

Many, but One

ABSTRACT: The problem of the many threatens to show that, in general, there are far more ordinary objects than you might have thought. I present and motivate a solution to this problem using *many-one identity*. According to this solution, the many things that seem to have what it takes to be, say, cats, are collectively identical to a single cat.

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Whether there is a cat on a mat seems to depend on whether some things—chemical atoms, say—are appropriately related to one another, i.e. *arranged catwise*. Whether some things are arranged catwise seems to admit of some leeway, both in the number of things that need to be so arranged and also in the particular relations that they must bear to one another. For instance, consider a fusion¹ of some atoms that is a large proper part of a fusion of atoms that are arranged catwise. Let the former differ from the latter in the following way: the former fusion has all but one of the same atoms as a part as the latter fusion. The parts of both fusions seem to be arranged catwise.² So, it seems that there are at

¹ I need some mereological terminology. I take *parthood* as a primitive relation. And I stipulate the following regarding its behavior: *parthood* is reflexive (for all x , x is a part of itself), anti-symmetric (for all x and y , if x is a part of y and y is a part of x , then x and y are identical), and transitive (for all x , y , and z , if x is a part of y and y is a part of z , then x is a part of z). Something is a *proper part* of another thing iff the first is a part of the second, but they are not identical. Some things *overlap* iff they have a part in common. Some things are *disjoint* iff they do not overlap. Some things *compose* another thing iff they are all parts of it and every part of it overlaps one of them. Something is a *fusion* of some things iff they compose it.

² I have presented the problem in terms of atoms. I don't make any assumptions about the ultimate architecture of matter. Perhaps there are smallest parts of matter. Or perhaps there is *gunk*, i.e. perhaps every part of matter has further parts. Nothing I say turns on any of this.

least two cats where we might have thought that there was just one. Similar reasoning purports to show that there are *far more* than just one. This is an instance of the problem of the many.³

Parallel reasoning threatens to show that, for almost any composite object of kind *K* that admits of leeway in the number of its parts and in the particular relations that they must bear to one another for there to be a *K*, there is never *just* one *K* where there is at least one.⁴ The relevant kinds of objects include the familiar objects of everyday experience, like tables, chairs, cats, and human beings, and also many entities that we believe in on the basis of scientific investigation, like cells.⁵ This is problematic insofar as we take it that it is possible for there is *just* one object of kind *K* where we take there to be one.

In this paper, I defend a solution to the problem of the many according to which, in those cases in which the problem arises, the many candidates for being objects of kind *K* are collectively

³ The problem of the many, as presented here, comes from Unger 1980. Lewis (1999) presents a problem in which it is indeterminate whether certain things are part of a cat. Sometimes this is presented as the problem of the many, or as a version of the problem of the many. It's not obvious that they're the same problem. Unger's problem isn't presented in terms of vagueness, for instance, and Unger (2006: 369–370) argues that the problem arises *even without vagueness*. See Jones (2010) for an extended discussion of whether the problems are the same. I return to discussion of Lewis's problem at the end of §4 in addressing an objection.

⁴ Philosophers disagree about what objects *are*. Some philosophers (e.g. Lewis 1986) hold that objects of familiar kinds are temporally extended; proponents of *perdurantism* will hold, roughly, that there is a cat on the mat when there is a “time slice” of a cat on the mat. They hold, further, that the time-slice itself is not itself a cat. There is a cat on the mat because there is a temporally extended object that is a cat that has a time-slice as a part that is on the mat. Others hold that objects are not temporally extended. There are two ways to hold this. One way is to hold that persisting objects are *wholly located* at different times; this is *endurantism*. Proponents of this view (e.g. Haslanger 1989 and van Inwagen 1990) hold, roughly, that there is a cat on the mat when the cat is *wholly located* on the mat, i.e. when one of its many locations it has at different times is on the mat. Another way to hold that objects are not temporally extended is to hold that objects are instantaneous; proponents of *stage theory* (e.g. Sider 1996, 2001a and Hawley 2001) will hold that there is a cat on the mat when an instantaneous cat is on the mat. I discuss perdurantism and stage theory in more detail in §3, below.

These different views make it somewhat difficult to state the problem in full generality. Different views require stating the problem somewhat differently. I have found it best to state the problem in one way and note that others can understand my terminology in a slightly different way, if they so desire.

Proponents of the second and third views can adopt the problem and solution I propose as stated. Proponents of perdurantism, however, will need a slightly different statement of the problem and of the solution. I suggest they hold that, in those cases in which the problem arises, the many candidates for being time slices of objects of kind *K* are collectively identical to a single time-slice of an object of kind *K*, and that there is just one such *K* in the vicinity. Proponents of this view should read “object of kind *K*” as something like “time-slice of object of kind *K*.” For the perdurantist, the problem of the many will also arise temporally; I don't discuss this in any detail in the paper, mostly because it would require too much space. However, the solution I propose generalizes, *mutatis mutandis*.

⁵ The problem does not arise for those objects that don't admit of such leeway. Perhaps molecules and chemical atoms are like this. The problem also does not arise for those kinds of objects, if there are any, where we don't take it that there is just one of them where we take there to be just one.

identical to a single object of kind K and that there is just one such K in the vicinity. I call this THE MANY-ONE IDENTITY SOLUTION to the problem of the many.

This solution is *conservative* in the sense that it agrees with ordinary judgements about how many objects of kind K there are, for relevant K s. For instance, we are correct that there is just one cat on the mat, car in the parking space, and human being in the chair. I begin by sharpening up the statement of the problem of the many. I then situate the solution I defend with respect to some other, related views and argue for the solution. In §3, I consider some objections to the solution and further develop the underlying metaphysics. Finally, in §4, I compare the view to two other conservative solutions.

§ 1 THE PROBLEM OF THE MANY

The problem of the many arises when we reason about instances of the following three claims, for appropriate kinds, K :

- ABUNDANCE: There are many K -candidates, i.e. things the parts of which seem to be arranged K -wise, in the vicinity of an object of kind K .
- PARITY: If any one of them is a K , then each is a distinct K .
- CONSERVATISM: There is just one K where we take there to be a single K .

According to ABUNDANCE, there are multiple composite objects with parts that seem to be arranged K -wise in the vicinity of any object of appropriate kind, K .⁶ *Prima facie*, having parts so arranged seems sufficient for the things with those parts so arranged *to be* a K . Given ABUNDANCE, PARITY seems on firm footing. Each candidate is plausibly distinct from the others; each has different parts, after all.

⁶ If *mereological nihilism*, the thesis that there are no composites, is true, then ABUNDANCE is false. Some might deny that there are any such things by accepting *mereological nihilism*, the view according to which there are no composite objects, i.e. no objects that have any parts besides themselves. Unger (1980) uses the problem of the many to motivate this position. See Rosen and Dorr 2002 and Sider 2013, for instance, for defenses of mereological nihilism. The statement of the problem in this paper presupposes that the true theory of the conditions under which composition occurs is not nihilism and that composition occurs often enough that there are multiple K -candidates in at least some situations. This presupposition could, perhaps, be dispatched with; see Jones 2013 for discussion.

Because the candidates are so similar to one another, it is difficult to see how *just one* could be a *K* if any is; *K*-hood generally doesn't seem responsive to such minute differences. Thus, the plausibility of PARITY rests on the claim that the many candidates are so similar to one another with respect to what's needed to be a *K*. Finally, CONSERVATISM seems true of the relevant kinds: there's just one *K* where we take there to be just one. Indeed, that there are some such *K*s is an assumption of the problem, and I'm happy simply to assume CONSERVATISM for the purposes of this paper.

These three principles seem to form an inconsistent triad. By CONSERVATISM, there is exactly one *K*. By ABUNDANCE, there are many *K*-candidates. Finally, by PARITY, there are many distinct objects of kind *K*. This contradicts CONSERVATISM.

Here are three notes about how the problem has been introduced. First, I introduced the problem using a cat as an example; I noted that there are plausibly many different cat-candidates in the vicinity of the cat. I characterized the candidates as things the parts of which seem collectively to have what it takes to be a cat, i.e. which seem to be arranged cat-wise. One cat candidate in the vicinity of a cat is a fusion of cells which seem to be arranged cat-wise. But cells, of course, are made out of smaller things like chemical atoms or mereological simples, if such things there be. Now consider a fusion of mereological simples, each of which overlaps some part of the fusion of cells, and which are such that no part of the fusion of cells is disjoint from them. I assume an extensional mereology, according to which objects with the same parts are identical. On that assumption, if there are cells and simples, then the fusion of cells is identical to the fusion of simples; accordingly, the fusion of simples is not a different cat candidate than the fusion of cells, nor is any other fusion that has the same parts as it. So, I won't distinguish among the various candidates with the same parts. Second, when I talk of cat-candidates, for instance, or *K*-candidates more generally, I mean to include all of the fusions of things arranged catwise or *K*-wise in the vicinity. Third, some of the things that are so arranged might themselves be kinds of objects that the problem of the many arises for. This is plausibly the case for

cells, for instance. In the vicinity of any cell, there are plausibly many cell-candidates; so, the problem of the many will need to be solved for cells as well as for things made out of cells. The solution I offer is intended to generalize to these sorts of cases.

§ 2 THE MANY-ONE IDENTITY SOLUTION

In this section, I introduce the thesis that there are many-one identities and situate it with respect to some other views. Second, I introduce THE MANY-ONE IDENTITY SOLUTION to the problem of the many. Third, I give two arguments for the claim that the many candidates are collectively identical to a single object of kind K , and I also give an argument for THE MANY-ONE IDENTITY SOLUTION.

§ 2.1 Many-one identity

A number of philosophers have considered the idea that many things can be identical to one thing, and they have developed this idea in different ways.⁷ The development I'm interested in holds that many things can be collectively identical to a single thing. Here are some putative examples of such identities. You are identical to your limbs, your head, and your torso, taken together.⁸ And a six-acre field is identical to six, non-overlapping, one-acre portions of land, taken together.⁹

Objections to many-one identity are familiar.¹⁰ However, I simply assume the coherence of many-one identity for the purposes of this paper. In helping myself to many-one identity, I don't mean

⁷ Baxter (1988) advances such a view. Lewis (1991), according to van Inwagen (1994), holds that identity and composition are merely analogous. Bohn (2011) and Bricker (2016) read Lewis (1991) as holding that many-one identity and one-one identity are instances of a more general form of identity. Wallace (2009, 2011a, 2011b, and 2014) defends the view that *composition* is a *form* of identity. Bohn (2009, 2014) defends the view I accept in this paper, which is that *identity* and *composition* are the very same relation. Many of the arguments in this paper could be run with Wallace's account of composition-as-identity, however.

⁸ This example is taken from Bohn 2009, p. 7.

⁹ This example is taken from Baxter 1988, p. 579. It reappears in Lewis 1991, p. 83 and is by now a standard example.

¹⁰ See van Inwagen 1994, pp. 210ff., for instance.

to downplay the difficulties facing it, but I think responses can be given to the major objections.¹¹ Furthermore, I have nothing new to add on that front, and I'm more interested in using the machinery of many-one identity, anyway. I therefore plead for toleration: I'm arguing only for the claim that *if* there are many-one identities, then many-one identity can offer a solution to the problem of the many.¹²

Following Bøhn (2009), I use the notion of a *portion of reality* to characterize many-one identity.¹³ Here are some examples of “portion of reality” talk and its connection to many-one identity. Your limbs, head, and torso are different portions of reality. Taken together, they are identical to the portion of reality that you are, namely you. The six-acre field is a portion of reality, as are the six smaller plots of land. Taken together, the latter six portions of reality are identical to the six-acre field portion of reality.

We can now characterize many-one identity. Some things are many-one identical to something iff they, taken together, are the same portion of reality as it. We've already seen some examples of what portions of reality are supposed to be and how talk of them is related to various quotidian phenomena. All of the examples we've seen, however, are ones in which the many are *disjoint* from one another.

But as I understand “portions of reality” talk, there is no reason why each of the many must be disjoint. Consider, for instance, your top 2/3rd and bottom 2/3rd. They are collectively the same portion of reality as you. This seems as true a statement as the one about your arms, legs, torso, and head being the same portion of reality as you, or as the several portions of field being the same portion of reality as the field. I suggest we recognize many-one identities in which the many are not disjoint.

¹¹ See Bøhn 2009, 2014; Cotnoir 2013, 2014; and Wallace 2009, 2014 for standard objections and replies.

¹² You might think that this is a counterpossible. But counterpossibles aren't all trivially true.

¹³ I'm going to follow Bøhn's (2009, 2014) development of many-one identity. The notion of a portion of reality comes from Frege (1884, p. 49, quoted in Bøhn 2009, p. 6), although Frege doesn't use it to explicate many-one identity. See, also, Bricker 2016 for “portion of reality” terminology.

Many-one identity is often encountered in discussions of

COMPOSITION-AS-IDENTITY All fusions are numerically identical to their parts,
taken together.¹⁴

According to COMPOSITION-AS-IDENTITY, if the six-acre field is a fusion, then it is identical to its parts, taken together.

One possible package of views combines COMPOSITION-AS-IDENTITY with *classical extensional mereology*.¹⁵ This includes commitment to both

UNRESTRICTED COMPOSITION Any things compose something, and

UNIQUENESS OF COMPOSITION No things compose more than one thing.

The metaphysics that emerges is one in which any portions of reality are collectively identical to, and compose, exactly one portion of reality, and any portion of reality is identical to its sub-portions of reality and they compose it, and only it. The objects that exist, on this view, are exactly those posited by classical extensional mereology, but fusions are identical to their parts, taken together.

I assume COMPOSITION-AS-IDENTITY along with classical extensional mereology in this paper. This serves to carve out a larger metaphysical position in which to situate THE MANY-ONE IDENTITY SOLUTION. Additionally, the arguments for and against COMPOSITION-AS-IDENTITY are numerous, and I simply don't have space to discuss them here. Finally, I take it that these assumptions are harmless since commitment to COMPOSITION-AS-IDENTITY and classical extensional mereology can be jettisoned from this paper, if one felt so inclined. None of my arguments rely on either.

¹⁴ This view is typically called something like "strong composition-as-identity" to differentiate it from related views, such as *weak composition-as-identity*, which is the view that *composition* and *identity* are merely analogous relation. For a survey of the family of views that go under the name of "composition-as-identity," see Wallace 2009 and Cotnoir 2013. I drop "strong" from the name of the present view because I am not discussing other views in the vicinity.

¹⁵ It is controversial whether COMPOSITION-AS-IDENTITY entails classical extensional mereology. The sticking point is whether it entails UNRESTRICTED COMPOSITION. See McDaniel 2010, Cameron 2012, and Effingham (unpublished manuscript) for arguments against the entailment.

§ 2.2 The many-one identity thesis and solution

With the machinery of many-one identity and COMPOSITION-AS-IDENTITY, it is now simple to state what I take to be the relation between the candidates and the single cat on the mat: the many candidates are collectively identical to the single cat and collectively compose the cat.¹⁶ Just as my limbs, torso, and head are the same portion of reality as me and are thus identical to me and compose me, and my top 2/3rd and bottom 2/3rd are collectively the same portion of reality as me and are thus identical to me and compose me, on the many-one identity view, the many candidates are the same portion of reality as the cat and are thus identical to the one cat on the mat and compose it. The many candidates are, and compose, the one cat. But I need some argument for this claim.

But first, here's a more general claim:

THE MANY-ONE IDENTITY THESIS In instances of the problem of the many, the many candidates for being an object of kind *K* are collectively identical to an object of kind *K*.

Note that THE MANY-ONE IDENTITY THESIS is not, by itself, a *solution* to the problem of the many. It does not tell us which principle is false, or where the reasoning of the problem goes wrong. In particular, since I will be arguing for a conservative solution, I should note that THE MANY-ONE IDENTITY THESIS is consistent with the claim that there are many; perhaps each candidate is (individually) identical to a cat. So, it falls short, as stated, from showing how CONSERVATISM can be true. To show how one can maintain CONSERVATISM, I will show how one can reject PARITY and hold the following:

THE MANY-ONE IDENTITY SOLUTION In instances of the problem of the many, the many candidates for being an object of kind *K*

¹⁶ Importantly, they are not *distributively* identical to the single cat; that is, it is not the case that each candidate is individually identical to the single cat. Instead, all of the candidates, taken together, are identical to the single cat.

are collectively identical to a single K , and no candidate is identical to any other object of kind K .

I begin by offering two arguments for THE MANY-ONE IDENTITY THESIS. I then argue for THE MANY-ONE IDENTITY SOLUTION.

§ 2.3 Arguments

Why accept THE MANY-ONE IDENTITY THESIS? Here are two arguments.

THE FIRST ARGUMENT: Suppose there is (at least) one cat on the mat. Candidates are introduced as some of a cat, say, plus or minus small, seemingly insignificant parts, such that each candidate seems to have what it takes to be a cat. And they are all, in some sense, in the vicinity of where a cat is. I suggest we try to make sense of these appearances. We can state the apparent relation between the many candidates and that cat in “portions of reality” talk: a cat is a portion of reality, and the candidates for being that cat are collectively that very same portion of reality. If that is correct, and given the account of many-one identity above, then the candidates are many-one identical to that cat and compose that cat.

Here’s another example. I am a human being. Some of the candidates for being a human being in my vicinity include my top and bottom 5999/6000^{ths} and their fusion. As a harmless simplification, suppose that these are all of the candidates for being a human being in my vicinity. They are the same portion of reality as me, a human being. Given the account of many-one identity, I am identical to them, taken together. So, they are collectively identical to a human being and compose a human being. Since I take it that other ordinary objects are not unlike cats or human beings in any relevant respect, I take it that the argument generalizes: in instances of the problem of the many, the many candidates

for being an object of kind *K* are collectively identical to an object of kind *K*. This establishes THE MANY-ONE IDENTITY THESIS.

THE SECOND ARGUMENT: According to CONSERVATISM, there is a single cat on the mat. Each of the candidates seems to have what it takes to be a cat. But, given CONSERVATISM, there's just one cat on the mat. Which is the cat? On the face of it, anything that could explain why one in particular is a cat also seems capable of explaining why another would be a cat. The candidates appear to be on a par with respect to what it takes to be a cat, after all. For instance, whatever, biologically, is required for there to be a cat seems to be had by all of the candidates; that's part of what it is to be a cat candidate, after all. So, if one appealed to some biological fact about a candidate to explain why it, in particular, is *the* cat, it seems there would be a similar fact about another candidate that would explain why *it*, too, is a cat. Meanwhile, the most obvious *differences* among the candidates, viz. that some are larger or smaller than others, or that some are more-or-less mereologically inclusive of the others, seem to be facts of the wrong sort to explain why one is the cat, and the other candidates aren't cats.¹⁷ A candidate's size—even its size relative to the other candidates—doesn't seem to be what (dis)qualifies a candidate to be a cat. Of course, if we knew that one candidate *in particular* was a cat, then perhaps facts like these would serve to *disqualify* the others from being cats on the grounds that cats don't have cats as proper parts,¹⁸ but we don't know which candidate is a cat.

Any choice according to which one candidate is the cat and the others aren't, based on these sorts of features of the candidates, seems to require arbitrariness; it doesn't respect the seeming parity

¹⁷ One might think that the fusion of all of the candidates is the best candidate for being the cat; it has a feature that no other candidate has, namely *being the fusion of all of the candidates*. Although it has a special feature, at this point it is appropriate to ask why *that feature* should matter. The goal isn't merely to find some feature that a candidate has and that no other candidate has—that's very easy since each candidate has the property *being identical to that very candidate*—but to find some reason to think that that very feature *matters*.

¹⁸ This is the strategy employed by Sider's (2001b) maximal properties solution to the problem of the many. See §4, below, for discussion.

among the candidates. And I can think of no other plausible explanation that would avoid similar arbitrariness. It is good to avoid arbitrariness.

We can avoid the seeming arbitrariness by saying that the candidates are all, collectively, the same cat. The seeming parity of the candidates is thereby respected. Since I take it that other ordinary objects are not unlike cats in this respect, I take it that the argument generalizes to other ordinary objects: in instances of the problem of the many, the many candidates for being an object of kind *K* are collectively identical to an object of kind *K*. This establishes THE MANY-ONE IDENTITY THESIS.

So there are two arguments for THE MANY-ONE IDENTITY THESIS. But recall that THE MANY-ONE IDENTITY THESIS isn't, by itself, a conservative solution to the problem. It isn't THE MANY-ONE IDENTITY SOLUTION, and it doesn't tell us anything about which of PARITY or ABUNDANCE is false. So what, if anything, does this view say about ABUNDANCE, PARITY, and the reasoning that generated the problem?

Note that the many cat candidates are collectively identical to something that is a cat candidate; after all, from THE FIRST and SECOND ARGUMENTS, the thing that they are identical to is a cat, so it must be a cat candidate, given how we introduced the notion of *candidate*. (Surely a cat has what it takes to be a cat!) Given CONSERVATISM, that one candidate is the single cat on the mat.

So which principle do I reject? I hold that ABUNDANCE and CONSERVATISM are true and that PARITY is false. In our toy case, there are many candidates for being cats, one candidate is the cat, but the candidates aren't each different cats. But before explaining why I think PARITY is false, it is important to head-off an obvious objection.

You might think that my view is collapsing under internal tension, if not outright contradiction. In THE SECOND ARGUMENT, I argued that the candidates are on a par with respect to some features that appear to be relevant to whether they are cats, so it would be arbitrary to say that any one of the candidates is a cat *because it has one of those features* and that the others aren't cats, since

they are all similar with respect to those features, or else those features don't seem to matter. But now I've said that the cat is one of the candidates. Am I guilty of the very arbitrariness I warned against?

I say that I'm not. To show this, I need to argue for two claims. First, I need to argue that the candidate has a feature that none of the other candidates has. Second, I need to argue that that feature is relevant to whether the candidate that has it is a cat.

I identify the cat with a candidate, but I say this candidate is *non-arbitrarily* selected: it has a feature that none of the other candidates has, and that feature is relevant to whether it is a cat. THE FIRST and SECOND ARGUMENTS show that a certain candidate, viz. the candidate that the candidates are collectively identical to and compose, is a cat. Of course, with the assumption of CONSERVATISM in the background, only one candidate has this feature, given that any other candidate that has this feature would be identical to it. That establishes the first claim. And what could be more relevant to whether something is a cat than the fact that it is a cat? The cat has a feature that is relevant to whether it is a cat. Thus, the second claim is established.

I now argue against PARITY to show that one candidate—the candidate that the candidates are collectively identical to and compose—is the best candidate for being a cat.

Recall that PARITY is plausible inasmuch as the claim that the candidates are all equally good candidates for being a cat is plausible. But the candidates are not all equally good candidates for being a cat. One—the one the candidates are all collectively identical to—is the best. CONSERVATISM can be maintained in this way.

I need an argument for the claim that the candidate that the candidates are collectively identical to and compose is the best candidate for being a cat. Here's THE THIRD ARGUMENT. According to CONSERVATISM, there is a single cat on the mat; from that and THE FIRST and SECOND ARGUMENTS, the many candidates are collectively identical to that cat. That cat is itself a candidate. Call that candidate 'z.' No other candidate is such that it is the cat; any such candidate would have to be that

very same candidate, *c*. It seems to be a conceptual truth that the candidate that is identical to the single cat on the mat is the best candidate for being the cat; after all, it, and no other candidate, *is* the cat. (And what could be more relevant to whether a candidate is *best* than whether it is the unique candidate that *is* the cat?) Therefore, *c*, the candidate that is collectively identical to all of the candidates and which they compose, is the best candidate for being the single cat on the mat. So I reject PARITY; the principle is unmotivated because the candidates aren't all on a par. Since I take it that other ordinary objects are not unlike cats in this respect, I take it that the argument generalizes to other ordinary objects and that, in instances of the problem of the many, the many candidates for being an object of kind *K* are collectively identical to a single *K*, and no candidate is identical to any other object of kind *K*. This is THE MANY-ONE IDENTITY SOLUTION to the problem of the many.

§ 3 OBJECTIONS, REPLIES, AND ADDITIONAL DEVELOPMENTS

First, one might push the following objection. I've promised a conservative solution to the problem of the many, but, to do so, I've assumed that CONSERVATISM is true. So, this is no solution at all. Here's my response: my goal has been to show how CONSERVATISM can be *maintained*, so I can help myself to CONSERVATISM in constructing my theory.

Perhaps it is helpful to compare this to a parallel case. The problem of temporary intrinsics threatens to show that persistence through change is impossible.¹⁹ Now suppose someone wanted to maintain the intuitively correct position that persistence through change *is* possible. Given this aim, it is acceptable for them to simply assume that such persistence is possible, develop a theory about persistence, and then show how the theory avoids the puzzle. That is, it is dialectically acceptable to assume that objects persist in addressing the question of how it is possible that they do so. Similarly,

¹⁹ See Lewis 1986, pp. 203–204 for the classic statement of the problem.

those who want to give a conservative solution to the problem of the many can help themselves to CONSERVATISM and then show how it is possible for CONSERVATISM to be true. That's what I've done here.

Second, some have complained that THE MANY-ONE IDENTITY THESIS doesn't entail that PARITY is false. The thought here is that there is *some other* thesis that entails the falsity of PARITY, so THE MANY-ONE IDENTITY THESIS doesn't solve the problem of the many, or is a dispensable part of the solution.

In response, I say that it's true that the thesis doesn't entail the falsity of PARITY. But once CONSERVATISM is granted, the argument against PARITY is straightforward, and relies on THE SECOND ARGUMENT for THE MANY-ONE IDENTITY THESIS; it is that thesis that allows us to non-arbitrarily pick a single candidate to be the cat, viz. the candidate that the many candidates are collectively identical to and compose.

Third, one might think that there is a tension between the solution's ontology and its being a *conservative* solution; this is especially the case if we accept COMPOSITION-AS-IDENTITY and UNRESTRICTED COMPOSITION.²⁰ In that case, there are way too many objects in the vicinity of a single cat, for instance. But even if we *don't*, one might wonder whether any solution which does not deny ABUNDANCE can rightly claim to be conservative; after all, there are all sorts of extraordinary objects in the vicinity of any ordinary object.

I admit that there is a tension between this solution to the problem of the many and certain other views in metaphysics which claim to be conservative. For instance, the present view is committed to many extraordinary objects, e.g. the many candidates which are not themselves cats, and those who adopt conservatisms according to which there are no such objects will be disappointed

²⁰ See, again, the discussion of §2.1.

with the view defended here.²¹ However, I have not claimed that the present view is a conservative view in this sense. Instead, I have claimed only that the view is conservative in the following sense: it holds that we're correct about how many *ordinary* objects there are, where the ordinary objects are those kinds of objects for which the problem arises. There is a single cat on the mat, and not millions, for instance. There are, however, many fusions in the vicinity of the cat, but these are not objects of the same kind as the cat. Indeed, they don't seem to be objects of any familiar or ordinary kind; rather, if it is a kind at all, they are of the extraordinary kind *fusion*. In any case, that there are many other objects, not of ordinary kinds, that are not cats in the vicinity of a cat does not cut against the current solution's conservative credentials, at least in the sense of 'conservative' that I claim describes the solution.

Fourth, one might hold that THE MANY-ONE IDENTITY SOLUTION is implausible for those kinds of objects that *do*, or at least *can*, change their parts. For instance, consider our cat again. I hold that it is identical to the many candidates for being it. However, cats can change their parts over time, and, more generally, they could have had different parts. The former is the claim that composition is *temporary*. The latter is the claim that composition is *contingent*.

Now, some take every identity to (a) hold at all times and (b) in all possible worlds; call (a) THE PERMANENCE OF IDENTITY, and call (b) THE NECESSITY OF IDENTITY. If composition is identity, and composition is temporary/contingent, then identity must also be temporary/contingent. This, of course, conflicts with THE PERMANENCE and NECESSITY OF IDENTITY.

The problem, then, is that it seems that one cannot hold that (i) objects can have different parts at (a) different times and (b) different worlds, (ii) COMPOSITION-AS-IDENTITY, and (iii) (a) THE PERMANENCE OF IDENTITY and (b) THE NECESSITY OF IDENTITY. Proponents of THE MANY-ONE

²¹ Korman (2015), for instance, adopts a much more expansive form of conservatism. On his view, not only are we largely correct about what ordinary objects there are, but folk ontology is correct that extraordinary objects do not exist.

IDENTITY SOLUTION as developed here must accept (ii), but they could deny either (i.a/b) or (iii.a/b). It is helpful to consider the temporal and modal versions of the objection separately. Consideration of possible responses illustrates the ways in which THE MANY-ONE IDENTITY SOLUTION can be adopted as a part of different packages of views about persistence and modality.

In the temporal case, the proponent of THE MANY-ONE IDENTITY SOLUTION can be a *perdurantist*.²² According to this view, objects are fusions of proper temporal parts; they are *spread out* in time in the way that we think of many objects' being spread out in space: they have parts that exist at different times, just as they have parts that exist at different places. The perdurantist holds that four-dimensional objects don't change their parts in any sense other than their proper temporal parts²³ having different mereological properties at different times.²⁴

To accommodate the ordinary view that objects change their parts over time, perdurantists appeal to facts about objects' proper temporal parts. For instance, a temporal part of a human being might have a hand as a part, and a later temporal part of that same object might not have a hand as a part. The perduring objects' temporal parts have different mereological properties, and these facts are used in analyzing ordinary talk of objects' changing their parts, e.g. one part has a hand as a part, and another part lacks a hand as a part, and what it is for an object to lose its hand is for an earlier instantaneous temporal proper part of an object to have a hand as a part, and for a later instantaneous temporal proper part of that object to lack a hand as a part. Both Bohn (2009) and Wallace (2009) develop their composition-as-identity views within a background metaphysics of perdurantism. They can both avoid the temporal version of the objection: the only sense in which perduring objects can change their parts, viz. by having different temporal parts that exist at different times, is not in conflict

²² See Lewis 1986, pp. 202–204 for the classic defense of perdurantism.

²³ The standard definition is: x is a *proper temporal part* of y during temporal interval (possibly instantaneous) T , iff x exists at, but only at, times in T , is part of y at every time during T , at every time in T overlaps everything that is a part of y during T , and $x \neq y$. In the case where T is an instant, x is an *instantaneous proper temporal part* of y .

²⁴ See Merricks 2003, pp. 22ff and Wallace 2014.

with the permanence of identity; nothing is identical to some things at one time and some other things at a different time.

Another option in the temporal case is to accept *stage theory*, the view that persisting objects are identical to what the perdurantist would say are instantaneous temporal parts of perduring objects and that objects persist through time by having *temporal counterparts* that exist at different times.²⁵ This view can be supplemented with a view of *de re* temporal predication where such predications are ambiguous.²⁶

For instance, consider a statue, S, and a lump of clay, C, that makes up the statue. On the stage view, ‘S’ and ‘C’ refer to the same thing, namely a single stage. But, according to this view, they are merely *temporarily identical*: they are identical now, but they will not be identical in the future. Suppose, for example, that the statue will be immediately squashed, so that it is true to say that C will, but S won’t, exist afterward. On this view, “will exist afterward” and “won’t exist afterward” ascribe properties to a single thing, since S and C are identical. However, the predications don’t ascribe *incompatible* properties to a single thing. Instead, depending on how the single object is referred to—as ‘S,’ or as ‘C’—different properties are the semantic value of the predicates in the predications, and these properties are not incompatibles.²⁷ On this view, identity is temporary, so (iii.a) is false.

So, there are at least two possible responses to the temporal version of the objection. The proponent of THE MANY-ONE IDENTITY SOLUTION can avoid the temporal version of the objection with either response.

²⁵ See Sider 1996, 2001a and Hawley 2001 for defenses of stage theory.

²⁶ Both Sider (1996, pp. 443ff., 2001) and Hawley (2001, pp. 183ff.) defend stage theories with this view of *de re* temporal predication.

²⁷ On this view, *de re* temporal predicates are what Noonan (1991) calls “Abelardian” predicates. Note that one need not adopt a counterpart-theoretic account of *de re* temporal claims in order to make use of the idea that predicates are Abelardian; see Noonan 1991, p. 191 and Lewis 1986, pp 248ff. for discussion.

In the modal case, one might follow Wallace (2009 and 2014) and deny (i.b) by holding that objects are *cross-world fusions* of their parts, and are identical to those parts, taken together. This view, and its response to the modal version of the objection, can usefully be conceived of as the modal analogue of perdurantism and the perdurantist response to the temporal objection. On this view, objects are “spread out” across modal space similarly to how the perdurantist takes them to be “spread out” across time: just as objects have *temporal* parts, they have *modal* parts.²⁸ The object is the sum of all of its modal parts and is identical to those parts collectively. The idea here is to transpose the perdurantist response to the temporal case into the modal case: the object *couldn't* have had different parts, so (i.b) is false. However, its modal parts have different mereological properties, and these facts are used in analyzing ordinary talk of objects’ being such that they could have had different parts, e.g. one modal part has a hand as a part, another part lacks a hand as a part, and what it is for the former object, say, to be such that it might have lacked a hand is for it to have a modal part that lacks a hand as a part.

Another possible response in the modal case follows proponents of counterpart-theoretic accounts of *de re* modal discourse: reject (iii.b).²⁹ This view is the modal analogue of Sider’s and Hawley’s response to the temporal version of the problem.³⁰ This view holds that claims about what an object could have been like are made true by other things—its modal counterparts—existing at other worlds. This view denies THE NECESSITY OF IDENTITY in the modal analogue of the statue and clay case, from above. S and C are identical, but they are merely *contingently identical* in this case; S could have been squashed, for instance, and C still would have existed. This view might also be supplemented with the idea that the predicates in *de re* modal predications are ambiguous. Again,

²⁸ Here’s Wallace’s (2014, p. 117) definition: “*x* is a *world-bound modal part* of *y* at a world *w* iff (i) *x* exists at, but only at, *w*, (ii) *x* is part of *y* at *w*; and (iii) *x* overlaps at *w* everything that is part of *y* at *w*.”

²⁹ Lewis (1986, pp. 212ff.) rehearses this sort of response. Bohn (2009) uses counterpart theory to respond to this very objection.

³⁰ Both Sider (1996, 2001a) and Hawley (2001) accept modal counterpart theory.

depending on how the single object is referred to—as ‘S,’ or as ‘C’—different properties are the semantic value of the predicates in the predications, and these properties are not incompatible.

So, there are two possible responses to the modal version of the objection. The proponent of THE MANY-ONE IDENTITY SOLUTION can avoid the modal version of the objection.

Finally, there are two different presentations of the problem of the many.³¹ The first, which I have been discussing in this paper, is from Unger 1980. The second comes from Lewis 1999. While Unger’s presentation motivates ABUNDANCE through the observation that there are many things that seem to have what it takes to be a cat, Lewis’s presentation motivates ABUNDANCE through considerations of vagueness. On that presentation, it is indeterminate which things are parts of the single cat, and there are many determinate things that could make up the cat. However, each has claim to make up the cat. But they can’t all make up the same cat. Thus, it seems, there are many cats.

The view defended in this paper seems to face a serious problem on Lewis’s way of setting up the problem.³² Suppose, as a first premise, that it is indeterminate whether a certain hair, *b*, is a part of the cat. Second premise: It is determinate that *b* is a part of the fusion of the candidates according to the view defended in this paper. Third premise: The fusion of the candidates is the cat. Fourth premise: The fusion of the candidates differs from the cat because the cat is such that it is indeterminate whether *b* is a part of it, but it is determinate that the fusion has *b* as a part. That’s a contradiction, of course. Conclusion: The view is false.

In response, I see no reason why the proponent of the view defended here should grant the first premise. According to the view I’ve developed, the cat is the fusion of the candidates. If that’s right, then it isn’t indeterminate whether *b* is a part of the cat. Thus, the first premise is false. Because

³¹ Or, perhaps, there are two different problems that are called the problem of the many. See note 3.

³² The following objection comes from an anonymous referee of this paper. They note that similar problems arise for the location and mass of the cat, as well. The solution I offer below seems to generalize to these cases. Thank you to this referee for pushing me on this objection and urging me to be clearer about the costs of my response.

there is an argument for the claim that the cat is the fusion of the candidates, my denial of the first premise is not *ad hoc*; there's an argument that the proponent of this view accepts that entails that the first premise is false.³³ This reasoning generalizes.

A potential worry about this response is that it is *question-begging*. However, I do not beg the question in the sense of assuming what I set out to prove: I haven't just assumed that the first premise of the objection is false and used that in my argument against it. Instead, I have argued to the falsity of the premise from something I've argued for. So, while it's true that I assert something that the objection denies, this is unobjectionable.³⁴ Indeed, the objection begs the question again the solution in this same way.

Nevertheless, one might think that the first premise is more plausible than its denial. It is worth making clear the cost of the view in connection with this. If the proponent of the view as I've developed it here wants to offer a perfectly general solution to both versions of the problem of the many, then they must hold that, necessarily, for any objects x and y , either it is determinate that x is a part of y or it determinate that x is not a part of y . This is, to say the least, *controversial*; it does sometimes—perhaps often!—seem that it is indeterminate whether, something is a part of another thing. So, those who accept the view are on the hook for denying something that certainly appears to be true. This, I admit, is a cost of the view, but it remains an open question, in my estimation, whether it is a prohibitively high cost.³⁵

³³ This general response seems to work for the version of the problem as it arises for the cat's location and mass.

³⁴ See Korman 2015, pp. 29–30 for discussion of this sense of begging the question.

³⁵ The view that borderline parts are impossible is controversial, but it's not unheard-of; at least one philosopher expresses preference for such a view in print. Ned Markosian (2014: 82). endorses *regionalism*, the view that “[n]ecessarily, for any x , there is a y composed of those x s iff there is a region, r , and an object, z , such that r is the fusion of the regions occupied by the x s and z occupies r .” Markosian (2014: 87–8) notes that, if regionalism is true, then if it can be indeterminate whether an object is located at a particular region, then it will be indeterminate whether that object has such-and-such as a part. He surveys three possible responses; the response Markosian expresses a preference for is that it is impossible for it to be indeterminate where an object is located. He notes that, given regionalism, this entails that it is impossible for it to be indeterminate whether something is a part of another thing.

§ 4 SIMILARITIES TO EXTANT SOLUTIONS

In this section, I compare THE MANY-ONE IDENTITY SOLUTION to two solutions that are, in different ways, similar to it. This further develops the metaphysical picture in the background of THE MANY-ONE IDENTITY SOLUTION and shows how it relates to two familiar solutions to the problem of the many

Theodore Sider (2001b) accepts a principle we can state as follows:

MAXIMALITY For all ordinary kinds K , anything that is a K does not have large proper parts that are K s.

Here's an application of MAXIMALITY to our toy case: one candidate is a cat, and the other candidates aren't cats because they are large proper parts of a cat, or they have a large proper part that is a cat. Like the MANY-ONE IDENTITY SOLUTION to the problem of the many, THE MAXIMALITY SOLUTION is a conservative solution; both solutions hold that, in cases in which the problem of the many arises, there is just a single object of kind K where we take there to be a single object of kind K . Additionally, both views deny PARITY: there is an object of kind K , but it isn't the case that each candidate is a distinct object of kind K .

Furthermore, the views agree about which candidate is the object of kind K . According to THE MANY-ONE IDENTITY SOLUTION, the largest candidate is the object of kind K ; any candidate that is *larger* would not be among the candidates that are identical to, and compose, the object of kind K . The defender of THE MAXIMALITY SOLUTION should say that the cat is the candidate that is the fusion of all of the candidates. This allows the defender of THE MAXIMALITY SOLUTION to rule out cases where there are two candidates, say, one of which is the cat, and the other of which is neither a large proper part of the cat, nor has the cat as a large proper part, perhaps because that candidate has an additional part that is disjoint from the candidate that is identified with the cat. So, the views are plausibly in agreement in each instance of the problem concerning which candidate is the object of kind K .

One obvious difference among the views, of course, is that Sider's solution takes identity to be a one-one relation, whereas THE MANY-ONE IDENTITY SOLUTION takes it to be, well, many-one. However, this is not to say that THE MANY-ONE IDENTITY SOLUTION is THE MAXIMALITY SOLUTION. The views differ in *how* they identify the object of kind *K* with the candidate(s). According to THE MAXIMALITY SOLUTION, one candidate is the object of kind *K*, and the others are objects of that same kind, because of the mereological relationships that the candidates stand in, along with an appeal to MAXIMALITY: one candidate is such that any other candidate is a large proper part of it, or has it as a large proper part, and MAXIMALITY is true. On THE MANY-ONE IDENTITY SOLUTION, one candidate is such that the candidates are collectively it and compose it, and it is the object of kind *K* because of the parity-style reasoning appealed to in THE SECOND ARGUMENT, along with the appeal to CONSERVATISM in THE THIRD ARGUMENT. Even if THE MAXIMALITY SOLUTION were supplemented with many-one identity, it would not be THE MANY-ONE IDENTITY SOLUTION. So, the views, as stated, happen to differ in their ideology, although THE MAXIMALITY SOLUTION could be developed in such a way that it shares the ideology of THE MANY-ONE IDENTITY SOLUTION. Most importantly, though, they differ in what it is that makes the object of kind *K* *the* object of kind *K*. Thus, a full appraisal of the views will require additional investigation concerning ideology and also concerning which has a more plausible story about what makes a candidate an object of kind *K*.

Jones's (2013, 2015) solution to the problem of the many makes use of *constitution*, a relation other than identity between a thing and what it is made of. Jones's solution holds that, in instances of the problem of the many, the many candidates for being an object of kind *K* collectively constitute an object of kind *K*.³⁶ Call this THE MANY-ONE CONSTITUTION SOLUTION. Like THE MANY-ONE IDENTITY SOLUTION, THE MANY-ONE CONSTITUTION SOLUTION holds that the relation between the

³⁶ For a similar proposal, see Jónsson 2001. While Jones holds that *each* of the candidates constitutes the cat, Jónsson holds that it is *only collectively* that the candidates constitute the cat.

candidates and the object of kind K is many-one. Obviously, however, the views differ concerning what that relation is. That said, both solutions deny a version of PARITY. The constitution view denies a version about constitution: a candidate constitutes an object of kind K , but it isn't the case that each constitutes a distinct one.

The main disagreement between these views is ideological, viz. whether one accepts the ideology of constitution or many-one identity. A full evaluation and comparison of the ideological costs of constitution and many-one identity would take me beyond the scope of this paper, but at least one conditional claim can be made which, if the antecedent can be made good on, would give some support to THE MANY-ONE IDENTITY SOLUTION over THE MANY-ONE CONSTITUTION SOLUTION: if many-one identity is just identity, then whatever its cost, it's a cost everyone has already paid and is therefore less ideologically-costly than a sui generis relation of constitution.

More interesting than potential argumentative strategies in support of THE MANY-ONE IDENTITY SOLUTION is the observation that the two views can be given parallel motivations and that they solve the problem of the many in a similar way. Consider THE SECOND ARGUMENT. It relies on arbitrariness considerations in arguing that none of the candidates seems to have any feature that would uniquely qualify it to be the single object of kind K , and not, also, qualify each of the others to be one. The way to avoid this arbitrariness, it is suggested, is to hold that the candidates are collectively identical to the K . This, I say, respects the seeming similarity of the candidates.

The argument assumes the background ideology of many-one identity. But the general strategy need not. Instead, if one accepted the ideology of constitution, they could give an obviously parallel argument, the conclusion of which would be that the many candidates collectively constitute the single K . Indeed, Jones (2013, 2015) gives a similar argument for THE MANY-ONE CONSTITUTION SOLUTION, focusing on the similarity of the candidates for constituting objects of particular kinds. Abstracting away their ideological differences, the two solutions are similarly motivated.

These three views are all conservative, and they hold that PARITY or some suitably revised PARITY-like principle is false. As I conceive of it, THE MANY-ONE IDENTITY SOLUTION is somewhere between the other two views in logical space. It shares with Sider's solution the commitment to some candidate's being identical to the single object of kind K and they even agree about which candidate is the single object of kind K , while it shares with Jones's solution its motivations and its commitment to the candidates' standing in a many-one relation to the single object of kind K .

§ 5 CONCLUSION

I have supplied two direct arguments for THE MANY-ONE IDENTITY THESIS, viz. THE FIRST and SECOND ARGUMENTS. THE FIRST ARGUMENT is of particular interest, since it argues from the way the problem of the many is stated to THE MANY-ONE IDENTITY THESIS. If this argument is successful, then the very statement of the problem of the many pushes us toward THE MANY-ONE IDENTITY THESIS. THE SECOND ARGUMENT, meanwhile, claims that, to avoid objectionable arbitrariness, we should accept THE MANY-ONE IDENTITY THESIS. Finally, I supplied an argument for

THE MANY-ONE IDENTITY SOLUTION In instances of the problem of the many, the many candidates for being an object of kind K are collectively identical to a single K , and no candidate is identical to any other object of kind K .

THE MANY-ONE IDENTITY SOLUTION denies PARITY: one of the candidates is the cat, but no other candidate is a cat. The view explains why PARITY is false. The idea, recall, is that one of the candidates is best, namely the candidate that all of the candidates are collectively identical to. The initial plausibility of PARITY rests on the claim that the many candidates are on a par with one another with respect to having what it takes to be a cat. But, since there is just one cat on the mat, and the

candidates are collectively identical to the candidate that is identical to the cat, that candidate is the best candidate; no other candidate, after all, is identical to the cat, and what could be more relevant to being the best candidate than actually being the cat?

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