PERSISTENCE AND PRESENTISM

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I

The 'friends of temporal parts' and their opponents disagree about how things persist through time. The former, who hold what is sometimes called a '4D' theory of persistence, typically claim that all objects that last for any period of time are spread out through time in the same way that spatially extended objects are spread out through space — a different part for each region that the object fills. David Lewis calls this manner of persisting 'perdurance'. The opposing, '3D' theory has it that at least some objects do not persist in this manner; they 'endure' through time by 'being wholly present at more than one time'.[1]

A related dispute pits 'presentists' against 'non-presentists'. Presentists hold that the only things that really exist are those that exist *now*, at the present moment; and non-presentists believe in something like a 'block-universe' in which non-simultaneous objects and events nevertheless co-exist (in a tenseless or non-temporal sense).

Of late, the relations between these four positions have come under considerable scrutiny.[2] As Ned Markosian has pointed out, it would be surprising if commitment to a perdurance or endurance theory of persistence automatically foreclosed one's options in the presentism—non-presentism debate. But, says Markosian, that is just what the standard formulations of the perdurance and endurance theories imply.[3] David Lewis has set the terms of the debate; in his usage, someone who thinks that all persisting objects endure would be said to hold the following:

(3Da)   Any object that exists at different times is wholly present at each moment at

which it exists.

While someone who thinks all objects perdure would affirm:

(4Da)   Any object that exists at different times has different temporal parts at the different moments at which it exists.

Markosian argues that both (3Da) and (4Da) imply the truth of presentism. As alternatives, he offers the following formulations:

(3Da)   Any object that is present at different times is wholly present at each moment at which it is present.

(4Da)   Any object that is present at different times has different temporal parts at the different moments at which it is present.

These do not, he claims, imply presentism; and so are preferable to Lewis's versions. Markosian concludes his paper with a nice explication of what it means to say that an object is 'wholly present' at more than one time.

       In this note, I argue that Markosian's versions are not improvements over Lewis's; and that the original, Lewis-style statements do not imply presentism. Finally, I offer an alternative account of 'wholly present' that makes room for a temporal parts theory according to which there are no instantaneous temporal parts. Before doing any of this, however, we must look at the nature of the presentism—non-presentism debate a bit more closely.

II

In order to see the logical relations among the four views in question, one must first recognize how deep the differences are between presentists and non-presentists. Markosian compares this dispute with the dispute between modal realists and modal actualists. Although the analogy is an instructive one, it does not support Markosian's own conclusions. The modal realist accepts, and the modal actualist rejects, non-actual objects. Similarly, the non-presentist accepts, and the presentist rejects, non-present objects. Markosian claims that both parties to the first dispute must agree that 'x exists' and 'x is actual' are not synonymous; and both parties to the latter dispute must agree that 'x exists' and 'x is present' are not synonymous. If modal realists and non-presentists admit the synonymy of their respective pairs of terms, their views end up trivially false; and if modal actualists and presentists admit synonymy, their views end up trivially true.

I accept the analogy between the cases, but reject Markosian's moral. Actualists typically *deny* that 'x exists' and 'x is actual' are non-synonymous.[4] The actualist *wants* her thesis to be 'trivially true'. Indeed, anyone with actualist tendencies is likely to find any other analysis of 'x is an actual object' unacceptable.[5] Actualist and realist disagree about the proper analysis of 'x is actual'; there is no neutral definition of 'actual' acceptable to both parties.

Disagreement between presentist and non-presentist is apt to run just as deep. Presentists are among those who 'take tense seriously'; they usually claim that, since tensed language cannot (or at least should not, for purposes of displaying ontological commitments) be paraphrased away into a tenseless idiom, 'x exists' is trivially equivalent to 'x exists at present'.[6] If a presentist *were* to agree to some distinction between being present and existing, what could it be? Someone who held a 'policeman's bull's eye' theory of time could distinguish between the two: past, present, and future events exist together in a four-dimensional block, and the property of 'nowness' or 'presentness' moves through the block like the light from a policeman's lantern moving along the fronts

of a row of houses.[7] But a presentist denies reality to past and future; thus it is necessarily true, on her view, that something exists if *and only if* it is present. There is no advantage for the presentist in distinguishing between being present and existing; and no other obvious candidate to play the role of 'being present' comes readily to mind. Thus to be present *just is* to be real or to exist, and the dispute with the non-presentist becomes a disagreement about how 'x is present' is to be analysed.

Note that this 'trivialization' of the actualist and presentist positions does not turn either dispute into a purely linguistic matter, a mere quibble about how to use words. Both disagreements may be put into the material mode by focussing on the question, What entities *exist* in the most unrestricted sense of the word? For the modal realist, what exists will include gold mountains, unicorns, and many other entities which the actualist insists do not exist at all. Likewise, the non-presentist maintains that Cleopatra and my first grandchild are just as real as Margaret Thatcher; while the presentist denies that the first two things exist in any sense. Both disputes are, I believe, fundamentally about ontological commitment. What should be included in the true ontology? Just the actual, and the present? Or, when speaking strictly and philosophically, must we also countenance the merely possible, and the non-present? Do the actualist and presentist preferences for the modally and temporally nearby merely reflect an artificial restriction on the scope of our quantifiers — pragmatically justifiable, but philosophically suspect? A more fundamental difference of opinion would be hard to find in metaphysics.

Since the presentist is almost certain to deny that existing and being present are distinguishable,[8] she is not apt to see any difference between Lewis's formulations ((3Da) and (4Da)) and Markosian's modified versions ((3Db) and (4Db)). Thus the latter cannot, for her, represent any kind of improvement.

The non-presentist is also not apt to notice a difference here. Let us ignore for the moment the expression 'is wholly present' (which will be discussed later), and consider the other occurrences of 'present' in (3Db) and (4Db). What is the non-presentist going to

make of these? Non-presentists are, in general, 'detensers'; that is they hold that (at the very least) the truth conditions of all sentences that include tensed verbs and words like 'past', 'present', and 'future' can be given in a tenseless language — a language containing nothing but eternally true statements.[9] How will such a person interpret (3Db) and (4Db)? There are a number of possibilities; but perhaps the simplest way for a detenser to understand statements like 'x exists at t' and 'x exists at present' would be to take these as equivalent to 'x exists (tenselessly) and is located at t' and 'x exists (tenselessly) and is located at the present moment' — where 'the present moment' will be dealt with by means of some further detensing strategy, e.g., replacing it with 'the time of this utterance', or a date. To be present at a time or a moment is just to be located there — i.e., to be in that particular three-dimensional time-slice of the big four-dimensional block that includes everything. It is not to have some special ontological status lacked by other things at other times.

Consequently, when the non-presentist detenses (3Db) and (4Db), the results will look something like this:

(3Dc)   Any object that exists (tenselessly) and is located at different times is wholly present at each time at which it is located.

(4Dc)   Any object that exists (tenselessly) and is located at different times has different temporal parts at the different moments at which it is located.

But now consider (3Da) and (4Da) from the non-presentist's point of view. What is it for something to 'exist at a time'? Surely it is just to be located in the time-slice in question. Existing at one time, but not at another, is, then, just a matter of being located in one time-slice, but not another. And so a non-presentist who interprets Markosian's

formulations as (3Dc) and (4Dc) will almost certainly take Lewis's original statements to be equivalent. Again, there can be no improvement if there is no difference.

III

But does there need to be an improvement? Do (3Da) and (4Da) really imply presentism, as Markosian alleges? Having seen some typical presentist and non-presentist interpretations of these statements, we are in a position to see what's wrong with Markosian's argument for the conclusion that they do:

> [C]onsider (or try to consider) some non-present object, like Socrates. It is clear that Socrates is not wholly present right now. But that means that anyone who endorses 3Da is committed to saying that Socrates does not *exist* right now, i.e., is not included in the currently correct ontology. Similar remarks would apply to any other putative, non-present object. Thus 3Da implies presentism.
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> 4Da, meanwhile, is in the same boat. For according to 4Da, objects that exist at different times do so by having different temporal parts at the different times at which they exist. But Socrates certainly does not have a temporal part right now. Thus anyone who endorses 4Da is committed to saying that Socrates does not exist right now, i.e., is not included in the currently correct ontology. Similar remarks would apply to any other putative, non-present object. Thus 4Da entails presentism.

Now I do not deny that (3Da) and (4Da), *as understood by a presentist*, imply presentism. Of course they do — *every* proposition does, according to the presentist, since she thinks 'existing' and 'presently existing' are analytically equivalent. But, clearly, this should not count as a strike against Lewis's formulations. It simply cannot be helped.

What I do deny is that the *non-presentist* should accept these arguments. Recall that I offered (3Dc) and (4Dc) as likely non-presentist interpretations of (3Da) and (4Da).

Since the non-presentist will regard 'existing at such-and-such a time' as something like 'existing (tenselessly) and being located at such-and-such a time', he will read Markosian's arguments in the following ways:

    1. If x exists and x is located at t, then x is wholly present at t. (3Da)

    2. Socrates is not wholly present at the present moment.

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    Therefore, it is not the case that (Socrates exists and Socrates is located at the present moment).

The non-presentist need not, however, be concerned that this conclusion will lead him to presentism — only the second conjunct of the negated clause need be false. The conclusion is compatible with his commitment to the proposition that Socrates exists.

    The second argument will be interpreted similarly:

    1. If x exists and x is located at t, then x has a temporal part that is located at t.

    2. Socrates does not have a temporal part that is located at the present moment.

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    Therefore, it is not the case that (Socrates exists and Socrates is located at the present moment)

Again, the conclusion does not lead to presentism.

    Markosian's arguments will only be valid by the non-presentist's lights if the non-presentist is willing to allow that 'It is not the case that x exists at t' implies 'It is not the case that x exists'. But that is just what a non-presentist is sure to deny. According to the non-presentist, something that existed in 1776 but not in 1996 still, in a deeper sense, exists. So she must spell out the difference between existing in or at t and existing, simpliciter; and

she must do this in some way (either the one I have suggested or some other) which will allow for the compatibility of 'Socrates does not exist at present' and 'Socrates exists'. When she does, she will be safe from Markosian's arguments.

IV

Thus Lewis's original way of putting the perdurance-endurance distinction is, it seems, fine as it stands. However, as Markosian justly notes, the notion of 'being wholly present' is in need of further unpacking. He offers the following pair of definitions (inspired by unpublished work of Theodore Sider):

(TP)   x is a *temporal part* of y at t $=_{df}$ (i) x exists only at t; (ii) x is a part of y at t; and (iii) x overlaps at t everything that is a part of y at t.

(WP)   x is *wholly present* at t $=_{df}$ (i) x exists at t and (ii) it is not the case that there is a y such that y is a *temporal part* of x at some time other than t.[10]

When plugged into (3Da) and (4Da), this definition of 'being wholly present' succeeds in capturing the difference between those who think that objects persist by having a different temporal part at each instant, and those who do not. I am not satisfied, however, that this corresponds to the distinction between endurance and perdurance. Consider, for example, two of the earliest and most influential friends of temporal parts: Bertrand Russell and C. D. Broad. Both affirm that objects persist by having different temporal parts at different times[11]; but both also deny that time consists of instants. On their view, an instant is to be identified — by means of something like Whitehead's method of extensive abstraction — with a set of overlapping spatiotemporal regions, just as a spatial point is to be identified with a set of infinitely-many nested spatial regions that 'hone in on' the place where the point was supposed to be.[12]

The 'no-instants' theory of temporal parts held by Broad and Russell, then, looks something like this: every temporal part has some temporal extension, but every temporal part also admits of further division into yet 'thinner' temporal parts; thus, for every pair of non-overlapping periods of time during which a thing persists, it has discrete temporal parts. An instant may fall within the period of time occupied by a temporal part of an object, just as a geometrical point may fall within a region occupied by a spatial part of an object; but regions of space and time, and the objects that fill them, have neither spatially unextended spatial parts nor temporally unextended temporal parts.

Note that, on the Markosian-Sider definition of 'wholly present', it turns out that Broad and Russell qualify as *endurantists*; for they accept that 'any object that exists at different times is wholly present at each moment at which it exists' — for, given (WP), this simply means that at each moment when an object exists it is not such as to have *instantaneous* temporal parts existing at other times. But, for Russell and Broad, this is true simply in virtue of the fact that there are no instantaneous temporal parts. They still believe that persisting objects are spread out in time just like they are spread out in space, with a different part for each filled spatiotemporal region.

I propose the following alternative definitions of 'temporal part' and 'wholly present'. 'T' and 'T*' range over intervals, 't' and 't*' over instants,[13] 'subinterval' is not equivalent to 'proper subinterval', and 'part' is not equivalent to 'proper part'.

(TP*)   x is a temporal part of y throughout T =df (i) x exists during and only during T; (ii) for every subinterval T* of T, there is a z such that (a) z is a part of x, (b) for all u, u has a part in common with z during T* if and only if u has a part in common with y during T*; and (iii) y exists at times outside of T.

The relation of parthood appealed to here must be neutral as between spatial and temporal parts — something like 'sharing a common constituent'. One might suppose that this

vitiates the definition as an account of 'temporal part'; but I think not. At least for the 'no-instants' theorists of temporal parts, there is no such thing as a *purely* spatial part of an object; for there is no such thing as an instantaneous, purely three-dimensional object. Thus these philosophers *must* take the neutral understanding of 'part' as most fundamental. And there is nothing untoward in going on to interpret (TP*) as spelling out a narrower notion.

(WP*)   x is wholly present at t =df (i) x exists at t, and (ii) it is not the case that there is a

y such that either: (a) for some t* such that t≠t*, y is a temporal part of x at t*; or

(b) for some T which does not include t, y is a temporal part of x during T.

Substituting this definition of 'wholly present' into (3Da) produces a more adequate statement of an endurantist position. *All* temporal parts theorists — including Broad and Russell, together with the believers in instantaneous parts — deny that persisting objects are 'wholly present at more than one time' in this sense. (4Da) can be easily altered to capture the views of all perdurantists:

(4Da*)   Any object that exists at different times either (a) has a different temporal part at

each moment at which it exists, or (b) has a different temporal part throughout

each of the different periods of time during which it exists.

Even Paolo Dau, who claims that only 'natural' or 'self-subsistent' divisions along the temporal dimension of an object count as temporal parts, would now have to deny (3Da) (recall that, as I have used the word 'part' in these definitions, a temporal part qualifies as a part of itself).[14] (4Da*) does, however, presuppose what Dau has called 'the Doctrine of Arbitrary Undetached Temporal Parts'.[15] Dau's view, which rejects this doctrine, seems to lie somewhere halfway between perdurance and endurance; his persisting objects have

enduring stages. Thus he rightly falls in neither of our 'pure' categories defined by (3Da) and (4Da*).

There are pressures which push the friends of temporal parts towards acceptance of instantaneous stages. David Lewis, for instance, claims that the strongest argument for the metaphysics of temporal parts is that it is the only plausible theory compatible with the truism that objects undergo intrinsic change.[16] In order to account for such change, he says, we must suppose that there is a different temporal part of a thing for each intrinsic change it undergoes. But some of the changes things undergo are treated by contemporary science as continuous, and are described by means of differential equations. For instance, an object may become continuously lighter, so that at every instant it possesses a slightly different weight. If some changes are continuous, and if such change really involves having different temporal parts for each infinitesimal change, then there must be temporally unextended parts.[17] Furthermore, although Broad and Russell affirm that nothing persists throughout an interval 'whole and entire', but only by having a different temporal part for each (extended) part of that interval; nonetheless, they must admit that every temporal part of a persisting object has *some* duration. Thus there is no hope of showing persistence through time to be a phenomenon which can be understood entirely in terms of certain relations holding among non-persisting things.

Why has the Broad-Russell metaphysics of temporal parts disappeared from the scene?[18] I suspect that the primary explanation is simply the present lack of enthusiasm for Whiteheadian methods of constructing points and instants. But perhaps the influence of Lewis's argument from temporary intrinsics and the attractiveness of a reductive account of persistence are also partly responsible. These last two pressures on the no-instant theory should, however, be resisted. Sally Haslanger has pointed out some rather large loop-holes in Lewis's argument from temporary intrinsics[19]; and we should not be convinced of the existence of instantaneous stages by the mere fact that, if there *were* such stages, then reductionism with respect to persistence would be feasible. So anyone — such as myself

— who is still attracted by the Whiteheadian way of dealing with points, lines, and surfaces[20] will probably also find the Whiteheadian approach to time appealing. No doubt there are serious difficulties which any such theory must overcome — e.g., it must be able to explain what is really going on when the physicist ascribes an instantaneous velocity to a point on a body. But I do not believe that Lewis's arguments, or reductionist drives, should be taken to count against a no-instants metaphysics of temporal parts.[21]

Notes

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[1] David Lewis, *On the Plurality of Worlds* (Oxford: Basil Blackwell, 1986), p. 202.

[2] Cf. William R. Carter and H. Scott Hestevold, 'On Passage and Persistence', *American Philosophical Quarterly* 31 (1994), pp. 269-83; and Trenton Merricks, 'On the Incompatibility of Enduring and Perduring Entities', *Mind* 104 (1995), pp. 523-31.

[3] Markosian, 'The 3D/4D Controversy and Non-Present Objects', *Philosophical Papers* 23 (1994), pp. 243-49.

[4] Robert Stalnaker, for instance, asserts that 'the actual world' just *means* 'the totality of everything there is' ('Possible Worlds', reprinted in Michael Loux (ed.), *The Possible and the Actual* (Ithaca: Cornell University Press), pp. 225-234; quotation from p. 229). And, in conversation, Alvin Plantinga — a serious actualist if ever there was one — has assured me that all actualists he knows of would agree that, to the extent that 'is actual' applies to individual objects, it means nothing more than 'exists'.

[5] Cf. the objections to various theories of actuality in Robert M. Adams, 'Theories of Actuality'. Adams is concerned primarily with the actuality of worlds and propositions, but his arguments have fairly obvious implications for questions about the actuality of individuals.

[6] Cf. Roderick M. Chisholm, 'Referring to Things That No Longer Exist', *Philosophical Perspectives*, Vol. 4 (Action Theory and Philosophy of Mind), (1990), pp. 545-556; Chisholm, *On Metaphysics* (Minneapolis: University of Minnesota Press, 1989), p. 163; A. N. Prior, 'The Notion of the Present', *Studium Generale* 23 (1970), pp. 245-48.

[7] The 'policeman's bullseye' analogy is given by C. D. Broad, *Scientific Thought* (London: Routledge and Kegan Paul, 1949; first publication, 1923), p. 59.

[8] Markosian has pointed out to me that there could be a sort of uncertain presentist, someone who is not absolutely sure that there are no non-present objects but who suspects that there aren't. And this person might, he suggests, be willing to countenance a difference between being present and existing. But I would say that, since no *real* presentist has any reason to believe in a special quality of 'being present' (and, indeed, no articulate presentist that I know of has ever posited such a quality), this uncertain presentist is merely waivering between real presentism — which has no room for a special quality of 'being present' — and the non-presentist 'policeman's bullseye' view mentioned above — which does have room for such a quality, but is probably also incoherent, and in any case is not a version of presentism.

[9] For typical old and new detensing strategies, cf. W. V. O. Quine, *Word and Object* (Cambridge, Mass.: MIT, 1960), §36; and D. H. Mellor, *Real Time* (Cambridge, U.K.: Cambridge University Press, 1981).

[10] I have altered clause (i), replacing 'x is present at t' with 'x exists at t', in light of my claim that 'being present at t' is equivalent to 'existing at t' for both presentist and non-presentist.

[11] Cf. Russell, 'The Ultimate Constituents of Matter' (1915), in his *Mysticism and Logic* (Garden City, N.Y.: Doubleday and Co., 1957), pp. 120-39, esp. pp. 123-24; Broad, *Scientific Thought*, p. 393; and Broad, *The Mind and Its Place in Nature* (Paterson, New Jersey: Littlefield, Adams and Co., 1960; first publication, 1925), p. 146. Broad later

denied that persisting objects have temporal parts; cf. *An Examination of McTaggart's Philosophy* Vol. 1 (Cambridge: Cambridge University Press, 1933), pp. 349-50.

[12] Cf. Russell, *Philosophy* (a.k.a. *An Outline of Philosophy*) (New York: W. W. Norton, 1927), Ch. 26; Russell, *The Analysis of Matter* (New York: Dover, 1954; first published, 1927), Ch. 28; and C. D. Broad, *Scientific Thought*, Ch. 1 (Broad only works out a method of construction for spatial points, but makes it clear that he accepts Whitehead's constructivist approach for instants of time as well). Both Russell and Broad were inspired by Whitehead, who held that, strictly speaking, time is not a series of discrete, temporally unextended instants but rather a series of overlapping durations. '[A] moment is merely a class of sets of durations whose relations of extension in respect to each other have certain definite peculiarities' (Alfred North Whitehead, *The Concept of Nature* (Cambridge: Cambridge University Press, 1920), p.62). Whitehead also maintained that '[a] duration retains within itself the passage of nature. There are within it antecedents and consequents which are also durations which may be the complete specious presents of quicker consciousnesses. In other words a duration retains temporal thickness' (p. 56). Whitehead's theory of the nature of the temporal dimension would seem to lead naturally to the view under consideration; namely, that, although there are no instantaneous temporal parts, yet every temporal part is further divisible along its temporal dimensions.

[13] Broad and Russell would naturally construe all talk of instants in terms of logical constructions out of intervals; those who believe in instants can treat them as real temporal locations in their own right; but all parties should be able to accept these definitions.

[14] Dau, 'Part-Time Objects', in Peter A. French, Theodore E. Uehling, Jr., and Howard K. Wettstein (eds.), *Studies in Essentialism*, Midwest Studies in Philosophy, Vol. XI (Minneapolis: University of Minnesota Press, 1986), pp. 459-74.

[15] For the spatial analogue of this doctrine, cf. Peter van Inwagen, 'The Doctrine of Arbitrary Undetached Parts', *Pacific Philosophical Quarterly* 62 (1981), pp. 123-137.

[16] Cf. David Lewis, *On the Plurality of Worlds*, pp. 202-203.

[17] Cf. Chris Swoyer, 'Causation and Identity', in Peter A. French, Theodore E. Uehling, Jr., and Howard K. Wettstein (eds.), *Causation and Causal Theories*, Midwest Studies in Philosophy, Vol. IX (Minneapolis: University of Minnesota Press, 1984), pp. 593-622; cf. esp. p. 596.

[18] Although he is officially agnostic on the question of whether there are instantaneous temporal parts, Mark Heller is the only contemporary friend of temporal parts I know of who mentions the possibility of a Broad-Russell theory. Cf. Heller, *The Ontology of Physical Objects: Four-dimensional Hunks of Matter* (Cambridge, U.K.: Cambridge University Press, 1990), p. 6.

[19] Haslanger, 'Endurance and Temporary Intrinsics', *Analysis* 49 (1989), pp. 119-125. Cf. also E. J. Lowe, 'The Problem of Intrinsic Change: Rejoinder to Lewis', *Analysis* 48 (1988), pp. 72-7.

[20] Cf. Zimmerman, 'Could Extended Objects Be Made Out of Simple Parts?', *Philosophy and Phenomenological Research* 56 (1996), pp. 1-29; and Zimmerman, 'Indivisible Parts and Extended Objects: Some Philosophical Episodes from Topology's Prehistory', *The Monist* 79 (January 1996).