities akin to reified Meanings. Similarly, one can ask whether possible worlds are concrete objects, abstract states of affairs, or maximal consistent sets of propositions. And the same goes for (macroscopic) material objects, where traditional candidates include mereological sums of smaller material objects, bundles of tropes, logical constructions out of sense data, and hylemorphic compounds of form and matter.<sup>2</sup> Generally speaking, then, to choose one candidate over another is to give an account of the nature of the identified entity.

There being a range of identification-candidates prompts a methodological question: should the prospects for realism about a given identification-candidate inform the choice to identify an entity with that candidate? My inclination is to answer in the affirmative, though I won't defend this as a general principle here. Instead, something slightly weaker is sufficient for my purposes- where the weakening restriction concerns entities that enjoy a presumption of existence in non-philosophical contexts. In particular, I endorse the following principle, which I will call the *meta-ontological principle of existential charity*: when choosing between rival identification-candidates for entities whose existence is considered trivial (or indubitable) in non-philosophical contexts, and all else is (roughly) equal, the metaphysician ought to pick an identification-candidate that vindicates, rather than overturns, the presumption of existence.<sup>3</sup>

Naturally, some might resist. After all, why think common sense is infallible about what exists? Why should one be charitable if common sense has a long history of error? These are reasonable questions, the reasonableness of which is a large part of what makes the charity principle defeasible. So, if it turns out that something about the entity in question is incoherent, or that no reasonable identification-candidate exists, then anti-realism may well be

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<sup>2</sup> Many of these traditional views have modern variants. For a modern version of the bundle theory, see Paul (2006). For a modern take on Aristotelian hylemorphism, see Fine (2003, 2008) and Koslicki (2008). Others advocate newer conceptions. For objects as spacetime nodes, see Schaffer (2009). For discussion of objects as structural relations, see Chakravartty (2003). For objects as conventional constructions, see Sidelle (2010, *inter alia*). In brief, many candidates for the nature of objects exist, and each requires argument. That being said, I will neither defend nor criticize these particular theories (space forbids a thorough examination); rather, I mention them to establish precedent and a position in conceptual space.

<sup>3</sup> See Hirsch (2002) and McGrath (2008) for discussion of a distinct (but similar) linguistic (rather than metaphysical) principle of charity.

justified no matter what common sense holds. However, if at least one candidate is good, then the principle suggests identifying the entity with the candidate that will vindicate the existential judgment rather than overturn it.

That being said, return to the debate over composition and ordinary objects. The ordinary object eliminativist has it that common sense errs; though the folk believe there are tables, there really are none. (Eliminativism, obviously, does not vindicate common sense judgments.) When faced with the incredulous stares that inevitably follow a claim such as ‘tables do not exist’, however, the nihilist-cum-eliminativist explains that even though ‘there are no tables’ is false, ‘there are simples arranged tablewise’ is true. It is via this paraphrastic strategy that the eliminativist aims to recover common sense distinctions: for example, that in the loose and popular sense at least, a room without tables differs considerably from a room with tables- for only in the latter are there simples arranged tablewise. More broadly, for the nihilist, it is the presence of simples arranged tablewise that make ‘there is a table’ assertable, that appear table-ish to the eye, and that prevent simples arranged coffeecupwise from shattering on the simples arranged floorwise.

So, although there is one sense in which the folk err – there really are no tables – there is another sense in which the folk do not err- where it appears there is a table there is something playing the table role, as it were. With this in mind, consider the following:

- iii) there is something that plays the role of ordinary objects in perception in discourse
- iv) Ordinary objects are (identical to) whatever plays the role of ordinary objects in perception and discourse
- v) Therefore, there are ordinary objects (i.e., ordinary objects exist).

Clearly, the nihilist-cum-eliminativist rejects iv; rather than identifying ordinary objects with whatever plays their role, the nihilist-cum-eliminativist maintains that ordinary objects are mereological composites- even though there are none if the nihilist’s arguments are sound. But why make this move? In lieu of a demonstration that one’s identification-candidate is the best (or only) candidate, identifying ordinary objects with a candidate that one proceeds to eliminate seems highly unmotivated. Consequently, I find the other choice-point more compelling; in line with the charity principle offered above, ordinary objects should be identified with whatever *there is* that plays the role of ordinary objects in perception and discourse.

### 3. Objects-as-Arrangements

What are ordinary objects, then? As indicated at the outset, my claim is that ordinary objects are arrangements, not composites. Making this move requires accepting arrangements in one's ontology. So, in this section, I explain what arrangements are, why they are a useful ontological posit, and why they are well-suited to play the role of ordinary objects in perception and discourse.

#### 3.1. The nature of arrangements

Firstly, arrangements are a kind of relation. More specifically, they are a multigrade relation, typically expressed by variably polyadic predicates such as 'are arranged tablewise'. (This is not to say, however, that they are not expressible by other linguistic forms, such as names.<sup>4</sup>) I assume there are types as well as tokens of arrangements; there are tablewise arrangements in general, and there are particular instances of tablewise arrangements, such as the tablewise arrangement in my dining room. That being said, my account is officially neutral regarding theories of properties and relations; for instance, arrangements could be universals wholly present wherever they are instantiated, or they could be tropes or particulars, singular and unique to their locations. The objects-as-arrangements view can work either way.

Second, and in keeping with the above, (instantiated) arrangements are spatiotemporally located. Thus, one can sensibly speak about where a particular tablewise arrangement is (e.g. two feet from a chairwise arrangement), as well as when a particular tablewise arrangement came to be (e.g. just before lunch). Because I take having spatiotemporal location as a sufficient condition for being concrete, I take arrangement-instances as concrete entities.

This might seem surprising at first- for one may assume that properties and relations are paradigmatically abstract entities, and that being abstract and being concrete are mutually exclusive. But this trades on an equivocation between distinct senses of 'abstract'. To see this, consider tropes – particularized properties – which are sometimes described as “abstract particulars” (Campbell 1981). This terminology, however entrenched, is misleading. For the sense of 'abstract' Campbell employs is akin to 'extract'; i.e., something that is drawn out of

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<sup>4</sup> Just as Quine (1948) slid between the name 'Pegasus' and the predicate 'pegasizes', the analogous move can be made here, *mutatis mutandis*.

something else for selective attention (this is, indeed, the etymology of ‘abstract’). But ‘abstract’ in this sense does not contrast with ‘concrete’ any more than ‘extract’ does.

The same goes for universals. Although Platonic or transcendent universals would be abstract entities *par excellence*, insofar as they are not spatiotemporally located, Aristotelian or immanent universals are concrete (or, at least their instances are, insofar as each instance of an Aristotelian universal is spatiotemporally located).<sup>5</sup> And though universals are often known through (the psychological process of) abstraction, i.e., through successive generalizations, the entities themselves, having spatiotemporal location, are concrete.

Thirdly, and like many spatiotemporally located entities, arrangements can persist through change. Swapping out a couch for a qualitative duplicate leaves the arrangement of one’s living room unchanged, for instance. Similarly, swapping an atom for a duplicate would not alter the tablewise arrangement. Thus, and more generally, *what* is arranged is often fungible, and so inessential to the identity and individuation of the arrangement.<sup>6</sup>

It is worth noting that this fungibility holds in an even more robust sense: specifically, in regards to what I’ll call “world-outcomes”. For instance, if the world ultimately consists of mereological simples, arrangements are arrangements of simples. (And for convenience throughout the paper, I often speak of arrangements of simples). However, arrangements could also be arrangements of gunky (i.e. non-atomistic) bits, or (more fundamental) property-instances, or world-stuff- depending on how the world turns out to be. Moreover, this multiple realizability with respect to world-outcomes is desirable; it shouldn’t be that there are tablewise arrangements only if the world ends up being atomistic, say. (Note that the same should be said of macroscopic objects in general; whether there tables and chairs, presumably, is independent of whether the world is atomistic or gunky, or whether physics needs fields and particles, or just particles, say.)

There is another sense, though, in which arrangements may not appear multiply-realizable: namely, that matter counts. Intuitively, wood arranged tablewise makes for a table but butter arranged tablewise does not (insofar as a butter-table can’t support heavy objects,

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<sup>5</sup> I assume – uncontroversially, I hope – that an instance of e.g. roundness is numerically distinct from the object which is round. Thus, more generally, an instance of a property being spatiotemporally located is distinct from the property-possessor being spatiotemporally located.

<sup>6</sup> Regarding the persistence conditions of arrangements in general, I do not here offer any general theory. For the most part, though, the sortal-governance of persistence conditions can be employed; the sorts of changes a tablewise arrangement can undergo are the very same changes a table might undergo, for example.

etc.). But this is not the right way to think about arrangements- for properly understood, these are not the same arrangement at all. To see this more clearly, compare a person to her wax likeness. Are these both instances of a human-wise arrangement? Superficially, yes; tracing the outline of each would result in duplicate shapes (let's say). But this similarity is literally only skin-deep: the wax likeness and the (real) person are only similarly arranged in two dimensions. But more deeply (again literally), a wax person and a real person are not similarly arranged: obviously, the insides of a wax statue are not arranged as the insides of a biological human are. Humanwise-arrangement is (at least) a three-dimensional affair, and the same goes for tablewise arrangements. More generally, two-dimensional sameness of arrangement (i.e., outline) is not sufficient for sameness of arrangement, properly speaking.

Fourth, I take arrangement-instances – like many relation-instances – to have (or confer) causal efficacy.<sup>7</sup> In brief, the idea is this: scattered atoms do not have the same causal powers that those same atoms would have if arranged more densely. As the only difference between these scenarios is their arrangement, the difference in causal power is attributable to the (instantiation of the) arrangement.

Fifth, just as a table is thought to have legs and a top as parts, so too may a tablewise arrangement be thought to have legwise arrangements and the topwise arrangements as parts. And just as the ultimate parts of a composite are (thought to be) simples, the ultimate parts of a macroscopic arrangement may be (thought to be) the spatial relations between simples. That being said, the sense in which arrangements have parts may be quite different than the sense in which a composite material object is thought to have parts; this distinction will be clarified in the next section.

### 3.2. Arrangements-as-objects

With that being said, it is a short step to showing that arrangements are identifiable with ordinary macroscopic material objects: for the generic features attributed to arrangements above are also features of ordinary objects. In particular, ordinary objects are concrete entities with spatiotemporal location (ii), they can persist through time (iii), they have causal powers (iv), and have parts (v). Moreover, because a tablewise arrangement looks just like a table, and,

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<sup>7</sup> Potential energy and gravitational force are perhaps more familiar examples of something's causal powers depending on its (spatial) relations to other entities.

more generally, ordinary object-wise arrangements look just like ordinary objects, arrangements are well-suited to play the role of ordinary objects in perception and discourse.

Of course, it is not usually thought that objects are relations (i). Granted, but it is not usually thought that objects are properties (more generally), yet the bundle theory of objects – according to which an object is really just a bundle of properties – cannot be ruled out as a theory of objects *eo ipso*. In fact, the bundle theory provides a way to frame my thesis: instead of thinking of objects in terms of bundles of monadic properties (as the traditional bundle theorist does), my account recommends thinking of objects as variably polyadic properties – that is, as arrangements. Yet my account has an advantage over the traditional bundle theory: rather than being properties of a mysterious property-less substratum, arrangements can be thought of as (polyadic) properties of mereological simples (or, as discussed above, whatever the fundamental material base of the world is).

### 3.2.1 Two objections

Obviously, my account requires not only that arrangements have the same general features of ordinary objects, but that there actually are entities satisfying the description. Yet some may doubt arrangements exist.

To a considerable extent, a debate over the existence of arrangements is an instance of the traditional debate over the existence of properties more generally. Thus, nominalist arguments against properties and relations will likely apply to arrangements. For my part, I do not find nominalism convincing – though I do not wish to rehash these arguments here. That being said, my account can get by with tropes rather than universals – for it is arrangement-instances with which I identify particular ordinary objects. Consequently, the standard nominalist arguments against universals are moot; the crucial question here is whether to be a realist about arrangement-instances at least. Here are three arguments for the realist conclusion.

First, consider specifically a mereological nihilist-cum-nominalist account. On this view, there are simples arranged tablewise, but there are no tables, and no tablewise arrangements either (‘arranged tablewise’ being a predicate applicable without incurring its own ontological commitment to tablewise arrangements). One consequence of this view is that a person (assuming one exists) cannot *perceive* a table – since a table does not exist to be perceived (obviously, I’m taking ‘perceive’ to be factive here). So what does the person

perceive? It can't be the tablewise arrangement, since that doesn't exist either on the nihilist-cum-nominalist view. The only remaining answer, then, is that it is the simples which are perceived. But simples can't be perceived- they're too small. Tablewise arrangements, however, are perceptible (and they're just the right size and shape). So even a mereological nihilist should accept the tablewise arrangement. Or else it is hard to see just what someone is seeing when they look at an alleged table.<sup>8</sup>

The second argument was suggested above (and is perhaps a variation of a truthmaker argument; cf. Armstrong 2004). Consider two scenarios- one involving scattered simples, the other involving those same simples more densely packed. If all that exists are the simples – no arrangements-tokens, or properties and relations more generally – then there is no ontological difference between these two scenarios. Instead, according to the nominalist, the only difference concerns which predicates (such as 'are densely arranged') are applicable. But predicates such as these are part of one's ideology, rather than ontology (cf. Quine 1951). I find it extremely hard to believe, however, that there is no worldly difference between these two scenarios: a world in which six simples are arranged in one way sure seems different than a world in which those same six simples are arranged some other way- even though, *ex hypothesi*, they contain the same simple objects. So what accounts for the worldly difference? What makes it true that in one instance there are simples arranged densely, but false in the other? My explanation: the existence of different arrangements in the different scenarios.

The third argument was also given above: namely, that arrangements have (or confer) causal powers. For example, scattered simples cannot break windows as clustered simples can. Because their arrangement makes a causal difference, arrangements are real.

Even so, one might not think the case can be made so quickly. The problem is this: if arrangements have parts, as I claimed above, then it might seem that a topwise arrangement and legwise arrangement compose a tablewise arrangement only under certain conditions. And if so, then the problems the nihilist sees with mereological composition are recapitulated- for if arrangements must be composed by arrangement-parts, then the arguments the nihilist

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<sup>8</sup> Cf. Elder (2007), who runs a similar (though more complex) argument against nihilism based on the implausibility of referring to entities – atoms – too small to be perceived.

levies against composition will apply as much to arrangement-composites as it would to material composites.<sup>9</sup>

More specifically, one might worry that the (whole) arrangement will be vulnerable to Merricks' (2001: 56-84) "causal redundancy" argument ordinary objects, which runs as follows. Consider a baseball shattering a window. Because composition is not identity, Merricks argues, the baseball is numerically distinct from the atoms that compose it. Yet, Merricks points out, the causal powers of the atoms arranged baseballwise – minus the numerically distinct baseball – are sufficient for shattering the window. This presents a dilemma. Either both the baseball and the atoms arranged baseballwise cause the shattering, in which case there is causal overdetermination, or else the baseball causes nothing, and so is epiphenomenal. Ruling out such (systematic) overdetermination, Merricks contends that the baseball is indeed epiphenomenal. But then the baseball is *causally redundant*, and as such, "to add the baseball [to one's ontology] is to needlessly multiply" (p. 83). So, Merricks argues, baseballs should be eliminated from one's ontology; baseballs do not exist. This argument does not only apply to baseballs, of course. Rather, it generalizes. For Merricks, all (inanimate) macroscopic objects are causally redundant, and should be eliminated from one's ontology.<sup>10</sup>

Now, part of my claim that one should identify objects with arrangements is that it avoids the force of this argument. For as argued above, the *arrangement* of the atoms is not epiphenomenal; if rather than being arranged baseballwise, those very same atoms were scattered across the earth, then those atoms would lack the causal power to shatter the window. Therefore, something in addition to the atoms – namely, their arrangement – is required for the power to break the window. Moreover, this shows that adding the arrangement to one's ontology – in addition to the simples – is not needlessly multiplying: because the atoms minus the arrangement do not have the causal power to shatter the window, accepting atoms and their arrangement does not commit one to overdetermination. And as even Merricks admits that a baseball would have causal powers if it existed (p. 81), that arrangements have (or confer) causal power provides a powerful reason to identify the

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<sup>9</sup> Put another way: because mereology is supposed to be ontologically neutral – i.e., it is not supposed to matter whether something is composed out of e.g. properties or objects or abstracta – then whether we are talking of composite arrangements or more standard understood composites should not matter here. I thank an anonymous referee for raising this objection.

<sup>10</sup> It should be noted that Merricks argues *for* the existence of people on the grounds that they are *not* causally redundant.

baseball with the arrangement and acknowledge its existence- rather than identify it with the composite and eliminate it.

Yet still one might object: if arrangements have parts, as I contend, why doesn't Merricks' argument apply? The reason is that there is a crucial difference between a material composite and its parts, and an arrangement and its parts. Developing this, though, requires a bit of machinery, for which I ask the reader's indulgence.

First consider sets and their members. There is a clear sense in which a set and its members are at different *levels*. (Russell's type theory, with its ban on self-membership, makes this especially clear. For Russell, individuals are of type – or level – zero, sets of individuals are of type or level 1, sets of sets of individuals are of type or level 2, and so on.) Here, the important feature of levels is that they are discrete, or discontinuous. That is, there is nothing in between a set and its members- no intermediate level .5, say, in between level zero and 1. Rather, there is a discrete jump, from member to set, from level zero to 1, and from 1 to 2, and so on. I will call an ordering with this feature *hierarchical*; a hierarchical ordering (or system) is one in which the relata of the relation – here, the membership relation – jump discontinuously from one level to the next.

Other philosophically interesting relations are hierarchical in this sense. For instance, types are of a higher level than tokens, and a multiply realizable property is of a higher level than its realizer: in such cases, there is nothing intermediate, and level breaks are discrete and discontinuous. And mereological composition, as standardly understood, is also hierarchical in this sense. Consider  $n$  parts which compose an  $n+1^{\text{st}}$  entity. Intuitively, the  $n+1^{\text{st}}$  entity – the whole – is at a different level than its  $n$  parts, just as a set is on a different level than its members. Undergirding the intuition is this: the jump from part to whole is also discrete or discontinuous; there is no intermediate  $n+.5^{\text{th}}$  entity in between the  $n^{\text{th}}$  and  $n+1^{\text{st}}$ , i.e., there is nothing in between part and whole.

Before getting to arrangements, consider a distance relation- say, a ten meter line. Obviously, there is a sense in which this line has parts- it can be segmented into two five meter pieces, for instance. But this relation is not hierarchical. Note that the 10 meter line is continuously divisible into parts- into an infinite number of infinitesimal intervals, at that. Moreover, if for every division into segments or intervals there was a level break, akin to the level break between member and set, then we are immediately committed to an infinite number of levels between any arbitrary length. More generally, if parts (segments) and whole

(lines) are at different levels, then the division into continuum-many intervals yields continuum-many levels- even for any arbitrarily (but finitely) short length. But this doesn't seem right. For clearly this is very much unlike the type/token relation, the realization relation, the membership relation, and even the standard mereological parthood relation- which do not allow for such continuum-many divisions between any given pair of relata. In brief, this suggests that what I'll call the *segmentation* (or interval) relation is *non-hierarchical* in the relevant sense. That is, the division between segments or intervals is continuous, not discontinuous or discrete, and does not involve a level-jump.

This notion is easily extended to account for the parts of arrangements. For if arrangements have parts, they are distance relations such as lines and line segments (geodesic or straight is no matter). For instance, a tablewise arrangement may have topwise and legwise arrangements as segments, which in turn have shorter segments or intervals as parts. But, as argued, these are non-hierarchical parts or segments. Thus, and more generally, I conclude that arrangements have parts in the nonhierarchical segmentation sense, rather than in the hierarchical classical mereological sense.

Here's the work this distinction does here: the overdetermination argument only applies to entities at different levels- that is, it is only a worry for entities related by a hierarchical relation. Consider first the paradigm instance of the overdetermination worry: that of functional property and realizer. As Kim (1992, 1993, *inter alia*) has famously argued, if a realizer property is causally efficacious, then the higher-order realizable property overdetermines the effect or else is epiphenomenal. Hence the traditional worry about mental causation: if mental properties are higher-order properties, realized by e.g. brain or computer states, and all the causal work is done by the first order properties, then the mental property is epiphenomenal, and, thus, eliminable. The lesson: when all the work is done on one level, the higher level seems causally superfluous, or else overdetermining. Eliminativism threatens.

The same goes for Merricks' version, which is (approximately) the same argument but applied to the mereological parthood relation (rather than the realization relation). Construed this way, Merricks' argument is this: since simples – ultimate parts – are efficacious, there is no need for the higher level whole- which is thereby expendable or eliminable. But the non-hierarchical segmentation relation doesn't work like this. It is continuous rather than discrete, and as the whole exists at the same level as the parts, it is not the case that all the work is done on one level with the next level up being (potentially) epiphenomenal. Instead, just as the

gravitational force will differ between two objects ten instead of nine meters away, so too will a tablewise arrangement have different powers than some arrangement which is not quite tablewise.

Thus, arrangements can have parts – nonhierarchical segments – without being subject to the overdetermination worry. Therefore, and as suggested earlier, this is a considerable advantage for the object-as-arrangements thesis over the standard mereological conception.

#### 4. Evading anti-realism

I dealt with the causal redundancy problem above. In this final section, I will briefly sketch how the objects-as-arrangements thesis sidesteps the force of the some other predominant arguments for anti-realism about ordinary objects.

##### 4.1. The problem of the many

Consider from a distance what appears as a single cloud. Upon zooming in, though, the cloud's boundaries become fuzzier, as it is unclear which of the various ambient water droplets are parts of the cloud, and which are not. Consequently, there are many candidates for defining the cloud- one for each distinct set of water droplets. But as each candidate is a collection of water droplets (with cloud-like properties), it appears that each candidate *is* a cloud. But if so, there are many clouds where at first it seemed there is only one; hence, “the problem of the many”. Of course, the problem is not restricted to clouds; instead, it generalizes to any object with potentially vague boundaries, which is to say virtually any ordinary macroscopic object.<sup>11</sup>

Rather than (arbitrarily) selecting one cloud-candidate as *the* cloud, one might argue there is no cloud at all (this was Unger's 1980 solution). But notice that the objects-as-arrangements thesis is immune to this strain of eliminativism. For assuming there are spatial relations between simples, there are arrangements. So even before (or without) *solving* the problem of the many, i.e. explaining why there is *at most* one cloud, the objects-as-arrangements view guarantees that there is *at least* one cloud- given there is some arrangement that can count as cloudwise.

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<sup>11</sup> This presentation largely follows Lewis (1993: 64).

Suppose, though, one thinks eliminativism is needed to keep the vast horde of “extra” clouds at bay (linguistic maneuvers such as supervaluationism notwithstanding),<sup>12</sup> and to guard against all manner of arbitrary or gerrymandered objects. Even if one cloud requires many, though, my view is still advantageous: for “arrangement universalism” is far less unpalatable than its mereological counterpart. The reason is that if there are spatial relations between *all* (or most) simples – something which seems rather hard to deny (assuming the universe is non-disjoint) – it is a trivial consequence that many of these relations could plausibly count as cloudwise arrangements- and that arbitrary or gerrymandered arrangements will appear if someone is willing to look for them. But as it is not harmful to accept spatial relations between all simples – whether they compose objects or not – then this is not a damaging consequence of my view.

#### 4.2. Material coincidence

Many philosophers argue that because a lump of clay can survive being squashed, but a statue constituted by that lump of clay cannot survive being squashed, the lump of clay and the statue are not identical.<sup>13</sup> But for many others, accepting this nonidentity is deeply problematic. First, it implies that distinct material objects can occupy the same place at the same time, and share all the same parts. Second, if the statue and the lump occupy the same space and share all the same parts, there seems to be nothing in virtue of which they have different persistence conditions, i.e. nothing grounds their differences. So, either to maintain the no-two-objects-can-share-place-or-parts principle, or to avoid the “grounding problem”, it is often argued that the statue or the lump – or both – do not really exist. And of course, the problem is not limited to statues and lumps; rather, these considerations may motivate a global eliminativism (Bennett 2004).

But the objects-as-arrangements thesis blocks these reasons for eliminativism. Firstly, the thesis shows why coincidence in space is not problematic- i.e., it shows why material coincidence need not be avoided (not that it does not obtain).

To see this, consider why coincidence-in-space is supposed to be problematic in the first place. Perhaps the most intuitive (or visceral) reason is that objects are presumed

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<sup>12</sup> For Lewis (1993), supervaluationism is a way to recover in conversational contexts the (super)truth of ‘there is at most one cloud here’. Metaphysically, though, this is no solution, as it remains true (just not supertrue) that there are many clouds.

<sup>13</sup> For overviews and bibliographies, see Paul (2010) and Wasserman (2012).

impenetrable, thereby excluding one another from the space each occupies. Notice, however, that this complaint is *category-specific*. To illustrate, note that properties can coincide in space, as can relations. For instance, even though density and volume are numerically distinct, something's density and volume entirely coincide in space. The same goes for mass and charge, and ductility and conductivity, to name just two more pairs of (natural) properties. More generally, and whether construed as universal-instances or tropes, many if not all of an object's intrinsic properties coincide. Yet no metaphysicians are puzzled.

Coincidence is also acceptable for relations. Consider an object *x* three meters from an object *y*, where *x* is larger than *y*. If *is three meters from* and *is larger than* are instantiated anywhere, they are in the same place, i.e., they coincide. And even objects happily coincide with entities of other categories. I occupy the same space as my shape and mass, for example, and my intrinsic properties more generally. Objects are also unproblematically co-located with the regions of space they occupy (should an object exclude the region of space it occupies from the region of space it occupies?). The same goes for objects and the events in which they participate. And so on. Yet no one takes these cases as problematic. Why not? Presumably, because it is highly implausible to think properties and relations are impenetrable- such that they (should) exclude one another from the space each occupies.

So here's the upshot. Because arrangements are a kind of relation (as described previously), and the coincidence of relations is not problematic, and ordinary objects just are arrangements, it follows that the coincidence of objects-as-arrangements is unproblematic. Thus, just as the coincidence of properties and relations can be accepted with equanimity, so too can coincidence for objects-as-arrangements.

Turn now to the grounding (or part-sharing) problem. Here, though, the object-as-arrangements thesis can help itself to extant solutions, such as Paul's (2006) based on property-mereology.

In brief, the idea is this. Paul argues that the grounding problem is partly generated by a presupposition: that objects such as Statue and Clay are exhaustively composed of all and only the same parts. Justifying this idea is (an interpretation of) classical mereology, according to which all of an object's parts are themselves (smaller) objects. But Paul rejects this. For objects are fusions of properties as much as they are fusions of objects; according to Paul,

composite objects not only have object-parts, but they have property-parts as well (2006: 30).<sup>14</sup> And in particular, Statue and Clay each have property-parts the other lacks: namely, the distinctive sortal and modal properties characteristic of each. So although they share all their object-parts (and so materially overlap), they do not share all their property-parts (and so do not qualitatively overlap). Thus, the difference between Statue and Clay is explained by each being a fusion of different (sortal) properties.

By extending Paul's theory from monadic properties to multigrade and variably polyadic properties (viz. arrangements), the objects-as-arrangements thesis has a ready-made way to avoid the problem. So there's no need for elimination.<sup>15</sup>

## 5. Conclusion

Many assume ordinary objects are mereological sums. But this identification is not self-evident, and I have argued for a viable alternative: that objects are arrangements. My strategy has been to demonstrate the view's considerable utility: for example, that it evades predominant arguments for anti-realism about ordinary objects. Upon rethinking the nature of ordinary objects, then, there is no reason to deny the obvious: ordinary objects exist.

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<sup>14</sup> Paul considers this a kind of bundle theory, but with the familiar mereological notion of fusion replacing the more traditional (and perhaps more obscure) notions of compresence or bundling.

<sup>15</sup> Paul's view need not be right to work here; instead, what is important is showing that the power of an extant view can be harnessed to do work for the objects-as-arrangements thesis.

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