SAMENESS WITHOUT IDENTITY:
AN ARISTOTELIAN SOLUTION TO THE PROBLEM OF MATERIAL CONSTITUTION

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Abstract

In this paper, I present an Aristotelian solution to the problem of material constitution. The problem of material constitution arises whenever it appears that an object *a* and an object *b* share all of the same parts and yet are essentially related to their parts in different ways. (A familiar example: A lump of bronze constitutes a statue of Athena. The lump and the statue share all of the same parts, but it appears that the lump can, whereas the statue cannot, survive radical rearrangements of those parts.) I argue that if we are prepared to follow Aristotle in making a distinction between numerical sameness and identity, we can solve the problem of material constitution without recourse to co-location or contingent identity and without repudiating any of the familiar objects of common sense (such as lumps and statues) or denying that these objects have the essential properties we ordinarily think that they have.

I

Ordinary material objects can be characterized in a variety of different ways. Better, they can usually be characterized *as* a variety of different things. For example, a bronze statue can be seen as a statue or a lump of bronze; a tree can be seen as a tree or a heap of cells; a hammock can be seen as a hammock, a piece of rope, or perhaps even a net. The fact that these objects can be characterized in such different ways is due to the fact that their parts are unified in several different ways and we have associated sortal terms with each of the various kinds of unity. For example, the parts of a bronze statue are arranged both statuewise and lumpwise; and because they are arranged in both of these ways at once, we are led to say that they compose a statue *and* that they compose a lump. All of this appears harmless enough on the surface, but difficult philosophical problems lurk just below.

One such problem is the problem of material constitution.

Consider, for example, a bronze statue of Athena (call it '*Athena*'). On the pedestal where *Athena* stands, we can identify a statue; we can also identify a piece of bronze; and it seems that we may reasonably ask: 'What is the relationship between the statue and the piece of bronze?' At least one answer is that the piece of bronze *constitutes* the statue: it is the lump of stuff out of which the statue is made. But this answer just raises a further question: 'What is constitution?' Many, at least initially, are inclined to say that constitution is *identity*. After all, there is only one object on *Athena's* pedestal, so *Athena* must be identical with the piece of bronze that constitutes it. But this answer will not do, since statues and pieces of bronze have different persistence conditions: for example, the piece of bronze can but the statue cannot survive being melted down and recast as a statue of Ghengis Khan. The alternative is to say that constitution is *not* identity, but it seems that this answer will not do either. If the statue is not identical with the piece of bronze, then it seems there must be two objects located on Athena's pedestal – but surely there is only one. Thus it is not clear what we should say about the relationship between the statue and the piece of bronze.

Generally speaking, the problem of material constitution arises whenever it appears that an object *a* and an object *b* share all of the same parts and yet are essentially related to those parts in different ways.[1] Scenarios like this are puzzling because we are tempted to say both that *a* is identical with *b* and that *a* is distinct from *b*. The problem is particularly intractable because the intuitions on both sides are deeply entrenched and the options for solving it are limited. I have argued elsewhere[2] that, for any puzzle that raises this problem, there are really only three ways to solve it:

(α) reject the view that if *a* and *b* share all of the same parts then *a* is identical with *b*,
(β) reject the view that if *a* is identical with *b* then necessarily *a* is identical with *b*,
(γ) reject some feature of the story that raises the problem (i.e., deny that *a* exists or deny that *b* exists or deny that *a* and *b* are essentially related to their parts in different ways).

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[1] I have argued elsewhere (Rea (1995) and (1997)) that the puzzle of the lump and the statue, as well as several other philosophical puzzles (including the Ship of Theseus and the Body-Minus puzzle) are all expressions of one and the same problem.

[2] Rea (1995) and (1997).

None of these options is initially appealing. Each is counterintuitive, requiring us to deny some otherwise plausible claim about familiar objects or the relations they bear to their parts.

There has been a great deal of ink spilled over the past three decades in trying to solve the various puzzles that raise this problem. Despite this fact, however, there is at least one solution that has been almost completely ignored.[3] Virtually everybody writing on the problem of material constitution has assumed that to embrace (α) is to embrace the possibility of there being two distinct material objects in the same place at the same time. In fact, however, this assumption is false. We can accept (α) without accepting the possibility of co-location if we are prepared to follow Aristotle in making a distinction between different kinds of numerical sameness. I do not myself endorse this kind of solution (though I have some sympathy for it).[4] My goal is simply to show that there is more to be said on behalf of (α) than most recent writers have acknowledged. If Aristotle's views about sameness are correct, then the problem of material constitution can be solved without denying the necessity of identity, without rejecting any of the features of the stories that raise the problem, *and* without embracing the possibility of there being co-located material objects.

II

Central to our discussion will be Aristotle's notion of 'accidental sameness'. What I propose (speaking now and henceforth as an advocate of the solution described in this paper) is that we understand constitution in terms of this relation. I do not propose to *identify* constitution with accidental sameness; rather, I mean simply to suggest that the two relations may be very much alike in many respects.

The story of accidental sameness begins with some 'kooky objects'.[5] According to Aristotle, when Socrates sits down, something called 'seated-Socrates' comes into existence. Seated-Socrates is an 'accidental unity'. It is not a substance, but (like a

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[3] I say 'almost' because Nicholas White (1986) describes a solution that appeals to all of the same Aristotelian doctrines that I will be appealing to. The trouble is, it is not clear in the end whether the solution White describes is supposed to be more like the one I am describing, or more like the co-locationist solution that I will be rejecting.

[4] The solution I do endorse is described and defended in Rea (forthcoming).

[5] The label is originally due to Gareth Matthews (1982).

substance) it has a 'hylomorphic' structure: Socrates is the 'matter' and seatedness is the 'form', or unifying principle. It comes into existence when seatedness comes to be (metaphysically) predicated of Socrates; it passes out of existence once Socrates is no longer seated. Accidental sameness is the relation that obtains between Socrates and seated-Socrates for as long as they both exist. It is a relation weaker than strict identity but stronger than co-location.[6]

So says Aristotle. But, as is often pointed out, this feature of Aristotle's ontology is rather difficult for modern readers to take seriously. Neither accidental unities nor the relation of accidental sameness seem to have any place among the familiar objects and relations of contemporary ontologies. Why, then, should we believe in things like seated-Socrates? And what is this mysterious relation of accidental sameness?

The second question is fair, and answering it is my main concern in this section. But the first question is a red herring. The fact is, many of us already believe in things *like* seated-Socrates, and that is why we have the problem of material constitution. For example, we believe in fists and statues, trees and human beings. But, like seated-Socrates, all of these things can be characterized as hylomorphic compounds whose matter is some material object (e.g., a hand, a piece of bronze, or some lump of living tissue) and whose form is some (perhaps very complex) property. Of course, this characterization blurs some important distinctions: it makes it sound as if undetached body parts, artifacts, organisms, and the lumps of matter that constitute organisms are all on a par as objects when in fact they are not (according to Aristotle). But, as even Aristotle would admit, whether or not they are all on a par, we do *believe in* all of these things (that is, we believe that there is *some* sense or other in which each of these things exist.) And my point here is simply that among the things we believe in are things that can be construed as hylomorphic compounds which (i) have as their matter other things that we believe in and (ii) exist only so long as a certain property is predicated of that matter. But to say this is just to say that we believe in (at least some) accidental unities. And if we take our belief in accidental unities seriously – if we do not repudiate such objects by

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[6] Cf. *Topics* A7, 103a23–31; *Physics* A7, 190a17–21, 190b18–22; *Metaphysics* D6, 1015b16–22, 1016b32–1017a6; *Metaphysics* D29, 1024b30–1.

reducing them to their parts as, say, Peter van Inwagen does[7] –
then we find ourselves confronted with the problem of mater-
ial constitution.

So Aristotle's 'kooky objects' are in fact not so kooky after all.
But what of the relation of accidental sameness? How are we to
understand it? From the literature on these matters, we learn the
following facts about accidental sameness: (i) it is the relation
that holds between an accidental unity and its parent substance;[8]
(ii) it is neither necessary identity nor contingent identity
(because Aristotle tells us that if *a* and *b* are accidentally the same,
they are in a way the same and in a way different; but if *a* and *b*
are identical – either necessarily or contingently so – there is no
way in which they are different[9]); and (iii) it is a species of numer-
ical sameness: if *a* and *b* are accidentally the same, then they are
'one in number', though, according to Aristotle, they are not
'one in being'.[10]

This last point bears some comment. I take it that (roughly
speaking), for any *a* and *b*, *a* and *b* are numerically the same just
in case *a* and *b* are to be *counted* as one thing. Thus, in saying that
accidental sameness is a species of numerical sameness, Aristotle
is just saying that accidental sameness is one among several rela-
tions whose relata are to be counted as one thing. Now, most
contemporary philosophers hold that, for any *a* and *b*, *a* and *b* are
to be counted as one thing just in case *a* is identical with *b*. If they
are right, then it makes no sense to say that there is a relation
which is not identity but which is, nonetheless, a kind of numeri-
cal sameness. But I am not convinced that they are right. It
certainly is not part of 'common sense' to think that, for any *a*
and *b*, *a* and *b* are to be counted as one thing just in case *a* is iden-
tical with *b*. As Denis Robinson points out, when we count

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[7] See van Inwagen (1990), esp. Chapter 10.
[8] I should note that the examples by which Aristotle introduces us to accidental
sameness are all examples in which the relata are a genuine substance and a compound
whose constituents are that substance and some property such as seatedness. However, I
see no reason to suppose that the relation could *not* hold between, say, a piece of bronze
and the statue that it constitutes, despite the fact that neither is a genuine substance.
[9] One might object here that objects that are only contingently identical *do* differ in
their modal properties, and so accidental sameness is really no different from contingent
identity after all. But this misrepresents the contingent identity theorist's view. Contingent
identity theorists deny that objects have modal properties. This is what enables them to
respect Leibniz's Law while at the same time denying that identity is necessary. (See, for
example, Gibbard (1975).)
[10] All of these points are made in Cohen (unpublished), Lewis (1991), Matthews
(1982) and (1992), and White (1986). For relevant texts in Aristotle, see note 6.

commonsensically we individuate objects by their matter.[11] When we sell our dining room furniture, for example, we don't charge people for the table, the chairs, *and* the pieces of wood that constitute them. But then why think that philosophers should count things any differently?

The obvious reply is that philosophers make distinctions where common sense does not. The philosopher recognizes that a bronze statue is not *identical* with the piece of bronze that constitutes it; thus, one might argue, she is obliged to count two things where common sense counts only one. But why should we agree with this? Granted, we have strong philosophical intuitions that support:

(1) For any region *R*, there are (at least) two objects in *R* just in case $\exists x \exists y (x$ is in R & y is in R & $x \neq y)$.

But we also have strong philosophical intuitions that support:

(2) A statue fills the region occupied by *Athena*; a piece of bronze fills the region occupied by *Athena*; the statue in that region is not identical with the piece of bronze; and only one object fills that region.

If we did not have intuitions that support (2), there would be no problem of material constitution. But, of course, if (2) is true, (1) is false; and I see no obviously compelling reason for preferring (1) over (2).

'But,' you say, 'isn't (2) just unreasonable? How do we count objects if we don't count *two* of them in a region where there is a statue and a piece of bronze distinct from the statue?' Here is what seems to me to be a reasonable answer to this question that is consistent with our common sense counting practices and doesn't entail that (1) is true: We count one object (and only one object) in every region that is filled by matter unified in some object-constituting way. We count one *statue* in every region that is filled by matter arranged statuewise; we count one *lump* in every region that is filled by matter arranged lumpwise; and we count one *object* in every region that is filled by matter arranged in either or both of these ways (or any other object-constituting way). Thus, when we recognize a statue and a lump in a particular region and deny that the statue is identical with the lump, we

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[11]   Cf. Robinson (1985).

are committed to the claim that there is matter in the region arranged both statuewise and lumpwise, and that being a statue is something different from being a lump; but all of this is consistent with there being just one object in the region.[12]

Let us return now to the business of characterizing accidental sameness. Accidental sameness is not identity, but it is a kind of numerical sameness. From this fact it follows (perhaps obviously) that (iv) accidental sameness is not co-location. I take it that, necessarily, if *a* and *b* are numerically the same at a certain time, then *a* and *b* share all of their parts in common at that time. Accidental sameness, then, entails complete community of parts. But co-location does not. For example, an event and a material object can fully occupy the same region of spacetime without sharing all of their parts in common. Likewise (though more controversially) two classes, a class and an event, and perhaps even two events[13] can fully occupy the same region of spacetime without sharing all of their parts in common. Of course, I have turned the discussion so that I am no longer just talking about material objects; but the point here was only to show that co-location does not entail complete community of parts, and that is exactly what these examples show.

So accidental sameness is a relation weaker than identity but stronger than co-location. It occurs whenever some matter is organized in several different ways at once, and whenever it occurs we can identify different kinds of objects in the same place but nevertheless count 'them' as one thing (and rightly so). If there is such a relation, it affords us an easy solution to the

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[12]   One might note here that there is a more direct (and more Aristotelian) argument to be had for the conclusion that we don't have two things in the region filled by *Athena*. According to Aristotle, 'thing' and 'object' aren't genuine count-nouns; thus, the question 'How many *things* (or *objects*) occupy the region filled by *Athena*?' is simply defective. It makes sense to ask how many *statues* fill that region, or how many *lumps* fill that region; but, the answer to each of these questions is obviously just 'one'.

This is all true enough, but I do not think that it renders my remarks about counting objects unnecessary. The reason is that even if Aristotle did not countenance 'object' and 'thing' as count nouns, many philosophers today do. The inference from the fact that there is one statue and one lump (distinct from the statue) completely filling the region occupied by *Athena* to the conclusion that there are two things or two material objects filling that region is not at all uncommon. And those who are inclined to make such an inference are not at all likely to be impressed by one who simply denies that 'thing' and 'object' are count nouns. What we need is some plausible story about counting objects that enables us to count only *one* object in a place where it appears that we should be counting *two* (or more). And that is precisely what I have given.

[13]   According to Jonathan Bennett ((1988), p. 124) two chess games can be co-located without sharing all of their parts in common.

problem of material constitution. We can simply say that when-
ever we have an object *a* and an object *b* that share all of the same
parts but are essentially related to their parts in different ways,
the relevant *a* and *b* are numerically the same but not identical.
To be sure, this solution carries an intuitive price, but for those
who are convinced that identity is necessary, that (say) statues
and lumps have different persistence conditions, and that the co-
locationist's view does not respect our intuitions about counting,
the price may well be worth paying.

III

Now that I have fully described the Aristotelian solution, I would
like to close by defending it against four objections. I do not
pretend that these are the only objections that could be raised
against the view, but they seem to me to be some of the most obvi-
ous and therefore the most important.[14]

First objection: In the last section I said that, for any region of
space R, there is one statue in R just in case R is filled by matter
arranged statuewise; there is one lump in R just in case R is filled
by matter arranged lumpwise; and there is *one object* in R just in
case R is filled by matter arranged in either or both of these ways
(or in any other object-constituting way). I said this to help make
the notion of accidental sameness more plausible, but one might
wonder whether this view of counting is even *consistent* with the
doctrine of accidental sameness. For once we accept this view, it
appears that we can give a very straightforward argument for the
conclusion that (for example) *Athena* is *identical with* the lump of
bronze (call it 'Lump$_A$') that constitutes it. The argument is as
follows:

(1) *Athena* is identical with the object whose matter is
   arranged statuewise.
(2) Lump$_A$ is identical with the object whose matter is
   arranged lumpwise.
(3) The object whose matter is arranged statuewise is identical
   with the object whose matter is arranged lumpwise.
(4) Therefore: *Athena* is identical with Lump$_A$.

Obviously, if my remarks about counting commit me to the

premises of this argument, then they entail the denial of the claim that *Athena* and Lump$_A$ bear to one another the relation of accidental sameness.

In fact, however, there is at least one premise in this argument that I am *not* committed to: premise (3). One might think that (3) just follows from the fact that there is *one* object whose matter is arranged both lumpwise and statuewise. But actually (3) follows from this only if Aristotle's views about sameness are false. Numerical sameness, according to Aristotle, does not entail identity. That is, on his view, it does *not* follow from the fact that there is one object whose matter is arranged both lumpwise and statuewise that the object whose matter is arranged lumpwise is identical with the object whose matter is arranged statuewise. Thus it is not my remarks about counting alone that commit me to the conclusion that *Athena* is identical with Lump$_A$, but only the conjunction of those remarks with the claim that Aristotle's views about sameness are false. My remarks about counting *alone* are perfectly consistent with Aristotle's views about sameness.

Second objection: I say that there is one (and only one) object in a region just in case the region is filled by matter unified in any object-constituting way. So, consider a region R that is filled by matter arranged both lumpwise and statuewise. What *is* the object in R? What are its essential properties? If indeed there is just one object in R, these questions should have straightforward answers. But in fact, it seems that they don't (at least not so long as we persist in saying that there is a statue *and* a lump in R). Thus, it seems that, contrary to what I have said, there is not just one object in the region.

This seems to me to be the most challenging objection to this solution. However, the following response strikes me as fairly reasonable: To the first question the correct answer is that the object is both a statue and a lump; to the second question there is no correct answer. According to the view I have been defending, in a region filled by matter arranged both statuewise and lumpwise there is a statue, there is a lump, and the statue is numerically the *same object* as the lump (though it is distinct from the lump). This seems sufficient to entitle us to the claim that the *object* 'is' both a statue and a lump, so long as we don't infer from this that the statue is identical with the lump or that the object has the essential properties of both statues and lumps. Given this view, however, it is hard to see how there could be any correct answer to the question, 'What are its essential properties?' absent

information about whether 'it' is supposed to refer to the statue or to the lump. The pronoun is ambiguous, and so we would need to disambiguate it before we could give any sort of straightforwardly correct answer to the question. Does this imply that there are two objects in the region? It might appear to because we are accustomed to finding pronoun ambiguity only in cases where the pronoun refers to *two* numerically distinct items at once. But if Aristotle's views about sameness are correct, we should expect to find pronoun ambiguity in cases of accidental sameness as well. Thus, to infer from the fact that the pronoun is ambiguous that there must be two objects in the region is simply to *presuppose* that Aristotle's views about sameness are false.

Third objection: Despite what I said in the previous section, one might still have doubts that this solution has any significant advantage over the co-locationist's solution. After all, one of the main selling points for this Aristotelian solution is that it allows us to count *one* object instead of two on *Athena's* pedestal. But is this really enough to justify the whole apparatus of accidental sameness? Why couldn't the co-locationist just concede that *both* ways of counting (hers and the Aristotelian's) are equally legitimate? Why not just say that it is legitimate to count by identity as the co-locationists do and it is legitimate to count filled regions of space as the Aristotelians do. Doesn't this get us what we want without all of the confusion about different kinds of numerical sameness?

Actually, it doesn't. What is unsatisfying about the co-locationist's view (to those who *are* unsatisfied about it) is not just the fact that their counting practices are abnormal, but that they seem to be mistaken or even incoherent. For example, Harold Noonan has complained that the co-locationist seems to 'manifest a bad case of double vision';[15] and Peter van Inwagen (in his earlier work, anyway) reports that he simply cannot understand their view.[16] It is not clear what it would be for there to be two material objects in the same place at the same time. It just seems obvious that there is exactly *one* object in a region if and only if there is matter in that region unified in some object constituting way or other. Of course, this is no argument against the co-locationist, and there is nothing to prevent the co-locationist from responding in like kind to the Aristotelian by saying that *she* doesn't understand what it would be for there to be different kinds of

[15] Noonan (1988), p. 222.
[16] Van Inwagen (1981), 128.

numerical sameness. Still, it does explain why the apparatus of accidental sameness is necessary: the co-locationist's way of counting seems to be more than inappropriate; it seems to be mistaken and perhaps incoherent. Thus, if we want to embrace (α) we need some principled reason to avoid counting the way that the co-locationist does, and the doctrine of accidental sameness affords us just such a reason.

Fourth objection: One might have doubts about whether the solution I have been exploring in this paper is really *Aristotelian*, as I have labeled it. For one might think that, instead of solving the problem of material constitution by appeal to accidental sameness, Aristotle would instead have opted for an 'eliminativist' solution. An eliminativist solution is one that denies the existence of at least one of the objects mentioned in every puzzle about material constitution. So, for example, one might think that in the *Athena*/Lump$_A$ example, Aristotle would say that there is no lump; there is only *Athena*. And one might think that Aristotle would say that in the case of a human body and its constitutive lump of tissue, there is again no lump; there is only the body. The reason, in short, is that for Aristotle, forms are hierarchically ordered. So, for example, the form *human being* is a form in the most basic, paradigmatic sense of the term whereas the form *lump of tissue* is not. And the 'form' *statue*, though not a genuine, paradigmatic form, at least has better claim to being called a form than the form 'lump of bronze'. So, one might think that Aristotle would simply recognize the object characterized by the primary form in each case and repudiate the other.

Even if this objection is sound, it does not undermine the main goal of this paper which is simply to present and go some distance toward defending a solution that has been largely ignored in the contemporary literature. But the objection is worth answering since in fact there is good reason for thinking that Aristotle would have embraced the accidental sameness solution that I have been exploring here. On the eliminativist interpretation, Aristotle's ontology faces some difficult questions. For example: Suppose a man *comes to be* from a lump of organic tissue. If the eliminativist view is correct, then the lump of tissue is *destroyed* when the man comes into existence. But then it turns out that change (of that sort, anyway) is merely replacement of one thing by another: there is nothing that persists through, or underlies the change. But in *Physics* A.7 Aristotle seems to deny that substantial change is merely replacement of one thing by

another; he explicitly claims that in every such case something *must* underlie the change. Thus, the eliminativist view seems to be in tension with what Aristotle takes to be the correct analysis of change.

Moreover, it seems that the eliminativist view gives Aristotle only an *incomplete* solution to the problem of material constitution. Consider, for example, a hammock which is also a fishnet (and suppose that the artist designed the hammock to serve this dual purpose). We may reasonably suppose that there are some changes that would destroy the fishnet and not the hammock and vice versa; thus we confront the problem of material constitution. Will the eliminativist solution work here? Since neither form seems to be primary, it seems the solution will work only if Aristotle is willing to deny that *both* hammock and fishnet exist. But Aristotle does not seem to want to go to such extremes – at least not if his remarks in *Metaphysics* H.2 are any guide. There, Aristotle countenances all kinds of artifacts: books, caskets, beds, thresholds, and so on. Of course, these are not genuine substances; but for Aristotle, to say that something is not a genuine substance is not at all the same as saying that it does not exist. But if he does not deny the existence of hammocks and fishnets, then he must avail himself of some *other* solution to the problem of material constitution in this case.

In light of these problems, and in light of the fact that Aristotle already believes in the relation of accidental sameness, I find it hard to believe that Aristotle would not have endorsed the accidental sameness solution that I have been exploring in this paper. The accidental sameness solution suffers from none of the problems just mentioned. In the case of a man's coming to be from a lump of tissue, we can say that the lump still exists (and thus underlies the change) though it is not identical with the man: man and lump stand in the relation of accidental sameness (or, at any rate, a relation very much like it). Similarly, we can say that the hammock and the fishnet stand in the relation of accidental sameness (or, again, a relation very much like it). I hasten to point out that here I am stretching the notion of accidental sameness beyond what some would consider to be its 'proper' use. Moreover, I do not deny that the doctrine of accidental sameness faces its own share of difficult questions. But since Aristotle already believes in such a relation, those are questions he faces whether or not he appeals to accidental sameness in order to solve the problem of material constitution. So why wouldn't he

appeal to accidental sameness to solve the problem? It seems to me much more reasonable to ascribe to Aristotle that sort of genuine solution to the problem of material constitution than to attribute to him the problematic and incomplete eliminativist solution described above.[17]

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