

All the World's a Stage*

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Some philosophers believe that everyday objects are 4-dimensional spacetime worms, that a person (for example) persists through time by having temporal parts, or stages, at each moment of her existence. None of these stages is identical to the person herself; rather, she is the aggregate of all her temporal parts.¹ Others accept “three dimensionalism”, rejecting stages in favor of the notion that persons “endure”, or are “wholly present” throughout their lives.² I aim to defend an apparently radical third view: not only do I accept person stages; I claim that we *are* stages.³ Likewise for other objects of our everyday ontology: statues are statue-stages, coins are coin-stages, etc.

At one level, I accept the ontology of the worm view. I believe in spacetime worms, since I believe in temporal parts and aggregates of things I believe in. I

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¹By the “worm view”, I primarily have in mind Lewis’s version of this view (see Lewis (1983*b*, 58–60), as opposed to the view defended in Perry (1972); see note 22. See also Heller (1984, 1990, 1992); Lewis (1986, pp. 202–4) and (1983*b*, postscript B, 76–77); and Quine (1976, 859–60) on four dimensionalism.

²Elsewhere (Sider, 1997) I argue against three dimensionalism and take up the important task of precisely stating three and four dimensionalism. For criticisms of four dimensionalism, and defenses and/or fervent assertions of three dimensionalism, see Mellor (1981, 104); Simons (1987, 175 ff.); Thomson (1983); van Inwagen (1990*a*).

³Contemporary philosophers seem to dismiss the stage view as obviously false, almost as if it were being used as an example of a bad theory. See van Inwagen’s discussion of “Theory 1” in (1990*a*, 248); Perry (1972, 479–80); Kaplan (1973, pp. 503–4); Salmon (1986, 97–9). An exception seems to be Forbes (1983, 252, 258 n. 27), although his remarks are terse. Some philosophers in the middle part of this century may have accepted something like the stage view. J.J.C. Smart, for example, says

When...I say that the successful general is the same person as the small boy who stole the apples I mean only that the successful general I see before me is a time slice of the same four-dimensional object of which the small boy stealing apples is an earlier time slice. (Smart, 1959)

One also sometimes heard the assertion that “identity over time is not true identity, but rather genidentity”. To my knowledge, these early stage theorists did not hold the account of temporal predication I defend below, nor do they defend the stage view by appealing to its ability to solve the puzzles of identity over time that I discuss.

simply don't think spacetime worms are what we typically call persons, name with proper names, quantify over, etc.⁴ The metaphysical view shared by this "stage view" and the worm view may be called "four dimensionalism", and may be stated roughly as the doctrine that temporally extended things divide into temporal parts.

In this paper I hope to provide what might be called "philosopher's reasons" to believe the stage view, by arguing that it resolves various puzzles about identity over time better than its rivals. After replying to objections, I conclude that a strong case exists for accepting the stage view. At the very least, I hope to show that the stage view deserves more careful consideration than it usually is given.

1. The Worm Theory and Parfit's Puzzle

I begin with Derek Parfit's famous argument that two plausible views about self-interested concern, or "what matters", cannot both be correct.⁵ According to the view that "identity is what matters", a future person matters to me iff he *is* me⁶; according to the view that "psychological continuity is what matters", a future person matters to me iff he is psychologically continuous with me.⁷ Both ideas initially seem correct (to some of us anyway), but consider the much discussed case of the "division" of a person.⁸ If I divide into two persons, Fred

⁴I say "typically" because of a problem of timeless counting that I consider in section 6.

⁵I follow Lewis (1983*b*) in exposition. The gloss of mattering as "self-interested concern" is misleading, for it is crucial that we not rule out Parfit's view of the matter by definition. The idea is that we have a general notion of concern, which in *normal* cases is only for what happens to oneself.

⁶Actually, a case can be made (see Feldman (1992, chapter 6)) that people typically continue to exist after death: as dead people (corpses). If this view is correct, then the idea that identity is what matters should be taken to be the idea that continued existence is a necessary condition for the preservation of what matters. (The sufficiency claim would be false, since existence as a corpse presumably does not preserve what matters.)

⁷This relation of psychological continuity is the relation claimed to be the unity relation for persons by those who hold descendants of Locke's memory theory of personal identity. There are various versions of this theory, between which I will not distinguish in this paper. (For example, some include a causal component to the psychological theory.) See John Perry's *Personal Identity* anthology for excerpts from Locke, his contemporary defenders, and their critics. See Lewis (1983*b*, 58) and Parfit (1984, section 78) for discussions of psychological continuity.

⁸See Parfit (1975), p. 200 ff. for a representative example of the division case, and his footnote 2 on p. 200 for further references.

and Ed, who are exactly similar to me in all psychological respects, the doctrine that psychological continuity is what matters implies that both Fred and Ed matter to me; but this contradicts the idea that identity is what matters since I cannot be identical both to Fred and to Ed.

Parfit's solution to his puzzle is to reject the idea that identity is what matters: I do not exist after fission, but nevertheless what matters to me is preserved.⁹ This seems counterintuitive. I could have moral concern for others, but how could such concern be like the everyday concern I have for myself? I believe, though I won't argue for it here, that rejecting the idea that psychological continuity is what matters also earns low marks; a way to preserve both ideas would be the ideal solution. And even if some relation other than psychological continuity is what matters (e.g., bodily continuity), if it can take a branching form then a problem formally analogous to the present one would arise, and there still would be a need to resolve the apparent conflict between two ideas about what matters.

In his "Survival and Identity", David Lewis has attempted to provide just such a resolution. On his version of the worm view, the relation of psychological continuity is identical to the "I-relation", or "the unity relation for persons"—that relation which holds between person stages iff they are parts of some one continuing person.¹⁰ By identifying these relations Lewis can claim that each is what matters, and hence claim to have resolved the conflict between our two ideas about what matters. In the case of fission, this identification commits Lewis to holding that two distinct persons can share a common person stage, for in that case, a stage in the present is psychologically continuous with future stages of two distinct people. Figure 1 illustrates this in the case where I divide into Fred and Ed. According to Lewis, in such a case we have a total of two people: Ed, who is made up of stages T₁, T₂, T₃, E₄, E₅, and E₆, and Fred, who is made up of T₁, T₂, T₃, F₄, F₅, and F₆. Before division, Fred and Ed overlapped; before division, the name 'Ted' was ambiguous between Ed and Fred.

So, Lewis resolves Parfit's puzzle by claiming that since the I-relation and the relation of psychological continuity are one and the same relation, both can be what matters. But the original puzzle involved *identity*, not the

⁹See Parfit (1984, 254–66) and (1975, 200 ff.). I have simplified Parfit's views slightly. He claims that the question of whether or not I survive division is an empty question. But, he says, some empty questions should be given an answer by us. The case of fission is such a case, and there is a best answer: I do not survive fission at all.

¹⁰See Lewis (1983b, 59–60) and Perry's introduction to his (1975), especially pp. 7–12.

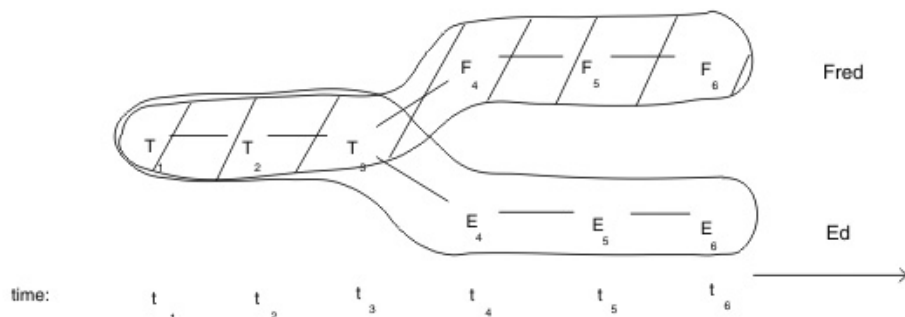


Figure 1

I-relation. I follow Derek Parfit in questioning whether Lewis’s claim that the I-relation is what matters adequately captures the spirit of the “commonsense platitude” (as Lewis calls it) that identity is what matters.¹¹ How exactly does Lewis understand that commonsense platitude? One possibility would be the following:

- (I1) A person stage matters to my present stage if and only if it bears the I-relation to my present stage

The problem is that (I1) concerns what matters to person stages. When in everyday life we speak of “what matters”, surely the topic is what matters to persons, so if Lewis is to vindicate the *commonsense* platitude that identity is what matters, his version of that platitude must concern what matters to persons. Unless persons *are* person stages, which they are not for Lewis, (I1) does not address the present topic.

Let us then consider a mattering relation that applies to persons. Where P is a person, and what happens to future person P* matters to P in the special way at issue here, let us write “M(P*,P)”. (Actually, the relation is four place since it involves two times. “M(P*,t*,P,t)” means that what happens to P* at t* matters to P at t. I will mostly leave the times implicit.) The doctrine that psychological continuity is what matters would seem to be the following:

- (PC) For any person P and any person P* existing at some time in the future, M(P*,P) iff P’s current stage is psychologically continuous with P*’s stage at that time

¹¹Parfit (1976, 92–5).

As for the doctrine that identity is what matters, the only two possibilities seem to be:

- (I₂) For any person P and for any person P* existing at some time in the future, M(P*,P) iff P=P*
- (I₃) For any person P and for any person P* existing at some time in the future, M(P*,P) iff P's current stage bears the I-relation to P*'s stage at that time

(I₂) clearly does express the “platitude of common sense” that what matters to me now is what will happen to me later. But, as Parfit notes, combined with (PC) it rules out the possibility of a stage of one person being psychologically continuous with a stage of another person, and is thus inconsistent with Lewis’s approach to fission. (I₃) avoids this problem, but at the cost of failing to capture the spirit of the commonsense platitude that what matters is *identity*. Suppose that, after division, Fred is tortured while Ed lies in the sun in Hawaii. Since according to Lewis T₃ bears the I-relation to F₄, (I₃) implies that M(Fred,Ed). So if (I₃) were true, Ed ought to fear something that will never happen to him!

In the postscript to Lewis (1983*b*, 74), Lewis makes some remarks that may seem to translate into an objection to this argument against (I₃). According to Lewis, at t₃, it is simply impossible for Ed to desire anything uniquely on his own behalf:

The shared stage [T₃] does the thinking for both of the continuants to which it belongs. Any thought it has must be shared. It cannot desire one thing on behalf of [Ed] and another thing on behalf of [Fred].

I complained that (I₃) implies that what happens to Fred matters to Ed. Lewis’s reply, apparently, is that to think otherwise would be to assume that Ed can have desires about what happens to Ed *as opposed to* what happens to Fred.

I believe this objection can be answered. We can, I think, ask what *matters* to a person (in the relevant sense) independently of asking what that person is capable of desiring. Suppose I am comatose, but will recover in a year. Though I am currently incapable of having desires, it seems that what will happen to me in a year matters to me now, in the relevant sense. The fact that I will be tortured in the future is *bad for me now*, even though I cannot appreciate this fact. So, regardless of what Ed can desire, if we wish to stay faithful to the spirit behind the commonsense platitude that identity is what matters, we must reject

the idea that Fred can matter to Ed. I conclude, then, that Lewis's attempt to preserve the view that both psychological continuity and identity matter in survival cannot succeed.

A three dimensionalist could follow Lewis's solution to the puzzle up to a point, by claiming that before fission, there are two co-located wholly present persons.¹² Though the possibility of two persons in the same place at the same time seems implausible to me, three dimensionalists have made similar claims (which I discuss below) in other cases, for example in the case of a statue and the lump of matter from which it is constituted. The problem for such a three dimensionalist, however, is the same as the problem for Lewis: since Ed is psychologically continuous with Fred, the doctrine that psychological continuity is what matters contradicts the commonsense platitude's requirement that what happens to Fred cannot matter to Ed. As noted above, two main responses are available to Lewis: speaking of what matters to stages, and the quoted reply that Ed is incapable of desiring things uniquely on behalf of himself. But the first response is unavailable to the three dimensionalist (since she rejects stages), and the second response, as I argued above, is unsuccessful. I know of no other possibilities for reconciling both ideas about what matters that are based either on three dimensionalism or the worm view. But there is such a possibility if we accept the stage view.

2. The Stage View and Parfit's Puzzle

First, I'll need to present the stage view in more detail. In particular, I need to address a problem that initially seems devastating. I once was a boy; this fact seems inconsistent with the stage view, for the stage view claims that I am an instantaneous stage that did not exist before today, and will not exist after today.

Properly construed, the stage view has no untoward consequences in this area. If we accept the stage view, we should analyze a tensed claim such as 'Ted was once a boy' as meaning roughly that there is some past person stage *x*, such that *x* is a boy, and *x* bears the I-relation to Ted (I spell out this analysis more carefully in section 7.) Since there is such a stage, the claim is true. Despite being a stage, Ted *was* a boy. The "I-relation" I invoke here is the same relation used by the worm theorist. (It should be noted that the stage view is independent of particular theories of the nature of the I-relation; a stage

¹²Denis Robinson (1985) takes such a line in the case of the division of an amoeba.

theorist could analyze the I-relation in terms of memory, bodily continuity, take it as “brute”, etc.).

There is a close analogy here with Lewis’s counterpart theory of *de re* modality.¹³ According to counterpart theory, an object, *x*, has the property **possibly being F** iff there is some object in some possible world that has *F*, and bears the counterpart relation to *x*. The I-relation plays the role for the stage view that the counterpart relation plays in counterpart theory. The temporal operator ‘was’, and also other temporal operators like ‘will be’, ‘will be at *t*’, etc., are analogous to the modal operator ‘possibly’. (The analogy is only partial, for there are no modal analogs of metrical tense operators like ‘will be in 10 seconds’.) This analogy between the stage view and counterpart theory will be important in what follows.

I’ll consider several objections to the stage view in section 6 below, but one should be considered right away. It can be phrased as follows: “According to the stage view, statements that look like they are about what once happened to me are *really* about what once happened to someone else. That’s absurd.”

The stage view does *not* have this consequence. According to the stage view, ‘Ted was once a boy’ attributes a certain temporal property, the property of **once being a boy**, to me, not to anyone else. Of course, the stage view does analyze my having this property as involving the boyhood of another object, but I am the one with the temporal property, which is the important thing. My answer to this objection parallels Lewis’s answer to a famous objection to counterpart theory that was given by Saul Kripke:¹⁴

[According to counterpart theory,]...if we say ‘Humphrey might have won the election (if only he had done such-and-such)’, we are not talking about something that might have happened to *Humphrey* but to someone else, a “counterpart”. Probably, however, Humphrey could not care less whether someone *else*, no matter how much resembling him, would have been victorious in another possible world.

Lewis replied that the objection is mistaken: Humphrey himself has the modal property of **possibly winning**. Granted,

Counterpart theory does say...that someone else—the victorious counterpart—enters into the story of...how it is that Humphrey might have won.

¹³See Lewis (1968).

¹⁴Kripke (1972), p. 45 in 1980 printing.

But what is important is that Humphrey have the modal property:¹⁵

Thanks to the victorious counterpart, Humphrey himself has requisite modal property: we can truly say that *he* might have won.

(I will discuss this objection further in section 6.)

Given the stage-view's "counterpart-theory of temporal properties", we can accept both that psychological continuity is what matters (in the sense of (PC)), and the following version of the doctrine that identity is what matters:

(I4) For any person P and any person P* existing at some time in the future, $M(P^*, P)$ iff P *will be* identical to P* then

What happens to a person in the future matters to me if and only if I will be that person. We cannot say that the person must, timelessly, *be* me, for I am not identical to persons at other times. But I *will be* identical to persons at other times, for I bear the I-relation to future stages that are identical to such persons. (I4) adequately captures the spirit of the commonsense platitude that identity is what matters, for it says that what matters to me is what will happen to me.

Back to the case of fission. Since both Fred and Ed—stages, according to the stage view—are psychologically continuous with me, each matters to me, according to (PC). (I4) then implies that I will be Fred, and that I will be Ed. This does *not* imply that I will be both Fred and Ed, nor does it imply that Fred is identical to Ed. The following sentences must be distinguished:

- (1a) I will be Fred, and I will be Ed
- (1b) I will be both Fred and Ed

(1a) is a conjunction of two predications; it may be thought of as having the form:

(a) futurely-being-F(me) & futurely-being-G(me)

In contrast, (1b) is a predication of a single conjunctive temporal property; its form is:

(b) futurely-being-F&G(me)

¹⁵See Lewis (1986, 196). See also Hazen (1979).

(1b) implies the absurd conclusion that Fred=Ed, since it says that I am I-related to some stage in the future that is identical to both Fred and Ed.¹⁶ Fortunately, all the stage view implies is (1a), which follows from the facts of the case, (PC), and (I4). It merely says that I'm I-related to some future stage that is identical to Fred, and also that I'm I-related to some *possibly different* future stage that is identical to Ed.¹⁷

3. Counting Worms

I have another objection to Lewis's multiple occupancy approach, which also applies to the three dimensionalist version of Lewis's approach that I mentioned at the end of section 1. Quite simply, the idea that in fission cases there would be two persons in a single place at one time is preposterous.¹⁸ Before division, imagine I am in my room alone. According to Lewis, there were two persons in the room. Was one of them hiding under the bed? Since each weighs 150 pounds, why don't the two of them together weigh 300 pounds? These are traditional rhetorical questions asked of those who defend the possibility of two things being in one place at a time. I think they have force.

These questions are by no means unanswerable since Lewis can always reply that there is only a single stage present. The two persons don't weigh 300 pounds together because they aren't wholly distinct now—they overlap. The point is simply to draw attention to the immense *prima facie* implausibility of such cohabitation. The conclusion that two distinct persons could overlap, and coexist at one place at some time is one that should be avoided if at all possible. Since I accept that for any class of person stages there is an aggregate of that class, I accept the existence of space-time worms that overlap in a single person stage at a given time. But since I say that no two persons can ever share spatial

¹⁶More care is required with this example than I take in the text, since I do not formulate the stage view with much precision before section 7. In the terminology of that section, (1b) should be understood as being *de re* with respect to 'I', but *de dicto* with respect to 'Ed' and 'Fred'—it says roughly that I now have the property of being I-related to a stage in the future that is identical both to the referent of 'Ed' then and to the referent of 'Fred' then. But this implies that the referent of 'Fred' at *t* and the referent of 'Ed' at *t* are identical—that is, it implies the *de dicto* claim that at some time in the future, Fred will be identical to Ed. Since this is false, (1b) is false.

¹⁷Perry (1972, 497) makes similar remarks regarding distinguishing 'It will be not-P' from 'Not-it will be P'.

¹⁸Perry (1972, 472, 480) agrees.

location at a time, I take this to show that these worms aren't persons.

Lewis's response to this problem is to defend an unorthodox view of counting.¹⁹ If roads A and B coincide over a stretch that a person (Jane, let us call her) must cross, when she asks how many roads she must cross to reach her destination, it would be appropriate to tell her "one". According to Lewis, in counting here, we go through the things to be counted (roads) and count off positive integers, as usual. But we do not use a new number for each road—rather, we use a new number only when the road fails to bear a certain relation to the other roads we've already counted. In this case, the relation is that of **identity along Jane's path**, which is born by one road to another iff they both cross Jane's path and share sections wherever they do. Let us say that persons are identical-at-t iff they have stages at t that are identical. (A three dimensionalist might say instead that objects are identical-at-t iff they have the same parts at t.) Counting by the relation **identity-at-t**, there is but one person in the room. In this way, Lewis tries to explain our intuition that there is only one person in the room. But is this *counting*? I think not. It seems clear to me that it is part of the meaning of 'counting' that counting is by identity. When we count a group of objects, we are interested in how many numerically distinct objects there are. Suppose I am alone in a room, and someone tells me on the telephone that there are actually two persons in the room. Then imagine she clarifies this remark: "well, actually, there is only one person, counting by identity-at-the-present-time". I would suspect double talk. I would rephrase my question: "how many numerically distinct persons are in the room?". The literal answer then would be two. And it seems to me that I just rephrased my original question, in such a way as to be sure that I was getting a literal answer. Lewis may introduce a procedure of associating natural numbers with groups of persons or objects, but it is misleading to call this "counting".

Lewis's example of counting one road while giving directions, however, is designed to show that we *do* sometimes count by relations other than identity. I grant that we would indeed say that Jane needs to cross one road, but Lewis's interpretation of this is not the only one possible. I would prefer to say that we have counted *road segments* by identity. What matters to Jane is how many road segments she crosses, and we have told her: one.²⁰ Granted, the question

¹⁹See Lewis (1983*b*, 64).

²⁰Objection: there are infinitely many segments that Jane crosses—they have varying spatial extents. For example, there is the segment that is just wide enough to encompass her footsteps, another a little bit wider, etc. How then can I say that she crosses but one segment? Clearly, however, we do say that she crosses but one segment. I take it that we have here a case of the

was about roads. But I think that it is quite plausible to claim that the predicate ‘road’ does not always apply to “continuant” roads—it sometimes applies to road segments. Whether a given speaker means road segments or continuant roads by ‘road’ depends on his or her interests (and may sometimes be indeterminate).

I support this view with an additional example. Suppose Jane is walking to the farm. As far as we know, her path is as shown in Figure 2. If she asks: “how

many roads must I cross to get to the barn?”, we will answer “three”. But suppose that, unknown to us, because of their paths miles away, the “three” roads are connected, as in Figure 3. In a sense, she only crosses one road (albeit three times).

If we count continuant roads, we count one road that she crosses, whether we count by identity or by identity-across-Jane’s-path. But I believe we gave the correct answer, when we said “three”. We told her what she wanted

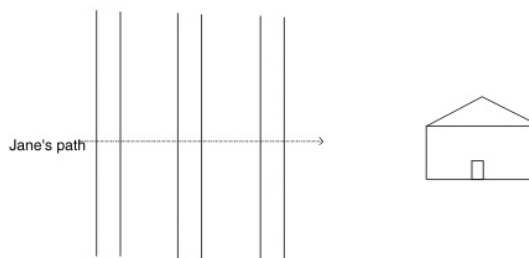


Figure 2



Figure 3

to know: the number of road segments she needed to cross. If someone came to me later and asked me for directions, my short answer would still be “three”. I might add “actually, you cross one road three times”. This might indicate that her question was ambiguous: does she want to know the number of roads or the number of road segments? But the first answer was satisfactory, for it is likely that she is more interested in road segments.²¹

This way of understanding the case of directions is, I believe, more attractive than counting by relations other than identity. Lewis cites the roads case as a precedent for the practice of counting by relations other than identity. Since this case can be controverted, there is no precedent. Counting is by identity.

so called “problem of the many” (see, for example, Lewis (1993); Unger (1980)); its solution is independent of the issues I discuss here.

²¹Another way to think about these cases is that, in Lewis’s road example, the correct answer is really “two”, and that the correct answer in my case is “one”, but when we give directions we sometimes speak falsely to avoid being misleading. I have no strong view about whether this is so; what I do claim is that if we must make our speech literally true in Lewis’s road case, we should count segments by identity, not extended roads by some other relation.

4. The Stage View and Counting

The advantage of the stage view over the worm view when it comes to counting is clear.²² Before division, when I am alone in my room there is but one stage, and therefore one person, if persons are stages. In trying to weigh the importance of this advantage of the stage view over the worm view, it may be instructive to return to the analogy with counterpart theory. According to counterpart theory, I exist only in the actual world; my otherworldly selves are distinct objects related to me merely by the counterpart relation. But this version of Lewis's modal realism is not inevitable; Lewis could have taken me to be the sum of all of my counterparts, an object that spans worlds just as a space-time worm spans times. Why not take objects to be transworld sums? In part, Lewis's reason is this. Even if I don't actually divide, I might have; thus, at some worlds I have two counterparts; thus, there are two transworld persons that overlap in the actual world; thus, even though I don't actually divide, there are in the actual world two persons at the same place at the same time! The solution of counting by relations other than identity would be required in the *actual* case, as well as in the bizarre case of fission. Comparing the case of temporal fission with modal fission, Lewis writes:²³

We will have to say something counter-intuitive, but we get a choice of evils. We could say that there are two people; or ... or that there is one, and we're counting people, but we're not counting them by identity.... It really isn't nice to have to say any of these things - but after all, we're talking about something that doesn't really ever happen to people except in science fiction stories and philosophy examples, so is it really so very bad that peculiar cases have to get described in peculiar ways? We get by because ordinary cases are not pathological. But modality is different: pathology is everywhere.

But I don't see why the frequency of the puzzle cases, or the question of whether they are actual, is relevant. Consider the following two claims.

- i) In fact, there is just one person (counting by identity) in the room

²² There is a version of the worm view that may appear to avoid my counting objections: John Perry's account of persons in "Can the Self Divide?". In fact I think this appearance is deceiving; see Lewis (1983*b*, 71–72). Anyway, Perry's version of the worm view is of no special help in the cases of coincidence I consider in section 5.

²³ Lewis (1986, 218–219).

- ii) If I were about to divide tomorrow, there would *now* be one person (counting by identity) in the room

Since I am currently alone in my apartment, I find i) compelling. But I find ii) compelling as well; I find the possibility of two persons sharing a single body, a single mind, etc. nearly as implausible as its actuality. Granted, bizarre cases require bizarre descriptions, but not bizarre descriptions in just any respect. The stage view accounts correctly for the case's strangeness: it is a case in which a person has two futures—for every action that either Fred or Ed commits after t_4 , Ted will do it. Bizarre though this is, it doesn't seem to warrant us saying that two persons are present before division.

If Lewis's method of counting by relations other than identity works, then it works no matter how frequently we must apply it—why would frequency matter?. On the other hand, if it *doesn't* work for everyday cases, then I don't think it works in the rare or counterfactual cases either. So, I say, we should give a unified treatment of the two cases of overpopulation due to non-actual fission and overpopulation due to actual fission. The best thing to say, in each case, is that there is only one person. Only the stage view is consistent with this claim.

5. Spatially coincident objects

A related virtue of the stage view is that it can be extended to handle other metaphysical problems involving two objects being at one place at a time. Suppose a certain coin is melted down on Tuesday. It seems that the coin, but not the lump of copper from which it is made, ceases to exist; but then it seems that the lump and the coin are distinct, because they differ with respect to the property **existing after Tuesday**. But how can this be? Today, the coin and the lump share spatial location, angular momentum, mass, etc.

David Wiggins would allow the coincidence because the objects are of different kinds²⁴, but I think the counter intuition is strong. Surely, we don't *say* "here are two coin-shaped objects in the same place". This talk is clearly intended to be literal (as opposed to talk of "the average family"), and is accompanied by robust intuitions ("shouldn't two coin-like things weigh twice as much as one?") While not decisive, these intuitions create an at least *prima facie* reason to look for a theory that respects them. One might appeal to counting by

²⁴See Wiggins (1968).

relations other than identity, but I've already argued against that response. And aside from the question of the proper way to interpret counting in everyday English, surely we can count by identity "in the philosophy room", and even in the philosophy room I don't find it plausible to count two coin-shaped objects. To me, this "reeks of double-counting", to use a phrase of Lewis's.²⁵ I don't think that we should distinguish the coin from the lump today, just because "they" will differ tomorrow. The more plausible view is that of temporary identity—the coin and the lump are identical today, although they won't be tomorrow. But of course I don't reject Leibniz's Law. I account for the truth of:

- (2) The lump of copper is such that it will exist after Tuesday
- (3) The coin is such that it will not exist after Tuesday

while denying that this implies that the coin and the lump of copper have different properties, by making a natural adjustment to the stage view. On the resulting version of the stage view, the expression 'will exist after Tuesday' is ambiguous, so there's no one property that (2) predicates of the lump of copper, but (3) withholds from the coin.

The ambiguity involves I-relations. An I-relation specifies what sort of "continuity" a thing must exhibit over time in order to continue to exist. Memory theorists like Lewis say the I-relation for persons is one of psychological continuity. Things are different for non-sentient things like coins. When a coin gets melted, a certain kind of continuity is destroyed, for the item has not retained a coin-like shape. Let us say that the *coin I-relation* does not hold between the coin and the lump that is present afterwards. But there is another kind of continuity that is not destroyed when the coin is melted: the copper atoms present after the process are the same as those that were present before. We can speak of the *lump-of-matter I-relation*, which does hold between the coin and the lump afterwards.²⁶

The ambiguity in tensed expressions I invoke is ambiguity of which I-relation is involved. In complete sentences uttered in context, the ambiguity is typically resolved. (2) is true because it means:

²⁵Lewis (1986, 252). In this passage Lewis is discussing actual overpopulation due to possible fission, but I think the "double-counting" intuition is equally strong in the case of the lump and the coin.

²⁶I ignore the complicating fact that the lump I-relation is surely vague (as probably are most I-relations).

- (2*) The lump of copper is lump I-related to something that exists after Tuesday

whereas (3) means:

- (3*) The coin is not coin I-related to anything that exists after Tuesday

Clearly, the property attributed to the lump by (2*) is different from that withheld from the coin by (3*). The use of the lump I-relation in interpreting (2) is triggered by the term ‘lump of copper’, as was the use of the coin I-relation in (3) by the presence of the word ‘coin’. All this is consistent with the coin and the lump being one and the same thing. Here I have again exploited the analogy between the stage view and counterpart theory. Just as I can account for temporary identity using multiple unity relations, Lewis has accounted for contingent identity in a parallel way using multiple counterpart relations.²⁷

In certain contexts the ambiguity in temporal constructions may be inadequately resolved. Uttered out of the blue, a query “how long has *that* existed?”, even accompanied by a gesture towards the coin, may have no determinate answer. But this is to be expected, given that we are admitting that both (2) and (3) are true. Moreover, this consequence isn’t particular to the stage view—a worm theorist who accepts overlapping worms will admit the same indeterminacy, but locate it in the referential indeterminacy of the demonstrative ‘that’, rather than in the tense operator as I do. As Quine has pointed out, a term whose reference is spatially fixed at some time may still be indeterminate, because it may be unclear what the temporal extent of the referent is.²⁸ Likewise for a three dimensionalist like Wiggins who accepts distinct but coincident objects.

On the stage view, then, people, statues, coins, quarks, etc. never coincide. I do grant the existence of aggregates of stages, and such aggregates do sometimes coincide; but I deny that these aggregates are people, statues, coins, quarks, etc. Moreover, I deny that these objects are (typically) in the range of our quantifiers.²⁹ Thus, the stage theorist can deny that any of the material objects over which we typically quantify ever coincide. Neither three dimensionalists

²⁷See Lewis (1971).

²⁸Quine (1950), pp. 67–68 in the Quine (1953) reprinting.

²⁹Caveat: I grant at the end of section 6 that in certain special contexts involving timeless counting, we quantify over worms. My claim in the text should be understood as being made in an ordinary context where we aren’t taking the timeless perspective.

nor worm theorists can match the stage view's resources here. (2) and (3) seem to commit us to the view that 'the coin' does not denote the same thing as 'the lump of copper'. As I have argued, a stage theorist can avoid this consequence by appeal to ambiguity in temporal constructions, but no such manoeuvre seems available to worm theorists or three dimensionalists. So to avoid being committed to spatial coincidence, a three dimensionalist or worm theorist would have to reject either (2) or (3). (3) seems the likely candidate here: the claim would be that the coin does not go out of existence upon melting; it merely ceases to be coin-like. I find this approach implausible. We surely think of artifacts like coins, statues, tables and chairs as being destroyed in certain cases, rather than conceiving of these as being merely cases of radical alteration. Moreover, this approach requires a distinguished "stopping place". Here I have a thing which is currently a coin; what is the permanent "kind" of the object? Is the object a coin? A lump of copper? There are other possibilities; we might take it to be a *chunk of quarks*, for consider separating the copper atoms into their constituent particles; to disallow coincidence between a lump of copper and a chunk of quarks we might say that the former persists through this procedure, while ceasing to be lump-of-copper-like. To avoid arbitrariness the final extreme looks most plausible, but it requires us to deny so many of our everyday intuitions about when objects are destroyed that the stage view looks preferable.

Another way to reject (2) or (3) would be to deny the existence of one of the involved entities. By denying the existence of lumps of matter, for example, one could reject (2). A more radical but probably more theoretically satisfying approach would be to follow Peter van Inwagen in rejecting the existence of both lumps of matter and coins, and composite material objects generally! (Van Inwagen makes an exception for persons.)³⁰ The latter view would eliminate the need to find a principled reason why coins are countenanced, for example, but not lumps of matter. I find both of these suggestions implausible, and I suspect many others would as well; I would rather accept the stage view than deny the existence of either lumps of matter or coins. (I argue elsewhere that there are other reasons to reject van Inwagen's radical view.³¹)

The importance of employing multiple unity relations extends beyond cases of temporary identity between artifacts and the quantities of matter that constitute them. First, we can use multiple unity relations to answer an

³⁰See van Inwagen (1990b), especially chapters 9 and 12.

³¹See my (1993).

objection to the stage view. I claim that I am identical to an *instantaneous* stage, and also that I will exist for more than instant—how can I have it both ways? The answer is that when I say that a stage is instantaneous and so will not exist tomorrow, I am denying that it is *stage* I-related to any stage in the future. The stage I-relation is that of identity—since stages do not persist through time, their I-relation never relates stages at different times (nor of course distinct stages at a given time). But I am (and so my current stage, with which I am identical, is) *person* I-related to stages tomorrow; this is what I assert when I say that I will exist tomorrow.

Secondly, multiple unity relations can help with other puzzles of spatial coincidence that have been discussed in the literature. Consider, for example, Peter Geach's paradox of Tibbles, a cat, and Tib, a certain large proper part of Tibbles which consists of all of Tibbles except for the tail.³² If Tibbles loses her tail at some time, *t*, it seems that both Tibbles and Tib survive: Tibbles because a cat can survive the loss of a tail, and Tib because all that has happened to it is that a certain external object (the tail) has become detached from it. After *t*, Tibbles and Tib share spatial location. But it seems that they're not identical—after all, Tib, but not Tibbles, seems to have the property **being a proper part of a cat before t**. If we accept the stage view we can identify Tibbles and Tib, using multiple unity relations to explain away their apparently differing temporal properties.

Finally, I'd like to very briefly mention some other puzzle cases that are handled nicely by the stage view: cases of degrees of personal identity and of a person gradually turning into another (Lewis), and cases of vague identity sentences where the terms involved have no "spatial vagueness" (Robert Stalnaker).³³ In each case, for worm theorists and three dimensionalists alike there is pressure to admit coincident entities in order to avoid contradicting formal properties of the identity relation in the first place, or admitting "genuine vagueness-in-the-world" in the second. But a stage theorist can avoid these pitfalls more adroitly, by appealing to unity relations that come in degrees in the first case, and in the second case by locating the vagueness in which of various unity relations are used in the interpretation of temporal constructions.

The examples I have discussed in this section provide what I think is the strongest support for the stage view. Though the contrary view has perhaps

³²Wiggins (1968) introduces the example, attributing it to Geach. For other discussions of this puzzle, see van Inwagen (1981); Cartwright (1975, 164–66).

³³See Lewis (1983*b*); Stalnaker (1988).

become familiar to metaphysicians, there really is a strong pre-theoretical motivation to reject spatial coincidence between distinct material objects. Moreover, unlike the case of fission, the cases of the present section are neither bizarre nor counterfactual, and so provide a response to a possible objection to my presentation through section 4: that the motivation for the stage view is merely from a bizarre, counterfactual case.³⁴ (Though as I said above, I think we have strong intuitions even about the bizarre case of fission.)

6. Objections to the Stage View

My argument for the stage view has been that it solves puzzles better than either three dimensionalism or the worm view. It remains to show that the stage view has no outweighing defects. The first objection I want to consider involves the fact that certain identity statements that we might have thought were true turn out on the stage view to be false. When I look back on my childhood, and say “I am that irritating young boy”, the stage view pronounces my utterance false. I accept this consequence. Assuming the account of temporal predication I sketched in section 2, the stage view does allow me to say truly that “I *was* that irritating young boy”; why can’t we accept that the former is false when we know that we can say the latter? It seems to me that the latter is what we mean, anyway. A related objection is that on the stage view, nothing persists through time. If by “Ted persists through time” we mean “Ted exists at more than one time”, then the stage view does indeed have this consequence. But in another sense of “persists through time”, the stage view does not rule out persistence through time, for in virtue of its account of temporal predication, the stage view allows that I both exist now and *previously* existed in the past. Given that the stage view allows the latter kind of persistence, I think that the denial of the former sort is no great cost.

Next I would like to consider in more detail the objection I addressed in section 2: the analog of Kripke’s Humphrey objection to counterpart theory. This objection, which we might call the semantic objection, has been given by John Perry against the stage view:³⁵

...[on the stage view] the little boy stealing apples is *strictly speaking* not identical with the general before me... [The stage view] denies what is

³⁴Lewis made this objection in a helpful conversation about an earlier draft of this paper.

³⁵Perry (1972, 479, 480). Nathan Salmon also appears to be giving an objection of this sort to a theory like the stage view in Salmon (1986, 97–99).

clearly true: that when I say of someone that he will do such and such, I mean that he will do it. The events in my future are events that will happen to me, and not merely events that will happen to someone else of the same name.

I believe that it is the semantic objection that is the source of the common attitude of metaphysicians that the stage view is obviously false. But, on its face, it seems to be a mistake. Perry says that the stage view denies that when I say ‘You will do it’, I mean that you will do it. But as I argued above (following the lead of Lewis in the modal case), the stage view is perfectly consistent with stages having temporal properties; it’s just that these properties are analyzed in terms of the I-relation and other stages.

Perry and I both agree that the events in my future will happen to me, that I was once a child, and that (hopefully) I will be an old man one day; what Perry must be finding objectionable is the stage view’s analysis of these facts. I can think of two kinds of worry one might have about the analysis. While I don’t think either constitutes a knockdown argument, I grant that each is a legitimate cause for concern. To those with these concerns, I acknowledge that the stage view has costs, but claim that they are outweighed by its benefits. The first concern is this: the fact that I was once a child and will one day be an old man is, according to the stage view, really a fact about two different objects, a stage that is a child and a stage that is an old man. Notice that this feature is not unique to the stage view: the worm theorist also analyzes change as difference between temporal stages. This makes it clear that the concern here is simply the familiar objection that the four dimensionalist conception of change is not genuine change at all.³⁶ Only if three dimensionalism is true can we avoid the need to analyze change in terms of stages, by invoking a single “wholly present” changing thing. I think that there are independent reasons to prefer four dimensionalism to three dimensionalism (see my (1997).) And even those who remain unconvinced by direct arguments for four dimensionalism should weigh their certainty that change cannot be analyzed in terms of stages against the other attractive consequences of the stage view.

The second concern is simply that the stage view’s analysis of temporal properties is flat-out implausible: the property **being I-related to some stage in the past that is F** is just not the same property as the property **previously being F**. The conception of persistence over time that the stage view can offer, the objection runs, is simply not common sense persistence at all. But I just

³⁶See Heller (1992) for a discussion of this issue.

don't agree. All that can be counted part of common sense is that objects typically have temporal properties (like **existing ten minutes ago**), and the stage view is consistent with this part of common sense. Further claims about the analysis of such properties are theoretical, not part of common sense, and so a theory that looks best from the perspective of a global cost-benefit analysis is free to employ a non-standard analysis of temporal predication.³⁷ I do not say that intuitions about theoretical analyses carry no weight at all, only that they are negotiable. Indeed, I partially based my rejection of Lewis's account of counting on such intuitions. I grant that my analysis of tensed predication is unexpected, to say the least; my claim is that this is not a decisive consideration.

A final objection is difficult to answer. If we take the "timeless perspective" and ask how many people there ever will be, or how many people have been (say) sitting in my office during the last hour, the stage view seems not to have an easy answer.³⁸ Persons on this view are identified with stages and there are infinitely many stages between any two times, assuming that time is continuous and that there is a stage for each moment of time.

In response I propose a partial retreat. The stage view should be restricted to the claim that *typical* references to persons are to person stages. But in certain circumstances, such as when we take the timeless perspective, reference is to worms rather than stages.³⁹ When discussing the cases of counting roads above, I suggested that we sometimes use 'road' to refer to extended roads and sometimes to road segments, depending on our interests. In typical cases of discussing persons, our interests are in stages, for example when I ask how many coin-shaped things are in my pocket, whether identity is what matters, etc. But in extreme cases, such as that of timeless counting, these interests shift.

This admission might be thought to undermine my arguments for the stage view.⁴⁰ Those arguments depended on the claim that the ordinary material objects over which we quantify never coincide, but now I admit that in some contexts we quantify over space-time worms, which do sometimes coincide. However, I don't need the premise that there is *no* sense in which material objects coincide; it is enough that there is some legitimate sense in which, e.g.,

³⁷Alan Hazen makes similar points in the case of the Kripke objection to counterpart theory in Hazen (1979, 320–24).

³⁸Compare Lewis (1983*b*, 72).

³⁹Or perhaps, in certain cases, to proper segments of such sums: if I ask how many persons exist during 1994, I will not want to count twice a person who will divide in 1995. I thank Fergus Duniho for this point.

⁴⁰Here I thank an anonymous referee for helpful comments.

the coin is numerically identical to the lump of copper, for I can claim that our anti-coincidence intuitions are based on this sense. Indeed, in making claims about coincidence in section 5, I intended to use terms like ‘coin’, ‘lump of copper’, etc., in the ordinary sense, in which they apply to stages rather than worms.

Trouble for this response comes from mixed sentences such as:

- (M) There is some set, S, such that S has finitely many members, S contains every coin or lump of copper that ever exists, and no two members of S ever exist at the same place at the same time

since on neither sense of ‘coin’ and ‘lump of copper’ is sentence (M) true. The best a stage theorist can do here is to claim that intuition is well enough served by pointing out that each of the following sentences has a reading on which it is true:

- (M₁) There is some set, S, such that S has finitely many members and S contains every coin or lump of copper that ever exists
- (M₂) No two coins or lumps of copper ever exist at the same place at the same time

The “special exception” to the main claim of the stage view that I have granted in this section admittedly detracts from the stage view’s appeal, but not fatally so. On balance, I believe the case for the stage view remains strong. In the next section I attempt to fill out the stage view by discussing certain semantic issues that confront a stage theorist.

7. Amplifications

A good place to start is the stage theorist’s treatment of proper names. In a formal development of the stage view, with each (disambiguated) name we would associate a certain property of person stages. The referent of that name, relative to any time (in any possible world) would be the one and only stage that has the property.⁴¹ This property may be thought of as being something like an individual concept. Given a name, such as ‘Ted’, I’ll speak of stages with

⁴¹Compare Perry (1972, 477).

the associated individual concept as being “Ted-stages”. It must be emphasized that talk of these individual concepts doesn’t require a descriptivist view of reference. A stage theorist can, if she wishes, adopt a theory of reference in harmony with the picture Kripke sketches in *Naming and Necessity*.⁴² A name is introduced by an initial baptism, where it is affixed to some stage. At least in normal cases where there is no fission or the like, that baptism completely determines what the referent of the name will be at any later time: it will refer to the stage existing at that later time (if there is one) that bears the I-relation to the originally baptized stage. Likewise for stages at other possible worlds: whether or not they have one of these individual concepts is determined by factors that the user of a given name needn’t know about. I myself would prefer to say that at another world the referent of a name is determined in some way by the holding of a counterpart relation between actual stages to which the name refers and otherworldly stages, but this view is not inevitable for a stage theorist. At any rate, the point is that a stage theorist can agree that a user of a name need not have in her possession descriptive information that uniquely identifies its referent; she need only be at the end of an appropriate causal chain extending back to an initial baptism. Thus, there is no assumption that these individual concepts are “qualitative” or “purely descriptive”.

The meaning of an n-place predicate should be taken to be an n-place relation over stages, rather than over worms. It should not be assumed, however, that these relations are temporally local or intrinsic to stages. Critics of temporal parts have often expressed skepticism about the possibility of reducing predicates like ‘believes’ to temporally local features of stages, but these doubts do not apply here since I am not proposing any such reduction. If I have a relational property, such as the property **being surrounded**, this is so in virtue of my relations to other things, but I myself have the property just the same, for I am the one that is surrounded. Analogously, a stage can have the property of **believing that snow is white** even if its having this property depends on properties of other stages (to which it is I-related). It is quite consistent with the stage view that it would be impossible for a momentary stage that existed in isolation from all other stages to have any beliefs.⁴³

Let us now consider the analysis of various types of sentence. The simplest case is a present tense assertion about a presently existing object, for exam-

⁴²See Kripke (1972), pp. 91–97 in 1980 reprinting.

⁴³I thank David Braun and Sydney Shoemaker for bringing this matter to my attention. Compare John Perry’s distinction between basic and non-basic properties in Perry (1972, 470–71).

ple ‘Clinton is president’. One could take this sentence to express a so-called “singular proposition” about Clinton’s present stage. Likewise for what I will call “*de re* temporal predications”, which occur when we single out a presently existing stage and assert something about what *will* happen, or what *has* happened, to it. If I say “Clinton was once governor of Arkansas”, we may take this as having subject-predicate form (the predicate is complex and involves a temporal operator); it expresses a singular proposition about Clinton, to the effect that he has the temporal property **previously being governor of Arkansas**. Ignoring the further complication that ‘Arkansas’ might be taken to denote a stage, this property is that had by a stage, *x*, iff *x* is I-related to some stage that i) exists before *x* in time, and ii) is governor of Arkansas.

Things are different with other temporal predications.⁴⁴ The sentence ‘Socrates was wise’ cannot be a *de re* temporal claim about the present Socrates-stage since there is no such present stage. Nor can we take it as being about one of Socrates’s past stages, for lack of a distinguished stage that the sentence concerns. What we must do is interpret the sentence as a *de dicto* temporal claim. Syntactically, the sentence should be taken as the result of applying a sentential operator ‘WAS’ to the sentence ‘Socrates is wise’; the resulting sentence means that at some point in the past, there is a Socrates-stage that is wise. This is somewhat like, and somewhat unlike, the claim that “once there were dinosaurs that roamed the earth”. The latter is not about any particular dinosaurs, but is rather about the past generally. The former is like this in not being about any particular Socrates-stage, but unlike it in not being a purely “qualitative” claim about the past, since the notion of a Socrates-stage may not be qualitative or descriptive. Various modal and counterfactual claims will also require *de dicto* readings. The sentence ‘If Socrates hadn’t existed, then Plato wouldn’t have been a good philosopher’ can’t be *de re* with respect to ‘Socrates’ (or ‘Plato’) for lack of present stages or distinguished past stages. Thus, assuming the Lewis-Stalnaker semantics for counterfactuals, it must be a *de dicto* claim to the effect that in the nearest world containing no Socrates-stages, the Plato-stages aren’t good philosophers.⁴⁵

The distinction I am appealing to here is a bit like one required by a “presentist” such as A.N. Prior. Prior rejects past objects and so can’t interpret ‘Socrates is wise’ as being about Socrates, but rather must interpret it as being

⁴⁴I thank Sydney Shoemaker for raising a helpful objection here.

⁴⁵I thank an anonymous referee for drawing my attention to this example. I gloss over the question of whether at the world in question, it must be that all, or some, or most, etc. Plato-stages aren’t good philosophers; as I see it, the original sentence is ambiguous.

about the past generally. (This is in contrast to temporal predications of current objects, which the presentist can take as being *de re*.⁴⁶) Notice, however, the differences between the presentist and the stage theorist. For one thing, the stage theorist requires *de dicto* temporal claims not because of a lack of past objects, but because of a lack of a *distinguished* past object. Also, there is some pressure for a presentist to interpret *de dicto* claims about the past in purely descriptive terms, on the grounds that if past objects don't exist at all, then neither will their non-qualitative identity properties.⁴⁷ The stage theorist (one who isn't a presentist, at any rate) need have no such qualms about admitting non-qualitative individual concepts of merely past entities.

It is important that the stage view has the means to express both *de re* and *de dicto* temporal claims. We clearly need the *de dicto* analysis for sentences concerning past individuals. The *de re* reading seems required for, e.g., the case where I look you in the eye, grab your shoulder, and say that *you* will be famous in the year 2000. Another reason we need the means to express *de re* temporal claims comes from the fission case. I want to say, before fission, that Ted will exist at t_4 . But the *de dicto* claim "It will be true at t_4 that: 'Ted exists'" will be false, since it is plausible to say that 'Ted' lacks denotation at t_4 . What is true is that at times before division, Ted has the temporal property **futurely existing at t_4** .⁴⁸

8. Conclusion

Despite its shock value and a bit of unsteadiness in connection with timeless counting, the stage view on balance seems to stand up well to scrutiny. I submit that it gives a more satisfying resolution of the various puzzle cases of identity over time than its competitors, the worm theory and three dimensionalism. Stage theorists can accept that:

Both identity and psychological continuity matter in survival

There is only one person in the room before I divide

The lump of copper is identical to the coin, Tibbles is identical to Tib, etc.

⁴⁶See Prior (1968).

⁴⁷See Adams (1986).

⁴⁸Compare Perry's (1972, 482–3) distinction between primary and secondary referents.

I think the benefits outweigh the costs. These are my promised philosopher's reasons for accepting the stage view.

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