

# Persistence and a New Problem of the Many

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One winter's Saturday Clarence wakes up. He realises he has left his umbrella at work. The office is locked, and he can't get in. Being one of those people who punish themselves for their mistakes, he can't bring himself to buy a replacement. He has an engagement six kilometres down the road and starts wondering whether it will rain. Normally, this would not be a problem, but his motor vehicle has broken down because he forgot to have it serviced. And of course, he blames himself for this mistake, so it is only natural that he can't bring himself to hire a cab or take a bus. He really should hope that it rains and that he gets drenched on the way to his engagement, but he is only human after all, and a small part of him hopes that it is a sunny day.<sup>1</sup>

He draws back the curtains and observes a beautiful blue sky sullied only by the presence of one medium-sized dirty grey cloud. It looks like it is not going to rain after all. But he remembers that he has been reading about Peter Unger's Problem of the Many (in his spare time). After thinking about Unger's problem for a moment (Unger, 1980), he amuses himself by constructing a sophisticated argument to the conclusion that it will probably rain after all. Clouds are collections of tiny water particles. At the margins of the cloud, the concentration of water particles decreases gradually. Thus, there seem to be many equally good ways of marking the boundary of the cloud. Depending on how the boundary is drawn, various peripheral water particles will or will not count as parts of the cloud. Thus, it would appear that there are many collections of water particles with equal claim to be the cloud; our concept of cloudhood is not precise enough to adjudicate in favour of one collection over the others. Since our notion of cloudhood doesn't decide the issue, we ought to say that there are many clouds where we thought there was just one. But if there are many dark clouds in the sky, then the likelihood of rain is high. So it will probably rain.

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<sup>1</sup>Some people think Clarence a rather peculiar fellow.

Clarence smiles because he knows rain is unlikely. For some perverse reason known only to himself, he has been reading about what philosophers say regarding such things. He knows that quite a lot of solutions have been proposed which would license the obvious conclusion that it will not rain. He mentally rehearses a few of these. Perhaps there is just one cloud but it has vague boundaries. Perhaps there is just one cloud that has precise but unknowable boundaries. Perhaps there are many clouds but this admission is harmless since they almost coincide mereologically and we can approximate by saying that there is just one cloud. Surely one of these solutions, or perhaps one of the others, is on the right track. So there is no need to worry about getting wet today.

Unger's Problem of the Many is generated by considerations surrounding vagueness. The problem is that ordinary objects seem to have borderline parts. Take the cloud, for example. There are particles for which it at least *seems* indeterminate whether they are parts of the cloud. I will present a new problem of the many, which arises from considerations related to persistence. This problem does not obviously centre around questions of indeterminate parthood. And, as I will argue, the new problem is resistant to the usual solutions offered to the standard problem.

## 1 The Problem for Perdurantism

I begin by outlining the new variant in terms of perdurance. There are pragmatic reasons for beginning with perdurance, as the new problem falls out of perdurance more readily than than it does out of endurance. The widely accepted account of perdurance says that persisting things persist in virtue of their having temporal parts.<sup>2</sup> Thus, persistence on this view is analogous to 'normal' cases of spatial extension.<sup>3</sup> A thing is extended through space in virtue of its having different parts at different places. Often, perdurantists claim that persisting things have instantaneous temporal parts, otherwise known as timeslices. For ease of exposition I will assume that perduring things have instantaneous temporal parts. However, nothing important hinges on this assumption.

The usual statement of the Problem of the Many in terms of perdurance runs as follows. Consider Clarence. Clarence's temporal boundaries appear to be vague, and so there are numerous entities which seem to be equally good candidates to

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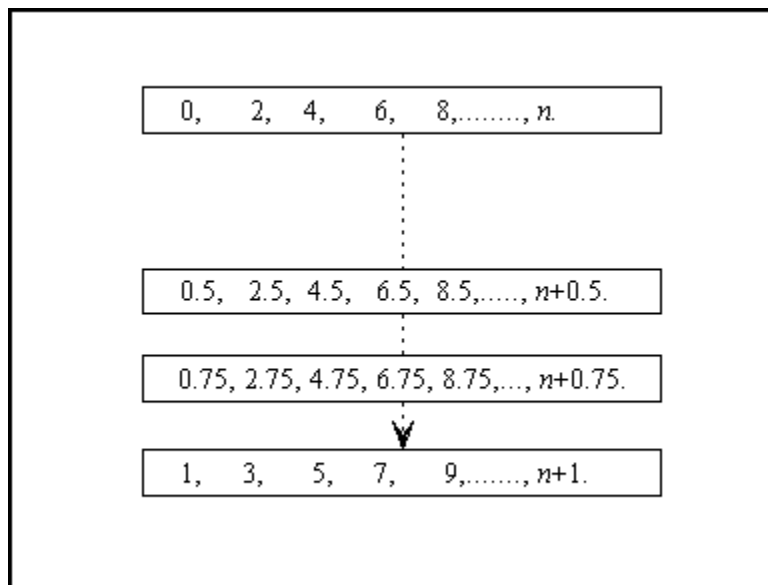
<sup>2</sup>Though there may be bizarre epistemically possible cases of perdurance which do not involve temporal parthood. See Merricks (1999, p. 431). For other discussions of the endurance/perdurance distinction, see Markosian (1994), Sider (1997) and also my (McKinnon, forthcoming 2002a).

<sup>3</sup>'Deviant' cases would be mereological simples with spatial extension.

be Clarence. These candidates have almost all their parts in common. They differ merelogically only at their temporal peripheries. Some have earlier first moments than others (and hence, include extra timeslices), and some have later last moments than others (and hence, include extra timeslices) (Lewis, 1993, p. 24).

Now, consider Clarence again. To differentiate the new problem from the standard one, and in the interests of expository ease, we can simplify matters by pretending that Clarence's temporal boundaries are perfectly precise. The first step is to notice that there is a way of constructing from Clarence's timeslices quite a lot of entities that are intrinsically very much like Clarence. And each of these entities is a proper part of Clarence, but no two of them mereologically overlap. In fact, if time is continuous then it can be shown that there are infinitely many such entities.

Assume first that continuity is modelled by the real number system. It will also simplify the exposition a little if we assume that Clarence has a first and last timeslice (that is, the temporal interval that marks his timespan is closed at both ends), though, again, nothing significant turns on this. Next, observe the following diagram:



The diagram represents each of Clarence's timeslices, from his first, represented by 0, to his last, represented by  $n + 1$ . Each horizontal line on the diagram represents a sum of some of his timeslices. Each line starts with a real number from 0 to 1 inclusive and proceeds in increments of 2. Let the increments of

2 represent a really brief interval of time, say,  $10^{-10^{1000000000000000000}}$  seconds (the selected interval may be arbitrarily brief). Thus, there are temporal gaps between each of the timeslices represented by a line, but these gaps are unfathomably brief. And there is a line for every number between 0 and 1 (though, naturally, not every line is marked on the diagram). This gives us continuum-many sums.

Now, consider the sum represented by the line that starts with 0 (the 0-sum). We begin by comparing the slice represented by 0 (the 0-slice) with the slice represented by 2 (the 2-slice). Although numerically distinct, the temporal gap between the two is so small that the qualitative difference between the two is vanishingly small. Similarly, the qualitative difference between the 2-slice and the 4-slice is vanishingly small, and so on. Change for the 0-sum is discontinuous, but not a bad approximation of continuity.<sup>4</sup> In terms of the timescales that matter for personhood, the differences in terms of continuity between Clarence and the 0-sum are negligible. If the world had been temporally discontinuous, then Clarence might have been something very much like the 0-sum.

The next thing to notice is that these considerations apply for any  $n$  from 0 to 1. If the world had been temporally discontinuous, then Clarence might have been something very much like the  $n$ -sum. So the actual world contains, in addition to Clarence, infinitely many sums whose qualitative histories approximate Clarence's very closely. Notice, moreover, that none of these Clarence-like entities have parts in common with any of the others; each Clarence-like entity is wholly distinct from any other.

This surfeit of Clarence-like entities poses a new problem of the many. The problem is this: where we thought there was one person (i.e. the spatiotemporal path occupied by Clarence) there turns out to be continuum-many people. The remainder of the paper involves the realisation of two key objectives. The first is to convince the reader that the case I have just described counts as a genuine problem of the many. The second is to show that this new problem is more stubborn and difficult to shift than are standard cases of the problem of the many. Let us now move on to the first task.

## 2 A Genuine Problem of the Many?

I suspect that some readers might at this stage be unpersuaded that the case of Clarence and the Clarence-like sums embodies a genuine problem of the many.

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<sup>4</sup>Consider that the PAL and NTSC telecast standards offer respective framerates of 25 and 30 frames per second, yet each affords a *reasonable* approximation of perceptual continuity. The approximation of continuity between slices of the 0-sum is *staggeringly* closer.

The Problem of the Many arises when it appears that there are various equally suitable candidates to be some thing, a tree, for instance. It seems that our notion of treehood does not serve to privilege any of the candidates, so we must either say that there are many trees where we thought that there was only one burgeoning oak, or that there are no trees where we thought there was one. However, so the thought goes, there is an important principle which governs both our application of ‘tree’ and ‘person’. This principle does not ensure that there is only one eligible candidate to be the tree, but it *does* ensure that there is just one eligible candidate to be Clarence.

According to this principle most kind-notions are maximal. This means that even if a thing would otherwise count as a tree/person, it is not a tree/person if it is a large proper part of something that is a tree/person. Here is how Theodore Sider describes the Maximality Principle:

Ordinary sortal predicates typically express maximal properties, where a property, *F*, is maximal, roughly, if large parts of an *F* are not themselves *F*s. A large part of a house—all of the house save a window, say—does not itself count as a house. A large part of a cat—all of it save the tail, say—does not itself count as a cat. Otherwise in the vicinity of every house there would be a multitude of houses; in the vicinity of every cat there would be a multitude of cats. The linguistic conventions governing ‘cat’ and ‘house’ do not count large undetached parts of cats and houses as cats and houses; therefore the properties these predicates express are maximal properties. Maximality is a kind of border-sensitivity (Sider, forthcoming 2002).

The Maximality Principle does not get around the standard problem of the many for the tree, since there are numerous pairs of tree-candidates that differ by a particle or two and yet neither is a proper part of the other. However, the case of Clarence and the Clarence-sums is not like this. Each of the Clarence-sums is a proper part of Clarence. Hence, none of the Clarence-sums counts as a person, since each is a proper part of a person, namely, Clarence. And so, the argument goes, there is nothing about the case I have presented which suggests that the perdurantist needs to say strange things like ‘There are many Clarences where we thought there was only one.’

Despite appearances, I doubt that the Maximality Principle shows that the new problem of the many Clarences is a mere ‘problem’. First, observe that Sider is careful enough to frame the Maximality Principle in such a way that it rules out candidates for *F*-hood only if those candidates are *large* proper parts of an *F*. Without this restriction the principle looks *prima facie* implausible. For

instance, imagine a supercomputer made up of hundreds of desktop computers connected in parallel. In the absence of the restriction the desktop units would not count as computers, which seems rather absurd. However, it may be that the restriction allows the Clarence-sums to slip through the net. After all, Clarence has uncountably many time-slices, whereas each Clarence-sum has only countably many. So perhaps none of the Clarence-sums really count as large parts of Clarence. It may be, however, that some unobjectionable tinkering with the Maximality Principle would remove this problem. Or perhaps a pertinent sense can be found according to which the Clarence-sums do in fact count as large parts of Clarence. I think the problem is significant, but I am not yet convinced that it is insuperable.

Better progress can be made by noting that in addition to personhood, we also have personhood\*. Personhood\* is just like personhood except that it drops the maximality requirement. Thus, persons\* fulfill all of the qualitative requirements for personhood except for the extrinsic matters pertaining to maximality. What is the significance of this distinction between persons and persons\*? As Sider puts it:

Why do we exclude objects from the ranks of the genuine rocks and conscious beings on the basis of technicalities, merely relational shortcomings? The answer lies in our practices of counting and reference. It is convenient to have manageable counts of rocks and conscious beings. Moreover, since reference, whether by names, demonstratives or descriptions, occurs frequently, if not always, with the aid of applications of sortal terms like ‘conscious being’ and ‘rock’, unique reference requires that these terms express maximal, extrinsic, properties (Sider, forthcoming 2002).

Perhaps, then, the distinction between persons and persons\* serves useful practical purposes. But it does not seem to be a distinction of metaphysical significance; it is primarily an exercise in philosophical bookkeeping.

Thus, the conclusion that there are many persons\* (the Clarence-sums) in addition to Clarence remains a disturbing one. Moreover, the way that Sider attempts to alleviate residual concern about the multitude of persons\* does not apply in the case of Clarence. Sider considers the case of Martha. Martha has an undetached part, Martha-minus, which overlaps all of Martha except her right index finger. Martha is a person, but Martha-minus, owing to the maximality constraint, is merely a person\*. Moreover, roughly where Martha is, there are many, many persons\* (e.g. Martha-minus-left-index-finger, Martha-minus-left-big-toe, etc.). As Sider explains:

Their near total overlap ensures that they do not ‘crowd each other out’ (mentally or physically), that their conscious\* ‘experiences’ are not objectionably distinct or independent, and so on (Sider, forthcoming 2002).

This seems right. Unfortunately it does not address the case of the Clarence-sums, since each Clarence-sum is mereologically disjoint from each of the others.

Here is a further reason to worry about any attempt to get around the new problem of the many Clarences by appealing to the Maximality Principle. There is an epistemic problem which indicates that the Clarence-like sums are more significant than that response suggests. Each of the Clarence-sums has its own stream of consciousness<sup>5</sup>, though these streams are phenomenally identical. And Clarence’s stream of consciousness is phenomenally identical to the stream of consciousness of each of the Clarence-sums. Clarence thinks he’s a person and each of the Clarence-sums thinks that it is a person. If the maximality principle holds, then only one of them is right. And in that case, none of the Clarence-sums ought to believe that they are a person, since there are infinitely many Clarence-sums and only one Clarence. But neither should Clarence himself believe that he is a person. Since his stream of consciousness is qualitatively identical to the streams of consciousness of the Clarence-sums, he has no way of telling that he is in fact Clarence and not one of the Clarence-sums. And since there are so many Clarence-sums and only one Clarence, he too ought to believe that he is a Clarence-sum, and hence, not a person.

This, then, confronts perdurantists with a dilemma. They could retain the concept of personhood while accepting that no-one is warranted to believe that they are persons. This is certainly a bizarre option. The other option is to accept that the global lack of warrant renders the concept of personhood a pointless one, which ought to be replaced by a similar concept that does not include the maximality constraint. This second option would give us a replacement concept for personhood, and the word ‘person’ would now denote this concept.

This option at least gives us a useful notion of personhood, and I shall be assuming from this point that this is the best option for the perdurantist. Yet this approach leaves us with a problem of the many. For, all things considered, we would still prefer a notion of personhood that didn’t imply that there are so many more people than we would pre-reflectively think there are.

I will finish this section by considering a couple of other reasons for doubting that the various Clarence-sums pose a genuine problem of the many. The first worry is that the existence of each Clarence-sum depends on the existence of

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<sup>5</sup>Or consciousness\* if you insist.

mereologically distinct entities (namely, the other Clarence-sums and Clarence himself) in an unacceptable way. The worry is that this dependence makes the Clarence-sums' various attributes extrinsic whereas these ought to be intrinsic, and that this is enough to ensure that the Clarence-sums are not persons. This is not a convincing objection. The kind of intrinsic/extrinsic distinction being invoked here is a nomological one. And in that sense, all of Clarence's attributes are extrinsic as well, since they depend on Clarence's existence, which in turn depends on the natural laws which obtain and his surroundings (for instance, that he is not in the vicinity of a massive gravitational field).

A related concern focuses on the persistence conditions for persons. There are many who claim that it is at least a necessary condition of a persisting thing's being a person that its various temporal stages exhibit some form of continuity. What sort of continuity is said to be required varies from theorist to theorist; usually it is psychological continuity, or some variant of physical continuity. There is also a further question that sometimes arises about the nature of the causal basis for the appropriate continuity. Will any sort of causal basis do? Or must the basis be a reliable transmitter of the continuity? Or, stronger still, must the basis be the kind of basis that obtains in normal cases of the appropriate continuity?<sup>6</sup> We can ask whether the causal basis of the appropriate sort of continuity exhibited by the Clarence-sums is of the right kind. If it is not of the right kind, then none of the Clarence-sums 'have what it takes' for personhood.

I do not want to discuss here the question of which type of causal basis is the right one. Instead, I will argue that however it turns out, the Clarence-sums are still going to count as persons. Take first the claim that any sort of causal basis will do. The Clarence-sums clearly satisfy this condition, since each Clarence-sum's adjacent time slices are causally connected.

Are the causal connections reliable ones? The mechanism which preserves continuity involves those mediatory slices of Clarence which are not part of the Clarence-sum in question. To answer the question of whether this mechanism is reliable, we need only to look at counterfactual situations where Clarence's life goes a little differently. It is easy enough to see that if Clarence's life is altered in certain ways, the Clarence-sums' lives are altered accordingly.

Are the connections normal? This depends on what sort of things we antecedently consider to be persons. If we consider only Clarence to be a person then the connections are not normal. The connections which mediate continuity

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<sup>6</sup>See (Parfit, 1984, pp. 207-287), (Garrett, 1998, Ch. 3) and McKinnon & Bigelow (2001) for discussions of these issues. It has occasionally been argued that no inter-stage causal connections of any kind are required. See Kolak & Martin (1987). For a discussion of this view see Matthews (2000).



in the case of Clarence are not mediated by other things which do not mereologically overlap Clarence. However, the connections which preserve continuity in the case of a Clarence-sum *are* mediated by the parts of other things (that is, other Clarence-sums). As I have already noted, I think we have good reasons to count the Clarence sums as persons. However, even if we think that they are only persons\* (and remember, I have argued that in this case a multitude of persons\* is problematic enough) then the connections are going to count as normal for persons\*.

Here is one last consideration that might be advanced in favour of the view that the new problem is not genuine. The claim to be considered is that I have made errant assumptions about composition. In fact (so the suggestion goes) composition is restricted so that temporally gappy entities are excluded. This means that for any persisting  $x$ ,  $x$  has a part located at every instant between  $x$ 's first and last instant. This has the consequence that there are no Clarence-sums, since the putative Clarence-sums are all temporally gappy. This looks to be a promising manoeuvre, and yet it is unmotivated. The ontological backdrop to perdurance is a view of time according to which past, present and future entities exist. But any motivation for banning gappy entities comes from a quite different view of time, presentism. Presentists say that present things exist, but that nothing past or future exists. In the context of presentism, discomfort about temporally gappy entities may arise because such entities would be entities that first cease to exist and then return to existence. I doubt that there are compelling reasons for presentists to regard this as impossible. But, certainly, if past, present, and future entities all exist then there is no reason to think of temporally gappy entities as going in and out of existence.<sup>7</sup> So there is no independent motivation for a restriction on composition that bans gappy entities.

Having urged that the case I present is genuinely a problem of the many, I will next address the question of whether this new problem is one for perdurantists alone.

### 3 Endurance

Enduring things are commonly characterised as persisting things that are wholly located at every time at which they exist.<sup>8</sup> This is commonly held to entail that

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<sup>7</sup>Except in a rather loose sense where talk of going in and out of existence is meant to stand for temporally gappy location.

<sup>8</sup>See (Sider, 1997, p. 209) for a telling criticism of this characterisation.

enduring things lack temporal parts.<sup>9</sup> I will describe two ways in which we might try to set up a variant of the new problem for endurance. The first is intended to be analogous to the formulation used for perdurance.

Suppose Clarence is an endurer, and therefore, has no temporal parts. Nevertheless, he is located at every instant from his first moment to his last. How do we come by analogues of the various Clarence-sums? We obviously cannot achieve this by aggregating temporal slices of Clarence; *qua* endurer, he has none. We just have to assume that there are other temporally gappy enduring Clarence-like entities. And we have to further stipulate that each enduring Clarence-like entity is such that it is located at the instants represented by one of the lines on the diagram presented earlier.

Here is where problems set in. Consider a putative Clarence-like endurer, Al. Now pick one of the times at which Clarence and Al are both located, *t*. Clarence and Al are both located at *t*, but not in the obviously benign sense that both have a (temporal) part at *t*. Clarence and Al are both located at precisely the same place at *t simpliciter* (I will use the now reasonably standard term ‘co-location’ to stand for this circumstance). It is questionable whether this circumstance is coherently describable.<sup>10</sup>

First, it is almost universally held that two entities of the same kind cannot be located *simpliciter* at the same time and place.<sup>11</sup> If this is correct, then it is going to be exceedingly difficult to state a straightforward analogue of my problem for perdurance in endurantist terms.

There are further problems. Consider, for instance, how it can be that Clarence and Al are co-located. This fact requires an explanation. And there are related matters that also need to be explained. For instance, if Clarence and Al each weigh sixty kilograms, why, when they are both standing on a set of scales, don’t

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<sup>9</sup>For a dissenting voice, see (Sider, 1997, p. 211). Although I agree with Sider that the characterisation of endurance in terms of being wholly present is flawed, I do hold that it is a constraint on an acceptable account of endurance that enduring things lack temporal parts (McKinnon, forthcoming 2002a).

<sup>10</sup>Notice that there is less reason to think that Al is not a person than there was for thinking that the Clarence-sums are not people. The primary rationale for thinking that the Clarence-sums are not people flowed from the maximality principle. However, the maximality principle does not apply in the case of Clarence and Al, since any time at which Clarence and Al are both located is such that Clarence and Al have the same parts relative to that time. And since (temporary) parthood is irreducibly temporally relative for endurantists, this means that there is no way of claiming that Al is a proper part of Clarence. Presentist endurantists may not quite agree with this way of putting things, since they deny that parthood ever involves irreducible relations to times. However, they can make an analogous point in their canonical vocabulary merely by noting that it is never the case that Al is a proper part (*simpliciter*) of Clarence.

<sup>11</sup>Two things of the same kind might be *partially* located at the same time and place.

the scales register a hundred and twenty kilograms? One way of explaining this would be to claim that Clarence and Al both have exactly the same parts. But this contravenes a highly plausible mereological principle, namely, that if  $x$  and  $y$  have exactly the same parts then  $x$  is identical with  $y$ .

Another way of attempting to furnish the required explanations involves invoking the constitution/identity distinction (and note that not all endurantists find this distinction appealing). Leave Al out of the picture for the moment. Those who endorse the distinction say that Clarence is co-located at  $t$  with a hunk of matter. Questions like ‘How can Clarence and the hunk be co-located?’ and ‘Why don’t scales read a hundred and twenty kilograms when Clarence gets on?’ are answered by invoking the distinction. It is true that Clarence and the hunk are different entities. But Clarence is constituted by the hunk. As such, he has certain physical properties such as his location and mass derivatively in virtue of his being constituted by the hunk. It is the special nature of the constitution relation, and the fact that different kinds have different non-derivative features from those of others that answers the questions.<sup>12</sup>

In order to answer the questions of how it is that Clarence and Al can be co-located and how the scale reads only sixty kilograms, we need to say that Clarence and Al are both constituted by the same hunk of matter. Such multiple constitution presents its own difficulties, however. First of all, there may be concerns about supervenience. Plausibly, facts about how many persons there are ought to supervene on facts about hunks of matter. And yet if we allow that Clarence and Al can both be constituted at  $t$  by the same matter, there are worlds which are duplicates of the Clarence and Al world in terms of the distribution of matter, but which contain only Clarence.

One response to this might be to say that just as Clarence and Al are co-located at  $t$ , there are two hunks of matter that are also co-located at  $t$ . One of these hunks constitutes Clarence at  $t$  while the other constitutes Al at  $t$ . Naturally enough, the problems resurface at the level of the hunks of matter. For we shall want to know how it is that the two hunks of matter come to be co-located, and how it is that the scales only read sixty kilograms when both hunks are weighed. But then we face a dilemma. Either the regress bottoms out at some level or it doesn’t. If it does bottom out, then we have one foundational entity located where the hunks are. But then we have the supervenience problem again. How many hunks there are ought to supervene on how many foundational entities there are. On the other hand, if the regress does not bottom out, then there is no satisfactory answer to the co-location and weight questions. In short, the current attempt to furnish an

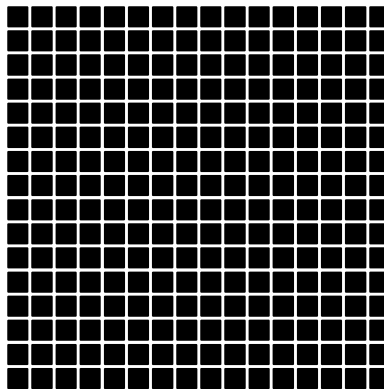
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<sup>12</sup>This is something of an oversimplification. See Rea (1997) and Sider (1999) for further discussion.

endurantist account of the new problem is riven with difficulties.

Endurantists should not yet be too pleased. There is a different way to construct the problem that does seem to gel with endurance. At any moment, Clarence has lots of parts. Consider just the smallest known particles that make up Clarence. There are around  $10^{28}$  of these. That comes to over a billion particles per second for every second since the Big Bang (some 20 billion years).<sup>13</sup> Even at the molecular level, Clarence has an astounding number of constituents; certainly enough molecules for us to contemplate some quite interesting things.

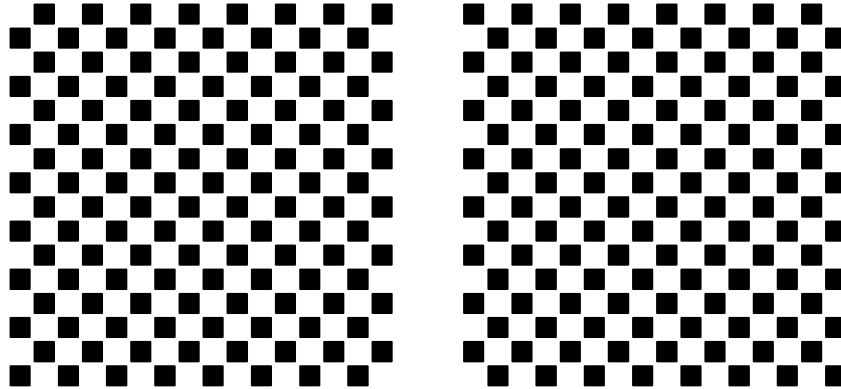
To get an idea of what I am about to propose, imagine a square made up of tiles each with an area of two square centimetres. The square itself has an area of one hundred square metres. Thus, the square is made up of twenty-five million tiles. Pictured below is a very small portion of the square.



Now, by judiciously removing twelve and a half million tiles from the square, and by judiciously arranging those tiles elsewhere, we can make a pair of squares, each having an area of a hundred square metres. Pictured below are very small portions of the pair of squares.

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<sup>13</sup>I owe this illuminating illustration to (Hudson, 2001, p. 13).



Thus, what we now have are two squares made from just the material that composed our original square. These squares are a bit more spatially gappy than the original square, but judged from a suitable distance they appear qualitatively identical to the original. The important thing to notice here is that the new squares were already embedded in the original square before we even touched it.<sup>14</sup>

I am going to suggest that we can treat the case of Clarence's spatial parts in a similar way. Remember that Clarence has many, many more molecular constituents than the original square. I suggest that there are going to be ways of partitioning those constituents so that we uncover many non-overlapping Clarence-like entities which appear to be good candidates for personhood. Suppose that, for every  $t$  in Clarence's timespan we partition each of Clarence's molecular parts at  $t$  into  $n$  such partitions. Now consider every way of combining these partitions so that we get a sequence of ordered pairs of partitions and times such that to each  $t$  in Clarence's timespan, one partition is assigned. The set of these sequences is the set of candidates to be the mereological histories of enduring Clarence-like persons.

How many of these sequences will count as the mereological histories of persons is going to depend on various auxiliary views about personhood. For instance, many of the sequences indicate abrupt mereological discontinuities. An example might be a sequence that assigns the same set of molecular parts to all times in the interval  $t_1$  to  $t_2$  except for  $t_2$ . An entirely different set of molecular parts is assigned to  $t_2$ . Many people are going to think that mereological discontinuity of this magnitude precludes this sequence from expressing the history of one enduring person who is located at all times in Clarence's timespan.

Although many sequences will not get past such culling procedures, many will. The new variant of the Problem of the Many applies not only to perdurers, but also

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<sup>14</sup>Or, to put things a little less tendentiously, the original square had two proper parts, each with the same intrinsic configuration as the new squares.

to enduring things. Next, I will consider how some of the more popular treatments of the standard Problem of the Many cope with the new problem.

## 4 Standard Treatments and the New Problem

One solution to the standard problem is to agree that strictly speaking, there are many clouds, for instance, where we thought there was only one, but that the degree to which this is problematic is overstated. In standard cases, the many clouds share almost all of their parts. So we can harmlessly approximate and say that there is just one cloud (Lewis, 1993, pp. 33-4).<sup>15</sup> This solution is not going to help with the new problem, since the Clarence-sums are mereologically disjoint.

Another response which has been favoured in some quarters is supervenionism. A supervenionist semantics is given for terms like ‘person’. We can say that ‘person’ is ambiguous with respect to which things are persons. So, for instance, it is ambiguous with respect to which one of Clarence and the various Clarence-sums counts as a person. The supervenionist approach suggests that we give the semantics for ‘person’ in terms of the various ways that it can be disambiguated, or precisified. One way of disambiguating ‘person’ might say that Clarence is a person and that the Clarence-sums are not. Another way might say that a certain Clarence-sum is a person and that neither Clarence nor any of the other Clarence-sums is a person. The idea is that when we use terms like ‘person’, what we say is true iff it is true according to all the ways of disambiguating the relevant term. Since it is true that on every disambiguation of ‘person’, there is only one person occupying the spatiotemporal region we would under normal circumstances say is occupied by Clarence, it is true that there is only one person located in that region. If the supervenionist approach is a viable one, it seems to show us how to avoid my version of the problem of the many. I have doubts about whether supervenionism gives a satisfying treatment of standard cases of the Problem of the Many (McKinnon, forthcoming 2002b). However, I will put these concerns aside for now. Even if the supervenionist approach is unimpeachable, it does not strike to the heart of the new problem. Perhaps ‘person’ is ambiguous. But ‘person\*’ is not.<sup>16</sup> And, as I argued in Section 2, the fact that the Clarence-sums are mereologically disjoint means that the proliferation of persons\* that they embody is problematic.

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<sup>15</sup>Lewis actually endorses a contextual solution. In some contexts the many-but-almost-one solution is favoured, but in most contexts supervenions are favoured.

<sup>16</sup>Or, at least, it is *much* less ambiguous than the supervenionist treatment takes ‘person’ to be.

Some philosophers claim that the standard problem is solved because only one of the sums which appear to be candidates to be clouds are actually clouds. The fact that none of them *appear* to be privileged is regarded as a consequence of our epistemic limitations (Sorenson, 1998). Again, I have doubts as to whether this approach works for standard problems of the many (McKinnon, forthcoming 2002b). Irrespective of whether these doubts are well-founded, this solution does not generalise satisfactorily to the new problem for the same sort of reason that causes trouble for supervenience. The Clarence-sums are all persons\*, even if none of them are persons.

The last response I will mention suggests that the standard problem is solved by recognising ontological indeterminacy. There is just one cloud, but it is indeterminate whether some particles at its periphery are parts of the cloud.<sup>17</sup> There are a couple of reasons why this response is ineffective in dealing with the new problem. First, I set up the problem by stipulating that Clarence himself never has any questionable parts. Then I noted that there are ways of partitioning those parts so that we get a multitude of Clarence-like entities. There is no problem with this stipulation because, although perhaps there is such a thing as vague parthood, there's no good reason to think that it is a constraint on personhood that persons have vague parts. So, the problem remains untreated in counterfactual situations where persons happen to have precise boundaries.

It is worse than this, however, since this way of setting up the problem was only a matter of convenience. In the perdurantist version of the problem, for example, I could have stipulated that Clarence has vague parts at his temporal peripheries, and then constructed the Clarence-sums in much the same way as I have actually done. We would then have had a multitude of Clarence-sums with vague parts at their temporal peripheries.

The only way in which we could seek to apply the ontological vagueness solution to reach the conclusion that there is just one person (Clarence) rather than many is pretty clearly inadequate. The attempted solution says that Clarence is indefinitely identical with, or indefinitely constituted by, each of the Clarence-sums, and the aggregate of these sums (which we were previously calling Clarence). The problem is that there is no part such that all of these sums have it in common. This means that Clarence has no definite parts. I take it that no one would have expected him to be quite so elusive!

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<sup>17</sup>See, for instance, Tye (1996).

## 5 Scratching Around for a Solution

Perhaps something useful can be done with the Maximality Principle after all. I suggest that we consider placing a maximality constraint not just on kindhood, but on composition. We say that for any set,  $S$ , the members of  $S$  compose something iff (a) there is a kind,  $K$  such that the members of  $S$ , as a plurality, satisfy the usual conditions for  $K$ -hood, and (b) there is no set,  $S^*$ , such that  $S$  is a large proper subset of  $S^*$  and the members of  $S^*$ , as a plurality, satisfy the usual conditions for  $K$ -hood.

This suggestion appears quite drastic. I am unsure how seriously it should be taken, although I do think it deserves some consideration. This version of the maximality constraint is metaphysically robust. It ensures that there are no persons\*. It is, however, likely to prove unappealing to many perdurantists; most perdurantists in the literature regard composition as being unrestricted, often in part because they are suspicious of giving special ontological status to kinds, whether they be ‘natural’ or otherwise. Indeed, there are arguments against endurance based on the vagueness of kind-notions.<sup>18</sup> In addition, the notion of kindhood that features here will need to be quite broad, otherwise it will include hands but not temporal parts of hands. Moreover, if we follow this response, we commit ourselves to regarding composition as extrinsic; whether the members of a given set compose anything is constituted in part by how things are with respect to the members of other sets.

However, the solution may yet be a live option for endurantists and perhaps also for those perdurantists who seek to motivate perdurance by other means than concerns about kinds and vagueness. Still, the solution needs a bit more motivation. At the moment it looks rather *ad hoc*. One way of making the solution a little more attractive is by noting that it coheres with what David Sanford has described as *naive mereology* (‘folk’ or ‘commonsense’ mereology, if you prefer). Naive mereology, as Sanford understands it, denies the existence of arbitrary undetached parts. Sanford remains uncommitted over whether parthood is nontransitive according to naive mereology, but he considers it to be very much an open question (Sanford, 1993, p. 220). Here is an example he uses to present a case for nontransitivity:

For inorganic examples of nontransitivity, I turn to a document of naive mereology known as a parts list. . . Those who use such lists, I suggest, typically take them to be complete, to mention every part. . . According to this Series HK parts list, the N-063 Delta Sprinkler has exactly 41

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<sup>18</sup>See Heller (1990, Ch. 2), Quine (1981, p. 10), Sider (1997). Note, however, that there is nothing about the core metaphysical picture of perdurance which requires such suspicions about kinds (Heller, 1993, pp. 50-3).



parts including 10 screw tokens of three different types. Each screw has a slotted head and a threaded shaft. The screw head is a part of the screw, and the screw is a part of the sprinkler; but the screw head is not a part of the sprinkler (Sanford, 1993, p. 221).

Regardless of whether naive mereological parthood is transitive, the important thing to note in the present context is that it arguably places something like the maximality constraint on composition. For, as the above quotation suggests, naive mereology says that there are sprinklers, screws and screw-heads, but that certain putative non-arbitrary parts of sprinklers are excluded.<sup>19</sup> So it is not only *arbitrary* parts that are ruled out. Consider a particular sprinkler (a nice green one). There is nothing which has all the same parts as the sprinkler but fails to include one atom that is included in the sprinkler.<sup>20</sup> Such a thing is not on the list which Sanford suggests is complete. The maximality constraint on composition clearly excludes such things.

Unfortunately, there are all sorts of issues to resolve at this point. Work on naive mereology is presumably an undertaking in descriptive ontology. *Perhaps* that works slightly in its favour, but there are a number of disputed metaphysical issues which have connections to mereology (e.g. kinds, vagueness, persistence and material constitution). It would be naive in the pejorative sense to expect that whatever small advantage naive mereology gains purely from being a ‘folk’ view bears a great deal of theoretical weight. Moreover, it might turn out that any consistent systematisation of naive mereology ends up looking somewhat less than naive (in the non-pejorative sense). So at this point, the maximality constraint on composition appears to have only a slender thread of motivation. However, as a constraint on *composition* it is a piece of heavy-duty metaphysics. It is in need of substantial support.

There is also a more direct problem with the maximality constraint on composition. Recall that the proposal suggests that if the members of a certain set (considered as a plurality) satisfy the usual conditions for *K*-hood then they compose something, so long as the set in question is not a *large* proper subset of a set whose members jointly satisfy the conditions for *K*-hood. Whether a set

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<sup>19</sup>Non-arbitrary parts of the sprinkler include the screws and whatever other types of things are listed on the inventory. SPRINKLER-MINUS-ONE-ATOM names a putative non-arbitrary part of the sprinkler, since it satisfies the conditions for sprinklerhood. But SPRINKLER-MINUS-ONE-ATOM is excluded because it breaches the maximality requirement.

<sup>20</sup>I use ‘include’ here in order not to be prejudicial over the issue of transitivity. However even if parthood is nontransitive, there must still be a good sense in which sprinklers have atoms as constituents. After all, it is not as if the atom has nothing whatsoever to do with the sprinkler. So there must be transitive quasi-mereological relations. Sanford uses ‘is part of’ (as opposed to ‘is a part of’ for its mereological correlate) to designate one such relation (p. 221).

whose members jointly satisfy the conditions for *K*-hood is a large proper subset of another set whose members jointly satisfy those conditions is going to be quite vague. This suggests that the composition relation is going to be quite vague. And, I think, this means that there is going to be a lot more count-indeterminacy than even those who are partial to ontological vagueness would find comfortable.

## 6 Conclusion

I have outlined a new problem of the many. I have defended its status as a genuine problem of the many and have noted its resistance to solution by standard means. I have also mooted a different solution, while conceding that it is at best rather problematic. Exactly what to make of this situation I leave open for consideration.

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