

Moderate Monism, Sortal Concepts and Relative Identity

HAROLD W. NOONAN

Coincidence (e.g., of a statue and the piece of bronze which constitutes it) comes in two varieties – permanent and temporary. Moderate monism (about coincidence) is the position that permanent coincidence, but not temporary coincidence, entails identity. Extreme monism (also known as the stage theory) is the position that even temporary coincidence entails identity. Pluralists are opponents of monism tout court.¹ The intuitively obvious, commonsensical position (= my own position) is moderate monism. It is therefore important to see if it can be sustained.

In what follows I first outline the moderate monism position and compare and contrast it with other metaphysical positions with which it is often associated. I then outline the arguments for moderate monism that seem to me most persuasive, drawing on earlier work of my own (1993) and Mark Johnston's (1992). Next I turn to three criticisms of moderate monism, by Jim Stone (2005a, 2005c), Eric Olson (2006) and Penelope Mackie (unpublished). In responding to these criticisms I maintain (a) that sortal concepts satisfy de dicto modal principles that constrain the histories of the things falling under them and that may be thought of as specifying the criteria of identity for the things falling under the sortal concepts, (b) that a distinction is required between restricted sortal quantification and unrestricted quantification over the things falling under a sortal concept (between e.g., 'some statue is ...' and 'something is a statue and is ...') and (c) that reflecting on the arguments which enforce this distinction provides the best ground for accepting that 'identity is relative' in one sense familiar from the writings of Peter Geach (1980), namely that

¹ The terminology comes from Fine (2003), with some modifications.

identity under a sortal concept at a time (expressible in the form ‘is the same S as at t’) does not entail absolute, Leibnizian identity. I shall suggest that one way (not the only way) of combining these ideas is to defend a variant of stage theory which is a sort of synthesis of some of the ideas of Hawley (2001) and Sider (2001), but is not so great a departure from standard perdurantism and which yields a variant on moderate monism – which may be thought of as moderately extreme monism.

I

I begin by outlining the moderate monist position.

According to the moderate monist if God creates ex nihilo (at t1) a bronze statue and later (at t10) annihilates it, destroying both the statue and the bronze of which it is composed (so we have a case of permanent coincidence – Scenario I), the statue and the piece of bronze are identical. If, however, God simply radically reshapes the bronze at t10 (so that we have a case of same origin, temporary coincidence – Scenario II), the statue ceases to exist and the piece of bronze survives, so despite their coincidence up to t10 the statue and the piece of bronze are two things.

Since it is true to say that the statue in Scenario I could not have been radically reshaped without being destroyed, but the piece of bronze in Scenario I could have been radically reshaped without being destroyed, to conform to Leibniz’s Law the moderate monist must accept that modal predication is what I have elsewhere called ‘Abelardian’ (Noonan 1991), so that the reference of, e.g., ‘could have been radically reshaped without being destroyed’ is different when attached to ‘the statue’ and ‘the piece of bronze’. One way of fleshing this out is to give a Lewisian counterpart-theoretic account of modal predication, according to which ‘could have been radically reshaped without being destroyed’ stands for the property has a statue counterpart

which is radically reshaped and not destroyed when attached to ‘the statue’, but stands for the property has a piece of bronze counterpart which is radically reshaped but not destroyed when attached to ‘the piece of bronze’. However, acceptance of the Abelardian character of modal predication, which is obligatory for the moderate monist (and the extreme monist) – unless, of course, he endorses a comprehensive Quinean scepticism about any grade of modal involvement beyond modality de dicto – does not require acceptance of Lewisian counterpart theory, or a fortiori, of Lewisian modal realism.

Another position with which the moderate monist need not associate himself is perdurantism. In fact, there is a two-way logical independence. A moderate monist is not logically required to be a perdurantist (and might very reasonably not be) and a perdurantist might, with logical consistency, embrace pluralism (though this position would, I think, be rather perverse).

To see the lack of necessary connection either way between moderate monism and perdurantism, or four-dimensionalism, reflect on the commitments of the latter position.

The first, and most strongly emphasized in the literature, is what John Hawthorne (2006) refers to as the doctrine of plenitude: every persisting object has an infinite number of temporal parts, at least one for each non-zero temporal interval in its history.² The perdurantist may embrace what Hawthorne calls ‘instantaneous

² I follow Hawthorne and Sider (2001) in my understanding of the notion of a temporal part. \underline{x} is a temporal part of \underline{y} at \underline{t} if and only if \underline{x} coincides with \underline{y} at \underline{t} and \underline{x} exists only at \underline{t} . Coincidence is explained in terms of overlap. One thing coincides with another at a time just in case the first overlaps everything that is a part of the second at the time (so it is big enough) and the second overlaps everything that is part of the first at the time (so it is not too big). One thing overlaps a second at a time iff they share a part at the time. One thing is a temporal part of another iff it is a temporal part of it at some time. So I am a temporal part of myself. And if a piece of bronze is

plenitude' and insist that every persisting object has a temporal part for each instant of its existence, or he may insist only on what Hawthorne calls 'gunky plenitude' and be non-committal about instantaneous temporal parts. Either way, his ontology contains a great many things that are not parts of the standard, three-dimensional, pluralist position.

The perdurantist may also accept, and frequently does, the doctrine of 'universalism', that every aggregate of temporal parts is an object whether or not the aggregates are aggregates of parts from what we would commonsensically think of as the histories of a single object.

Putting these theses together the typical perdurantist accepts that there is such a thing as Noonan-from-1960-to-1980, such a thing as Noonan-from-1960-1980 plus Noonan-from 1990-2000, Noonan-right-now, the first half of Cleopatra plus the second half of Winston Churchill and so on.

The typical perdurantist also appeals to his ontology to deal with Lewis's problem of temporary intrinsics (which, of course, Lewis put forward as an argument for perdurantism). If I am bent on Monday but straight on Tuesday I stand in the bent on (or at) relation to Monday and the straight at relation to Tuesday. According to the standard three-dimensionalist position that is all that can be said. But the perdurantist can say more. He can say that I am bent on Monday because my Monday temporal part possesses the property of being bent. The three-dimensionalist cannot say this because he does not recognise the existence of my Monday temporal part. So the three-dimensionalist has to accept that the state of affairs of my being bent on

made into a statue, which is subsequently destroyed without repair or replacement of parts, the statue is uncontroversially a temporal part of the piece of bronze. Given this definition, then, the difference between the endurantist or three-dimensionalist and the perdurantist cannot just be that the latter accepts the existence of temporal parts.

Monday is irreducibly relational. On the other hand, the perdurantist can accommodate Lewis's intuition that shapes are fundamentally non-relational properties and that persisting things stand in such relations as the bent at relation to times in virtue of their temporal parts possessing fundamental non-relational properties.

Of course, the perdurantist does not have to accept the Lewisian intuition of the fundamentality of the non-relational (or more precisely, of the non-time-indexed, since it is not relations as such Lewis thinks should not be regarded as fundamental, but relations to times) and is not committed to doing so by his acceptance of a plenitudinous ontology. All the perdurantist is committed to accepting is that, if I am bent on Monday, I coincide with something, my Monday temporal part, which has the property of coinciding with something which is bent on Monday. He does not have to accept that the temporal part is bent on Monday; much less that it is bent simpliciter. (To see why the perdurantist might wish to reject the Lewisian intuition of the fundamentality of the non-time-indexed, consider the property of being conscious on Monday. Should we say that if I possess it this is in virtue of the fact that something else (a temporal part of me) is conscious on Monday, or is conscious simpliciter?)

So much, for the time being, for perdurantism. I have been stressing that it is package deal and the elements of the package are logically separable. However, the minimal perdurantist commitment is to gunky plenitude, and so to an ontology significantly more extensive than that of common sense, and now it should be clear that the moderate monist has no such evident commitment. The moderate monist's motivation is repugnance at the inflated ontology of the pluralist, which in itself can hardly incline him to endorse the perdurantist's plenitudinous ontology (it is another question, of course, whether there are arguments he, along with everyone else, should

accept for minimal perdurantism). Moreover, the moderate monist need not accept a plenitude of temporal parts in order to appeal to the Abelardian character of modal predication to resist the pluralist's argument from Leibniz's Law. The two are clearly separable (even though they are both embraced by Lewis).

Moderate monist need not be perdurantists, then, unless everyone needs to be a perdurantist. Equally, perdurantists need not be moderate monists. A perdurantist can accept that, whenever I exist, there is something coincident with me that exists only at that time, without regarding me as a mere aggregate of such temporal parts. Or he can say that the temporal parts of the statue and the permanently coincident piece of bronze are distinct – in virtue perhaps of modal differences between them, so the statue-at- t_5 and the piece-of-bronze-at- t_5 are distinct instantaneous objects that (permanently) coincide. Insofar as the perdurantist wants to emphasise analogies between time and space he should not take this line, since it is like saying that when two houses share a wall there are actually two spatially coincident walls, but again my point is just that it is logically consistent to be a perdurantist (in the minimal sense) and simultaneously a pluralist.

II

The argument for moderate monism should not then be that it is a consequence of perdurantism, since it is not (quite apart from the fact that this argument would beg the question why perdurantism should be accepted). So what arguments are there for moderate monism?

Of course, moderate monism is a conjunctive thesis: that permanent coincidence is, but temporary coincidence is not, identity. So arguments for it have to rule out both the opposing positions, both pluralism and extreme monism. But in this section I will focus just on arguments against pluralism and defer discussion of

extreme monism until later (though I have already indicated that I am in fact a good deal less unfriendly to it than to pluralism).

The fundamental anti-pluralist intuition is an intuition of supervenience: there cannot be two purely material objects which in all actual, relational and non-relational, past, present and future respects are microphysically indistinguishable – as the statue and the piece of bronze are in the permanent coincidence situation if they are not identical. But this is precisely what the pluralist denies, so how can we get beyond the clash of intuitions?

I think that there are two main lines of argument against pluralism.

The first is as follows. While it may be disputable whether the statue and the piece of clay in the permanent coincidence situation – call them, as usual, Goliath and Lumpl – are distinct objects, no one could accept that they are distinct statues. The pluralist has to say that despite the properties it shares with Goliath, Lumpl is not a statue, and despite the properties it shares with Lumpl, Goliath is not a piece of bronze (alternatively the pluralist can say that though Goliath and Lumpl are both statues and distinct objects they are not distinct statues, but no pluralist will say that). So the pluralist has got to reject any proposition that entails that Lumpl is a statue (and any proposition that entails that Goliath is a piece of bronze).

But consider the following proposition (adapted from Johnston 1992, see also Noonan 1993; I follow Johnston's numbering):

(8) If \underline{y} is a paradigm statue and \underline{x} is microphysically exactly like \underline{y} then \underline{x} is a statue.

Suppose now, for reductio, that Goliath and Lumpl are distinct. Goliath is a paradigm statue, and Lumpl is microphysically indistinguishable from Goliath, so, given (8), Lumpl is a statue. Hence there must be not merely two coincident material objects

where Goliath is, but two coincident statues. But this is intolerable, hence, given (8), Goliath and Lumpl cannot be distinct.

Although Johnston thinks that this is an impressive argument against pluralism, he thinks that it can be resisted, since it can be seen that (8) is false. (8) is false because if it were true the following would also be true:

(9) If y is a paradigm statue and x is an entity that differs from y in any respect relevant to being a statue only very minutely, then x is a statue.

But that (9) is false, Johnston argues, can be seen by considering Peter Unger's (1981) 'problem of the many'.

The problem of the many begins from the observation that:

(10) In the closest vicinity of any paradigm middle-sized material F there are usually very many entities that differ only minimally from the paradigm in any respect.

Applying this principle to the case of Goliath/Lumpl, given (9) we must conclude that in the vicinity of Goliath there must be many statues, albeit highly coincident, almost completely overlapping. But this is false, hence, Johnston argues, the problem of the many reveals that (9) and hence (8) must be rejected.

Johnston thinks that what should replace (8) and (9) are:

(8') If y is a paradigm statue and x is intrinsically exactly like y and x is of the right category, i.e. not a mere quantity or piece of matter, then x is a statue

and:

(9') If y is a paradigm statue and x is an entity that differs from y in any respect relevant to being a statue only very minutely and x is of the right category, i.e. is not a mere quantity or piece of matter, then x is a statue.

I have doubts about whether these replacements provide a solution to the problem of the many, as Johnston thinks, but whether or not this is so, it is clear that the following alternative weakenings of (8) and (9) are not cast into doubt by that problem:

(8*) If y is a paradigm statue and x is microphysically exactly like y and x does not merely partly overlap any statue then x is a statue.

(9*) If y is a paradigm statue and x is an entity that differs from y in any respect relevant to being a statue only very minutely and x does not merely partly overlap any statue then x is a statue.

But if (8*) is true Lumpl is a statue just as Goliath is.

And, of course, if (8*) and (9*) are acceptable so are:

(8*') If y is a paradigm statue and x is microphysically exactly like y and x does not merely partly overlap any statue and x is of the right category, i.e., not a mere quantity or piece of matter, then x is a statue,

and:

(9*') If y is a paradigm statue and x is an entity that differs from y in any respect relevant to being a statue only very minutely and x does not merely partly overlap any statue and x is of the right category, i.e., not a mere quantity or piece of matter, then x is a statue.

Of course, (8*') does not entail that Lumpl is a statue, but as we shall see later it can be used in conjunction with the second main argument against pluralism to push the pluralist to further extremes.

So the pluralist must reject (8*). How?

Well, one thing that the pluralist can say is that (8*), like (8), is false because something is a statue – an artwork – in virtue partly of its relational properties (Baker

1997). But it is obviously false that if x is an F in virtue partly of its relational properties and y is intrinsically microphysically like x and does not merely partly overlap x then y is an F.

This is correct. (8*) and (8) are obviously false, as Johnston notes, since whether something is a statue depends on its causal origin, at least. But since it is part of the story that Goliath and Lumpl have the same origin and all the same relational properties (expressible in microphysical terms) there is no (non-question-begging) response here for the pluralist.³

The second way the pluralist can resist accepting (8*) is by insisting that sortal concepts are constituted by persistence conditions which give necessary conditions of falling under them and that, in the case of the concept of a statue, one such persistence condition is: being incapable of being radically changed in shape. So Lumpl is not a statue and (8*) is false because Lumpl is capable of being rolled into a ball and not destroyed and no statue is. Later I will be arguing that it is not necessary to assume that sortal concepts involve de re persistence conditions of this type in order to distinguish them from non-sortal concepts and what is acceptable in the thought that they do can be made consistent with moderate monism. But for now all I want to emphasise is that if it is said that Lumpl is a piece of bronze and not a statue because it is capable of being rolled into a ball without being destroyed it cannot also be said

³ In fact, Baker's own objection to the argument as actually given in Noonan 1993 appears to be rather that Lumpl, although a statue, is so derivatively, and so is not a distinct statue from Goliath (Baker 1997:604). If I understand this it involves accepting what I said earlier no pluralist could accept, that though Goliath and Lumpl are both statues and distinct (i.e., non-identical) objects, they are not distinct statues, but the same statue. But since Baker denies that Lumpl is non-derivatively a statue she faces the same problems in explaining why that the standard pluralist does in explaining why Lumpl is not a statue at all. Why are (8*) and (8*') false, except for reasons that have no bearing on the argument against the pluralist, when 'statue' is read as 'non-derivative statue'?

that it is capable of being rolled into a ball and not destroyed because it is piece of bronze and not a statue. The pluralist who appeals to modal differences to explain why Goliath and Lumpl are of different sorts cannot say that their modal differences are explicable in terms of their different sorts.

The final possibility for the pluralist who wishes to reject (8*) then is just to say that the sortal difference between Goliath and Lumpl is primitive. There is no other difference between them that explains why Goliath is a statue and Lumpl not, although there are other differences between them consequential on this difference, like the modal difference just noted, and other differences are possible because of this difference (it may be that the statue is admired and the piece of bronze not, that the statue is valuable and the piece of bronze not etc. (Fine 2003)). Not every difference between things can be grounded in some other difference, one must stop somewhere and in this case that is here. Against this position I have nothing to say, except that it seems surprising. It is plausible that the question ‘In virtue of what is this object (which is in fact an electron) negatively charged?’ may have no answer, but it does not seem plausible that the question ‘In virtue of what is this object (which is in fact a statue) a statue?’ should be similarly unanswerable.

At any rate, to reject the first argument against pluralism the pluralist must deny (8*) and to do so relevantly he must either accept that purely material entities of identical material constitution at all times can be distinct merely in virtue of differences in modal, dispositional or counterfactual properties or that purely material entities of identical material constitution at all times can be distinct merely in virtue of differences in sortal properties.

The second argument against pluralism that I find impressive is that it entails a degree of ontological inflation far greater than that made evident by the case of Goliath and Lumpl.

One way of arguing this is to consider the extensions of a compositionally vague general term on the assumption that vagueness has its source in language, not the world (see Noonan 1993, drawing on Hughes 1986). But a simpler way to argue the point is to start with the thought that we employ a particular set of artefact concepts, but could have employed a slightly different set. Thus we talk, for example, of ‘snowballs’, where what is required for the persistence of a snowball is the persistence of a roughly spherical lump of snow. A snowball is destroyed once the lump is flattened into a disc shape.

Clearly, however, we could talk of ‘snowdiscballs’, where what is required for the persistence of a snowdiscball is less demanding; merely that the lump of snow remains either in a ball shape or a disc shape (see Sosa 1987). The concept of a snowdiscball is as legitimate as the concept of a snowball and, in fact, in many cases where a snowball is present there will also be present an all-times-coincident snowdiscball (in every case, that is, in which the snowball is not made from a previously disc shaped piece of snow or destroyed by flattening it into a disc shape). But to hold, in such a situation, that two, at-all-times-coincident, entities are present seems clearly absurd. It cannot be justified by insisting on the systematic reasons for distinguishing pieces of matter from the objects which constitute them, which Johnston gives as reasons for preferring his (8’) and (9’) to (8) and (9).⁴ And, again, if

⁴ The point that the pluralist is committed to distinct but at all times coincident artefacts can be made without appeal to the manufactured concept of a snowdiscball. Consider the familiar concepts of a house and a room. Suppose I build a one-roomed house, with the intention of extending it later, but never do. Then the house and the

we accept that in such a situation there are two coincident entities, we are bound to accept many more, for, once one gets the idea, it is very easy to invent other variations on the concept of a snowdiscball. So the point obviously generalizes to other artefact concepts and there seems no reason to reject its generalization to all concepts but an unacceptable anthropocentrism.

The position, then, is that if we insist on the standard, non-Abelardian, account of modal predication, which underpins the usual Leibniz's Law argument for pluralism, it will not be enough to allow that there is a systematic distinction between pieces of matter and the material objects they constitute; we will also have to accept that within the category of material objects constituted by pieces of matter it is possible for two distinct material objects to be at all times coincident, and in fact we will have to accept that not only can this be the case, but it is always the case—whenever we are prone to speak of there being one material object of a certain sort, there are, in fact, very many, always coincident, material objects of similar sorts distinguished only by their modal, dispositional or counterfactual properties. Moreover, these entities will not merely be of similar sorts (snowballs and snowdiscballs) but of the same sort unless the doubly weakened version of (8), namely (8*') and its equivalents for other concepts are all relevantly false. I submit that accepting all this is too high a price to pay just to preserve the standard account of modal predication. Yet once we reject that account we no longer have any good

room are permanently coincident. But the house could have been enlarged into (or originally built as) a many-roomed mansion, in which case the room would have become (or always have been) a proper part of it. So the pluralist must distinguish the two (see further the discussion of the paradox of increase below, or consider Lewis's example of GWR and GWR- (1986) or Kripke's example of the rootless plant and its stem in his unpublished lectures on identity). What the example of the snowdiscball brings out in addition is merely how huge the pluralist's ontological commitment is.

argument for non-identity even in the case of Goliath and Lump1; we can, therefore, embrace monism without qualms.

The pluralist can respond (Mackie unpublished) that whilst this argument does establish that pluralism entails a degree of ontological inflation far greater than initial reflection on the case of Goliath and Lump1 might suggest, this is not unacceptably high, or at least, if it is the typical moderate monist, with his perdurantist commitment to plenitude, is in no position to say so. The only difference between the typical monist and the pluralist, in fact, is that whilst the moderate monist must accept the existence of snowdiscballs as well as snowballs just as the pluralist must, the latter must also accept, what the former will not, that there are snowdiscballs that are permanently coincident with distinct snowballs. This is a difference indeed, but why the pluralist can say, is it a significant one? Why, once the existence of snowdiscballs is conceded is it a significant gain in ontological economy to claim that when such entities are permanently coincident with snowballs they are identical with them?

I have no conclusive reply to this response. However, it is worth considering the consequence of accepting pluralism for the description of a possible world containing just one, spatially unextended, durationless atom (and it is hard to see why pluralists should consider such a thought experiment illegitimate). The moderate monist will say that this world contains just one material object. The pluralist must allow that it may contain a multitude, distinguished only by their sortal differences and modal differences. In fact, it is hard to see how the pluralist can avoid saying that such a world must contain infinitely many numerically distinct material objects. I leave it to the reader to decide whether this ontological commitment is not significantly more extensive than that of the plenitudinous perdurantist.

III

I turn now to the arguments against moderate monism and begin with Jim Stone's (2005a, 2005c).

Stone argues that moderate monism is incoherent, employing an argument that Penelope Mackie (2007) has dubbed the 'modal dilemma'. His argument is that if the moderate monist accepts, as he must, the Abelardian account of modal predication he has a problem explaining why in the same origin, temporary coincidence scenario (Scenario II) the up-to time-t₁₀-coincident statue and piece of bronze then go their separate ways.

It is natural to respond to this demand for explanation by appealing to a modal difference between the two: the statue does not survive radical reshaping (say, into a mermaid shape) because it cannot, whereas the piece of bronze can. Or, as Mackie (2007) puts it, it is natural to respond to the explanatory demand by appealing to the fact that in Scenario II:

(M3) The statue can survive being transformed into mermaid shape
is false, although

(M4) The piece of bronze can survive being transformed into mermaid shape
is true.

But if modal predication is Abelardian this apparent difference need not correspond to any genuine difference between the statue and the piece of bronze, since this difference in truth-value is compatible with the statue being the piece of bronze (as in Scenario I). But then it looks as if the mere fact that (M3) and (M4) differ in truth-value cannot explain why in Scenario II the statue and the piece of bronze go their separate ways.

Thus, it appears, the moderate monist faces what Mackie calls a modal dilemma. To account for the identity verdict in Scenario I he must accept that modal predication is Abelardian, but to endorse the intuition that the apparent modal difference between the up-to-t₁₀-coincident statue and piece of bronze in Scenario II is explanatory of their future divergence he must regard this difference as a genuine one – which seems to require rejecting Abelardianism.

To see how the moderate monist can explain why the statue and the piece of bronze go their separate ways in Scenario II note first that, irrespective of one's view of modal predication, the fact that (M3) is false and (M4) is true in Scenario II cannot explain why the statue and the piece of bronze in fact go their separate ways, since although the fact that (M3) is false entails that the statue does not in fact survive reshaping, the fact that (M4) is true does not entail that the piece of bronze in fact does survive reshaping – since what can happen may or may not in fact happen.

The explanation of the divergence of that statue and the piece of bronze in Scenario II that the moderate monist can offer goes like this:

- (1) The statue is a statue
- (2) No statue can survive radical reshaping

So:

- (3) No statue does survive radical reshaping

So:

- (4) The statue does not survive radical reshaping.

But:

- (5) Necessarily, any piece of bronze survives radical reshaping in which all its matter is preserved in one coherent whole

(6) The matter of the piece of bronze is radically reshaped but preserved in one coherent whole.

So:

(7) The piece of bronze survives radical reshaping.

Therefore:

(8) The statue and the piece of bronze go their separate ways.

In this explanation (2) and (5) are de dicto modal propositions which tell us something about the persistence conditions, or identity criteria, of statues and pieces of bronze.

(1) and (6) are non-modal claims about what actually happens. The proposition that the statue is not a piece of bronze (but see section IV below) is, of course, entailed by this explanation, but it does not have an explanatory role.

The obvious worry about this explanation is that it does not do sufficient justice to the intuition that the SII statue does not survive reshaping because it cannot. The principle appealed to, to justify the claim that the statue cannot survive radical reshaping, is the de dicto modal principle, (2), that no statue can survive radical reshaping, that is, that necessarily, if something is a statue it does not survive radical reshaping. But we can introduce the predicate 'permanent bachelor' with the obvious meaning and then there will be a de dicto modal principle analogous to (2) to the effect that no permanent bachelor can survive marriage. But it would be absurd to appeal to such a principle to explain why Dick, who, it turns out on his deathbed, was a permanent bachelor, never married when the opportunity presented itself. Analogously, then, why is it not absurd to explain the divergence of the statue and the piece of bronze in Scenario II by appeal to the de dicto modal propositions (2) and (5)?

However, the explanation is straightforward. Scenario II is given to us by its description, as one in which a statue is coincident-up-to-t10 with a piece of bronze. The statue is not identifiable in any other way than as a statue (or as something which differs in its future after t10 from the piece of bronze) – it is not identifiable, for example, as the statue-like thing indiscernible from the piece of bronze up to t10, since that description is also true of the piece of bronze. By contrast, any situation one describes in which there is a permanent bachelor is one in which the man in question is identifiable in some other way (as ‘Mary’s eldest brother’, for example), so the question ‘Why did that man, who in fact never married (Mary’s eldest brother), fail to marry when he had the opportunity?’ can be formulated.⁵ No such question can be formulated about the thing that is in fact a statue in Scenario II.

I conclude that explaining why the statue and the piece of bronze in the same-origin-temporary-coincidence scenario go their separate ways is no problem for the moderate monist. To do so he needs merely to appeal to factual claims and to de dicto modal propositions, so his distinctive Abelardian account of de re modal predication is not at issue.

This response to Stone’s modal dilemma serves equally as a response to the ‘paradox of increase’ recently put forward by Eric Olson (2006) as a puzzle that any account of material objects must confront, and which presents any account at all in accord with common sense with a serious challenge. In fact, the possibility of increase is unproblematic for the moderate monist.

⁵ As Mackie pointed out to me, this difference is related to the following fact about permanent bachelors: when a man marries, no permanent bachelor goes out of existence, and the ‘coincidence’ between a permanent bachelor and a man (unlike the coincidence between a statue and a piece of bronze) can never be merely temporary.

Objects with the same origin can cease to be coincident in two ways: one can continue to exist when the other ceases (as in the case of Goliath and Lump), or one or both can come to have a part the other lacks. When one of two coincident objects gains a part and the other does not, therefore, we merely have another example of a type of same-origin-temporary-coincidence scenario and we can anticipate that any apparent paradox can be disarmed by appeal to the same considerations that disarmed Stone's modal dilemma.

We can see how this plays out if we examine Olson's presentation of the paradox of increase more closely. He sets it out in entirely general terms, but it helps in thinking it through to have a concrete example in mind, so in what follows think of A as a house, B as a room which is added to the house after the initial construction and C as the original structure before B is added (or consider Kripke's example in his lectures on identity (unpublished) of the rootless plant consisting only of a stem until it grows a flower as a part). Here then is Olson's presentation of the paradox of increase:

Suppose we have an object A and we want to make it bigger by adding a part B. Let us therefore conjoin B to A in some appropriate way. Never mind what this conjoining amounts to: let us do whatever it would take to make B a part of A if it ever can be. Have we thereby made B a part of A? It seems not. We have only brought it about that B is attached to A. We have rearranged A's surroundings by giving it a new neighbour, but we haven't given it a new part. If we have made A a part of anything, we have made it a part of the thing made of A and B after our conjoining. But that thing didn't exist at all when we started ... or if it did, it already had B as a part.... It seems that nothing would ever give A a new part.

Olson goes on to state this reasoning in a way that makes its premisses explicit and lays out a range of possible solutions. Thus stated the reasoning has eight steps:

- (1) A acquires B as a part
- (2) When A acquires B as a part, it comes to be composed of B and C (= the rest of A apart from B)
- (3) C does not acquire B as a part
- (4) C exists before B is attached
- (5) C coincides mereologically with A before B is attached
- (6) No two things can coincide mereologically at a time

So:

- (7) C=A

So:

- (8) A does not acquire B as a part (from (3) and (7))

– contradicting the original assumption (1).

One way of resisting this argument, of course, is to deny (7). This is what the moderate monist does, he says that before A acquires a new part it coincides with but is distinct from C, which ends up as a part of A. Olson responds:

But if A got bigger why didn't C get bigger too? ... A but not C has the capacity to grow by gaining B as a part.... This is surprising. A and C appear to be exactly alike before the attachment.... There appears to be no difference that could account for any differing capacity to acquire parts.... We might try to explain it in terms of a difference in kind. A can acquire new parts because it is a [house] ... a thing of some 'mereologically inconstant' kind, C cannot change its parts because it is not.... But this is little help.... What is it about A that makes it a [house]? Ordinarily we expect there to be a physical difference

between [houses] and other things.... But there is no such difference between A and C. It looks as if what makes A a [house] is nothing more than what sort of thing it can survive ... it is a [house] because, in addition to having all the right physical properties (which C shares), it can also gain new parts.... It looks like coincidentalists [i.e., moderate monists] will have to say that there is no explanation of why A but not C can gain new parts.... A's capacity and C's incapacity to gain new parts are basic properties of them ... we cannot explain their having them in terms of other properties, in the way we can explain why an object is fragile in terms of the way its particles are bonded together.

These considerations are evidently the same as those lying behind Stone's modal dilemma and the response is the same. A house can be made bigger by appropriate building work just as a piece of bronze can be radically reshaped. There is a de dicto modal principle that specifies part of the persistence conditions for houses analogous to the de dicto principle, (5), employed in the explanation of the divergence of the statue and the piece of bronze at t10 in Scenario II. A room cannot be made bigger by the sort of building work in question. Again this is merely a de dicto modal principle, analogous to the de dicto modal principle, (2), about statues, so there is no more a puzzle about how the house grows though the room does not than there is about how the piece of bronze undergoes radical reshaping though the statue does not.

And surely this is exactly what we should expect. If someone ask 'Why was Goliath destroyed at t10?', a sensible answer would be, for example, 'It was beaten shapeless with a hammer?' (Or maybe this is better as an answer to the question 'How?'; an appropriate answer to the 'Why?' question might then be: 'Because its owner wanted to reuse the bronze to make a different statue.')

But if the response now is, 'I know that, but why did beating it shapeless with a hammer destroy it?' the only

appropriate reply is to say that doing that sort of thing to a statue is just what we call destroying it. Similarly, if someone asks why C was not enlarged when A was extended a sensible reply would be to point to the sort of building work done, which did not constitute what we call ‘enlarging a room’ If the response is now ‘I now that work was done, but why was carrying it out not enlarging the room (though it did constitute extending the house)?’ the only appropriate reply to is repeat that doing that sort of building work is just what we call ‘extending a house’ and do not call ‘enlarging a room’. Given that C is a room, therefore, there is no more mystery about why it is not extended though A is than about why Goliath is destroyed when the bronze is hammered shapeless.

The de dicto modal principles employed in these explanations can be thought of, as I have said, as specifying persistence conditions for things of the sorts in question, or again, they may be thought of as specifying criteria of identity for things of these sorts. Staying with the example of statues and pieces of bronze, we have seen two types of persistence conditions in the discussion above.

The principle that no statue can undergo radical reshaping can be expressed as follows

(S) Necessarily, for all x, if x is a statue then if the matter that constitutes x at t is radically reshaped at t, then x ceases to exist

– this specifies a ‘passing away’ condition for statues.

The principle that any piece of bronze must survive radical reshaping in which all its matter is preserved in one coherent whole can be expressed as:

(P) Necessarily, for all x, if x is a piece of bronze then if the matter that constitutes x at t is radically reshaped at t but preserved in one coherent mass, x survives

– a ‘preservation’ condition for pieces of bronze (this terminology comes from Mackie (unpublished b)).

Both ‘passing away’ and ‘preservation conditions’ can, however, be thought of as consequences of conditions of a more fundamental kind. The reason why sortal concepts are governed by such conditions is that they constrain the histories of the things they apply to, and such constraints can always be expressed in the form:

Necessarily, if \underline{x} is an \underline{S} then if \underline{x} exists at \underline{t} and \underline{t}' then \underline{Rxtt}' .

Or of the form:

Necessarily, if \underline{x} is an \underline{S} then if \underline{Rxtt}' \underline{x} exists at \underline{t} and \underline{t}' .

Thus the ‘passing-away’ condition for statues is entailed by a principle of the first form (stating that a statue cannot have radically different shapes at different times) and the ‘preservation condition’ for pieces of bronze is entailed by a principle of the second form (stating that if the matter composing a piece of bronze is in one coherent mass at both of two times, whatever shape it is in, the piece of bronze exists at both times).

Principles of these forms lay down necessary conditions for being a thing of sort \underline{S} and a specification of the totality of such conditions is a specification of the persistence conditions, or the criterion of diachronic identity, for things of that sort. What distinguishes sortal concepts from non-sortal concepts (even ones that necessarily apply to a thing at any time it exists, like being a permanent bachelor) is that they are governed by such de dicto modal principles.

It follows that questions about criteria of identity over time are misunderstood if they are thought of as questions about identity. Rather they are questions about the conditions of membership of sortal kinds. The problem of statue identity over time, for example, can be formulated as follows, without mention of identity:

(Q) What conditions \underline{C} satisfy the following schema: (SC) If \underline{x} is a statue then if \underline{x} exists at \underline{t} and \underline{t}^* , \underline{Cxtt}^* ?

A solution to the problem, i.e., an account of statue identity over time, will then take the following form:

(A) All and only the following conditions satisfy schema (SC): [LIST].

To see that this is an adequate rephrasing of the problem one need only observe that a condition is sufficient just in case nothing else is necessary. So a complete list of necessary conditions, together with the fact that the list is complete determines all the sufficient conditions. But a quaternary relation \underline{R} , satisfied by ordered quadruples $\langle \underline{x}, \underline{t}, \underline{y}, \underline{t}' \rangle$ is sufficient for the identity of statue \underline{x} at time \underline{t} with statue \underline{y} at time \underline{t}' just in case there is no such relation \underline{R}' , not entailed by \underline{R} , which is a necessary condition of statue identity over time (where to say that \underline{R}' is a necessary condition of statue identity over time is just to say, as we have seen, that if \underline{x} is a statue and \underline{x} exists at \underline{t} and \underline{t}^* then $\underline{R}'xtxt^*$).

Question (Q) then expresses, without mention of identity, everything that could possibly be wanted in enquiry after the conditions of statue identity over time – and the same holds, mutatis mutandis, of course, for all questions about criteria of identity over time. (Of course, questions about criteria of identity at a time are subsumed under question (Q). Conditions listed under (A) will include ones of the form: ‘if $\underline{t}=\underline{t}^*$ then \underline{Rxt} ’.)

IV

I claim, then, that the moderate monist can answer the objections of Stone and Olson. Now I turn to Mackie’s objection (Mackie unpublished a).

This can be approached by noting that if the response to Stone and Olson given above is accepted it must be taken on board that whether a sortal concept

applies to a thing depends on its total history, past, present and future. But Mackie objects that this is utterly implausible. Whether something is a statue, for example, at a time plausibly depends on its past, but it cannot depend on its future. The concept of a statue is not future-reflecting, like the concept of a future President, say, which applies to someone at a time in virtue of facts rooted outside that time. But, then, she argues, moderate monism must be incorrect. Since Lump1 is distinct from Goliath in the same-origin-temporary-coincidence scenario it is not a statue, even before Goliath's demise (there are not two statues there). So, since the same-origin-permanent coincidence differs only with respect to future events, Lump1 is not a statue there either. But Goliath is. So they are two, not one. Pluralism is vindicated.

Mackie also appeals to the contention that sortal concepts are not future-reflecting to challenge the first of the arguments given in Section II above against pluralism. The argument was based on the plausibility of the following sufficient condition for being a statue:

(8*) If y is a paradigm statue and x is microphysically exactly like y and x does not merely partly overlap any statue, then x is a statue.

But Mackie argues that since sortal concepts are not future reflecting (8*) is no more plausible than:

(8*B) If y is a paradigm statue and y begins to exist at t and x begins to exist at t and x is microphysically exactly like y from t up to some later time t' and x does not merely partly overlap any statue from t to t' , then x is a statue.

But she says, moderate monists must reject (8*B), on pain of making the statue and piece of bronze identical in the same-origin-temporary-coincidence scenario. So the moderate monist's appeal to (8*) is undermined.

One way the moderate monist can respond to all this is by querying the claim that sortal concepts are not future-reflecting. He can agree that I do not need foresight to know that there is a statue before me, and that I can know of what is before me that it coincides with a statue without knowing its future – and so he can agree that in these respects the concept of a statue is unlike the concept of a future President – whilst insisting that in the strict sense Mackie’s argument requires not to be the case, sortal concepts are future-reflecting. But I think it is more straightforward for the moderate monist to allow that sortal concepts are not future-reflecting, even in the strict sense.

What follows?

First, it follows that whether we are in the permanent-coincidence or temporary-coincidence scenario, Lump1 is a statue before t10. So in the temporary-coincidence scenario there are two objects present before t10 each of which is a statue then. Are there two statues there? Not unless we count by identity. So the moderate monist can simply deny that we do. In other words the moderate monist can simply take a leaf out of the relative identity theorist’s book.⁶ Entities are to be counted as two statues, he can say, when both are statues and are not the same statue. But though when coincident Goliath and Lump1 are both statues they are then the same statue, so they are to be counted as one statue. They are the same statue because the relation we express in English with the form of words ‘is the same statue as at time t’ is a relative equivalence relation, not an absolute equivalence relation.

⁶ I am not endorsing every component of the relative identity theorist’s position here. In particular, I am not endorsing Geach’s argument for the inexpressibility in any language of absolute identity. See Noonan 1997 for an overall assessment of relative identity.

In fact, we can now see that the same-origin-temporary-coincidence scenario is just an example of precisely the type of situation to which relative identity theorists typically appeal in support of their position.

Consider Geach's unlucky cat, Tibbles, and its tail complement, Tib.⁷ Tibbles is sitting comfortably on the mat. And Tib is there too, occupying a smaller region. Some relative identity theorists (and others, for example, Chisholm 1986) are prepared to argue as follows: 'there is one cat on the mat. Tib is on the mat. Tibbles is on the mat. Tib is a cat. Tibbles is a cat. So Tibbles is (one and) the same cat as Tib. But Tib is not (identical with) Tibbles (it is smaller). So objects can be the same cat without being numerically identical. Being the same cat as at a time is a relative identity relation.'

But there is an easy response to this argument, namely that the concept of a cat is maximal, no cat is a proper part of a cat.

The relative identity theorist can avoid this response by extending the story by supposing that Tibbles' tail cut off. After the amputation Tib is wholly coincident with Tibbles, so that appeal to the maximality requirement on the concept of a cat fails. But the relative identity theorist's opponent can plausibly say that Tib is not a cat even after the amputation, because it has the wrong past history.

But the relative identity theorist can avoid this rejoinder by suggesting a time-reversed variant of the case of Tib and Tibbles, in which we begin with a tailless cat

⁷ What is Tib? Tib is a certain bodily part of a cat, like a tail, leg, whisker or head. We can run the Tib/Tibbles arguments taking Tib to be a cat's head, in fact. (Animals have been decapitated in experiments and their heads kept alive, though the subjects of these experiments were not cats but, as Tibbles would be pleased to know, dogs. In C.S. Lewis's novel, That Hideous Strength, the leader of the wicked organization Ransom, the hero, fights is always referred to, as it turns out, significantly, as 'The Head')

and graft on a tail – in other words a same-origin-temporary-coincidence case of the same type as the Goliath/Lumpl example, or Olson’s example of (house) A and (room) C. Now the opponent of relative identity faces a hard set of choices. He can deny that both Tib and Tibbles exist before the grafting. Or he can accept that the concept of a cat is future-reflecting. Or he can join the pluralist in denying that there need be any actual microphysical difference, relational or non-relational, past, present or future between a cat and something which is not a cat – which takes us back over old ground.

It is not surprising then that the moderate monist’s position, when developed in the most straightforward way to meet Mackie’s objection, leads to an acceptance of relative identity.⁸

But Mackie’s object can be pressed further. I have claimed that the moderate monist should say that Goliath and Lumpl are the same statue before t₁₀ in the temporary coincidence scenario. But we can speak, and I have been speaking, of the statue in the scenario, and the (statue shaped and sized) piece of bronze. How are these definite descriptions to be understood?

At this point the moderate monist must take another leaf out of the relative identity theorist’s book, and distinguish between restricted sortal quantification and unrestricted quantification over things falling under a sortal concept. The de dicto persistence conditions governing the concept of a statue define a sortal kind to which Goliath but not Lumpl belongs (in the temporary coincidence scenario; in the

⁸ The pluralist need not reject this reasoning. In fact, extant pluralists should welcome it. From their point of view, to say that moderate monists should accept relative identity is just to say that a position they reject entails another position they reject.

permanent coincidence scenario both belong to it because ‘they’ are the same object). It is this sort we quantify over when we use the quantifying expressions ‘some statue’ and ‘every statue’ (mutatis mutandis, ‘some piece of bronze’ and ‘every piece of bronze’). And it is these quantifying expressions that figure in the appropriate Russellian expansion of the definite descriptions mentioned above. So the description ‘the statue in such and such a place at t₅’ uniquely denotes Goliath even though Lumpl is there and is also, before t₁₀ a statue.

As I said, the distinction between restricted sortal quantification and unrestricted quantification over things falling under a sortal concept, is a familiar part of the relative identity theorist’s package, but in a moment I want to show how it naturally emerges in another framework, namely, that of the stage-theorist. Before coming to that, however, I want first to explain how it is a necessary part of the moderate monist’s position even if relative identity is rejected.

Return to the permanent coincidence scenario. The moderate monist says that in this situation Goliath is Lumpl. So he has to accept that modal predication is Abelardian. So he is able to deny that Lumpl would be destroyed if rolled into a ball whilst acknowledging that Goliath would be destroyed if rolled into a ball. Can he also endorse the universally quantified proposition that any statue would be destroyed if rolled into a ball (with the exception of statues, say statues of Humpty Dumpty, we better add to be strict, originally created to be ball shaped)?

An argument that he cannot goes as follows. According to the moderate monist Lumpl is Goliath in the permanent coincidence situation. So it is a statue. So if the moderate monist accepts that anything that is a statue would be destroyed if rolled

into a ball he must accept that Lump1 would be destroyed if rolled into a ball. But he doesn't. So he must deny that anything that is a statue would be destroyed if rolled into a ball. So he must deny that any statue would be destroyed if rolled into a ball.

The only response available to the moderate monist, if he wishes to endorse the commonsensical proposition that any statue would be destroyed if rolled into a ball, is to distinguish this from the stronger proposition that anything that is a statue would be destroyed if rolled into a ball. But this is to distinguish (where 'S' is a sortal term) between a proposition of the form 'Every S is ...' and one of the form 'Everything, if it is an S is ...' (where '...' represents a modal or dispositional predicate), which is precisely to distinguish restricted sortal quantification from unrestricted quantification over things that satisfy a sortal concept. (The need for this distinction for the moderate monist is implicitly noted by Lewis in his paper 'Counterparts of Persons and their Bodies', where he points out that on his account of modal predication, even if everybody (i.e., every person) is his body and conversely, every body is a person, 'Everybody might have been a disembodied spirit' does not have the same truth-conditions as 'Every body might have been a disembodied spirit'; consequently the former cannot be equivalent to 'Everything, if it is a person, might have been a disembodied spirit', nor the latter to 'Everything, if it is a body, might have been a disembodied spirit'.)

Now I need to tie up some loose ends. I agreed with Mackie that sortal concepts are not future-reflecting, but now we can see that there is a sense in which they are. Lump1 is a statue before t10 in the temporary-coincidence scenario, but it does not fall within the range of the quantifying expressions 'some statue' and 'every statue' that must be used in the appropriate Russellian account of the uniquely

denoting definite description ‘the statue in such and such a place before t_{10} ’. So Lump does not fall under the predicate ‘is identical with some statue’, when ‘is identical with’ denotes numerical identity and ‘some statue’ is the first of these quantifying expressions. So this predicate is future-reflecting. In a sense then, I have responded to Mackie merely by moving the bump under the carpet, but I hope the intuitive plausibility of the position is still evident.

I come now to the second loose end. Evidently, with the distinction now made, I cannot endorse the de dicto modal principles employed previously in responding to Stone and Olson, but the acceptable modal principles are the ones got by replacing, in (S) and (P), the quantifying expressions ‘for every x , if x is a statue ...’ and ‘for every x , if x is a piece of bronze ...’ by ‘for every statue x ’ and ‘for every piece of bronze x ’, understood as explained above. (Similarly, in the formulation, (Q), of the problem of statue identity over time, the clause ‘if x is a statue then’ in (SC) must be replaced by ‘for every statue x ,’.)

Note also that within the present framework, as well as these de dicto modal principles, the moderate monist can also endorse a set of de re modal principles which are plausibly partly constitutive of our grasp of sortal concepts, such as:

Any statue would be destroyed if rolled into a ball

Any piece of bronze would survive if rolled into a ball.

The moderate monist can also endorse the following stronger principles, which are, however, ones that anti-essentialists, like Mackie (see Mackie 2006 and unpublished b), would reject (though Lewisian anti-essentialists would accept):

No statue could survive if rolled into a ball

Any piece of bronze must survive if rolled into a ball.

Finally, I want to explain how the present development of moderate monism can be seen as a plausible modification of stage theory if a four-dimensional ontology is assumed.

Recall first the distinction between standard perdurance theory and stage theory. For perdurance theorists statues and pieces of bronze are summations of stages, which may share parts. A statue is a maximal summation of stages linked by the statue unity relation. A piece of bronze is a maximal summation of stages linked by the piece of bronze unity relation. So whether something is a statue does depend on its future as well as on its past and present, since Goliath is a statue and Lump1 is not a statue, not because of any actual past or present differences, or because of any modal or dispositional differences, but merely because of future differences. (Mutatis mutandis the room I am now typing in and the house I am now typing in are distinct and the former is not a house and the latter is a house, not because of any way they differ here, but because the house extends beyond the (internal) door and the room does not.) It follows that it no more makes sense to ask when something is a statue than it makes sense to ask where something is a house (by contrast it makes sense to ask when something is bent and where it is infested with woodworm). Sortal concepts are not time-indexed for the perdurantist (they do not express relations to times).

The stage theorist maintains, in opposition to the perdurantist, that statues and pieces of bronze are not maximal summations of stages linked by unity relations, but are themselves stages. Statues are stages, which is to say, (some) stages are statues. So

at any time at which a statue and a piece of bronze coincide there is a genuine numerical identity between something that is a statue and something that is a piece of bronze: something is both a statue and a piece of bronze. An advantage that the stage theorist claims for his account is that it provides the right bearers for Lewis's temporary intrinsics. If I bend the statue and first straighten it out (let's suppose that this much distortion is consistent with the artist's creative intentions so that we can stay with the familiar example) then, Lewis says, there has to be something that is bent simpliciter and something that is straight simpliciter. But the endurantist, who rejects plenitude, cannot recognise such an object; he just recognises the enduring statue, which stands in the bent at relation to one time and the straight at relation to another. This, Lewis claims, is an argument for perdurantism. But if so, the stage theorist claims, it is an even better argument for stage theory, since he can capture, as the perdurantist cannot, the intuition that the thing that is bent simpliciter is a statue. The stage theorist will therefore be happy to say that at every moment before t₁₀ in the temporary coincidence scenario the piece of bronze is a statue and the statue is a piece of bronze, since every one of the coincident stages before t₁₀ is both a statue and a piece of bronze.

One problem for the stage theorist is to explain why I have only ever owned three cats, given that I have owned an infinite number of cat stages (of course, he also faces the problem of explaining why I have owned more than one cat given that 'I' denotes a present instantaneous stage, but, as is familiar, he solves this problem by appeal to an Abelardian temporal counterpart theory). One plausible line suggested by Hawley's discussion (2001:62) is to say that when counting cats we do not count by numerical identity, but by the cat unity relation, i.e., that relation which holds between

two cat stages (cats) when, as the perdurantist would say, they are stages of the same cat. But since cat stages are cats, it is plausible to suppose that we count them as the same only when they are the same cat; in which case we must take it that ‘is the same cat as’ denotes, not numerical identity, but the cat unity relation (which, however, holds between simultaneous cat stages only when they are numerically identical – setting aside time-travelling cats). Another way of responding to the problem of counting across time, suggested by Sider’s discussion (2001:197), is to say that sometimes, when we quantify over cats, we quantify not over cat stages (though they are cats), but over maximal summations of cat stages related pairwise by the cat unity relation. Understanding my assertion that I have only ever owned three cats in terms of such quantification gets the truth-conditions right.

It is reasonable, I think, to say that we should not regard these suggestions by Hawley and Sider as in competition; rather they are complementary. Stage theorists need both. They need to recognise quantification over summations as well as stages because they need to account for the function of such definite descriptions as ‘the cat I owned in 2001 and 2005’ (I owned two cats in 2001, one died, and I got another, which, along with the remaining cat, I still owned in 2005). And stage theorists need to recognise that ‘is the same cat as’ denotes the unity relation for cats, rather than numerical identity, in order to avoid the implausibility of saying that though you have only ever owned one cat, you have owned infinitely many things, each of which was a cat and no two of which were the same cat.

At any rate, it is easy to see how the moderate monist can employ the stage theorist’s ideas, modified in the way suggested, if he accepts the plenitudinous ontology common to the perdurantist and stage theorist. His account will still be

distinct from that of the extreme monist (we can describe it as moderately extreme monism), since, though he will recognise a strict identity at any moment before t10 in the temporary coincidence scenario between something which is correctly describable as a statue and something which is correctly describable as a piece of bronze, he will be able to deny that the statue is identical with the piece of bronze. And, of course, the arguments against pluralism and the responses to the objections to moderate monism put forward by Stone, Olson and Mackie will remain in force.

University of Nottingham

Nottingham, NG72RD, UK

harold.noonan@nottingham.ac.uk

References

- Baker, L. 1997 Why Constitution is not Identity. *Journal of Philosophy* 94: 599-621.
- Chisholm, R. 1986: Intellectual Autobiography, in Bogdan R. ed. *Roderick M. Chisholm*. Dordrecht: D. Reidel.
- Fine K. 2003 The Non-identity of a Material thing and its Matter. *Mind* 112: 195-234.
- Geach, P.T. 1980 *Reference and Generality*, 3rd edition. Ithaca and London: Cornell University Press
- Gibbard, A. 1976: Contingent Identity. *Journal of Philosophical Logic*, 4, pp.187-221.
- Gupta, A. 1980: *The Logic of Common Nouns*. Yale, NH: Yale University Press.
- Hawley, K. 2001. *How Things Persist*. Oxford: Oxford University Press.
- Hawthorne, J. 2006. *Metaphysical Essays*. Oxford: Oxford University Press.
- Hughes, C. 1986: Is a Thing just the Sum of its Parts? *Proceedings of the Aristotelian Society*, supplementary volume 85, pp.213-235.
- Johnston, M. 1992: Constitution is not Identity. *Mind*, 101, 401, pp.89-105.

- Kripke, S. (unpublished). Lectures on Identity.
- Lewis, D. 1971. Counterparts of persons and their bodies. *Journal of Philosophy* 68: 203–11. Reprinted in D. Lewis, *Philosophical Papers, Volume I*. Oxford: Oxford University Press, 1983.
- Lewis, D. 1986. *On the Plurality of Worlds*. Oxford: Basil Blackwell.
- Mackie, P. 2006. *How things might Have Been: Individuals, Kinds and Essential Properties*. Oxford: Clarendon Press
- Mackie, P. 2007. Coincidence and Modal Predicates. *Analysis* 67:21-31.
- Mackie, P. (unpublished a). Coincidence and Identity.
- Mackie, P. (unpublished b). Sortal Properties, Modality and Persistence.
- Noonan, H. 1976. The Four-Dimensional World. *Analysis* 37:32-39.
- Noonan, H. 1991. Indeterminate identity, contingent identity and Abelardian predicates. *Philosophical Quarterly* 41: 183–93.
- Noonan, H. 1993. Constitution is identity. *Mind* 102: 133–46.
- Noonan, H. 1997. Relative identity. In Bob Hale and Crispin Wright (eds.) *Companion to the Philosophy of Language*. Oxford: Basil Blackwell.
- Olson, E. 2006. The Paradox of Increase. *The Monist* 89.3
- Sider, T. 2001 *Four-Dimensionalism: An Ontology of Persistence and Time*. Oxford: Oxford University Press.
- Sosa, E. 1987: Persons and other Beings, in Tomberlin J.E. ed. *Philosophical Perspectives*, 1. California: Ridgeview.
- Stone, J. 2005a. Why counterpart theory and three-dimensionalism are incompatible. *Analysis* 65: 24–27.
- Stone, J. 2005b. Counterpart theory and three-dimensionalism: a reply. *Analysis* 65: 325–29.

Stone, J. 2005c. Why counterpart theory and four-dimensionalism are incompatible.

Analysis 65: 329–33.

Unger, P. 1981: The Problem of the Many, in French P.A., Uehling T.E. and

Wettstein H.K. eds. *Midwest Studies in Philosophy*, vol 6. Minneapolis: University of Minnesota Press.