# Many Relations and the
# Problem of Material Constitution

ANTHONY ADRIAN

In *A Materialist Metaphysics of the Human Person*, Hud Hudson proposes a novel solution to the problem of the many on behalf of three-dimensionalists.[1] He rejects this new solution, called the 3D Partist View, on the way to his preferred four-dimensionalist version of it. The 3D Partist View is admirable in its originality and its ability to handle certain puzzles of material constitution. However, it is still missing something. The purpose of this paper is to offer a hylomorphist interpretation of 3D Partism. As such, this paper will not be a critique of Hudson's preferred 4D Partism. Rather, I will show one of the overlooked virtues of hylomorphism, viz. its ability to solve problems of material constitution. In section 1 I will briefly review the problem of the many, in section 2 I will explain Hudson's 3D Partist View and why he rejects it, in section 3 I will introduce my hylomorphist version of the Partist View, and in section 4 I will show how this addition can solve the problem of the many. Finally, in section 5, I will tally up some metaphysical commitments of both my version and Hudson's version of the Partist View.

Before we get into the problem of the many and the Partist View, I need to make clear an important assumption about material constitution that I make throughout the paper. The problem of material constitution arises

---

[1] In this paper, "three-dimensionalism" will refer to the thesis that material objects have extension in only three dimensions and persist over time by *enduring*; that is to say, objects persist over time by being "wholly present" at each time they exist. Opposed to this is "four-dimensionalism," the thesis that objects have temporal parts in addition to their material parts and persist over time by *perduring*; that is to say, objects persist over time in virtue of having temporal parts whenever they exist.

*Anthony Adrian is a senior philosophy major at Texas State University. His interests include metaphysics, the philosophy of logic, and ancient and medieval philosophy.*

when there seem to be two (or more) objects composed of the very same matter (at the same time and at the same place) and when those objects seem to be related to the shared matter in different ways. There are several traditional philosophical puzzles related to the problem of material constitution, including the problem of the many (to be discussed below), the problem of the statue and the clay, the paradox of the Ship of Theseus, and the paradox of increase. The assumption I will be making is that these related problems are actually just imperfect statements of the problem of material constitution, as Michael Rea has shown, and that any solution to the problem of material constitution is a solution to the related problems, but not necessarily vice versa ("Problem" 525). The reader will thus notice that I treat the problem of the many and the puzzle of the statue and the clay as more or less equivalent and that I frequently move back and forth between them.

## I. The Problem of the Many

The following is Hudson's condensed presentation of the problem of the many:[2]

> 1. Legion, a human person, is sitting in his chair.
>
> 2. The set of simples Tweedledee is exactly the set that composes Legion.
>
> 3. Tweedledum is the set of simples that has as its elements all the members of Tweedledee except for one simple. (15–17)

The problem of the many becomes apparent when there appears to be at most one composite object (in this case, a human person) but there are also many other composite objects located "within" that object that seem to qualify as the very same kind of object. In this case, the question arises, is Tweedledum a person? We know that Tweedledum, if he (or it) is not a person, has almost exactly what it takes to be a person. According to Hudson, each mereologically simple object seems to be insignificant on its own, and therefore it also seems that no one simple can make the difference between a person and a non-person. And if one simple should not make a difference, it seems that two simples should not make a difference either. But if we start subtracting simples one by one, we are left with a whole host of person candidate sets.

---

[2] I've used the condensed version of the argument because Hudson's original formulation depends on his commitment to mereological universalism (the thesis that for any plurality of objects whatsoever, there is necessarily an object composed of them). He then revises the problem to appeal to those who aren't universalists. However, because the particulars of mereological universalism aren't essential to my argument, I will use only the condensed version.

## II. The Partist View

Hudson then examines ten solutions to the problem of the many. He deems the "constitution view" one of the more plausible solutions, but ultimately rejects it. In describing the constitution view, he says,

> Let us acknowledge that there is a multitude of things in Legion's chair at T but then claim that they are person-constituters rather than persons . . . This position, characterized by the slogan "constitution is not identity," permits us to say that there is exactly one person in Legion's chair at T, and that there are many person-constituters there also.[3] (Hudson 32)

But Hudson is a mereological universalist who thinks that constitution just is identity (33). Additionally, Hudson observes that the many person constituters (of which Tweedledum is one) are just too similar to the person Legion not to be persons themselves. To support this claim, Hudson approvingly quotes David Lewis's discussion of cat-constituters (as opposed to the person-constituters we have been discussing):

> The constituters are cat-like in size, shape, weight, inner structure, and motion . . . any way a cat can be at a moment, cat-constituters also can be; anything a cat can do at a moment, cat-constituters also can do. They are all too cat-like not to be cats. (33)

Hudson notes that three-dimensionalists typically view parthood as a three place relation which is indexed to a time: $p$ is a part of object $a$ at time T. The three-dimensionalist needs this relativizing to a time to account for the fact that some objects (paradigmatically, organisms) are composed of different parts at different times. When asked whether the set of $x$'s or the set of $y$'s compose the object $o$, the three-dimensionalist may insist that the question is ill formed. We cannot make sense of composition simpliciter since an object may have different parts at different times.[4]

Hudson then suggests that the three-dimensionalist take parthood to be a four place relation, where $r$ is a variable that indexes the parthood relation to a region of space: $p$ is a part of $a$ at region R at time T. The question of parthood is now relativized both to a time and to a region of space. Though it is intuitively clear why a three-dimensionalist would relativize

---

[3] I realize that when using the word "constitution," most philosophers have in mind objects that completely share their parts, but since I'm focusing on Hudson's presentation of the problems, I'll stick to his usage of the term.

[4] This does not apply only to organisms. Many inanimate objects, such as houses and universities, gain and lose parts over time.

parthood to a time, is there any motivation for relativizing parthood to a region of space?

Consider the following case of an object that has seemingly contradictory properties if not for the relativity of regions of space. Imagine a perfectly homogeneous sphere that occupies a continuous region of space. Let us also say that the sphere has no proper parts; the sphere is mereologically simple.[5] Now imagine that the sphere is colored green on its left half and colored red on its right half. Given that the sphere has no proper parts, when asked what color it is, we might be at a loss trying to explain that the sphere is bicolored yet mereologically simple. It seems as though we must say that the sphere is both green and red (but not a mixture of the colors). But this sort of scenario should not make us break a sweat as long as we can specify a certain region where it is true that the sphere is red and another region where it is true that the sphere is green. Since we have at least one instance that motivates us to stipulate a region when asking about composition, I'll take it to be permissible to invoke regions when giving a formula for parthood.

When we ask whether the set Tweedledum composes a person, we must refer to the set Tweedledum at a certain time and place. The three-dimensionalist may say that one object can exactly occupy multiple regions at one time and that an object may have different properties at different regions. There is not an object $x$ at R and another object $y$ at R* which have different properties and yet are still identical. Rather, the single object $x$ has a certain property at R and another property at R* (a subregion, perhaps), but it is nevertheless $x$ at every region. The four place Partist View of parthood allows the three-dimensionalist to escape the problem of the many by claiming identity among all of the "persons" at differing regions of space. So while the problem of the many may show that there is an enormous number of persons sitting in the chair "with" Legion, they are nevertheless all identical to Legion at the same time, T, but each is identical to Legion at a different region.

It seems as though three-dimensionalism is rescued from one sticky problem, but there are other embarrassing puzzles for the 3D Partist to worry about. Hudson brings in the infamous cat Tibbles to illustrate one such problem.

Tibbles is composed of a set of simples, the $x$'s, at region R at time $T_1$. Tibs is the set of simples, the $y$'s, which compose all of Tibbles minus her tail, at R* at $T_1$. The 3D Partist claims the following:

$$\text{Tibs @R* @}T_1 = \text{Tibbles @R @}T_1$$

---

[5] This assumes the thesis that simple objects can be extended. Though I favor an analysis of simples as extended, I don't wish to defend that thesis here. My usage of extended simples is merely for the sake of the example. For more on extended simples, see Simons.

From left to right, this reads: Tibs at subregion R* at time $T_1$ is identical to Tibbles at region R at time $T_1$. The problem is that at R at $T_1$, Tibbles has Tibs as a proper part. For a thing *x* to be a proper part of a thing *y* is for *x* to be a part of *y* and for *y* not to be a part of *x*.[6] Although an object can be an *improper* part of itself, no object can be a *proper* part of itself. But if we claim that Tibs is identical to Tibbles, even by granting the 3D Partist that identity can hold between objects at different regions at the same time, we are committed to saying just that. Assuming that we want to keep the traditional notion of proper part (which is virtually non-negotiable), this contradiction is fatal to the 3D Partist View. To see that it is fatal, note that improper parthood implies identity (if *x* is an improper part of *y*, then *x* is identical to *y*) while proper parthood implies non-identity. 3D Partism erases the distinction between proper and improper parthood, and claims that a whole thing can be identical to one (or more) of its proper parts.

## III. Another Relation

What is a three-dimensionalist to do? One thing three-dimensionalists should certainly not do is simply abandon Hudson's insights on indexing parthood to a region of space—it is too valuable of a distinction to throw away. However, the three-dimensionalist also shouldn't buy into this business of things being identical at different regions, nor should she immediately grant Hudson's rejection of constitution. For Hudson, the problem with constitution is that there is too much of a similarity between the constituters (in these cases, Tweedledum and Tibs) and what is constituted (Tweedledee and Tibbles, respectively). The difference between having and lacking a single mereological simple is plainly insufficient to distinguish between a person, Tweedledee, and a non-person, Tweedledum. The difference is difficult to distinguish if we take the only "difference maker" to be mereological simple objects. Luckily, mereological simples do not have a monopoly on difference making. I suggest that the three-dimensionalist add another relation: the *in-F* relation where F stands for a certain form. Form has been invoked throughout philosophy's history. A form could be understood as a Platonic universal, an Aristotelian function that is immanent within the object, or some divine designation. This five-place constitution relation will be compatible with most, if not all, realist conceptions of form. When I speak of form, I have in mind the Aristotelian, non-transcendental version, though nothing that follows depends on my preference for one over the others. The new parthood formula will look like this:

x @W ≺ y/F @R

6 Formally, $\forall(x)\,\forall(y)\,(PPxy \leftrightarrow (Pxy \cdot \sim Pyx))$.

This formula reads: *x* at region W is a part of *y* in the form F at region R. For the sake of simplicity, I will not refer to periods of time separately from regions of space (or vice versa). So any talk of region will be of space-time region.

The five-place relation, as one might guess, is basically hylomorphism combined with Hudson's Partist theory; I shall call it Hylomorphic Partism. Hylomorphism fits naturally with many of our intuitions about material objects. For instance, the distinction between an assembled table and the disassembled parts of the table is best expressed in hylomorphic terminology: an assembled table and the disassembled parts of the table both have the same *matter* but they have different *forms*. Distinguishing between the form of an object and the matter of an object is often overlooked in contemporary philosophy as a strategy for solving puzzles of material constitution.

But what, some may wonder, is form? This is a difficult question to give an exact response to, but the following examples should give us at least as clear of a concept of form as traditional examples give us of the concept of a mereological sum. Form can be said to be the principle of unity of a thing. When we see a shiny new gadget, one whose function we cannot readily discern, we ask questions like "What is it?" and "What does it do?" These questions about what a thing is and what a thing does, as opposed to what the thing is made of, are questions concerning the form of a thing. Typically, the form of a thing is a functional explanation of it. The form, or principle of unity, of a composite object may therefore follow this schema:

> *What it is for* (a table/a gun/an organism/etc.) *to exist is for these parts* (a table/a gun/an organism/etc.) *to* (the principle of unity is specified here).[7]

The requisite form will differ between objects of different kinds. For instance, the principle of unity necessary for an organism to sustain existence will be a *dynamic* principle, because the parts of an organism are actively contributing to the metabolic processes. In the case of an artifact, the principle of unity could be less active, but it must still allow for the intended function of the artifact. Of course, not all artifacts have a function. A clay statue does not have a form that allows for a function. Rather, the form of a statue is simply the arrangement of the clay parts that yields the intended aesthetic qualities.

This form of a thing explains under what conditions that object exists and how it is to persist. Consider the parts of a firearm lying on a table. Is there are an object composed of the unassembled, disjointed parts? Mereological universalism says yes, but this appears to be a case of the tail

---

[7] This is based on a schema found in Johnston (133).

wagging the dog. The problem most people have with conceding that there is an object composed of the disassembled parts is that there simply does not appear to be any compelling reason to do so. Nothing about pieces of a gun lying within close proximity to each other forces us to say that there is a single object there.

But when we consider an assembled firearm, at least one reason to posit a new object emerges. There is at least one thing an assembled gun can do that its parts cannot: propel a bullet. And that function depends on the arrangement of the parts of the gun (just try getting the disassembled, or even partly assembled, parts of a gun to fire a bullet). Since we have a case in which the arrangement (form) of certain matter (the parts of the gun) yields a new functional capacity (bullet propelling) we have good reason to suppose that when you assemble the parts of a gun in the right way you will get a new composite object. And there just does not seem to be that same compelling reason when we are considering whether mereological sums exist. Note that in this case, there seems to both a functional and aesthetic principle of unity at work. Consider a highly ornate gun that has been stolen from a museum. If the thief were to assemble its parts in such a way that it could fire a bullet but lacked the ornamentation and design of the original, and then he were to return *that* object, the museum curator may still insist that *the* gun hadn't yet been returned. In this case, there seem to be two forms that are independently necessary and jointly sufficient to constitute the gun.

## IV. Hylomorphic Partism and the Problem of the Many

I will discuss Hudson's arguments against the 3D Partist only with respect to inanimate objects, and specifically with respect to artifacts.[8] The question whether Tweedledum is a person actually comprises two distinct questions: 1) Do the simples belonging to the set Tweedledum compose an object? And 2) Supposing that the set of simples does compose an object, does that object meet the philosophical requirements of personhood? Since we are dealing with the part-whole relationship, only the first question concerns us.

Let us consider another prominent example illustrating the problem of material constitution: the paradox of the statue and the clay. A sculptor buys himself a fine slab of clay at $T_0$. In the interval between $T_0$ and $T_1$ we find the sculptor doing what he does best—sculpting. At $T_1$ our protagonist has finished his masterpiece. Shortly after $T_1$ the sculptor presents his statue to an audience, who marvels at its beauty.

---

[8] As opposed to inanimate natural bodies such as mountains.

"The clay," some patrons remark, "is exquisite. Where did you import it from?" As the sculptor prepares to respond, his arch nemesis, having snuck into the private audience, smashes the statue into hundreds of pieces at $T_2$. Constitutionalists will claim that the sculptor brought a new object—the statue—into existence and that it was later destroyed. The statue was an object that was constituted by, but not identical to, a certain hunk of clay. Moreover, the clay existed from $T_0$ to $T_2$ (and perhaps beyond, in scattered form) whereas the statue existed only from $T_1$ to $T_2$. Let us return to the schema introduced earlier: what it is for a statue to exist is for some matter to be formed in some aesthetic manner at a certain region and time and not to be an immediate part of a larger statue. Requiring that the statue not be the immediate part of a larger statue will also help us when, say, part of the statue gets broken off. When we are left with a partly fragmented statue we would still say that it is the same statue as it was prior to losing some parts. This is because the form has stayed the same. Of course, there will be a point where the statue has lost its form and the clay will no longer constitute a statue. But, this is a matter of epistemic, and not ontological, vagueness.[9]

Recall that Hudson's charge is that there is not a significant difference between an object and its numerous object constituters. A statue constituter that lacks one simple that the actual statue possesses does not seem to be different in any important way, but if we take the *in-F* relation seriously, there is a significant difference: one set of simples in a particular region is in the statue form while the other sets of matter in the subregions are not.

Of course, Hudson will want to know why one set of simples, presumably the largest set under consideration, S, is in the form of a statue, yet a set lacking one member of S (we will call that set S*), is not in the form of a statue. Let us begin by assuming there is a statue at region R. We may say that subset S* at subregion R* is potentially a statue because that subset at that subregion has the *accidental* form of a statue in virtue of being a part of a set at a region that actually is a statue. The subset has a certain configuration that is nearly indistinguishable from the actual statue, but that configuration is due to the fact that it is configuring a larger object. And if that set has a certain form due to another set having the same form, then it is in the constitution relation.

One may worry that the addition of the *in-F* relation appears to be unnecessary since it is not doing any work that the region relativization cannot do. If something is occupying a certain region, then that object is in

<hr />

[9] Hudson and I are in agreement about the impossibility of ontological vagueness. See Hudson 72–80 for further discussion.

a certain configuration; after all, regions are not shapeless. The addition of yet another relation seems superfluous.

It is important to notice that objects "occupy" regions by being "in" certain forms. And, as we noted earlier, the form, but not the region an object occupies, will dictate the persistence conditions of that kind of object. To see this, and to return to talk of guns, imagine that we have a mold of a gun. At one time, metal is poured into the mold and produces an object with the capacity to fire a bullet.[10] Certain other types of metal may be suitable substitutes to pour in the mold and make an object that can fire a bullet, but there will be certain materials (clay, perhaps) that could be poured into the mold and thus occupy the same region without being able to function as a gun. This drives home the point that when it comes to objects that have a functional purpose, the form of an object is not to be identified simply with the spatial arrangement without reference to the kind of matter.

What I have said about forms may bear a striking resemblance to another solution to constitution puzzles—the invocation of maximal properties. Ted Sider has said that "a property, F, is maximal, roughly, if large parts of an F are not themselves Fs" (139). The idea is that an object at region R has the property of, say, being a table just in case none of the larger objects composing it (the legs of table, the top of the table, etc.) have the property of being a table. This is supposed to explain the difference between a table and the ever so slightly smaller object that is the table minus one simple.

The problem with maximal properties is that they do not really explain anything; rather, they point to an instance of two objects which are nearly identical yet which have different properties. But it is not clear *why* one object has a maximal property and another object lacks it. The presence or absence of a maximal property, however, is highly informative. What we discover from apparent maximal properties is the presence of a certain form that would allow for that property to be manifested. We could then explain *why* an object has a maximal property based on its arrangement and functional unity.

Another possible objection deals with the difference between form and matter. We have said that at region R there is a statue, but is there not also a lump of clay occupying the entirety of region R? Indeed, at every region where there is a part of the statue there will also be clay since the statue is made of clay. So it will not do us much good to say that the form of clayness has suddenly disappeared when the matter that formerly composed clay is now in the form of a statue.

---

[10] Let us assume for the sake of an argument that a gun could be made by such a process.

As I see it, there are two answers one could give in this situation, the second of which is my preferred explanation. The first is to make the form that the hylomorphic compound is in hyperspecific. So instead of saying that the clay is in the form of a statue, one could say that the clay is in the form of a clay-statue. Since the matter is in the form of a clay-statue, this explains why we seem to refer to the clay even though the hylomorphic compound is a statue. Were some matter to be in the form of a gold-statue, we should expect people to remark about the sheen and the quality of the gold. But suppose we have a golden statue of David next to a clay statue of David. Do we observe the same form in both statues? The arrangement certainly seems the same in both statues; the only difference is that one is made of a precious metal and the other is not.

Alternatively, one could say that the clay is now playing the *role* of the matter in the form-matter compound that is the statue. The fact that we can refer to the clay without referring to the statue, on this account, would be perfectly natural, since to talk about the clay is just to talk about the hylomorphic compound's matter without referring to its form. We do this sort of thing all the time; while observing a wooden table, one may note the outstanding quality of the wood used but ultimately have a negative opinion of the table itself. Referring to the matter (or the thing that is playing the role of matter) of the object currently in a certain form is ubiquitous.

This allows one to say that there are actually two hylomorphic compounds—the clay and the statue. In this case, one hylomorphic compound acts as the matter in a further form-matter compound. That is to say, any composite object will have certain constituents with a certain principle of unity, in this case, the clay is a constituent of the statue, and those constituents may also have their own constituents with their own principles of unity. It is taken by many to be a conceptual truth that two distinct material objects cannot occupy one and the same region. But it is not at all apparent that two (or more) hylomorphic compounds cannot occupy the same region of space.[11]

Say that I fashioned a bit of clay into a cross, which would mean something very profound to a Christian. Presenting it to a Christian would mean something completely different than presenting it to a primitive tribal community. Perhaps the tribal people have no conception of a cross and therefore have no reason to recognize the form of a cross. When presented with the cross, all they see is a piece of clay in an unfamiliar formation. We should also leave open the possibility that when we observe ordinary material

---

[11] Rea, in "Sameness without Identity," and Brower and Rea, in "Material Constitution and the Trinity," take up the task of explaining how two hylomorphic compounds which lack identity could ultimately be the same material object.

objects, we might be in a position like that of a tribe. Perhaps, when observing a cross, some extraterrestrial community sees clay, a cross, and some other object that we don't recognize, despite the form having "been there" anytime we observed the object. This is not to make the relativistic claim that we project forms onto certain collections of matter. Rather, it is to say that we simply might be ignorant of certain kinds of things. With that in mind, I think the safest thing to say is that there are at least two hylomorphic compounds in the case of the statue constituted by clay. Note too that this is not at all at odds with the previous answer. To say that the clay is playing the role of matter in the cross compound is perfectly compatible with the cross itself being the "matter" in yet another hylomorphic compound.

What I hope is clear now is that there is an alternative to the problematic 3D Partist View and that we do not have to abandon the idea that objects endure over time. Nor do we have to accept problematic theories such as the idea that many things are identical at different regions. The alternative I have proposed, Hylomorphic Partism, resolves many of the traditional problems of constitution and is greatly in concert with our everyday beliefs about material objects.[12]

# Works Cited

Brower, Jeffrey E. and Michael Rea. "Material Constitution and the Trinity." *Faith and Philosophy* 22 (2005): 487–505.

Hudson, Hud. *A Materialist Metaphysics of the Human Person*. New York: Cornell UP, 2001.

Johnston, Mark. "Parts and Principles: False Axioms in Mereology." *Philosophical Topics* 30.1 (2002): 129–66.

Rea, Michael. "The Problem of Material Constitution." *Philosophical Review* 104.4 (1995): 525–52.

———. "Sameness without Identity: An Aristotelian Solution to the Problem of Material Constitution." *Ratio* (1998): 316–28.

Sider, Ted. "Maximality and Microphysical Supervenience." *Philosophy and Phenomenological Research* 66 (2003): 139–49.

Simons, Peter. "Extended Simples: A Third Way Between Atoms and Gunk." *Monist* 87.3 (2004): 371–84.