

Growing Individuals and Intrinsic Properties

Most people who believe in temporal parts believe that the referents of our ordinary referring terms, like *Bill Clinton*, or *that table*, are fusions of temporal parts from past, present and future times. Call these fusions worms, and the theory that the referents of ordinary referring terms (ordinary objects) the worm theory. Buying the metaphysical theory of temporal parts does not immediately imply that we must buy the worm theory. Theodore Sider (1996, 2000), for example, has suggested that these ordinary referring terms just pick out a single, instantaneous, temporal part. Sider's theory, called the stage theory, solves some pressing philosophical problems, including the problem of temporary intrinsics. But the stage theory has several difficulties of its own, especially what I will call the problem of long-term intrinsics. I argue for a rival theory, the growing individuals theory. On this theory, the referents of our ordinary referring terms have past and present temporal parts, but not future temporal parts. This theory best accounts for our intuitions about which intrinsic properties ordinary objects have.

1. Temporary Intrinsics

I am now straight-shaped, but in the future I will be bent. Nothing can be bent and straight, so what I just said might look impossible. How ought we resolve the dilemma here? Four solutions have been offered.¹

The first solution says that being straight is actually a relation. I am never straight or bent *simpliciter*, but merely stand in the *straight-at* relation to some times, and the *bent-at* relation to others. This makes the apparent inconsistency disappear, but at the cost of turning shape properties into relations. Surely, however, shape properties are intrinsic. Indeed, if any changeable property is extrinsic, and undergoing non-Cambridge change just means changing one's intrinsic properties, then this solution implies objects can never undergo non-Cambridge change, which is absurd.

¹ The first three are discussed in Lewis (1988), the fourth in Sider (2000).

The second solution says that only the present is real, so there is no thing that is both bent and straight. Of course, I have the property of being bent in the future, but since the future is unreal, that is not even *prima facie* inconsistent with being straight. If presentism were acceptable, this might be a plausible solution. However, since presentism is inconsistent with our best scientific theories (Putnam 1967), this solution has more costs than benefits.

The third solution (defended by David Lewis) proposes to solve the problem by a careful analysis of predication in terms of temporal parts. I am straight, on this theory, iff my current temporal part is straight. I will be bent iff one of my future temporal parts is bent. It is consistent for one thing, my current temporal part, to be straight and for another thing, a future temporal part of mine, to be bent, so the apparent inconsistency is resolved.

On this solution, I am not simply bent, though my current temporal part is. Rather, I have the property of being straight *now*. This looks like a relational property; it looks like I have this property iff I stand in a certain relation to a time. And that relational property looks extrinsic. So even if I am straight now, and bent later, there are no intrinsic properties that I have at one time and lack at another. Hence I never undergo non-Cambridge change. To be sure, there are intrinsic properties that some of my temporal parts have and other temporal parts lack, but that is not what it means to undergo non-Cambridge change.²

Perhaps being straight *now* is intrinsic, despite its apparent relational nature. There are some intrinsic properties like this. Unlike Pinocchio, I have the property that each of my legs is longer than my nose. This property is defined using a relation, *longer than*, but it is intrinsic to me. Any duplicate of me would share this property. If we could maintain that *being straight now* is intrinsic despite its relational appearance, then the temporal parts view would allow for non-Cambridge change. However, we can prove that on any theory that has ordinary objects persisting through past, present and future times, properties like *being straight now* will be extrinsic.

² This objection to Lewis is put forward by Mark Hinchliff (1996).

Suzy and Katie are identical twins, but due to a complicated birth, Suzy is exactly a day older than Katie. Suzy and Katie resemble each other in a rather peculiar way. For any time t , Katie's temporal part at t is an exact duplicate of Suzy's temporal part at t minus one day, and Katie is at exactly the same spatial position as Suzy was a day before. This continues all the way to Suzy's death, and Katie's death a day later. Now, if *Suzy* and *Katie* refer to fusions of past, present and future stages, these facts imply that Suzy and Katie are duplicates. Roughly, Katie is the object we get if we take Suzy and move her one day forward in time. Hence Suzy and Katie differ only in spatio-temporal position. And it is a platitude that objects differing only in spatio-temporal position are duplicates. So on the worm theory, Suzy and Katie are duplicates.³ Right now, Suzy is standing on a stage performing *Macbeth*. So she is, roughly, straight. Her sister is sitting in the audience, thinking about how she will be performing tomorrow. So Katie is, less roughly, bent. Since Suzy is straight, but her duplicate Katie is not straight, being straight is not an intrinsic property of Suzy. Intuitively, Suzy is straight, and this is an intrinsic property of Suzy, so something has gone wrong. The most obvious candidate is the assumption that Suzy has past, present and future temporal parts.

Note that rejecting temporal parts would not help here. We can define Suzy and Katie to be enduring objects that differ only in that Suzy is located one day earlier than Katie in the spatio-temporal manifold. Suzy and Katie are still duplicates, and they still differ with respect to which one is straight, so straightness is still not intrinsic to Suzy or Katie.

The final solution, advocated by Sider, adopts the metaphysics of temporal parts, but says that ordinary objects are single temporal parts rather than fusions of temporal parts. (This is the stage theory.)

³ The principle that objects differing only in spatio-temporal position are duplicates can be sharpened considerably using the concept of congruential geometric transformations. That sharpening will not be detailed here, though I should note that even when we make the principle precise Suzy and Katie are still duplicates. Informal versions of this principle have played a central role in Kantian debates about whether the property of *being a left hand* could be intrinsic, and if it is intrinsic, what consequences this has for our broader metaphysical picture. See, for instance, Van Cleve 1998.

Since my current temporal part has the intrinsic property *being straight*, and I am my current temporal part, I have that intrinsic property, which is a nice result. The stage theory has the apparent downside that, in some sense, I did not exist five minutes ago, and will not exist five minutes hence. As Sider notes, this apparent refutation can be sidestepped. Sider analyses *de re* temporal predication in counterpart-theoretic terms. So *I was a student* is true iff I have a temporal counterpart at some past time and that temporal counterpart is a student. There are some subtleties about the use of counterpart theory in this way, but it handles these simple cases correctly.

The stage theory cannot allow for what we might call long-term intrinsics. Some things are roughly the same size throughout their existence. The Golden Gate Bridge, for example, has not grown and shrunk by a significant amount over its life. (It grows and shrinks a little with changes in temperature, but we ignore these changes.) I have changed significantly in size as I have aged; once I was just two feet long, but I am now six feet tall. This property that I have, and that the Golden Gate lacks, of getting taller as one gets older, seems to be intrinsic. You don't have to know about any part of the world other than me to know that I have this property. To be sure, the property is defined using the relation *taller than*, but since it is a relation that a thing may bear to itself, that is compatible with it being an intrinsic property. (Compare the property *having each of one's legs be longer than one's nose*, mentioned above, that is also defined using a relation, and is intrinsic.)

The stage theory, however, entails that this is not an intrinsic property. On the stage theory, I am just a temporal part of a particular size, though I happen to have other temporal counterparts of different sizes. But this means that in some world I have a duplicate that is not accompanied by temporal counterparts of different size. Perhaps all the temporal counterparts of that duplicate are roughly six feet tall. So that duplicate of me will not share my property of getting taller as one gets older. Hence that property is extrinsic. In general, any property I have in virtue of the way my earlier temporal parts were, will be extrinsic according to the stage view. But intuitively, some of these long-term properties are intrinsic. So the stage view, like the other three solutions, has a fairly substantial cost.

2. *Growing Individuals*

On the growing individuals (GI) theory, the objects of our ordinary reference have past and present temporal parts, but no future temporal parts. So my current use of *Bill Clinton* picks out an object with a temporal length of fifty-four years, earlier uses of *Bill Clinton* picked out an object with a much smaller temporal length, and later uses will pick out an object that is temporally longer. This does not mean that all *de re* future predications are false. *Bill Clinton will be alive tomorrow* is true iff Bill Clinton has a temporal counterpart whose last stage is tomorrow and whose last stage is alive. (In short, we mostly borrow the counterpart theory Sider uses in the stage theory.) Most of the technicalities are omitted here, but in general a sentence like *In 2005, a will be F* is true iff *a* has a temporal counterpart whose last stage is in 2005, and in 2005 that object is *F*.

The main attraction of the GI theory is that it avoids the two hard problems concerning intrinsic properties that we discussed above. Because Suzy is one day larger (in temporal extent) than Katie, it follows that Suzy and Katie differ in size and not only in spatio-temporal position, so they are not duplicates. Hence, the GI theory is consistent with *being straight* being an intrinsic property, more generally with the existence of temporary intrinsics. Since I am a fusion of all my past temporal parts, any duplicate of me will have become taller as it got older, just like I did. Hence, the GI theory is consistent with the existence of long-term intrinsics. The fact that none of the extant solutions allows for both temporary intrinsics and long-term intrinsics, while the GI theory does, seems to be good evidence for the GI theory.

On the GI theory, I am straight iff my *last* temporal part is straight. On the worm theory, I am straight iff my *current* temporal part is straight. There is an important difference here. On the worm theory, it may be intrinsic to me that I have some straight temporal parts, but it will not be intrinsic to me that one of the straight parts them is current, and so that I am currently straight. The example of Suzy and Katie shows this. Suzy and Katie are duplicates, if the worm theory is correct, but one of them has a straight current temporal part, and the other has a bent current temporal part. So duplicate people, with the

same internal distribution of temporal parts, can differ with respect to whether their current temporal part is bent or straight. So being straight is extrinsic on the worm theory.

Whether my last temporal part is bent may well be intrinsic to me. If we can identify which of my temporal parts is the last one from just looking at me, and we can identify whether that part is bent by just looking at it, then it seems intrinsic to me whether my last part is straight⁴. (Compare: There is no way we could tell from just looking at a four-dimensional worm which of its temporal parts is *current*.) It is intrinsic to me which of my temporal parts is at one of my temporal extremities. But since I have two temporal extremities, it might be extrinsic a particular temporal part is the *last* one. The GI theory needs to assume (or better, have it empirically discovered) that ordinary objects have a temporal order, so which of its parts come after which other parts is intrinsic to the object. Without this assumption (or discovery) the theory will falter in many ways. As the reader can easily verify, our solutions to both the problem of temporary intrinsics and the problem of long-term intrinsics rely on this assumption. So we assume, and hope it will be discovered, that the temporal order of an object is intrinsic to it.

The GI theory is compatible with anti-realism about the future, but we need not assume it. Indeed, the semantics we adopted above assumes realism about the future. Still, it is nice to incorporate into our theories about ordinary objects some rather popular intuitions about the asymmetry of time. We do not deny that this table will exist tomorrow, though we do say that *this table* does not refer to an object with future temporal parts.

On the GI theory all future-directed long-term properties are extrinsic, but this is not obviously compatible with all our intuitions about long-term properties. Still, this does not seem to be a major cost. The intuition that I have intrinsic properties in virtue of the way I have been is much stronger than the intuition that I have intrinsic properties in virtue of the kind of thing I will become. For a concrete

⁴ This sentence appears to give an epistemological analysis of intrinsicness: a property is intrinsic to me iff we can tell just from looking at me that I have it. While this analysis has some obvious counterexamples, I may for instance have intrinsic properties which cannot be perceived, it is a useful intuition pump in simple cases.

example of this, many people think that one's age is intrinsic.⁵ Since on the GI theory age is just temporal length, ages are intrinsic. Few people, however, would hold that the amount of time we have until death is intrinsic to us. Intuitively, some of my duplicates will die tomorrow, and some may live forever. Again, the GI theory agrees with intuition here, saying that time left until death is extrinsic. These intuitions about age and time until death provide strong support for the asymmetric attitude towards past and future stages encoded in the GI theory. They also provide a reason for preferring the GI theory to the *shrinking individuals* theory, on which I am a fusion of present and future temporal parts. That theory predicts, bizarrely, that *having n years until death* is intrinsic, but *being n years old* is extrinsic.

Finally, the GI theory gets some support from the role of referring terms and tense operators in indirect speech. (The following example is taken, mostly, from Dudman 1992.) Tiger Woods is playing the final round of the open later today. After reading the overnight scores, Suzy says, "Tiger will win." After Tiger does win, Sally says, "Tiger won." Most theorists believe Suzy and Sally expressed identical propositions: each of them attributes winning to Tiger. Their use of different words is solely because of their different relations to the victory, not because of any difference in the proposition they are expressing. The GI theory, however, says that there is an important difference between Sally's statement and Suzy's. After the match, Sally attributes victory to one of Tiger's temporal parts; but before play starts, Suzy can only attribute victory to one of Tiger's temporal *counterparts*. There is some interesting linguistic evidence that supports the GI theory here. The most natural way to report Sally's utterance is to say, "Sally said that Tiger won". However, when we report Suzy's utterance we do not use this form of words, but rather say, "Suzy said that Tiger would win." Since all that matters in indirect speech is accurately reflecting the content of what was said, if Suzy and Sally really said the same thing there would be no reason for this difference in reporting methods.⁶

⁵ For a rather extreme indication of the strength of this intuition, Peter Vallyntyne (1996) deliberately complicates his theory of what makes a property intrinsic so as to allow that ages are intrinsic.

⁶ Dudman takes this to be evidence that English does not have a future tense. On his theory, English has past and present tenses, but 'will' is a modal operator, like 'ought' and 'can', rather than a future tense operator. This theory

As further evidence for this, change the example a little so that as the final putt sinks, Tiger says, “I win!” Despite the fact that Sally and Tiger use quite different words, we can say “Sally said Tiger won, and so did Tiger.” or even, “Sally and Tiger said that Tiger won.” We do not, in general, need to preserve the tense of an utterance in a report: we can report Tiger’s present tense utterance using the past tense. And we do not, in general, need to preserve the sense of a referring expression: we can report a speech-act containing a personal pronoun by using a name. All we need to preserve is the content.⁷ If Suzy and Sally said the same thing, there should be some X such that we can say, “Suzy and Sally said that X.” But there is no such X. To see this, just run through the possible candidates for X. It could not be, for example, *Tiger would win*, or *Tiger won*, or *Tiger is the winner*. Since there is no such X, we may conclude that there is an important difference in the content of Suzy and Sally’s utterances. As the GI theory predicts this, and all the other proposed solutions to the problem of temporary intrinsics do not, the GI theory seems to have an interesting advantage.⁸

is set out in his (1991) and (1994). I only raise this to note that I am not committing myself to his theory of tense in virtue of using the example, just to the example’s benefits for the GI theory.

⁷ There are interesting questions concerning the appropriateness of reporting Sally and Tiger’s utterances simultaneously if Sally does not use a pronoun, but instead uses some definite description that, by common knowledge, denotes Tiger. So if Sally says, “My hero won”, is it appropriate to say, “Sally and Tiger said that Tiger won”? These questions seem to raise issues concerning the existence of referential definite descriptions, at that would take us well outside our current topic, so they will be set aside for now.

⁸ It might be wondered why we are taking linguistic evidence so seriously when the original question was in metaphysics. The reason is that the GI theory agrees with the standard temporal parts theory, and with the stage theory, about what things there ultimately are. These theories all agree that there are temporal parts, and that any arbitrary temporal parts have a fusion. What we disagree about is which of these fusions ordinary referring expressions pick out. Linguistic evidence is clearly relevant to that question, and it seems to favour the GI theory.

References

- Dudman, V. H. (1991) "Interpretations of 'If'-Sentences" in Frank Jackson (ed.) *Conditionals*. Oxford: Oxford University Press.
- Dudman, V. H. (1992) "A Popular Presumption Refuted" *Journal of Philosophy* 89: 431-2.
- Dudman, V. H. (1994) "On Conditionals" *Journal of Philosophy* 91: 113-32.
- Hinchliff, Mark (1996) "The puzzle of change" In *Philosophical Perspectives, 10, Metaphysics*, ed. J. Tomberlin. Cambridge, MA: Blackwell.
- Lewis, David (1988) "Rearrangement of particles: reply to Lowe" *Analysis* 48: 65-72.
- Putnam, Hillary (1967) "Time and physical geometry" *The Journal of Philosophy* 64: 240-7.
- Sider, Theodore (1996) "All the world's a stage" *Australasian Journal of Philosophy* 74: 433-53.
- Sider, Theodore (2000) "The Stage View and Temporary Intrinsic" *Analysis* 60: 84-8.
- Van Cleve, James (1998) "Incongruent Counterparts and Higher Dimensions" in Peter van Inwagen and Dean Zimmerman (eds.) *Metaphysics: The Big Questions*. Malden, MA: Blackwell.