

Simples, Stuff, and Simple People

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1 Introduction

Here is a question about (physical) mereological simples that I raised in a recent paper.¹

The Simple Question: What are the necessary and jointly sufficient conditions for an object's being a simple?

And here is the answer to this question that I defended.

x is a *maximally continuous object* =df x is a spatially continuous object and there is no continuous region of space, R , such that (i) the region occupied by x is a proper subset of R , and (ii) every point in R falls within some object or other.

The Maximally Continuous View of Simples (MaxCon):
Necessarily, x is a simple iff x is a *maximally continuous object*.

The intuitive idea behind MaxCon is that whenever an object has proper parts, those proper parts are spatially separated from one another. Composite objects, on this view, are all scattered objects (although it is consistent with the view that the different parts of a composite object tend to be not so widely scattered). But simples, according to MaxCon, are utterly unscattered – and it is in virtue of being completely connected, as opposed to being scattered, that they have no proper parts.

According to MaxCon, simples can be spatially extended. For example, MaxCon allows for the possibility of simples that are spherical, egg-shaped, cubical, or shaped like donuts, as well as simples that are long and thin and

¹ Markosian (1998b).

² See the chapter on Democritus in Barnes (2002).

³ Markosian (1998b), Section 6.

⁴ Markosian (1998b), p. 225.

⁵ For the rest of the paper I will take MaxCon to be representative of views that

simples that are irregularly shaped, with various protuberances, including the hooks and eyes that Democritus apparently envisioned.² (But it is worth noting that, as the case of Democritus illustrates, one can believe in extended simples without endorsing MaxCon.)

Here is an objection to MaxCon (and to the idea of extended simples in general) that I discussed in my earlier paper.³ Consider a maximally continuous object in the form of a statue shaped like Joe Montana. Suppose the statue is such that we would intuitively describe it as having a right arm made of one type of matter and a body that is made of a different type of matter. According to MaxCon, however, this statue is a simple. So according to MaxCon, it cannot be the case that the statue has a part that we can appropriately call its right arm. The objection, then, is that the MaxConner is unable to give a completely accurate characterization of the case. For it appears that the MaxConner cannot capture what is true in the intuitive claim that “the arm part” of the statue and “the rest of the statue” are made of different types of matter.

In response to this objection, I admitted in my earlier paper that the proponent of MaxCon must say that such a statue would not literally have any proper parts. But I said that we can capture what is literally true in the intuitive claim that the statue has a right arm that is made of a different type of matter from the rest of it by talking about the arm-shaped sub-region of the region occupied by the statue, and the fact that the matter occupying this sub-region differs from the matter occupying the rest of the region occupied by the statue. Thus my reply to the statue objection committed me to saying that, at least in some cases, talk about matter, or stuff, is not reducible to talk about things.⁴ And I think it is clear that anyone who believes in the possibility of extended simples must also take a similar line.

In Section 2 of this paper I will explore in greater detail this claim about the irreducibility of stuff to which the MaxConner and the believer in extended simples are committed.⁵ In Sections 3 and 4 I will discuss a different

² See the chapter on Democritus in Barnes (2002).

³ Markosian (1998b), Section 6.

⁴ Markosian (1998b), p. 225.

⁵ For the rest of the paper I will take MaxCon to be representative of views that allow for the possibility of extended simples.

(but related) objection to MaxCon (and extended simples), involving the possibility of mereologically simple people who come into contact with one another. This discussion will also involve some issues concerning names and the way we refer to things (whether simple or complex) and stuff.

2 The Irreducibility of Stuff

In order to understand the MaxConner's commitment to the irreducibility of stuff, we will first need to get clear on the difference between things and stuff. To begin with, I am talking here of physical things and physical stuff. I have elsewhere defended an analysis of the concept of a physical object according to which physical objects are those objects with spatial locations,⁶ and I would also endorse the corresponding analysis of the concept of physical stuff: physical stuff is stuff with a spatial location. But I do not have any analysis to offer of the concept of a thing. Nor do I have available an analysis of the concept of some stuff. I will instead take these notions to be unanalyzable, and I will take the terms 'thing' and 'stuff' – as well as their synonyms (such as 'object', 'entity', and 'item' in the case of 'thing', and 'matter' and 'material' in the case of 'stuff') – to be primitives. (I hasten to point out that my failure to give analyses of the notions of thing and stuff should not be taken as a sign of negligence on my part, since as far as I can tell no one else knows how to analyze these concepts either.)

Another important concept that I will also take to be unanalyzable is the relation of constitution. This is a peculiar and intimate relation that can obtain between a thing and some stuff. It is the relation that occurs when a particular thing is made of or constituted by a certain portion of stuff. (The locution 'made of' is often used in ordinary speech to express the relation of composition, which is a multigrade relation that relates a thing to a plurality of things, as in the sentence 'This table is made of these five pieces of wood'. But I think that 'made of' is also frequently used in normal conversation to express a relation between a thing and some stuff, as in the sentence 'This statue is made of the bronze that Phil bought last week'. Meanwhile, the phrase 'constituted by' is sometimes used by philosophers to express a putative relation between a thing and a thing, as in 'The statue is constituted

⁶ Markosian (2000).

by the lump of clay'.⁷ So neither 'made of' nor 'constituted by' is an ideal choice of term for the relation that I am after. I will use them both anyway, however, since I am not aware of any better alternative.)

Despite the fact that I am taking the notions of thing, stuff, and constitution to be unanalyzable, I will nevertheless make a series of remarks in an attempt to clarify these concepts, and then I will briefly spell out ten substantive theses concerning things, stuff, and constitution that I endorse and that will, I hope, shed further light on these notions.⁸

Here are some examples of things: you, me, my chair, the rock in my garden, the moon, an oxygen molecule, some electron in my daughter's nose, an acorn, a dog. Here are some examples of (what I will call) portions of stuff: the water in this glass, the wood my chair is made of, the matter that constitutes the rock in my garden, all the gold on the planet, the plastic in my computer.

Here are some examples of sentences about things:

- (a) Montana threw the ball to Rice.
- (b) That guy over there is a philosopher.
- (c) There are some philosophers in New Jersey.
- (d) Every atom is composed of smaller particles.

And here are some examples of sentences about stuff:

- (e) Water is wet.
- (f) That stuff over there is blue.
- (g) There is some smelly stuff in New Jersey.
- (h) Every portion of stuff contains a smaller portion of every other kind of stuff.⁹

In general, "count nouns" like 'chair', 'rock', and 'electron' typically refer to things, while "mass nouns" like 'wood', 'steel', and 'pudding' typically refer to stuff. Stuff comes in portions, while things do not. Things can be

⁷ See for example, Thompson (1998) and Baker (2000).

⁸ I will not here give arguments for most of the ten theses in question, although I hope to do so elsewhere.

⁹ From the no-view-is-too-crazy-to-have-been-endorsed-by-some-philosopher department: Anaxagoras apparently believed the proposition expressed by (h). See the chapter on Anaxagoras in Barnes (2002).

counted, and so can different portions of stuff. Stuff, however, cannot be counted (although it can be measured).

One important question about things and stuff is whether it really makes sense to say that the stuff that constitutes a given thing is distinct from that thing.¹⁰ I think that there are in fact several good arguments for the conclusion that the stuff that constitutes a thing is not identical to that thing.¹¹ Here's one. An object will typically have different temporal and modal properties from the matter that constitutes it. For example, the matter that constitutes me right now has existed for much longer than I have. And the matter that constitutes my bicycle right now could survive being melted, but my bicycle could not.¹²

Here's another good argument for the conclusion that the stuff that constitutes a thing is not identical to that thing. It is possible for an object to be constituted by some matter at one time, and then to be constituted by some different matter at a later time. In fact, this is probably the case with virtually every organic object in the actual world, and with many inorganic objects as well.¹³

So my first substantive thesis about things and stuff is this: (1) *The stuff that constitutes a thing is distinct from that thing.* Although the relation between a thing and the stuff that constitutes it is an intimate relation that involves spatial coincidence and a great deal of shared properties, it is not identity.

Another important thesis about things and stuff that I endorse is the following: (2) *For every object, and for every time at which that object is present, there is exactly one portion of matter that constitutes that object at that time.* (Talk of portions of matter might sound suspiciously like talk of things, namely, portions. But in order for the appeal to stuff to work as a reply to the statue objection to MaxCon (and to various related objections), it must be claimed that portions are not things. If someone should insist that in talking about stuff I avoid even the appearance of thing talk and thing quantifiers, I would be happy to do so, although the result might involve some strange-sounding locutions. For example, thesis (2) above would have to be phrased this way:

¹⁰ Kris McDaniel raises this question in McDaniel (2003).

¹¹ The two arguments that follow are borrowed from Markosian (forthcoming).

¹² For similar arguments see Chappell (1973).

¹³ Those who want to deny the existence of stuff will most likely respond to the above arguments by appealing to counterpart theory and temporal parts theory.

For every object, and for every time at which that object is present, there is some matter such that that matter constitutes that object at that time and for any other matter it is not the case that that other matter constitutes the object at that time. In what follows I will make free use of expressions like ‘a portion of matter’, but with the understanding that such expressions could be rewritten so as to make it more explicit that a portion of matter is not a thing.)

Here is a third thesis about things and stuff to which I am committed: (3) *There cannot be matter without objects.* I.e., if there is any matter at all, then there must also be at least one object.¹⁴ Moreover, if there is some matter, and that matter occupies a continuous region of space, and it is not the case that that region falls within a larger continuous region that is also filled with matter, then the matter in question constitutes a simple. That is, (4) *Every maximally continuous portion of matter constitutes a simple object.* This fourth thesis is distinct from MaxCon itself, at least as I have formulated MaxCon, and is not entailed by MaxCon. Nor does it entail MaxCon. But I think it is so closely connected to MaxCon that it makes sense to have a name for the combination of the two theses. I will accordingly refer to the conjunction of MaxCon and the claim that every maximally continuous portion of matter constitutes a simple as “MaxCon+”.

The fifth thesis about stuff that I want to endorse is analogous to a well-known (and controversial) mereological doctrine about things, namely, the Principle of Unrestricted Fusions (PUF). PUF (as it applies to things) says that every plurality of things is such that those things have a fusion.¹⁵ Although I have elsewhere argued against PUF as applied to things,¹⁶ and continue to reject that version of the thesis, I nevertheless endorse the version of PUF that applies to stuff. That is, I accept this thesis: (5) *For every two portions of stuff, there is a portion of stuff that is the fusion of those two portions.* This principle yields a great many portions of stuff. Moreover, it yields portions of stuff in a

¹⁴ This claim is related to a thesis called “Against Matter Without Objects” that is mentioned in footnote 23 of Markosian (1998b).

¹⁵ This is the view that van Inwagen calls “Universalism” in van Inwagen (1990), Section 8. It is also sometimes known as “Unrestricted Composition”. In addition to van Inwagen (1990), see Lewis (1986), Section 4.3; Van Cleve (1986); and Sider (2001), pp. 120-139

¹⁶ Markosian (1998a).

tremendous variety of shapes and sizes, including widely scattered portions of stuff and portions of stuff with all kinds of strange properties.

Which brings us to the sixth thesis about things and stuff that I want to endorse: (6) *Some portions of stuff constitute things, but not every portion of stuff constitutes a thing.* So, for example, although the portion of stuff consisting of all the matter that makes up my body constitutes an object (namely, me), the portion of stuff consisting of the matter that makes up my body plus the matter that makes up your body does not constitute any object.¹⁷ Similarly, the portion of matter making up the entire statue (the one in the above example that is shaped like Joe Montana) constitutes an object, but the portion of matter that fills the arm-shaped sub-region of the region occupied by the statue does not constitute any object.

My next thesis is also related to a well-known and controversial mereological thesis about things: The Doctrine of Arbitrary Undetached Parts (DAUP). According to DAUP, for every material object, M, if R is the region of space occupied by M at time t, and if sub-R is any occupiable sub-region of R whatever, there exists a material object that occupies the region sub-R, and is a part of M, at t.¹⁸ (A related thesis is The Doctrine of Arbitrary Undetached Regions (DAUR), according to which for every region of space, R, and for every subset, S, of the set of points whose fusion is R, there is a region of space that is the fusion of the members of S and that is a part of R.) Like most 3Ders, I do not accept DAUP (although I do accept DAUR).¹⁹ But I do endorse a variation of DAUP that applies to portions of stuff, and that could be called The Doctrine of Wholly Arbitrary Portions (DWAPO): (7) *For every region of space, R, such that every point in R is filled with matter, there is a portion of matter*

¹⁷ I will often leave out temporal indices in sentences like the one above. With the relevant temporal indices in place, the above sentence would look like this: although the portion of stuff consisting of all the matter that makes up my body right now constitutes an object right now (namely, me), the portion of stuff consisting of the matter that makes up my body right now plus the matter that makes up your body right now does not constitute any object right now.

¹⁸ Van Inwagen formulates (in a slightly different way) and rejects DAUP in van Inwagen (1981).

¹⁹ A 3Der is someone who rejects an ontology of temporal parts. See Markosian (1994) and Sider (2001).

*that exactly fills R.*²⁰ (I take it that this seventh thesis entails, but is not entailed by, the fifth thesis above (PUF as applied to portions of stuff).)²¹

The eighth thesis about things and stuff that I want to endorse is another one that has, as an analogue, a well-known and controversial mereological thesis about things. The relevant mereological thesis about things is Mereological Essentialism, which says that every object has each of its parts essentially. I do not accept this, but I do accept its analogue as applied to stuff: (8) *Every portion of matter has each of its sub-portions essentially.* (I also accept the corresponding thesis about regions of space, according to which every region of space has each of its sub-regions essentially.)

The final two theses about things and stuff that I will spell out before attempting to characterize the doctrine of the irreducibility of stuff involve two further notions that I will here take to be unanalyzable, namely, the relations of parthood and occupation.²² Here are the final two theses: (9) *The relation of parthood that relates a thing to a thing and the relation of parthood that relates a portion of stuff to a portion of stuff are the same relation.* (10) *The relation of occupation that relates a thing to a region of space and the relation of occupation that relates a portion of stuff to a region of space are the same relation.* But, mainly in order to mark the distinction between things and stuff, I will for the most part use different terminology for talking about these relations, depending on whether the relata in question are things or stuff. I will say that things occupy

²⁰ This thesis is also mentioned in Markosian (forthcoming), although the acronym given to it there is DWAP rather than DWAPO.

²¹ Thesis (7) entails that the only portions of matter that do not have sub-portions are point-sized portions of matter, which is the stuff-analogue of a view called “The Pointy View of Simples” that is discussed (and rejected) in Markosian (1998b).

²² I hasten to point out that these notions, too, are ones that others have (for the most part) not attempted to analyze. But it is interesting to note that, as Hud Hudson has pointed out to me, the MaxConner – but not the proponent of MaxCon’s main rival, The Pointy View of Simples (see Markosian (1998b) and footnote 21 above) – is in a position to offer an analysis of parthood in terms of topological concepts, if he so chooses. Here is the analysis that Hudson has in mind.

x is a *part* of y =df for every z, if x shares a boundary point with z, then y shares a boundary point with z.

(For a definition of ‘boundary point’ see Section 3 below.) Cf. Casati and Varzi (1999), Section 2.2, and Clarke (1981).

regions, while portions of matter fill regions (even though I take it that the same relation is involved in each case). Similarly, I will say that one object is a part of another, while one portion of stuff is a sub-portion of another (even though, again, I take it that the same relation is involved in each case).

I hope that what I have said so far is enough to give readers a fairly clear idea of what I mean by ‘thing’ and ‘stuff’, even though I have not defined those terms. Now it is time to give a more detailed characterization of the thesis I mentioned in Section 1 about the irreducibility of stuff. Here are four closely related questions that inevitably arise once we acknowledge a distinction between things and stuff.

- (Q1) Is the physical world, on the most fundamental level, a world of things, or a world of stuff, or a world of both things and stuff?
- (Q2) Do the most basic facts about the physical world include only facts about things, or do they include only facts about stuff, or do they include both facts about things and facts about stuff?²³
- (Q3) Is the most accurate description of the physical world one that is purely in terms of things, one that is purely in terms of stuff, or a description that is in terms of both things and stuff?
- (Q4) Are either thing talk and quantification over things, on the one hand, or stuff talk and quantification over stuff, on the other hand, eliminable?

Each of the above four questions is a variation on this more basic question: Things or stuff? Given this, the manner in which a person answers any one of these four questions will for all intents and purposes determine how that person answers the other three. Meanwhile, there are three different ways of answering the more basic question – (1) things, (2) stuff, and (3) both things

²³ My own preference is to take facts to be instantiations of universals (such as the instantiation of blueness by my shirt), and to understand the most basic facts to be those facts that obtain without obtaining in virtue of other facts. But the second thesis of each of the ontological views characterized in the text is meant to be neutral with respect to competing views about the nature of facts.

and stuff – that correspond to three different ways of answering each of the variations on that basic question. As I see it, then, there are three views available to any philosopher concerned with the fundamental ontology of the physical world, and the question of which is more basic, things or stuff. For our purposes, these three views can be formulated as follows.

The Thing Ontology: (i) The physical world is fundamentally a world of things, rather than a world of stuff. (ii) The most basic facts about the physical world are facts about things, rather than facts about stuff. (iii) The most accurate description of the physical world must be in terms of things, rather than stuff. (iv) Thing talk and quantification over things are ineliminable, whereas stuff talk and quantification over stuff are eliminable.²⁴

The Stuff Ontology: (i) The physical world is fundamentally a world of stuff, rather than a world of things. (ii) The most basic facts about the physical world are facts about stuff, rather than facts about things. (iii) The most accurate description of the physical world must be in terms of stuff, rather than things. (iv) Stuff talk and quantification over stuff are ineliminable, whereas thing talk and quantification over things are eliminable.

The Mixed Ontology: (i) The physical world is fundamentally a world of both things and stuff. (ii) Among the most basic facts about the physical world are facts about things and also facts about stuff. (iii) The most accurate description of the physical world must be in terms of both things and stuff. (iv) Thing talk and quantification over things, as well as stuff talk and quantification over stuff, are both ineliminable.

I have not conducted anything like an empirical study, but I suspect that The Thing Ontology is probably the most popular of these three ontologies

²⁴ Earlier we saw two examples of sentences containing quantification over things: (c) There are some philosophers in New Jersey; and (d) Every atom is composed of smaller particles. We also saw two examples of sentences containing quantification over stuff: (g) There is some smelly stuff in New Jersey; and (h) Every portion of stuff contains a smaller portion of every other kind of stuff.

among current philosophers. But The Stuff Ontology has had its proponents over the years, including Anaxagoras (I think) and, more recently, Michael Jubien.²⁵

Meanwhile, recall that those who endorse MaxCon (or merely the possibility of extended simples), are thereby forced (by the statue objection above) to accept the irreducibility of stuff. What this means is that those philosophers must reject The Thing Ontology. That is, philosophers who endorse MaxCon (or merely the possibility of extended simples) are committed to the truth of either The Stuff Ontology or The Mixed Ontology. Either one of these will suffice for making the reply to the statue objection spelled out above.

Things are slightly more complicated for me, however, in virtue of an additional commitment I have to the thesis that whenever two or more objects compose a bigger object, it is just a brute fact that they do so.²⁶ Because I accept this thesis, which I call Brutal Composition, I must say that among the most basic facts about the physical world are some facts about things. For consider some simples that compose a composite object. According to Brutal Composition, it is just a brute fact that these simples compose something. So the existence of that composite object is among the most basic facts about the physical world. Which means that the most basic facts about the physical world do not contain only facts about stuff. And thus I am committed to The Mixed Ontology.

In addition to the four tenets of The Mixed Ontology, there is also an optional non-supervenience thesis, which some philosophers who reject The Thing Ontology may want to endorse, but which I do not endorse. The relevant thesis can be formulated as follows.

The Non-supervenience of Stuff on Things: It is possible for two worlds to differ with respect to the facts about stuff while being exactly alike with respect to the facts about things.

Instead of this non-supervenience thesis, I endorse the corresponding supervenience thesis, which can be spelled out like this.

²⁵ See the chapter on Anaxagoras in Barnes (2002), as well as Jubien (1993).

²⁶ See Markosian (1998a).

The Supervenience of Stuff on Things: It is not possible for two worlds to differ with respect to the facts about stuff while being exactly alike with respect to the facts about things.

And I also endorse the corresponding thesis about the supervenience of things on stuff.

The Supervenience of Things on Stuff: It is not possible for two worlds to differ with respect to the facts about things while being exactly alike with respect to the facts about stuff.

So although I think that things and stuff are both basic in an important sense, I also think that there is an important sense in which things and stuff supervene on one another.

3 Simple People

In Markosian (1998b) I discussed an objection to MaxCon that involved two maximally continuous and qualitatively indiscernible objects coming into contact with one another. I admitted that in such a case, according to MaxCon, the original two objects would go out of existence as a result. But I pointed out that anyone who rejects The Doctrine of Arbitrary Undetached Parts (see Section 2 above) will have an independent reason to endorse this consequence, even if he or she does not accept MaxCon. (For if either of the original objects survived, it would be an arbitrary undetached part of the resulting object.) I also pointed out that we can say that even though the original objects go out of existence in this case, the matter that constituted each of them when they were present does not go out of existence.

I now want to address a variation on this objection that is based on the possibility of there being people who are maximally continuous objects.²⁷ Such people would be mereological simples, according to MaxCon. But suppose that two such people came into contact with one another. Then, according to MaxCon, at least one of the people would thereby go out of existence, since after the contact was made, there would be just one object present, and that object would be a simple. Moreover, if we describe the case

²⁷ A version of this objection is suggested in footnote 15 of McDaniel (2003). Other versions of it have been suggested to me by Joshua T. Spencer (in correspondence and in an unpublished paper) and by Hud Hudson (in conversation).

properly, there will be great pressure on the MaxConner to say that both people go out of existence as a result of their coming into contact. (For we can make the two people qualitatively similar in relevant respects, so that the choice of either one over the other as the one who survives would be intolerably arbitrary.) But – and here’s the rub – it doesn’t seem like two people would have to go out of existence just as a result of touching each other, even if they were both maximally continuous objects to begin with. The point can be made especially forceful if we imagine that each person is thinking “I think, therefore I am” throughout the entire process. In that case, by the end of the story, there will be two distinct streams of consciousness, each one involving a *cogito*-type thought, even though the original thinkers of those thoughts will have gone out of existence, according to the MaxConner.

Before we can formulate this argument precisely, we will need to take a closer look at the notion of contact. It turns out that there are various ways of understanding this concept. We will focus on three of them. Two of the ways will require some special terminology from topology; I propose to use the following definitions, which are adapted from some definitions of Richard Cartwright’s.²⁸ (In these and the subsequent definitions, I will use ‘R’ as a variable ranging over regions of space, ‘p’ as a variable ranging over points in space, and ‘x’ and ‘y’ as variables ranging over physical objects.)

R is an *open sphere* about p =df the points in R are all and only those points that are less than some fixed distance from p.

p is a *boundary point* of x =df every *open sphere* about p contains at least one point occupied by x and at least one point not occupied by x.

p is an *open boundary point* of x =df p is a *boundary point* of x but x does not occupy p.

p is a *closed boundary point* of x =df p is a *boundary point* of x and x occupies p.

x is *topologically open* =df all of x’s *boundary points* are *open*.

x is *topologically closed* =df all of x’s *boundary points* are *closed*.

²⁸ Cartwright (1987). (Cartwright takes regions of space to be sets of points, whereas I take them to be fusions of points that can be modeled by such sets.) For some definitions of ‘contact’ similar to the ones spelled out below see Hudson (2001).

x is *partially open* =df some of *x*'s *boundary points* are *open*.

x is *partially closed* =df some of *x*'s *boundary points* are *closed*.

Here then are the three senses of 'contact' that we will need to consider.²⁹

x and *y* are in *ordinary contact* =df *x* and *y* appear to the naked eye to share a *boundary point*.

x and *y* are in *real contact* =df *x* and *y* share a *boundary point*.

x and *y* are in *perfect contact* =df *x* and *y* share a *boundary point* that is *open* for one of them and *closed* for the other.

When I rest my hand on my desk, in a way that would ordinarily be described as involving contact, it is very unlikely that my hand and the desk actually share a boundary point. I think this shows that the notion of ordinary contact comes much closer to capturing the everyday sense of 'contact' than either real contact or perfect contact. But the possibility of two maximally continuous people coming into ordinary contact does not pose any threat to MaxCon. For it is possible for two objects to be in ordinary contact while being spatially separated from one another.

Similarly, the possibility of two maximally continuous people coming into real contact does not pose any threat to MaxCon. For it is possible for two objects to be in real contact in virtue of sharing a boundary point that is open for both of them. Thus, the fusion of the regions occupied by two maximally continuous people in real contact could very well be a discontinuous region. Which means that even if two maximally continuous people in real contact had a fusion, so that there was a third object that had those two people as its parts (and there is no reason why the MaxConner, *qua* MaxConner, has to agree that there is such an object), this new object would not itself have to be a maximally continuous object. So it would not have to be a simple, according to MaxCon. Hence the MaxConner is free to say that there is such a third

²⁹ There is a fourth sense of 'contact' that is also worth discussing, but that I will mainly skip over in this paper. It can be captured by this definition.

x and *y* are in *super contact* =df *x* and *y* share a *boundary point* that is *closed* for both of them.

Given the above characterization of a closed boundary point, it should be clear that super contact is also known as overlap.

object, while at the same time claiming that the two original, maximally continuous people in the scenario continue to exist (and continue to be simples).

Matters are quite different, however, when it comes to perfect contact. If two objects were in perfect contact, then the fusion of their regions would have to be a continuous region. This is on the surface the kind of case that will cause trouble for MaxCon. But here we run into a kind of technical difficulty in our attempt to describe the scenario that is meant to be problematic for the MaxConner. The reason for this is that contact – whether ordinary, real, or perfect – is a two place relation. Which means that, from the MaxConner's point of view, there cannot be a time at which there are two maximally continuous people who are in perfect contact with one another.

Here is why. Let's call the people involved in the putative example Romeo and Juliet. And let's call the maximally continuous portions of matter constituting them M1 and M2, respectively. Finally, let's call the fusion of these portions of matter M3. (Recall that I have already accepted the thesis that for every two portions of matter, there is a portion of matter that is the fusion of those two. (This was thesis (5) in Section 2 above.)) Now, the idea behind the example is that at the beginning of the story, when Romeo and Juliet are several feet apart, M1 and M2 are both maximally continuous, but M3 is not; and the further idea is that at the end of the story, when Romeo and Juliet are supposed to be in perfect contact, M1 and M2 are still continuous (but no longer maximally so), while M3 is maximally continuous. But this means that, according to the MaxConner, M1 and M2 no longer constitute objects at the end of the story. And it also means, given thesis (4) above, that M3 constitutes a simple at the end of the story. So, according to the MaxConner, we go from having two objects that are not in any kind of contact with one another at the beginning of the story to having just one object at the end of the story. In general, the MaxConner will have to say that there is no time in the story at which there are two objects that are in perfect contact with one another.

The upshot is that the MaxConner has a special reason for rejecting any description of our putative example according to which it involves two maximally continuous people coming into perfect contact with one another. Still, this does not make for a very satisfying response to the argument against MaxCon. For the intuitive force behind the argument is based on the idea that there is something about the idea of two maximally continuous people

coming into perfect contact that should be at least describable in a way that even the MaxConner can accept.

In fact, we can borrow the names introduced two paragraphs ago to describe a “perfect contact scenario” that should not be rejected out of hand by the MaxConner.

The Perfect Contact Scenario: At t_1 there are two maximally continuous portions of matter, M_1 and M_2 , such that (i) each one constitutes a person (Romeo and Juliet, respectively); (ii) M_1 is at least partially open; (iii) M_2 is at least partially closed; and (iv) there is a portion of matter, M_3 , such that M_3 is the fusion of M_1 and M_2 .³⁰ (M_3 is at t_1 a discontinuous portion of matter that does not constitute a person.) M_1 and M_2 approach each other between t_1 and t_2 , until it comes to be the case at t_2 that M_1 and M_2 are in perfect contact with one another. (Which means that at t_2 , M_3 becomes a maximally continuous portion of matter, and M_1 and M_2 both cease to be maximally continuous portions of matter (although they continue to be continuous).) Meanwhile, despite the fact that M_1 and M_2 both cease to be maximally continuous at t_2 , neither one changes in any important intrinsic way at that time.

And now that we have a precise way of describing our story that should be acceptable to the MaxConner, we can state the argument formally as follows.

³⁰ I earlier defined ‘partially open’ and ‘partially closed’ in terms of objects, so we will now have to understand those definitions as extending to portions of matter. And similarly with ‘perfect contact’.

The Argument from Maximally Continuous People in Perfect Contact

- (1) MaxCon entails that if The Perfect Contact Scenario were to occur, then Romeo and Juliet would both go out of existence.
- (2) It's not the case that if The Perfect Contact Scenario were to occur, then Romeo and Juliet would both go out of existence.

-
- (3) MaxCon is false.³¹

I want to consider three main responses to this argument. The first one involves denying that The Perfect Contact Scenario is possible, but not for anything like the technical reason mentioned above. Instead, the MaxConner could simply deny the possibility of maximally continuous people to begin with. Doing so would allow the MaxConner to insist that the conditional contained in Premise (2) has a necessarily false antecedent, and so is a necessarily true conditional, which would make the premise itself false.

Should the MaxConner deny that there can be maximally continuous people? I don't think so. It might not be consistent with the laws of nature in the actual world for there to be maximally continuous people, but I can't think of any reason why we should say that it is metaphysically impossible for there to be such people. For example, it seems metaphysically possible for a world to be similar to ours, but with "one dimensional" strings connecting all of the particles of any given person; and such a world would contain people that are maximally continuous.³² Also, it seems epistemically possible (and hence it

³¹ In footnote 29 above, I spelled out a fourth sense of 'contact' (super contact) that I said I would mainly set aside in this paper. For the record, what I say below about The Argument from Maximally Continuous People in Perfect Contact is substantially the same as what I would say about a similar argument based on the possibility of maximally continuous people in super contact.

³² Joshua T. Spencer makes this suggestion in an unpublished paper. (Notice that the strings in Spencer's example would have to be made of some material that allows them to pass right through each other without becoming either discontinuous or tangled.)

seems metaphysically possible) for a world to be similar to ours on the macroscopic level but to differ on the microscopic level, so that ordinary objects (including the people) are all maximally continuous.

So although The Argument from Maximally Continuous People in Perfect Contact presupposes the substantive thesis that there can be maximally continuous people, I don't think denying that presupposition is a very promising way for the MaxConner to respond to the argument.

The second response to the argument that I want to consider is one that I find more promising, although it is not the response that I want to make in the end. The second response also involves denying the possibility of The Perfect Contact Scenario, but for a different reason. The MaxConner could say that although it is possible for there to be maximally continuous people, it is not possible for one of them to have an open boundary point while another one has a closed boundary point. For the MaxConner could (plausibly) claim that it's a necessary truth that either every object is topologically open or else every object is topologically closed.³³

The MaxConner who takes this line, like the MaxConner who makes the first response to the argument mentioned above, will be able to insist that the conditional contained in Premise (2) has a necessarily false antecedent, and so is a necessarily true conditional, which in turn makes the premise itself false.

As I said, this strikes me as a promising response to The Argument from Maximally Continuous People in Perfect Contact. But I am not comfortable hitching my view of simples, which I take to be straightforward and intuitive, to a view about the topology of physical objects that I find somewhat arcane and about which I don't have any clear intuitions. I suppose that if I became convinced that the third response to the argument that I am about to propose fails for some reason, then I would be willing to fall back on this second response, as the only way to preserve my intuitions in favor of MaxCon. But in the meantime, I prefer to keep my topological options open.

The third response to The Argument from Maximally Continuous People in Perfect Contact – the one that I endorse – is somewhat complicated. The short version of the response is that I think there is a kind of ambiguity in a sentence – 'Juliet goes out of existence' – that appears as a component of both Premise (1) and Premise (2). (And similarly with the corresponding sentence

³³ A MaxConner who makes this claim will have to respond to the arguments contained in Hudson (2002).

about Romeo.) If the ambiguity is resolved in one of the two possible ways, then Premise (1) of the argument is true, but Premise (2) is false. If the ambiguity is resolved in the other possible way, then Premise (2) is true but Premise (1) is false. In order to explain all of this, however, I will have to go through a short digression on the topic of how we refer to things and stuff.

4 How We Refer to Things and Stuff

Recall The Stuff Ontology that was spelled out in Section 2 above. According to that view, the physical world is fundamentally a world of stuff, without any things. According to the Stuff Ontologist, then, we never refer to things, for the simple reason that there aren't any. What do we refer to, then? Well, clearly the answer has to be that we refer to stuff. But there is a potential problem with this answer. Portions of stuff do not in general have the right features to play the role of what our names and referring expressions pick out. The reason for this has to do with the principles of individuation and identity that will govern portions of stuff. For example, there are theses (5) (the Principle of Universal Fusions as applied to portions of stuff) and (8) (Mereological Essentialism as applied to portions of stuff) from Section 2 above. Given these theses, a particular portion of stuff will come into existence as soon as all of its sub-portions exist, and will last for just as long as all of those sub-portions continue to exist. Considering the way the actual laws of nature apparently work, this means that most portions of stuff will last for a tremendously long time – much longer than we tend to think the referents of our names and other referring expressions last. More importantly, the above-mentioned principles of individuation and identity, together with certain contingent facts about our world, entail that the vast majority of portions of stuff are widely scattered throughout their entire careers. Very few portions of stuff ever manage to be arranged in anything like a pattern that would be recognizable to us. And even when a portion of stuff does manage to be temporarily arranged in some recognizable way – such as the portion of stuff that constitutes my body right now, which is at this instant arranged in a human-body way – that arrangement rarely lasts for more than an instant.

Because portions of stuff tend to be so long-lasting and so widely scattered, portions of stuff will almost never have the properties that we take the referents of our names and referring expressions to have. For example, there is no portion of stuff that (i) came into existence at the time we think the

Taj Mahal came into existence and in the place where we think it was created, (ii) occupies the region that we take the Taj to be occupying at each moment of its existence, and (iii) will go out of existence at the time when it would be natural to think the Taj goes out of existence. So there is no portion of stuff that could plausibly be taken to be the bearer of the name 'the Taj Mahal'. And if The Stuff Ontology is correct, then nothing else exists besides portions of stuff. So what does the name 'the Taj Mahal' refer to? What do names and referring expressions in general refer to?

Here is brief sketch of how I think the Stuff Ontologist should answer this question. When a name is first introduced, it is introduced in connection with an episode of some sortal property, such as the property of being a building. (By 'an episode of ϕ ' I mean an instantiation of ϕ that lasts for some period of time.) Which episode of which sortal is invoked in a given case of name-introduction will depend on various features of the context, and may at first be less than completely determined. But sooner or later, the name comes to be correlated with an episode of some sortal, with the correlation working as follows. For any time at which the name has a referent, the referent of the name at that time is whatever portion of stuff happens to be involved in the episode in question at that time (i.e., whatever portion of stuff is such that the relevant episode consists at that time of that portion's instantiating the property in question). Thus, for example, if someone says "Let's call this dog Shün," while pointing at a particular dog, then a certain episode of dogginess is thereby invoked and attached to the name 'Shün'. From then on (for as long as the name continues to have that meaning), the name refers, at any given time, to whatever portion of stuff is involved in that episode of dogginess at that time. In this way, which portion of stuff the name refers to will change over time, but the name will always refer to a portion of stuff that exemplifies dogginess and that constitutes a dog. And similarly for other referring expressions.

(I realize that this is barely a sketch of an account of the semantics of names and referring expressions, and I also realize that the sketch raises a great deal of further questions. My point for now is just that the Stuff Ontologist is going to have to say something along these lines, given the absence of things from her ontology and the unsuitability of any one portion of stuff to be the referent of a referring expression over any period of time.)

A typical proponent of The Mixed Ontology will have other resources, of course, and so will be able, at least in principle, to give a more standard

account of reference, according to which names typically refer to persisting things. But I think that anyone who believes in the possibility of extended simples, including a Mixed Ontologist like myself, must say something about names and reference that is similar to the view I have just sketched out. The only difference will be that the Mixed Ontologist who allows for the possibility of extended simples need not say that names never refer to things. Which brings me to what I want to say as a MaxConner about names. I think that names refer to both things and portions of stuff, according to the following three principles. First, names are always introduced in connection with episodes of properties. (Sometimes which episode is invoked when a name is first introduced will be made explicit by the introducer, and other times it will be implicitly determined by features of the relevant context.) Second, for any time at which a name refers to a thing, the thing picked out by the name at that time is whatever thing is such that the relevant episode involves that thing's instantiating the property in question at that time. And third, for any time at which a name refers to a portion of stuff, the portion of stuff picked out by the name at that time is whatever portion of stuff is such that the relevant episode involves that portion's instantiating the property in question at that time.

Are names going to be ambiguous on this view? Not in the ordinary sense of 'ambiguous' (having different possible referents). But they will be ambiguous in this sense: many names will have two distinct – although intimately related – actual referents at a given time. One of them will be a thing and the other will be some stuff.

Similarly with personal pronouns. When I utter the word 'I' on this account, my utterance picks out both a thing and a portion of stuff. Each referent has the property of being a person; or, in order to avoid the appearance of treating the stuff in question as a thing, we can say that each referent is personable, i.e., exemplifies the property of personhood.

The reader may wonder at this point: how many people are in my chair as I type these words? Well, we all know that the correct answer is one. But that tells us more about our rules for counting than it does about any deep metaphysical matter. Our rule is this: when we're counting ϕ 's, and there is a thing that is ϕ as well as some stuff that constitutes that thing and that is also ϕ , we count that thing/stuff pair as a single ϕ .

Here is how all of this bears on Romeo and Juliet. At t_1 in The Perfect Contact Scenario, the name 'Juliet' refers to both a thing and some stuff. Then

when M1 and M2 become connected, 'Juliet' no longer refers to any thing (since the thing it used to refer to no longer exists, and the new thing that is constituted by M3 is not a person), but it still refers to some stuff. The portion of stuff that 'Juliet' refers to at t2 is every bit as personable as was the thing referred to by 'Juliet' at t1, because in fact the episode of personhood that was going on in Juliet's vicinity at t1 continues to go on at t2, even though it does not then involve any thing as its instantiator.

Thus there is an important sense in which 'Juliet goes out of existence' is true if The Perfect Contact Scenario occurs.³⁴ For the unique thing that is a referent of the name 'Juliet' goes out of existence in that case.

If we understand the sentence 'Juliet goes out of existence' in this way, then Premise (1) of The Argument from Maximally Continuous People in Perfect Contact will be true. After all, MaxCon does entail that if The Perfect Contact Scenario were to occur, then the things referred to by the names 'Romeo' and 'Juliet' would go out of existence. But if we understand the sentence 'Juliet goes out of existence' in this way, then Premise (2) of The Argument from Maximally Continuous People in Perfect Contact will be false. For it will be the case (according to we MaxConnors, anyway) that the things referred to by the names 'Romeo' and 'Juliet' both go out of existence if The Perfect Contact Scenario occurs.

Meanwhile, there's also an important sense in which 'Juliet goes out of existence' is false even if The Perfect Contact Scenario occurs. For the other referent of 'Juliet' would continue to exist (and would continue to exemplify personhood) even if M1 and M2 came into contact. I.e., even if The Perfect Contact Scenario occurred, there would continue to be some stuff that is the referent of 'Juliet'. If we understand the sentence 'Juliet goes out of existence' in this way, then Premise (2) of The Argument from Maximally Continuous People in Perfect Contact will be true. But if we understand the sentence 'Juliet goes out of existence' in this way, then Premise (1) of the argument will be false. For MaxCon does not entail that if The Perfect Contact Scenario were to occur, then the stuff that is Juliet would go out of existence. Nor does MaxCon entail that if the scenario were to occur then the stuff that is Romeo would go out of existence.

³⁴ And similarly with the sentence 'Romeo goes out of existence'. (In what follows I will no longer continue to mention that what I say about 'Juliet goes out of existence' also applies to the corresponding sentence about Romeo.)

The upshot is that whichever way we choose to understand the sentences ‘Juliet goes out of existence’ and ‘Romeo goes out of existence’, The Argument from Maximally Continuous People in Perfect Contact will have a false premise.

I anticipate the following response by a proponent of The Argument from Maximally Continuous People in Perfect Contact. “The sense of ‘Juliet goes out of existence’ that I had in mind all along is (of course) the first one you considered – the sense that involves the unique thing that is the referent of ‘Juliet’ going out of existence. And I am not at all convinced by your claim that Juliet-the-thing does indeed go out of existence if the scenario occurs. I think that your rejection of Premise (2) of the argument (when the sentence in question is taken this way) is wildly implausible. How can you blithely say that Juliet-the-thing will go out of existence in the scenario? I mean, put yourself in Juliet’s shoes. How would you like it if you knew that the very thing that is you was about to go out of existence as a result of touching your beloved?”

My reply is that Juliet need not worry. For while it is true that the thing that is Juliet will go out of existence, it is also true that the stuff that is Juliet will continue to exist. Not only that, but that stuff will continue to support all of the properties – being alive, consciousness, being a person, loving Romeo – that she cares about having. And it is also true that she – Juliet! – will continue to exist, to be alive, to be conscious, to be a person, and to love her Romeo just as much as ever. Being a thing that goes out of existence is not, as it turns out, the worst thing that can happen to a person.³⁵

³⁵ I’m grateful to Andrew Egan, Hud Hudson, Shieva Kleinschmidt, and Joshua T. Spencer for helpful comments on an earlier draft of this paper.

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