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Preserving the Principle of One Object to a Place: A Novel Account of the Relations Among Objects, Sorts, Sortals, and Persistence Conditions

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I. Introduction

It is common for the whole of one object and the whole of another to occupy just the same place at just the same time. So say many identity theorists, partly on the basis of reasoning such as this:

Before us lies a copper statue. In just the same place, presumably, there is some *copper* and a *piece* of copper. Now what are the relations among the statue, the copper, and the piece of copper? They can't all be the same one thing, since they differ in their persistence conditions. Suppose that tomorrow we are going to hammer the statue flat and then break what remains into bits. Both the copper and the piece of copper, but not the statue, will survive the flattening. And the copper, but not the piece of copper, will survive the subsequent shattering. So before us there are three objects occupying just the same place. Or if the copper is not an object, there are two such objects: the statue and the *piece* of copper. Of course, it is only because the statue and the piece of copper consist of the same particles of matter that they are able to occupy the same place.

Supporters of such reasoning propose that the commonsense principle of one material object to a place be restricted so as to apply only to objects of the same sort. They would allow place-sharing by a statue and a piece of copper, although not by two statues or by two pieces of copper.

Let's reserve the term 'coincidence' and its cognates for cases in which the whole of one object wholly occupies the place wholly and simultaneously occupied by the whole of another. Note that as here defined, 'coincidence' denotes an irreflexive relationship. We will use 'coextension' and its cognates for the corresponding reflexive relationship.

The idea that material objects commonly coincide with others is widely accepted.¹ Indeed, it is a corollary of what may be considered the standard account of the relations among objects, sorts, sortals, and persistence conditions. But to many the idea seems preposterous.² And I (1992) have argued that the idea is incoherent. Presumably, those who accept coincidence do so only because they see no congenial way to avoid it. In this paper, I will present and defend a novel alternative to the standard account, one which dispenses with coinciding objects and which may prove more widely agreeable than the other ways of preserving the principle of one object to a place. A quick look at those other ways, followed by a preview of what lies ahead, will take up the remainder of this introductory section.

One way we could avoid coincidence in the statue case is by denying that statues are *essentially* statues. We could say that there is before us but a single object, one which at present is both a piece of copper and a statue and which after tomorrow's flattening will remain a piece of copper but no longer be a statue. Thus today's statue will continue to exist after ceasing to be a statue, just as *prime ministers* often continue to exist after ceasing to be prime ministers. There are two drawbacks to this solution. One is simply that many of us are unwilling to allow that a work of art (or a functional artifact, such as a car) *would* survive a flattening. The other drawback is that the solution is inapplicable to certain other putative cases of coincidence, such as that of Tibbles the cat. (Tibbles is discussed in Section VI.) In such a case, in which one of the putatively coinciding objects is initially a large proper part of the other, what would help would be some basis for ruling that at least one of the objects ceases to exist. What would be no help at all would be a ruling that some seemingly essential property actually is accidental. That might *prolong* a career; it could not foreshorten one.

Some theorists have sought to avoid coincidence by invoking the doctrine that material objects have temporal as well as spatial parts.³ On this doctrine, it is not the whole of the piece of copper, but at most a part of it, a temporal part, that is present during any period shorter than the entire period throughout which the piece of copper exists. The relation between the piece of copper and the shorter-careered statue is like the relation between a pipe and

¹ Among those prepared to accept coincidence are Chappell (1990), Chisholm (1973, 587–91), Doepke (1982), Forbes (1987, 142–44), Hirsch (1982), Johnston (1992), Kripke (1971, 163–64, fn. 19), Lowe (1983), Pollock (1974, 157–66), Salmon (1981, 224–29), Shorter (1977, 399), Simons (1987, 212–15, 221–24), Thomson (1983), Yablo (1987), and, most influentially, Wiggins (1967, Part One; 1968; 1980, chap. 1).

² Peter van Inwagen calls it a “desperate expedient” (1981, 129). Harold Noonan says that it “manifests a bad case of double vision” (1988, 222). David Lewis, speaking of the idea that plastic dishpans coincide with dishpan-shaped pieces of plastic, writes, “This multiplication of entities is absurd on its face” (1986, 252).

³ See Cartwright 1987, 168–70 and Heller 1990, 19.

its bowl. The bowl is a spatial part of the pipe; the statue is a temporal part of the piece of copper. In both cases it is only a part of the second object, not the whole of it, that is coextensive with the first object. And because the part in question is numerically identical with the object with which it is coextensive, coincidence is avoided. For genuine coincidence it would be necessary for different objects to occupy the same place at every time at which either exists.

The insufficiency of the temporal-parts solution emerges when we notice that there indeed are putative cases of career-long place-sharing. Such a case is described by Allan Gibbard (1975). A clay statue was brought into being by the conjoining of separately fashioned halves and will be destroyed by being broken into bits. The statue is spatially *and temporally* congruent with the piece of clay that was thereby brought into being and will thereby be destroyed. Even so, it can be argued that the statue and the piece of clay are diverse: It seems true of the piece of clay, but not of the statue, that it *could* survive being hammered flat. To block this argument it would be necessary to supplement the already heavy baggage of temporal parts with some such device as the rejection of *de re* modal properties (this is Gibbard's choice), the claim that the property denoted by a modal predicate varies with the sense of the subject to which it is attached (Noonan 1985, 202–6), the claim that objects have their size and shape essentially (Heller 1990, 53–55), or a doctrine of *modal* parts (Schlesinger 1985).

The need for such supplements substantially diminishes the appeal of the temporal-parts solution. Furthermore, the doctrine of temporal parts is at odds with our ordinary ways of thinking. This creates a presumption against the doctrine that could be overcome only by showing that there are problems for whose solution the doctrine is required. My aim is to show that putative cases of coincidence do not constitute such a problem.

Yet another way to avoid coincidence is to hold, with Geach (1967), that it is common for objects to be numerically identical relative to one sortal but numerically diverse relative to another. With regard to our statue case, the sortal relativist might say something like this. The statue here now and the piece of copper here now are identical relative to all sortals and, in that sense, are absolutely the same one object. Will this one object still exist after tomorrow's hammering? Relative to the sortal 'piece of copper', the answer is yes. But relative to the sortal 'statue', the answer is no. Tomorrow there will be an object spatiotemporally continuous with today's object, but tomorrow's object is neither absolutely identical with today's object nor absolutely diverse from it.

Another form of relativism, one advocated by Myro (1985) and suggested by Stalnaker (1986), makes numerical identity relative to time. On this theory, our statue is presently identical with the piece of copper; so we have before us just one object. Will this object survive tomorrow's hammering? The

answer of the temporal relativist is that the hammering will destroy the statue, but not the piece of copper with which the statue is temporarily identical.

Most of us, I believe, find these relativist theories uncongenial, if not unacceptable. I will show how we can comfortably avoid coincidence without surrendering the absoluteness of identity.

Now the statue case is but one of several commonly cited as examples of coincidence. The others feature such pairs as a person and his or her body, a tree and the aggregate of the molecules of which it is composed, and a tailless cat and its "puss" (that part of a normal cat which consists of all of the cat but the tail). Probably it is the latter case, the case of Tibbles the cat, that lately has received the most attention. In seeking a way to avoid coincidence we will want to be mindful of the entire range of putative cases. Some philosophers have paid a steep price to avoid coincidence in one type of case, evidently without noticing that their costly solution is inapplicable to cases of other types. Following a discussion of the Tibbles case, William Carter (1983) reluctantly recommends consideration of the doctrine of mereological essentialism. But that radical doctrine would be unhelpful in cases such as that of the statue, in which the spectre of coincidence arises from something other than the loss or gain of a part. Peter van Inwagen (1981), who also focuses exclusively on Tibbles-type cases, avoids both coincidence and mereological essentialism by the expedient of denying that there are such things as undetached legs, tails, and pusses. But this desperate move contributes nothing to the handling of cases not involving the loss or gain of a part.

In Section II of this paper, I will show how we can dispense with coincidence in the statue case without resorting to temporal parts, sortal relativism, temporal relativism, mereological essentialism, a denial of the essentiality of statuehood, or any other theory that conflicts with our ordinary ways of thinking. In Section III, I will challenge the arguments in support of the standard account of the relations among objects, sortals, and persistence conditions, an account on which coincidence is unavoidable. In sections IV and V, I will outline and defend an alternative to the standard account, an alternative that will accommodate Section II's treatment of the statue case. In Section VI, I will show how the alternative account enables us to dispose of other putative cases of coincidence, including, notably, the case of persons and their bodies.

II. The Statue and the Piece of Copper

In this section, I will present my own account of the statue case. I will do so in the context of responding to a persuasive pretheoretical argument for the diversity of the statue and the piece of copper, a variant of the argument pre-

sented at the beginning of Section I. (The *theoretical* argument for the same conclusion will be examined in Section III.)

Before us today lies a statue fashioned a week ago from the whole of a single piece of copper acquired a year ago. Let's call the statue "Statue" and the original piece of copper "Piece 1." In the place occupied by Statue, it seems true to say, we have a piece of copper. To give it a name that leaves open its relation to Statue and to Piece 1, let's call this piece of copper "Piece 2." Now there are two things that seem hard to deny: first, that Piece 2 is the same piece of copper as Piece 1; second, that Statue has existed only for a week and therefore is not to be identified with Piece 1. Thus are we pushed toward the surprising conclusion that Statue and Piece 2 are different objects simultaneously occupying the same place.

The argument's main line is this:

- Premise 1:** Piece 2 is Piece 1.
Premise 2: Statue is not Piece 1.
Conclusion: Statue is not Piece 2.

How might we resist this unwelcome conclusion? Given our ambition of reconciling the principle of one object to a place with the essentiality of statuehood, with the absoluteness of identity, and with our ordinary conception of objects as enduring (rather than perduring) through time, there appear to be only two ways of challenging the argument.

One is to deny that there is such a thing as Piece 2, to deny, that is, that when Piece 1 has been used to make a statue we still have a piece of copper. Of course, we still have some *copper*. And we have a copper statue. But, it might be said, the term 'piece of copper' cannot correctly be applied to a finished product. Before last week's hammering we had a piece of copper. Today, it might be said, we do not. Therefore, Piece 1, which was a piece of copper *essentially*, has ceased to exist. So far as I am aware, no one has advanced this objection to the argument. And while I have some sympathy for the objection, I wouldn't care to rely on it. For one thing, it is far from clear that the extension of 'piece of copper' is restricted in the way the objection assumes. For another, this sort of objection would be implausible as applied to certain other cases, such as that of Tibbles the cat. So, I will not dispute the assumption that there is such a thing as Piece 2.

The other way for us to challenge the argument is to grant the existence of Piece 2 but to deny the identity of Piece 2 with Piece 1. In my judgment, the best account of the statue case is this: Piece 2 is numerically identical with Statue. That is, we have here just one object. It is (predicatively) both a piece of copper and a statue. This object has existed only a week. It is not to be

identified with Piece 1. Although there is here a piece of copper, it is not the one with which we began. We have the same *copper*, but not the same *piece* of copper.⁴

What is novel in my account, and what is likely at first to seem counter-intuitive, is my denial of Premise 1. In what follows I will explain why this premise is false and try to break its hold on our intuitions.

How could Premise 1 fail to be true? How could Piece 2, the piece of copper here now, fail to be Piece 1, the piece of copper that we had to begin with? After all, Piece 2 is qualitatively and spatiotemporally continuous with Piece 1 under the sortal 'piece of copper'. And it consists of just the same copper atoms. Surely a piece of copper retains its identity while undergoing a continuous change in shape. (We'll suppose that the statue was made by hammering rather than by casting.)

The answer is simple. The reason that Piece 2 is not Piece 1 is that Piece 1 was merely a piece of copper, whereas Piece 2 is also a *statue*. Given the assumption that a mere piece of copper cannot *become* a statue (and it is only this essentialist assumption that warrants Premise 2 of my opponents' argument), Piece 2 cannot be identified with Piece 1. But why do I say that Piece 2 is (predicatively) a statue? Because Piece 2 is Statue. Providing we make this commonsensical assumption, we can see *that* Piece 2 is not Piece 1. And we can see *why* Piece 2 is not Piece 1.

In effect, of course, we are standing our opponents' argument on its head. If we begin by assuming that there is just one object before us, that the piece of copper here and the statue here are one and the same, and if we then join our opponents in assuming that statues are statues *essentially*, we can conclude straight away that Premise 1 is false.

The problem is that denying the identity of Piece 2 and Piece 1 seems as much a violation of common sense as does denying the identity of Statue and Piece 2. I have explained why Premise 1 is false. But if it is false, why does it have such strong intuitive appeal? In the remainder of this section, I will offer three explanations.

(1) "Surely," say believers in coincidence, "the piece of copper here now is the piece of copper we had to begin with." Unless we have our wits about us we will be quick to agree. By referring to each object as a "piece of copper" they encourage us to ignore the objects' difference in sort. They deflect attention from the point that the object here now is also a statue. If we consider only that the objects are pieces of copper consisting of the same copper, then of course we will agree that they are the *same* piece of copper. I believe this goes far toward explaining why Premise 1 strikes us as unexceptionable.

⁴ There will be more on the relation between the copper and the piece of copper later in this section.

(2) A further explanation, I believe, is found in the ease with which one can overlook the distinction between a piece of copper and the copper of which it consists. It is true that the *copper* here now is the *copper* we had to begin with. And one might think that this is to say that the *piece* of copper here now is the *piece* we had to begin with. That the claims are different ones, that the copper and the piece of copper are not to be identified, is shown by the fact that the copper and the piece of copper have different persistence conditions. The copper, but not the piece of copper, could survive the cutting of the piece into five smaller pieces.

Of course, the copper and the piece of copper occupy just the same place. So if the copper differs from the piece of copper, don't we have coincidence after all? No, we don't. But the reason why not can't be given until Section VI, where we will consider putative cases of coincidence that feature quantities of matter.

(3) Oversights are not the whole explanation for the appeal of Premise 1. Perhaps some would accept Premise 1 simply because they would reject Premise 2. If one is inclined even to identify *Statue* with Piece 1, to say that the original piece of copper has become a statue, then one will be inclined to identify Piece 2 with both Statue and Piece 1. Of course, my opponents must reject this conception of the case: It involves rejecting both the second premise and the conclusion of their argument.

In sum: If we keep clearly in mind that 'Piece 2' refers not to the *copper* here, but to the *piece* of copper, and that this piece of copper is also a statue, whereas Piece 1 was *merely* a piece of copper, then we will feel much less inclination to identify Piece 2 with Piece 1. Such inclination as remains is simply the inclination, felt by some, to identify *Statue* with Piece 1, to say that Piece 1 has become a statue. But if Premise 1 is accepted only because Premise 2 is rejected, the verdict on the argument under discussion will be the same.⁵

⁵ I want here to add two points of clarification: (1) I would not deny the analogue of Premise 1 in just *any* case that might be substituted for the one under discussion. In general, I would deny the analogue of Premise 1 just in those cases in which I accepted the analogue of Premise 2. In a case in which I considered the analogue of 'statue' not to be a "substance sortal" (defined in note 17), probably it is the analogue of Premise 2 that I would want to reject. And although I consider 'statue' to be a substance sortal, I might have considered rejecting Premise 2 itself if Statue had been an example of "found art" or extremely amateurish art. The theory to be outlined in Section IV, unlike standard sortal essentialism, allows for substance sortals to apply essentially to some objects and accidentally to others. (2) The argument mentioned at the beginning of Section I differs from the argument discussed in this section in attributing to the statue and the piece of copper divergent *modal* properties. I would deal with the former argument in the same way I have dealt with the latter: I would deny that the piece of copper *could* survive being hammered flat, on the ground that the piece of copper is also a statue.

We have seen that denying Premise 1 is not the violation of common sense it initially seems. So far as common sense is concerned, we are free to deny the identity of Piece 2 with Piece 1 and to identify Piece 2 with Statue instead. But there remains an obstacle to doing so: The diversity of Statue and Piece 2 is entailed by a widely accepted philosophical theory. Let's proceed to examine that theory.⁶

III. The Standard Account

The following doctrines constitute the heart of what may be considered the standard theoretical account of the relations among objects, sortals, and persistence conditions.⁷ (1) Associated with every sortal is a set of persistence conditions. (2) Objects that satisfy a given sortal invariably have the persistence conditions associated with that sortal.⁸ (3) Two sortals are cosatisfiable (as are 'kitten' and 'cat') only if the persistence conditions associated with one are the same as the persistence conditions associated with the other.⁹

With regard to (2), let's give the long definite description it contains a Russellian interpretation. (Let's *not* take that description to mean 'whatever persistence conditions, if any, are associated with that sortal'.) Thus understood, doctrine (2) entails doctrine (3).

Now from the conjunction of doctrine (3) and the proposition that 'statue' and 'piece of copper' are sortals associated with different persistence conditions, it follows that nothing is both a statue and a piece of copper. Since 'Statue' is our name for a certain statue and 'Piece 2' our name for a certain piece of copper, it follows that Statue is not Piece 2.

⁶ Before closing this section, I want to address a question that may have occurred to some readers. Tomorrow, let us suppose, Piece 2 is going to be hammered flat. This will leave a piece of copper we'll call "Piece 3." Of course, I deny the identity of Piece 3 and Piece 2 for the same reason I deny the identity of Piece 2 and Piece 1. But what is the relation between Piece 3 and Piece 1? The answer is that they are one and the same. Piece 1 went out of existence a week ago and will come back into existence tomorrow. Elsewhere (Burke 1980) I have argued, at article length, and for reasons having nothing to do with the desirability of avoiding coincidence, that there need be nothing problematic about intermittent existence in cases, such as that of Piece 1/Piece 3, in which the *components* of the intermittently existing object exist continuously.

⁷ The fullest statements of this account are found in Wiggins 1980 and Simons 1987. Elements of the account are found in most of the works cited in note 1.

⁸ Persistence conditions are not properties. Strictly speaking, objects don't "have" persistence conditions. What objects do have is the property of being such as to persist just so long as certain conditions are met. But I will join those who speak of persistence conditions as had or possessed. This way of speaking permits simpler formulations and will not lead us into substantive error.

⁹ If there are cosatisfiable sortals whose associated persistence conditions are different but not incompatible ('collie' and 'dog', perhaps), then 'the same as' should be replaced by 'compatible with'. For more on this, see the third paragraph of Section IV and notes 17 and 18..

Might we deny that 'statue' and 'piece of copper' are sortals associated with different persistence conditions? I believe not. I regard both 'statue' and 'piece of copper' as sortals, for reasons that will soon be apparent. I see no reason to deny doctrine (1), the doctrine that every sortal is associated with some set of persistence conditions. And for reasons given toward the end of Section IV, I agree that the persistence conditions associated with 'statue' are incompatible with those associated with 'piece of copper'. What we should deny, if we want to maintain the identity of Statue and Piece 2, and if, more generally, we want to avoid coinciding objects, are doctrines (2) and (3). But since arguments for (3) invariably rely on (2) (we'll soon see some examples), we will directly challenge only the arguments for (2).

Before doing so we must consider the notion of a sortal, that is, the notion of a term that denotes a sort. And we must consider what is meant by 'the persistence conditions *associated* with a sortal'.

Of the many criteria of sortalhood that have been suggested, the relatively precise criteria come in three varieties: grammatical, mereological, and numerative. Unfortunately, to all of these relatively precise criteria there are fairly clear counterexamples.¹⁰ Of the criteria currently on offer, my preference is for Wiggins': A sortal is a term that can be used to answer the question 'What is it?' There is an object on my coffee table. If I tell you only that it is a red object, you will not know what it is. But if I tell you that it is an apple, you will. 'Apple' is a sortal. 'Red object' is not.

The Wiggins criterion of sortalhood seems to accord well with our judgments concerning which terms do and do not denote sorts, in the appropriate sense of 'sorts'. (More on this in Section IV.) Of course, the criterion (like sortalhood itself) is somewhat vague. There are cases where we would be able to say with confidence neither that a term does answer the *what is it* question nor that it doesn't. Certainly we would prefer a more precise criterion—and a more illuminating one. But I don't know of such a criterion that isn't otherwise unsatisfactory. In Section IV we will discover an important merit of the Wiggins criterion. Here we may note that it is agreeably liberal: It accepts as sortals all terms billed as such by those who believe in coincidence. On some criteria, 'piece of copper' doesn't qualify. On Wiggins', it does: There are objects (such as copper scraps) for which 'piece of copper' clearly does answer the *what is it* question.

Identity theorists speak both of the persistence conditions *of objects* and of the persistence conditions *associated with sortals*.¹¹ By 'the persistence condi-

¹⁰ See Feldman 1973.

¹¹ More commonly, perhaps, they speak of the identity or reidentification *criteria* associated with sortals. But since I prefer to speak of an object's persistence conditions, rather than of the criteria for reidentifying the object, I will speak, likewise, of the persistence conditions associated with sortals. (For a discussion of identity criteria, and of their association also with singular terms, see Lowe 1989.)

tions of the object *o*' is meant 'the conditions necessary and sufficient for the persistence of *o*'. These conditions determine the changes that *o* can and cannot undergo while continuing to exist. But what might be meant by 'the persistence conditions associated with the sortal *F*'? One way to define this expression is to equate it with 'the persistence conditions that any object will have if it satisfies the sortal *F*'.

The problem with this definition is that it makes doctrine (1), the doctrine that for every sortal there is an associated set of persistence conditions, equivalent to doctrine (2). (Given the definition, doctrine (1) says that for every sortal there is a single set of persistence conditions that is had by any object that satisfies that sortal. Given the same definition, and given the Russellian interpretation of definite descriptions, doctrine (2) says the same thing.) For my purposes such a definition would be inconvenient: I want both to accept doctrine (1) and to reject doctrine (2).

I grant that every sortal has an associated set of persistence conditions. But I want to claim that an object can satisfy sortals associated with different persistence conditions. In such a case, I want to say, the object has the persistence conditions associated with just one of the (groups of) sortals it satisfies. It is quite possible, I want to contend, for some *F*'s to have the persistence conditions associated with *F* while other *F*'s, *F*'s which are *G*'s, have the persistence conditions associated with *G*.¹² To avoid excluding this possibility by definition (which would merely force a reformulation of my claims), let's understand 'the persistence conditions associated with the sortal *F*' to mean 'the persistence conditions that any object has if it has the persistence conditions it has in consequence of satisfying the sortal *F*'.¹³ This will leave it an open question, even for those who accept doctrine (1), whether objects satisfying a given sortal invariably have the persistence conditions associated with that sortal. That is, it will leave open whether doctrine (2) is true.

Let's proceed, then, to take up that very question. The first thing to be said is that the burden of proof rests with the doctrine's proponents. No one, I believe, would suggest that doctrine (2) is self-evident. It will be accepted, if at all, on the basis of some philosophical argument. And precisely because accepting the doctrine would force us to accept that there often is a multiplicity of objects where we ordinarily suppose there to be just one, or else to avoid this extravagance by resort to theories that many philosophers find more disagreeable still, the argument will need to be a rather convincing one.

¹² For ease of expression, I use '*F*' and '*G*' both as sortal variables and as sortal dummies. This will cause no confusion.

¹³ I assume that an object's having the persistence conditions it has is explained by its being of a certain sort. (Presumably it must be explained by *something*. And it's hard to imagine what *else* it might be explained by.) The same assumption is evident in the main argument for doctrine (2), Wiggins', which will be discussed later in this section.

Does such an argument exist? Despite the importance of doctrine (2), one is hard pressed to find in the literature on identity a *statement* of the doctrine, never mind a defense of it. Generally the doctrine serves as an unstated assumption in arguments for doctrine (3), as in the passages below.

Because sortals have criteria for reidentification built into them [doctrine (1)], one object cannot fall under two sortals having different criteria for reidentification [doctrine (3)]. Still, we want to locate objects falling under different sortals at the same place. For example, the car and the lump of plastic occupy the same volume of space but cannot be identified with one another because of the different criteria for reidentifying cars and lumps of plastic. (Pollock 1974, 160–61)

Wherever an individual x belongs to each of two different sorts ϕ and ψ , these sorts cannot...have different criteria of identity [doctrine (3)] ...The point quite simply is that, if C_ϕ and C_ψ are the respective criteria of identity and they are *different*, then if x were to belong to both ϕ and ψ we could not in general rule out *a priori* the possibility that there should arise circumstances in which, according to C_ϕ (say), x would cease to exist, whereas according to C_ψ it would not; so that anyone asserting that x instantiates both ϕ and ψ would lay himself open to the intolerable possibility that circumstances should arise in which he would have to say that x *both does and does not* cease to exist. (Lowe 1983, 54)

Pollock assumes that any object satisfying a given sortal is to be reidentified by the criterion “built into” that sortal. Lowe assumes the same thing: that the criterion of identity associated with a sort is applicable to any object of that sort. In our terms, both assume doctrine (2): Any object satisfying a given sortal has the persistence conditions associated with that sortal. But nowhere does Pollock or Lowe defend, or even formally *state*, doctrine (2). Neither considers the possibility I suggested earlier: When an object satisfies sortals associated with different identity criteria, *one* of these criteria is privileged to serve as the criterion by which the object is properly reidentified. (*Which* one will be discussed in Section V.)

Now there are persuasive arguments for doctrine (2), if it is granted that physical objects commonly coincide with others. In the present context, of course, those arguments are inadmissible. To speed us on our way I’ll relegate them to a note.¹⁴

¹⁴ One runs like this. Whenever sortals associated with different persistence conditions have coextensive instantiations, an object satisfying one of the sortals and having the persistence conditions associated with that sortal *coincides* with an object satisfying the other sortal and having the persistence conditions associated with that sortal. Now if each of the objects satisfies *both* sortals, then the coinciding objects are of the same sort, which surely is unacceptable. So neither object satisfies the sortal whose associated persistence conditions it fails to have. That is, neither object is a counterexample to doctrine (2). But it is only in such cases (cases in which sortals with different associated persistence conditions are coextensively instantiated) that there is any apparent threat to doctrine (2). So we may conclude that doctrine (2) is true.

Another argument for the doctrine, one we can disregard for the same reason, goes something like this: It is common for an object with one set of persistence conditions to coincide with an object with another set of persistence conditions. Therefore, it is

What other arguments are there? So far as I can determine, there is just one. And I know of no statement of the argument less sketchy than this one by Wiggins (1980, 62):

...to fulfil its office and constitute an answer to the *what is it* question, a genuinely sortal predicate must stand for a concept that implicitly or explicitly determines identity, persistence, and existence conditions for members of its extension.

Neglecting the reference to identity and existence conditions, and making explicit both the implicit premise (IP) and the implicit conclusion (IC), Wiggins' argument for doctrine (2) (IC) might be laid out as follows:

- P If every sortal answers the *what is it* question, then every sortal stands for a concept that determines persistence conditions for every member of its extension.
- IP Every sortal answers the *what is it* question.
- IC Every sortal stands for a concept that determines persistence conditions for every member of its extension.

The problem with the argument is that it depends on the ambiguity of the sentence (IP) that serves both as the implicit premise and as the antecedent of the explicit premise: Every sortal answers the *what is it* question. IP might mean either IP1 or IP2.

- IP1 Every sortal is such that there are or could be objects for which it answers the *what is it* question.
- IP2 Every sortal is such that it answers, *for every member of its extension*, the *what is it* question.

Now for the argument to be valid, IP must have a consistent meaning. But in order for IP to be warranted, IP must mean IP1. And in order for P to be warranted, IP must mean IP2. Let me try to substantiate the latter two claims.

If IP is taken to mean IP1, then IP is unexceptionable. Indeed, IP1 is simply a more precise formulation of what I meant earlier in this section when, following Wiggins, I defined sortals as terms that can be used to an-

important for us to have convenient means of referring unambiguously to each of two such objects. What we need, and what our language can therefore be expected to supply, is a class of (relatively short) terms each of which applies to all and only those objects that have in common some particular set of persistence conditions. Since it is clear that non-sortal terms (such as 'red object') do not fill the bill, the class must be that of (relatively short) sortals. This sort of argument may be implicit in Doepke 1987, 37–38.

swer the *what is it* question. A quite different claim, and one I see no good reason to accept, is IP2. Consider the sortal 'piece of copper'. For some objects, *mere* pieces of copper, 'piece of copper' answers the *what is it* question. But what would stop us from saying, contrary to IP2, that there are other pieces of copper, Statue, for example, for which 'piece of copper' fails to answer that question? Indeed, this is precisely the sort of account that I will develop and defend in sections IV and V. (To make IP2 an implicit *definition* of 'sortal' would merely force a reformulation of the issues.)

Now certainly it would make sense for those who accept doctrine (3), the doctrine that sortals are cosatisfiable only if they are associated with the same sets of persistence conditions, also to accept IP2. Given doctrine (3), there is a convincing argument for IP2.¹⁵ But as remarked earlier, the only support I know (or can imagine) for doctrine (3) is doctrine (2). Since IP2 is employed here in support of doctrine (2), IP2 cannot here be supported by reference to a doctrine for which doctrine (2) is the only support. And since there is no apparent argument for IP2 that *doesn't* rely on doctrine (3) (or else on doctrine (2) itself), I conclude that IP2 is unwarranted.¹⁶

Unfortunately for Wiggins' argument, IP2 is the interpretation of IP required by the stated premise, P. If IP means only IP1, then there is no apparent basis for inferring the consequent of P from its antecedent. Given only that sortals answer the *what is it* question for *some* members of their extensions, we cannot infer that sortals stand for concepts that determine persistence conditions for *all* members of their extensions.

Accordingly, Wiggins' argument, the only argument for doctrine (2) that doesn't depend explicitly on the thesis that material objects commonly coin-

¹⁵ 1. For every object, there is a term (even if only a long one) that answers the *what is it* question for that object. [premise]

2. Only sortals answer the *what is it* question; and only a term *satisfied* by an object can answer the *what is it* question for that object. [premise]

3. Every object satisfies a sortal that answers the *what is it* question for that object. [from 1 & 2]

4. Cosatisfiable sortals have the same associated persistence conditions. [doctrine (3)]

5. If all of the sortals satisfied by an object have the same associated persistence conditions, then if any of those sortals answers the *what is it* question for that object, so do the others. [premise]

6. If any of the sortals satisfied by an object answers the *what is it* question for that object, so do the others. [from 4 & 5]

7. Each of the sortals satisfied by an object answers the *what is it* question for that object. [from 3 & 6]

IP2 Every sortal answers, for any object that satisfies it, the *what is it* question. [from 7]

¹⁶ Actually, there is one other argument for IP2. It will be more convenient to consider and criticize this argument in Section IV.

cide with others, may be rejected. Of course, the failure of arguments for the doctrine does not mean that the doctrine is false—or even that it cannot reasonably be accepted. Doctrine (2) is the linchpin of the standard account of the relations among objects, sortals, and persistence conditions. Despite the implausible implications of that account, there will be an understandable reluctance to reject it until there is an appealing alternative.

IV. An Alternative Account

In this section, I will offer an alternative to the standard account. In Section V, I will defend my account against a likely objection. And in Section VI, I will show that my account permits us to dispose of other putative cases of coincidence in the same way we disposed of the statue case.

First, a terminological matter. For ease of expression I will hereafter treat sortals associated with the same persistence conditions as the same sortal. Thus ‘puppy’, ‘injured dog’, and ‘dog’, which all have the same associated persistence conditions, will count as a single sortal.

Also to be treated as a single sortal is any group of sortals that are associated with sets of persistence conditions that are different but not incompatible. Such groups exist, I believe, just in case it is possible for one substance sortal to restrict another.¹⁷ A possible example of such a group: ‘collie’, ‘dog’, ‘mammal’, ‘animal’. The persistence conditions associated with these terms are not incompatible. That is, it is possible for a single individual to have the persistence conditions associated with all four terms. But if all of these terms are substance sortals (which is very much open to question), then they all differ slightly in their associated persistence conditions.¹⁸ In any event, I will use ‘the same sortal’ as short for ‘sortals associated with persistence conditions that are identical or, at least, not incompatible’. And I will use ‘different sortals’ as short for ‘sortals associated with incompatible persistence conditions’.

Now for my account, of which we have had partial previews, of the relations among objects, sorts, sortals, persistence conditions, and answers to the *what is it* question. Of the three doctrines listed at the beginning of Section

¹⁷ One sortal restricts a second just in case it is necessarily true that anything that satisfies the first satisfies the second. As customarily defined, a substance sortal is a sortal the satisfaction of which is essential to anything that satisfies it. My account will require a somewhat different definition: A substance sortal is a sortal such that there are or could be things to which it is essential that they satisfy that sortal.

¹⁸ The associated persistence conditions would differ only in their levels of generality. If an object has the persistence conditions associated with ‘collie’ if and only if it will persist just so long as there is an object with which it is spatiotemporally continuous under ‘collie’, then an object has the persistence conditions associated with ‘dog’ if and only if it will persist just so long as there is an object with which it is spatiotemporally continuous under a name for a variety of dog. (There is more about persistence conditions toward the end of this section.)

III, I accept (1) but reject (2) and (3). I agree that every sortal has an associated set of persistence conditions, but I hold that every composite object that is not a mere aggregate satisfies at least two sortals, one being 'aggregate'.¹⁹ For example, Piece 2 (= Statue) is (predicatively) a piece of copper, a statue, and an aggregate of copper atoms. I also hold that among the sortals satisfied by an object, one is the object's "dominant" sortal.

Let's say that sortal *F* is object *o*'s *dominant* sortal just in case *o* has the persistence conditions it has in consequence of satisfying *F*. And let's say that sortal *F* *dominates* sortal *G*, with respect to *o*, just in case (1) *o* satisfies both *F* and *G*, and (2) *F*, not *G*, is *o*'s dominant sortal. With respect to Piece 2, for example, 'statue' dominates both 'piece of copper' and 'aggregate of copper atoms'. (The *basis* for this and other such claims will be made clear in the next section.)

These definitions raise a question: Is it possible for *F* to dominate *G* with respect to one object but for *G* to dominate *F* with respect to another? Suppose we have two gold statues. One is the creation of a master and is of interest primarily as a work of art. The other is an amateurish production of interest primarily as a piece of gold. Now certainly we *could* say that even in the latter case the object has the persistence conditions associated with 'statue'. We could simply add that our primary interest is not in the *object* but in the stuff of which it consists. The alternative, a plausible one, is to say that 'statue' dominates 'piece of gold' with respect to the first object but that 'piece of gold' dominates 'statue' with respect to the second.

Again, consider an example of "found art": a stone "statue" whose intrinsic properties are entirely the result of natural processes. Even assuming that the found object really is a statue, it is tempting to think that 'piece of stone' is its dominant sortal. It would be plausible to say that the statue once was a mere piece of stone and that it became a work of art, while remaining the same piece of stone, when it was found, appreciated, and displayed with certain intentions. It is an advantage of my account that it is able to accommodate this view of the case. (On the standard account, an object satisfies just one sortal. Given that 'statue' is a sortal, *every* statue must have the persistence conditions associated with 'statue'.) Without denying that found art really is art, without claiming that examples of found art are examples of art even before they are found, without claiming that all artworks are abstracta, and without taking any other controversial position within aesthetics, we are able to avoid saying that artists sometimes cause material objects to come into being merely by taking and inviting others to take a certain attitude. (I don't myself *mind* saying that. But some do.)

¹⁹ I will make the unfavorable assumption that for every set of two or more objects there is an object, an aggregate, that is composed of all and only the members of that set. If there isn't, it's just that much easier to avoid coincidence. More on aggregates, and how I conceive them, in Section VI.

For ease of exposition, and contrary to what I am inclined to believe, I will sometimes speak as though *G* can never dominate *F* if *F* ever dominates *G*. Accordingly, it will be useful to have two additional definitions. They will permit us to speak of dominance and domination *simpliciter*, as well as dominance and domination with respect to a specified individual. Let's say that *F* is the dominant member of a set of cosatisfiable sortals just in case *F* dominates every other member of that set. And let's say that sortal *F* dominates sortal *G* just in case (1) it is possible that there be an object with respect to which *F* dominates *G*, and (2) it is not possible that there be an object with respect to which *G* dominates *F*.

Now what I propose is that we reject doctrine (2), the doctrine that objects satisfying a given sortal invariably have the persistence conditions associated with that sortal, in favor of doctrine (2'): Objects that satisfy at least one sortal invariably have the persistence conditions associated with one or another of the sortals they satisfy. In combination with the assumption that every object satisfies at least one sortal (not necessarily a *short* sortal), doctrine (2') entails this: For every object there is a sortal such that the object has the persistence conditions it has in consequence of satisfying that sortal. Or, using our new terminology: Every object satisfies one or more sortals, one of which is its dominant sortal.

Furthermore, I submit that only an object's dominant sortal tells what the object is. The alternative, which I reject, is to say that any of the sortals satisfied by an object will suffice to answer the *what is it* question for that object, but the dominant sortal provides the *best* answer. Consider a copper statue, an object that satisfies both 'piece of copper' and 'statue'. The dominant sortal, I hold, is 'statue'. (How dominant sortals are to be identified is explained in Section V.) Now would 'piece of copper' provide even an inferior answer to the *what is it* question? I think not. What, after all, does 'piece of copper' mean? Given that the term applies (on my account) to copper statues, kettles, and bracelets, as well as to *mere* pieces of copper, 'piece of copper' means merely 'cohesive object formed by a quantity of copper'. And merely to be told what kind of stuff an object consists of (and that it is cohesive) is not to be told *what* that object is. (Unless, of course, the object is merely a piece of that kind of stuff.) I can no more tell you what the copper statue is by telling you that it is something copper than by telling you that it is something brown.

Still, one can imagine an argument for the alternative view. It runs as follows: (1) Every sortal denotes a sort. ('Sortal' was introduced by Locke as short for 'term denoting a sort'.) And it seems natural to say that (2) any object that satisfies a given sortal is an object of the *sort* denoted by that sortal. It follows that (3) every sortal answers, for every object that satisfies it, the question 'What *sort* of object is it?' even if some other sortal provides a *better* answer to that question. But surely, (4) the question 'What *sort* of object

is it?' is logically equivalent to the question 'What is it?' (It's only because of this equivalence that it is acceptable to use suitability for answering the *what is it* question as a criterion of *sortalhood*.) It follows that (5) every *sortal* answers, for every object that satisfies it, the question 'What is it?' even if some other *sortal* provides a better answer to that question.²⁰

On the definition with which we are working, a *sortal* is a term such that there are or could be objects for which the term answers the *what is it* question. Accordingly, let's say that a *sort* is a classification such that there are or could be objects for which the information that they belong to that classification answers the *what is it* question. Now given these definitions, it is true that (1) every *sortal* denotes a *sort*. And it is true that (2) any object that satisfies a given *sortal* will be an object of the *sort* denoted by that *sortal*, in the sense that the object will belong to the classification with which the *sort* is identical. But does it follow that (3) every *sortal* answers, for every object that satisfies it, the question 'What *sort* of object is it?'

Certainly it *sounds* as though (3) follows from (2). That's because (3) *does* follow from (2), if the question 'What *sort* of object is it?' is taken to mean 'What is a *sort* such that the object is of that *sort*?' But if instead the question is understood (as is required for the truth of (4)) to be logically equivalent to 'What is it?' then (3) does *not* follow from (2). To infer (3), thus understood, from (2) would be to rely on the assumption, call it "A," that for any *sort* and for any object, the information that the object is of that *sort* answers the *what is it* question for that object. Now A would be an entirely reasonable assumption, if there were reason to believe that every object is an object of just one *sort*. But, of course, I argued in Section III that there is *not* any reason to believe this. In any case, the argument's dependence on A renders the argument circular. A is essentially identical to the argument's conclusion: (5).

It is worth noting that our use of 'sort' has been a technical one. As is customary in philosophical writings, we have used it to refer to something like Aristotle's second substances, to classifications of objects according to their "forms." In ordinary contexts, the question 'What *sort* of object is it?' generally means 'What is a *sort* such that the object is of that *sort*?' And it requires for an answer nothing more than does the question 'What *manner* of object is it?' For answering the latter, both non-*sortals* and non-dominant *sortals* suffice. With respect to Statue, for example, the question can be answered by 'something heavy', 'something brown', or 'something copper'.

It is an important merit of the Wiggins criterion of *sortalhood* that it substitutes an unambiguous question—'What is it?'—for the ambiguous question 'What *sort* of object is it?' In my view, the latter is *doubly* ambiguous. It can mean (1) 'What is a *sort*, in the ordinary sense of "sort," such that the

²⁰ This is the further argument for IP2 mentioned in note 16.

object is of that sort?' (2) 'What is a sort, in the Aristotelian sense of "sort," such that the object is of that sort?' or (3) 'What is the object?' On my account, unlike Wiggins', a correct answer to (2) is not necessarily a correct answer to (3).

In what follows, I will use 'of that sort' to mean 'of that Aristotelian sort'. (More precisely, I will use it in the sense indicated four paragraphs back.) And I will use such expressions as 'tell what sort of object it is' and 'tell the object's sort' to mean 'tell *what* the object is'. The latter, of course, is equivalent to 'answer the *what is it* question with respect to the object'.

To summarize my account: Every composite object that is not a mere aggregate satisfies at least two sortals, one of which is its *dominant* sortal, that is, the sortal from which it gets its persistence conditions. Although an object is *of* the sort denoted by each of the sortals it satisfies, only the object's dominant sortal *tells the object's sort*. That is, only the object's dominant sortal answers the *what is it* question for that object.

Before concluding this section, I will address a couple of questions concerning persistence conditions. The task of the theory of diachronic identity is that of identifying the general persistence conditions associated with broad *categories* of objects. Besides the specific persistence conditions associated with various *sorts* of objects (and the sortals that name them), it is commonly assumed that there are general persistence conditions associated with such broad categories as works of art, functional artifacts, hunks of stuff, aggregates, natural kinds, persons, and organizations. Despite helping myself freely to the language of "persistence conditions," I will undertake to identify neither these general persistence conditions nor the specific persistence conditions associated with the sortals that figure in my examples. That, obviously, would require another long paper.²¹ This much, however, can be said: The persistence conditions associated with a given sortal need be no different on my account than on the standard account, with one exception. On my account, an object that has the persistence conditions it has in consequence of satisfying *F* can persist only so long as it does not undergo changes that would cause it to satisfy a sortal that dominates *F*. Thus a mere piece of copper could not survive changes that would make it a statue. On my account, therefore, but not on the standard account, a mere piece of copper would be destroyed by changes that would cause it to be coextensive with a statue. (On the standard account, of course, such changes would cause the piece of copper to be *coincident* with a statue, not to *be* a statue.)

Earlier I said that if 'dog' and 'animal' are both substance sortals, then the persistence conditions associated with these terms are different but not in-

²¹ Also beyond the scope of the present paper, as will be stressed in section V, is a defense of the essentialist presuppositions of my account. I am offering an essentialist alternative to the essentialist standard account.

compatible, the difference lying solely in their levels of generality. (See note 18.) It might be thought that I ought, in consistency, to say the same thing with respect to 'copper statue' and 'piece of copper', since I hold that the former restricts the latter²² just as 'dog' restricts 'animal'. But if there were no incompatibility of persistence conditions with respect to 'piece of copper' and 'copper statue', then (contrary to what I have said) there also would be none with respect to 'piece of copper' and 'statue'.

The difference between the two cases is this: 'Piece of copper', unlike 'animal', applies (on my account) to objects of diverse *categories*. Its extension includes works of art and functional artifacts, as well as mere hunks of matter. These categories are associated with mutually inconsistent general persistence conditions. Functional artifacts are commonly thought to be capable of persisting despite the replacement of many or even all of their original parts, providing there is spatiotemporal continuity under a sortal. By contrast, works of art and mere hunks of matter can survive much less in the way of compositional change. There is no (non-trivial) set of persistence conditions, however general, that is possessed by all pieces of copper. That is why the persistence conditions associated with 'piece of copper' cannot differ simply in level of generality from those associated with 'copper statue'.

On my account, the persistence conditions associated with 'piece of copper' are the persistence conditions possessed by those objects for which that term answers the *what is it* question: *mere* pieces of copper. As already noted, I won't try actually to formulate those conditions. But I assume that they are incompatible with the persistence conditions associated with 'statue', which I, along with supporters of the standard account, assume to be much more restrictive with regard to changes in shape.

To reconnect with the paper's main line of development, the reader may wish to reread the summary of my account, six paragraphs back, before proceeding to Section V.

V. The Which One Problem

In Section IV, I outlined an account of the relations among objects, sorts, sortals, and persistence conditions. Among the advantages of my account over the standard account are its ontological economy,²³ its compatibility with the

²² Well, not really. It is possible for several pieces of copper to constitute a statue without constituting a single piece of copper. But I do hold that 'copper statue' restricts 'aggregate of copper atoms'.

²³ As noted by a referee for this journal, the advantage of my account with respect to ontological economy is not as great as it might appear. After all, I do recognize all of the *sorts* of objects recognized on the standard account. And over time I recognize almost as *many* objects. (Recall the statue case discussed in Section II. I recognize one object before the sculpting and one object, a different object, afterwards. My opponents recognize one object before the sculpting and two afterwards. But since one of the latter is identified with the former, they recognize over time only the same

commonsense principle of one material object to a place, its flexibility in dealing with atypical cases of the sort discussed in the sixth and seventh paragraphs of section IV, and its freedom from two of the burdens of the standard account: that of avoiding (or else defending) a multiplication of *agents* (see the final two paragraphs of section VI) and that of explaining how coinciding objects could differ in *sort*, a problem that threatens the very coherence of the standard account.²⁴ Are there *disadvantages* to my account? Well, there is one *apparent* disadvantage.

On the account presented in Section IV, objects commonly satisfy two or more sortals but get their persistence conditions from just one. The obvious question is *which* one. If an object is both a statue and a piece of copper, how do we determine whether it has the persistence conditions associated with 'statue' or the persistence conditions associated with 'piece of copper'? In general, how do we identify an object's dominant sortal? On the standard account, of course, this awkward question does not arise, since every object satisfies just one sortal. (Recall that sortals associated with identical or compatible persistence conditions, such as 'collie', 'dog', 'mammal', and 'animal', aren't being counted as different sortals.) In this section, I will offer an answer to the *which one* question. And I will show that questions of essentially the same kind face proponents of the standard account. So whatever the merits of my answer, the *which one* problem puts my account at no significant disadvantage.

So, which of the sortals satisfied by an object is the object's dominant sortal? If we make the plausible assumption that an object's persistence conditions are determined by its sort (see note 13) the answer to this question is straightforward: An object's dominant sortal is the sortal that tells the object's sort, the sortal that tells what the object is.

Of course, this answer raises a new question, in response to which I offer (as a first approximation) the following criterion: Of the sortals satisfied by an object, the one that tells the object's sort is the one whose satisfaction entails possession of the widest range of properties.

Admittedly, the criterion is somewhat vague. But its vagueness seldom prevents a clear-cut decision. This will become clear as we consider a representative sample of cases. To keep things simple we'll limit ourselves to pairwise comparisons. But to make the comparisons appropriately challenging we'll consider some of the most troublesome pairs. After we see how the criterion works, we'll inquire into its justification.

number of different objects as do I: two.) Still, my account does greatly reduce the number of objects existing at any one time. And it slightly reduces the total existing *over* time: In those rare cases that my opponents would describe as cases in which two or more objects are congruent spatially *and temporally*, I recognize over time a total of only one object.

²⁴ This problem is discussed in Burke (1992) and Johnston (1992).

Suppose, to begin with, that we are choosing between 'tree' and 'hunk of cells'. Which of these cosatisfiable sortals (is such that its satisfaction) entails possession of the wider range of properties? Well, both sortals entail possession of physical and chemical properties. But 'tree', unlike 'hunk of cells', also entails possession of a full range of biological properties. (Or if dead but undecomposed trees are still trees, what is entailed by 'tree' is possession at *some* time of a full range of biological properties.) Think of a hunk of fat cells just excised by a plastic surgeon. Every one of the cells constituting the hunk engages in a full range of biological activities. But the hunk itself, unlike those hunks of cells that are also organisms, probably does not engage (and probably never did engage) in any biological activities at all. Even if it does (or did), there are certain biological activities, such as reproduction, that are engaged in only by organisms, not by just any hunk of cells. So, 'tree' entails possession of a certain range of properties whose possession is not entailed by 'hunk of cells'. And since 'tree' is (on my account) a *restriction* of 'hunk of cells', the latter can entail nothing whatsoever not entailed by the former. Accordingly, my criterion selects 'tree' over 'hunk of cells'.²⁵

Now consider a couple of cases involving artifacts: one a work of art satisfying both 'statue' and 'piece of copper', the other a functional artifact satisfying both 'typewriter' and 'hunk of metal'. This time the sortals competing for dominance are ordered neither by the restriction relation nor by any simple variant of it. ('Statue' doesn't restrict 'piece of copper'. It doesn't even restrict 'piece of stuff': There are statues made of two or more separated pieces. And there *could* be a two-piece typewriter, even if there isn't one.) Still, it is clear that 'statue' and 'typewriter' entail possession of the wider range of properties. Admittedly, there are specific physical and chemical properties entailed by 'piece of copper' and 'hunk of metal' that are not entailed by 'statue' and 'typewriter'. But that's not what counts. Any statue and any typewriter will be composed of *some* substance or substances and thus will *have* a full range of physical and chemical properties. What counts, on my criterion, is the entailed range of properties, not the range of specific properties entailed. So, 'piece of copper' and 'hunk of metal' enjoy no advantage with respect to physical and chemical properties. But 'statue', unlike 'piece of copper', entails possession of aesthetic properties, such as artistic genre and artistic style. And 'typewriter', unlike 'hunk of metal', entails possession of functional properties, such as function, degree of functionality, mode of operation, and quality of design. So the types of properties common to all statues or all typewriters exceed in range the types of properties common to all

²⁵ If sortals S1 and S2 differ in their associated persistence conditions, but S1 restricts S2, then there is or *could* be at least *one* object with respect to which S1 dominates S2. That much, but only that much, is true simply in consequence of our *definitions*.

pieces of copper or all hunks of metal. Accordingly, my criterion chooses 'statue' and 'typewriter' over 'piece of copper' and 'hunk of metal'.

I can think of three types of case that call for special attention. Typical of one is the case of Tibbles the cat, which was mentioned in Section I. A "puss" is that part of a normal cat that includes all of the cat except its tail. So when a cat loses its tail, there is (on my account) an object satisfying both the sortal 'cat' and the sortal 'puss' (allowing, as I will, that 'puss' is a sortal). The question, then, is which of these sortals (supposing it to be one or the other) is the object's *dominant* sortal. Assuming that persistence conditions are a function of sort, the answer depends on whether it is 'cat' or 'puss' that tells the object's sort. That, in turn, depends on which of these sortals entails possession of the wider range of properties. As usual, the answer is clear. Both 'cat' and 'puss' entail possession of physical and chemical properties. But 'cat', unlike 'puss', entails possession of *behavioral* properties. (Most pusses aren't cats: most are proper *parts* of cats. So most pusses don't breathe, sleep, hunt, mate, or otherwise *act*.) Given my criterion, we can rule without hesitation, and with a sense of enhanced understanding, that the dominant sortal is 'cat' rather than the philosophical concoction 'puss'. (What we should go on to say about the Tibbles case is spelled out in Section VI.)

Also calling for special attention is the always troublesome case of persons and their bodies. To generate work for my criterion, let's make two assumptions, each disputable: (1) that persons are wholly physical and (2) that the persistence conditions associated with 'person' are nevertheless incompatible with those associated with 'human body'. On my account, of course, the assumed incompatibility of persistence conditions is no bar to the cosatisfiability of the two sortals. So let's assume that human persons satisfy both 'person' and 'human body'. The question now arises: Which term dominates? Given my criterion, the question is which term entails possession of the wider range of properties. Assuming it to be *necessary* not only that persons are wholly physical but that they are living or otherwise functioning organisms, whether biological, mechanical, or whatever, the answer is clear. Person entails present possession not only of physical properties and of chemical properties, but also of the properties of a biological or other sort of functioning organism. Since some human bodies are dead (and yet still exist), 'human body' does not. Furthermore, 'person' entails present or past possession of the capacity, or at least of the potential, for intellection. 'Human body' does not: Some genetically defective human bodies never have even the potential to function intellectually. It is clear, on the two assumptions made above,²⁶ that 'person' entails possession of the wider range of properties and,

²⁶ If it is necessarily *false* that persons are wholly physical, then 'person' and 'human body' aren't cosatisfiable. And the question of which dominates the other doesn't arise. But if it is neither necessarily true nor necessarily false that persons are wholly physi-

therefore, that my criterion chooses 'person' over 'human body'. (The implications of this are discussed in Section VI.)

Having just mentioned that it is a matter of controversy whether the persistence conditions associated with 'person' are incompatible with those associated with 'human body', probably it is opportune to remark that the general account presented in this paper, like the standard account of the relations among objects, sorts, sortals, and persistence conditions, is meant to be compatible with a variety of views concerning the properties essential to various sorts and categories of objects and, therefore, with any of a variety of views concerning the persistence conditions associated with various sortals and categoricals. The aim of the present section is not to resolve controversies among essentialists. The aim, rather, is to provide a plausible and generally serviceable means of identifying an object's dominant sortal, and thus its persistence conditions, when it has been determined by other means (a combination of intuition, philosophical reasoning, and, at least on the causal theory of reference, empirical inquiry) what persistence conditions are associated with the various sortals satisfied by the object. The latter is a challenging task, but no more so on my account than on the standard one.

Finally, suppose we are choosing between 'piece of copper' and 'aggregate of molecules'. Here, for once, there is not a perfectly familiar category of property whose possession is entailed by one sortal but not by the other. This is not surprising, since pieces of copper are among the most primitive of the sorts of objects ordinarily recognized, while 'aggregate of molecules', in the intended sense (clarified in Section VI), does not denote an ordinarily recognized sort of object. But since I want to accommodate those who believe in arbitrary sums, here, very briefly, is what I suggest. A composite object is "strongly" unified, let us say, just in case there is something that unites its components, something that makes them the components of a single object, *beyond the mere fact that they exist*. (The latter is sufficient to make them the components of an "aggregate.") Now I assume (despite the nihilistic arguments of van Inwagen 1990) that there are quite a number of such uniting relationships, all easier to illustrate than to define, such as those possessed by the components of a piece of copper (roughly: cohesion), a solar system, the United States of America, a tree, a pile of dirt, and a disassembled trombone. Corresponding to each strongly uniting relationship is a strongly unifying property. 'Piece of copper' entails possession of a member of this category of properties. 'Aggregate of molecules' does not. And since 'piece of copper' is (on my account) a *restriction* of 'aggregate of molecules', the latter entails nothing not entailed by the former. Accordingly, my criterion selects 'piece of copper' over 'aggregate of molecules'. (More on aggregates in Section VI.)

cal, then my criterion would have to be made more precise before it could yield a clear-cut decision.

We have seen that my criterion provides clear-cut rulings across a wide range of cases. And in general, I think its rulings are the ones we want. But we saw in Section IV that it is a potentially significant advantage of my general account that it can make provision for some *FG*'s to have the persistence conditions associated with *F* while other *FG*'s have the persistence conditions associated with *G*. This would provide options for dealing with atypical cases, such as those involving "found art" or amateurish art employing valuable materials. (On the standard account, *every* work of art must have the persistence conditions associated with 'work of art'.) To secure these options it would be necessary to modify my criterion of sortal dominance. I will not consider such modifications in this paper.

So, we have at least a rough answer to the *which one* question. But what *justifies* the answer? What justifies accepting my criterion? Two things do: its intrinsic reasonableness and, especially, the agreeableness of its rulings. Suppose that a number of objects have been identified merely by their places, without the aid of any of the sortals they satisfy. (It's only on the standard account, on which there can be more than one object to a place, that an object must be identified under a sortal.) And suppose we are asked what the identified objects are. As will be evident from the examples we have considered, the answers yielded by my criterion will be the same ones, except perhaps in atypical cases of the kind mentioned above, that we would give in the course of ordinary life. When asked to say what something is (perhaps by a child), we ordinarily produce, whenever possible, a dictionary entry, such as 'cat', 'desk', or 'mountain range'. We would select 'typewriter' over 'hunk of metal', at least if we were instructed to ignore any extraordinary features of the context. I assume that our ordinary answers are generally correct (when we have correct information about which sortals are satisfied by the objects in question). And since my criterion gives the same answers, I conclude that my criterion is accurate.

Of course, anti-essentialists would deny that there *are* uniquely correct answers to *what is it* questions. They would insist that an object's sort, like its essential properties and its persistence conditions, is always *relative* to something like an interest or a description. What sort of object is our brown copper statue? Would it continue to exist if hammered flat? If painted green? The answers, an interest-relativist would say, may differ for a curator, a metallurgist, and a decorator. The brown copper statue has no interest-independent persistence conditions and, in our sense of 'sort', no interest-independent sort. Ditto for the typewriter/hunk of metal.

Now the account offered in this paper, like the standard account of the relations among objects, sorts, sortals, and persistence conditions, is frankly essentialist. But my aim in this paper is not to defend essentialism. It is to present an essentialist alternative to the essentialist standard account. I do, however, want to emphasize one point. To be an essentialist is not necessarily to

be a realist with regard to essentiality. (See Hooker 1978 and Sidelle 1989.) Neither is it necessarily to be a realist with regard to persistence conditions or sort. An object's essential properties, its persistence conditions, its sort, and its dominant sortal all are matters that can be viewed by an essentialist either as objective or as relative to our conceptual scheme.²⁷ (The anti-essentialist views them as relative to descriptions, contexts, interests, or other things similarly numerous and transitory.) A pleasing feature of conceptual-scheme relativism is that it provides relatively little basis for skepticism concerning our ability to determine an object's essential properties, persistence conditions, and dominant sortal (when we have answers to the relevant empirical questions): To make such determinations we need only be attuned to the features of our own conceptual scheme. For the conceptual-scheme relativist, at least, there is little question of the propriety of taking agreement between the rulings of my criterion and the informed judgments we make in ordinary life as evidence for the accuracy of my criterion.

To conclude this section, I want to argue that there would be little advantage to the standard account even if we did not have a satisfactory answer to the *which one* question. Although the standard account does not face the problem of identifying an object's dominant sortal, it does face problems of the same kind. We can identify an object's dominant sortal if we can decide, with respect to certain of the properties of the object, whether the object has them accidentally or essentially. If we are choosing among 'statue', 'piece of copper', and 'aggregate of molecules', it will be sufficient to decide whether the object is a statue essentially and, if not, whether it is a piece of copper essentially. Some will consider such decisions problematic. But on the standard account, too, as on any essentialist account, there are many decisions to be made, and justified, about the essential properties of objects.

Consider our copper statue. By denying that it is also a piece of copper and an aggregate of molecules, we could indeed ease the task of deciding whether the statue is a statue essentially. But the gain would be of little significance, since many decisions about the essential properties of the statue would remain: What changes in shape could the statue survive? How much of the statue could be destroyed without the statue's ceasing to exist? Could the original composition of the statue have been partially or wholly different? Could the statue have been the work of a different artist? Could it continue to exist if it ceased to be regarded, even by its creator, as a work of art?

In short, the problem of identifying an object's dominant sortal is the problem of determining which of the sortal properties of an object are had by the object essentially. If we lessened this problem by insisting that the sortal

²⁷ Wiggins, the leading exponent of the standard account, takes a realist position with regard to sort (1980, 136–38) and is thereby committed to a realist position with regard to essentiality and persistence conditions.

properties (i.e., the properties denoted by substance sortals) are instantiated by different (but coincident) objects, we would still have the problem of determining the essentiality or inessentiality to the various instantiating objects of many types of *non*-sortal properties. That we would be left after our ontological extravagance with slightly fewer decisions concerning the essentiality of properties is, I submit, a minor consideration that is far outweighed by the considerations enumerated in the first paragraph of this section.

In summary, I have presented an answer to the *which one* question, suggested a justification for the answer, and noted that questions of the same general kind arise on the standard account also, as on any essentialist account.

VI. Other Putative Cases of Coincidence

In sections III through V, I challenged the arguments supporting the standard account, proposed an alternative to that account, and defended my account against a predictable objection. In this section, I will show how my account handles putative cases of coincidence *other* than that of the statue and the piece of copper.

A. Ordinary Objects and Quantities of Matter

Sydney Shoemaker (Shoemaker and Swinburne 1984, 113), after noting that a copper statue is arguably diverse from the hunk of copper with which it is coextensive, writes, "...whatever we say of the hunk of copper, the statue does share its space with one entity that is incontestably non-identical with it, namely the quantity of copper of which it is composed."²⁸

I agree with Shoemaker that the quantity of copper (i.e., the copper) is diverse from the statue, but only because I agree with Henry Laycock that the quantity of copper (unlike the piece of copper) is not a single object. Laycock (1972) would say that the copper is to be identified with the copper atoms of which the statue is composed²⁹ and thus is to be identified with objects, not with *an* object. If he is right, the congruence of the statue and the copper is not a case of coincidence because it is not a case of the congruence of one object with any one other.

But suppose the copper *is* a single object, as many would hold it to be. In that case, presumably, the copper is identical with the *aggregate* of the copper atoms (or with the aggregate of the particles of matter) of which the statue is

²⁸ To harmonize Shoemaker's example with ours, I have taken the liberty of substituting 'copper' for Shoemaker's 'bronze'.

²⁹ Tyler Burge (1977, 109–10) shows how this account might be extended to mixtures, such as bronze and milk. I would myself prefer to identify the copper with the matter, i.e., the *particles* of matter, of which the statue is composed. Although I think that copper atoms are copper atoms essentially, I think that quantities of copper are not essentially quantities of copper.

composed. Putative cases of coincidence featuring aggregates are dealt with in subsection B.

B. Ordinary Objects and Aggregates

Among the most frequently cited examples of coincidence are those involving ordinary physical objects (such as ships and trees) and “aggregates” (or “collections”) of particles, molecules, cells, planks, or whatever. Entirely representative is an example given by Wiggins (1968, 90–91):

A certain tree T stands (leafless, suppose) at a certain spot...and occupies a certain volume...All and only [that volume] is also occupied by the aggregate W of the cellulose molecules which compose the tree....Are [T and W] identical?...T = W only if T and W have exactly the same conditions of persistence and survival through change. But self-evidently they do not....Suppose T is chopped down and then dismembered and cut up in such a way that no cellulose molecule is damaged. It seems that W then survives. And there is just as much wood in the world as there was before.³⁰ But T, the tree, cannot survive such treatment. Conversely, suppose the tree is pruned and the clippings are burned...Then the tree T survives but W, the aggregate defined as the aggregate of such and such particular cellulose molecules, does not survive.

To what, we need to ask, does Wiggins refer by ‘the aggregate W of the cellulose molecules’? Is he referring to the *set* of the cellulose molecules? Presumably not. Sets, at least as standardly conceived, aren’t physical objects and don’t occupy space. Is he referring to the *aggregation* (or heap) of the cellulose molecules? Evidently not. It seems clear that Wiggins takes W to be capable of surviving the dispersal of its members. This is a capability not possessed by aggregations.

When speaking of “aggregates,” Wiggins, and others who offer similar examples, evidently have in mind a category of object concerning which they evidently accept the following propositions. (1) For any set of two or more physical objects there is a physical object, an aggregate, that is composed of all and only the members of that set. (2) Every aggregate has the persistence conditions it has in consequence of being an aggregate. (3) An object that has the persistence conditions it has in consequence of being an aggregate will persist just so long as do all of the objects of which it is the aggregate. From the conjunction of (1), (2), and (3) it follows that for any set of two or more physical objects there is a physical object, an aggregate, which is composed of all and only the members of that set and which will persist just so long as do all of those members.

Now (1) is a doctrine of arbitrary sums and hence is very much open to question. But for the sake of argument, I am willing to allow arbitrary sums. Furthermore, I agree that (3) is approximately correct, when ‘aggregate’ de-

³⁰ Note that Wiggins evidently does identify the wood of the tree with the aggregate of its cellulose molecules.

notes the category of object Wiggins evidently has in mind. What I deny, unsurprisingly, is (2). With respect to the case at hand, I deny that W, the aggregate of the cellulose molecules, has the persistence conditions associated with 'aggregate of cellulose molecules'.³¹

On my account, W satisfies 'tree' as well as 'aggregate of cellulose molecules'. Since 'tree' dominates 'aggregate of cellulose molecules', for the reasons indicated in Section V, W has the persistence conditions associated with 'tree'. Hence there is no reason to deny the identity of W with T, no reason to consider this a case of coincidence.

Let's use 'Z' to refer to the object that is constituted after the dismemberment of T by the cellulose molecules of which T had been composed. On my account, W and Z are different aggregates of molecules even though they are aggregates of the same molecules. This will not seem counterintuitive, so long as two points are kept firmly in mind: (1) An aggregate of molecules is to be distinguished from the molecules of which it is the aggregate: The molecules are *many* objects; their aggregate is *one* object. (2) W, unlike Z, is not *just* an aggregate of certain cellulose molecules: It is also a tree.

What, the reader may ask, do I take 'aggregate of cellulose molecules' to *mean*? The answer is that I consider the term a name for the (natural) *sort* of thing that Z is. (I'm allowing that there *is* such a thing as Z.) What one says about that sort of thing will depend upon whether one favors the standard account or my account of the relations among objects, sorts, sortals, and persistence conditions. On the standard account, an aggregate of cellulose molecules is any object that (a) is composed exclusively of cellulose molecules and (b) will persist just so long as do all of the cellulose molecules of which it is composed.³² On my account, an aggregate of cellulose molecules is any object, whether an ordinary object or merely a sum, and whatever its persistence conditions, that is composed exclusively of cellulose molecules.³³ Such an object will have the persistence conditions associated with 'aggregate of cellulose molecules' just in case that sortal tells what the object is. An object that does have those persistence conditions, Z for instance, will persist just so long as (a) all of the cellulose molecules of which it is the aggregate persist, and (b) it does not undergo changes that would cause it to satisfy a sortal that dominates 'aggregate of cellulose molecules'.

³¹ If it were insisted that the three propositions provide an implicit *definition* of 'aggregate', this would merely shift the question to whether aggregates, thus defined, *exist*. The proper way to assign a meaning to 'aggregate' will be indicated shortly.

³² For a full articulation of the standard account's conception of aggregates, see Burge 1977.

³³ This analysis assumes that Wiggins is right in thinking that there is something of Z's sort where T is. This can be doubted. Recall the analogous doubt over whether there is a "piece of copper" where Statue is.

C. Cats and Pusses

A “puss” is that part of a normal cat that includes all of the cat except its tail. Yesterday the cat Tibbles consisted of a 7-pound puss, named ‘Tib’, and a 1-pound tail. Earlier today Tibbles lost its tail. But Tibbles still exists. And so does Tib. Yesterday Tib occupied a proper part of the place occupied by Tibbles. Today Tib occupies the whole of that place. Still, Tib and Tibbles differ numerically, because they have different histories. Tibbles is a former 8-pounder; Tib is not. So, Tib and Tibbles are different objects that now occupy just the same place.³⁴

In spite of all the attention this argument has received, there is a simple, commonsensical response that seems to have been overlooked: that of rejecting the premise that Tib still exists. We can agree that yesterday there was such a thing as Tibbles’ puss. And we can agree that today there is a puss that is spatiotemporally continuous with that puss. But we can deny that today’s puss is identical with yesterday’s. Initially this sounds unpromising. But that is only because we tend to focus on what the two pusses have in common, especially their shape and their composition, and fail to attend to their difference in *sort*: Yesterday’s puss, Tib, was *merely* a puss, while today’s is also a cat. If we assume that cats are cats *essentially*, and thus *non-cats* are *non-cats* essentially, we can conclude that Tib has ceased to exist.³⁵

I called this response “commonsensical” because I think that sortal essentialism is implicit in our ordinary ways of thinking. At least it doesn’t represent a radical departure from those ways of thinking, as do the other theories by reference to which the case has been disposed. (For nine ways of dealing with Tib and Tibbles, see Simons 1987, 119.)

Of course, the suggested response assumes the cosatisfiability of ‘cat’ and ‘puss’. But the cosatisfiability of different sortals is precisely what my account provides for. The response also assumes that ‘cat’ dominates ‘puss’, an assumption whose warrant was made clear in Section V.

³⁴ The puzzle of Tib and Tibbles is Peter Geach’s adaptation of a medieval *sophisma*. The term ‘puss’ is Harold Noonan’s.

³⁵ Geach (1980, 215) maintains that a proper part of a cat may itself be a cat (the *same* cat, albeit not the same lump of feline tissue, as the cat of which it is a part). His argument for this is as follows: A sufficiently large part of a cat clearly *would* be a cat if separated from the rest of the cat; but the separation surely wouldn’t *generate* a cat; so the part must *already* be a cat. What is easy to overlook is the possibility of denying the first premise, on the grounds that the separation would cause the part to cease to *exist*. It is eminently plausible to say both that proper parts of cats are non-cats and that non-cats are non-cats *essentially*. If instead one accepts Geach’s conclusion that any sufficiently large part of a cat is itself a cat, one is forced either to allow that cats can be identical although discernible (with respect to size, weight, and shape) or else to acquiesce in a monstrous multiplication of cats.

D. Persons and Bodies

Perhaps the most frequently cited example of coincidence is that of persons and their bodies. Let's briefly consider the example from both dualist and materialist points of view.

On dualist theories of the human person, there is no threat of genuine coincidence. Dualist theories divide into those on which the body is a proper *part* of the person and those on which the body is something like a possession. On theories of the first type, it is true that a person occupies the place occupied by his body. But it's not the whole of the person that occupies that place; it's merely a part of him that does so. This is no more a case of coincidence than is the case of a pipe and its bowl. ('Coincidence' is defined in the fourth paragraph of Section I.) On theories of the second type, on which a person is a mind or soul that "possesses" a body, it is only in some non-literal sense that a person may be said to "occupy" the place occupied by her body. The sense is similar to that in which a general may be said to occupy the area occupied by his army, even if he commands the army from outside that area.

On materialist theories, the matter is more complicated. For materialists who identify persons with their bodies, there is no question of coincidence. But for supporters of (some version of) the brain criterion or the psychological criterion of personal identity, coincidence may seem unavoidable, except by the radical measures surveyed in Section I. Let's consider the matter just from the standpoint of the psychological criterion. Once we have done so, it will be sufficiently evident what might be said from the standpoint of the brain criterion.

Suppose that Jane and Jill have undergone a procedure that effected an exchange of the information in their brains. The result is this: There now is a person who has the psychological properties originally had by Jane, but whose body is qualitatively and compositionally identical to the body originally had by Jill. And *vice-versa*. Proponents of the psychological criterion will say that the former is Jane and the latter Jill. And no doubt they will view this as a case of body switching. If we call Jill's original body "Body 1" and Jane's present body "Body 2," no doubt they will say that Body 2 is Body 1, that Jane now has the body originally had by Jill. But if they do say this, then (unless they hold that persons are abstracta—or invoke one of the radical theories canvassed in Section I), they will have to say that Jane and Body 2 are different physical objects that now occupy the same place.

My suggestion for materialists who accept the psychological criterion is to deny that Body 2 is Body 1. On what grounds might they do so? Well, we have found no general bar to the cosatisfiability of different sortals. And it would seem entirely natural for materialists to insist on the cosatisfiability of 'person' and 'human body'. Materialists who accept the psychological crite-

tion can say that Body 1 and Body 2 are persons as well as human bodies, that 'person' dominates 'human body' (for the reasons given in Section V), and that psychological continuity is required for personal identity. They can conclude that Body 2 is not Body 1, on the grounds that Body 2 lacks psychological continuity with Body 1. They can add that reference to persons as "bodies" is as an invitation to consider them in abstraction from their psychological properties and that this is part of what accounts for our readiness to misidentify Body 2 (Jane) with Body 1 (Jill).

But isn't this bizarre? Body 2 consists of the same head, the same neck, the same torso, and the same limbs as did body 1. How could it fail to *be* Body 1? Actually, the suggestion should elicit little surprise. We are accustomed to cases, such as that of the ship of Theseus, in which the same parts in the same arrangement arguably fail to make the same object. Just as one can argue that spatiotemporal continuity is necessary for the diachronic identity of ships, one can argue that psychological continuity is necessary for the diachronic identity of those human bodies (the psychologically functioning ones) that are persons.

Considerations of the sort presented in the preceding two paragraphs will serve also to make it plausible (to materialists who favor the psychological criterion) that Jane's present body is none other than the body she had to begin with.³⁶

To conclude this subsection, I want to indicate, although I won't here develop, a line of reasoning that suggests that coincidence is especially worth resisting precisely in the case of persons and their bodies. Suppose that Pete, a person, coincides with his body, Bob. Then Pete, like Bob, is a physical object. (It is only on theories on which persons are purely physical objects that persons are literally coextensive with their bodies.) Indeed, Pete consists of just the same particles of matter as does Bob.

Now here is the problem. Suppose that Pete is thinking. On both type-type and token-token versions of materialism, Pete's thinking is identifiable with some physical event taking place within Pete. But any physical event taking place within Pete is taking place also within Bob. Does this mean that Bob, also, is thinking? If not, why not? If a person and his body are different physical objects composed of just the same particles of matter, the only differences between them, it would seem, lie in their persistence conditions and, perhaps, in their early histories. (No doubt it would be said that death without

³⁶ Two remarks concerning the locution 'Jane's body'. (1) To speak of "Jane's body" is not thereby to concede the diversity of Jane and her body. At most, it is to concede that their identity is open to question. (2) Perhaps there is a sense of 'body' in which 'Jane's body' refers not to a physical object, but merely to the physical (as opposed to the psychological) *dimension* of Jane. In any such sense of 'body', Jane, although diverse from her body, does not *coincide* with her body. Coincidence requires two physical objects.

dismemberment would terminate the existence of Pete but not that of Bob. And perhaps it would be said that Bob came into existence some months or years earlier than Pete.) But there is no apparent way to explain, simply by reference to *those* differences, why thinking (or talking or walking) is something done by persons *but not by their bodies*. Unless an explanation can be provided, or unless materialists are willing to accept the multiplication and coincidence of *agents*, they had better find a way to avoid saying that persons and their bodies are different physical objects wholly present in just the same place. To materialists who favor the psychological criterion (or the brain criterion) of personal identity, I commend the sort of account presented above.

VII. Conclusion

I have presented and defended a novel account of the relations among objects, sorts, sortals, and persistence conditions. Among its advantages over the standard account (all listed at the beginning of Section V) is its compatibility with the commonsense principle of one material object to a place. My account enables us to dispose of the full range of putative counterexamples to that principle. And it enables us to do so without resorting to anti-essentialism, temporal parts, sortal relativism, temporal relativism, mereological essentialism, or other theories that conflict with our ordinary ways of thinking about the world.³⁷

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³⁷ I am greatly indebted for criticisms and suggestions to John Tilley and James Buxton, to anonymous referees for this journal, to Cindy Stern, who commented on a portion of the paper at the 1992 meeting of the Pacific Division of the American Philosophical Association, to others who made comments at the same meeting, notably Harriet Baber and Greg Ray, and, most especially, to Frederick Doepke.

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