FOUR-DIMENSIONALISM: AN ONTOLOGY OF PERSISTENCE AND TIME. THEODORE SIDER. Oxford: Clarendon Press, 2001. Pp. xi, 250.

How do the familiar concrete objects of common-sense persist through time? The *four-dimensionalist* argues that they *perdure*, i.e., they persist through time by having temporal parts at each of the times at which they exist. The *three-dimensionalist*, on the other hand, holds that ordinary concrete objects *endure*; they lack an additional temporal dimension and persist, instead, by being (as they say) 'wholly present' at each of the times at which they exist.

Theodore Sider's excellent book provides an extremely lucid, persuasive and detailed defense of the four-dimensionalist position, which poses formidable challenges to the three-dimensionalist. Sider begins, in Chapter 2, by offering powerful considerations in favor of the B-theory of time, which is in his view most plausibly combined with four-dimensionalism. His remarks in Chapter 3 clarify and advance the dispute over how four-dimensionalism is best formulated in a way that is intelligible to all parties involved in the debate over persistence. The brunt of his case for four-dimensionalism comes in Chapters 4,5, and 6, where he masterfully surveys the existing evidence for and against this view, and, with great insight and subtlety, takes a stand on the relative strength of arguments given by others. What is more, at certain crucial places in the book, Sider adds powerful new considerations of his own creation to the existing stockpile, which no doubt will engender a flurry of serious philosophical scrutiny in the literature to come. The version of four-dimensionalism which Sider in the end embraces is also new: instead of the more familiar 'worm-theory' (according to which ordinary concrete objects are analyzed as extended space-time worms), Sider adopts the 'stage-theory', which views ordinary concrete objects as momentary stages; they

persist by having temporal counterparts at other times. Sider prefers the stage-theory over its competitors because it is the theory which has "on balance, the most important advantages and the least serious drawbacks" (Sider 2001, 140); it provides, in his view, the best unified treatment of an usually wide range of metaphysical puzzles (e.g., those concerning *fission*, *fusion*, *longevity*, *vague identity*, and *conventional identity*, alongside the more usual suspects involving *constitution* and *undetached parts*).

Sider's case for four-dimensionalism also has the virtue of being unusually fair-minded in its assessment of evidence. For example, after careful discussion in Chapter 4, Sider in fact finds most of the arguments that have been traditionally advanced in favor of four-dimensionalism to be unpersuasive (e.g., arguments concerning *special relativity*; *analogies between space and time*; as well as David Lewis' famous argument from *temporary intrinsics*).[1] Sider's insightful criticisms of competing analyses, in Chapter 5, inevitably cut right to the heart of what is objectionable about these views; many of the alternative treatments will, I think, have a difficult time recovering from Sider's objections. His responses to prominent objections to four-dimensionalism, in Chapter 6, are, I think, largely successful (though I will mention some notable exceptions below). As a result, Sider arrives at an extraordinarily thoughtful, informative and balanced assessment of the debate over persistence from which misleading rhetoric is largely absent.

Despite its many significant virtues, Sider's defense of four-dimensionalism is, in my view, ultimately inconclusive.[2] The reasons for this, very briefly, are as follows. The single most powerful

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[1] See David Lewis, *On the Plurality of Worlds* (Oxford: Basil Blackwell, 1986), Ch.4, 198 ff.

[2] For more detail, see Kathrin Koslicki, "The Crooked Path from Vagueness to Four-Dimensionalism", forthcoming in *Philosophical Studies*.

and innovative argument offered by Sider in favor of his position is the *argument from vagueness*, discussed in Chapter 4.[3] This argument is inspired by some cryptic and condensed remarks made by David Lewis in defense of *unrestricted mereological composition*, i.e., the thesis that, for any plurality of objects whatsoever, there is a single object which they compose.[4] Sider's argument from vaguenss, if successful, establishes that objects are constantly coming into and going out of existence, regardless of how bits of matter are arranged at any given time, since *no principled line* can be drawn between conditions and arrangements of matter which support this circumstance and ones which fail to do so. In its properly temporalized form, so Sider argues, the argument from vagueness entails four-dimensionalism: my 'today-part', for example, is one of the objects against whose existence no cogent arguments can be provided, if Sider has his way.

As I have argued elsewhere (see "The Crooked Path"), the argument from vagueness is fatally flawed, in that it fails to provide independent evidence for the thesis that mereological composition is unrestricted. Morever, the debate over whether mereological composition is restricted or unrestricted is in any case independent of Sider's main topic, the dispute between between the three-dimensionalist and the four-dimensionalist over the nature of persistence. There are, after all, coherent versions of three-dimensionalism, such as Judith Jarvis Thomson's, which also embrace unrestricted mereological composition.[5] Thus, even if the argument from vagueness was successful, it would fail to establish four-dimensionalism.

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[3] See also Theodore Sider, "Four-Dimensionalism", *Philosophical Review* 106 (1997): 197-231.

[4] See David Lewis, *On the Plurality of Worlds*, Ch.4, 211 ff.

[5] See Judith Jarvis Thomson, "Parthood and Identity Through Time", *Journal of Philosophy* 80 (1983), 201-220.

The argument from vagueness is, in my view, the dialectical center-piece of Sider's case for four-dimensionalism. Without it, there is a relative stand-off between the two competing analyses of persistence. To establish this, we would of course have to address in more detail than the present context allows the wealth of interesting additional evidence Sider amasses in favor of his view. For example, Chapter 4 contains intruiging discussions concerning the nature of spacetime as well as concerning such "exotic" possibilities as time travel and worlds without time, all of which (in Sider's view) favor four-dimensionalism.

Sider combines the outcome of the argument from vagueness (viz., unrestricted mereological composition) with other powerful and controversial Lewisian views (in particular, counterpart-theory and Humean Supervenience), which are not themselves defended in the book. As a result, he is committed to an exceedingly deflationary conception of *ontology* in at least the following two respects. First, any collection of bits of matter whatsoever, no matter how gerry-mandered, counts as an *object*, according to this conception. Secondly, the question with which Sider began, viz., "What is the nature of the persistence of the familiar concrete objects of common-sense?", turns out not to be one about which the *ontologist* proper has much to say. For the familar concrete objects of common-sense are simply somewhere to be found among the great plethora of fusions; to say where exactly is not, strictly speaking, a matter of ontological concern, but rather a question which involves the organization of our *conceptual* household (i.e., the nature of the similarity-relations that are invoked in particular contexts).

The potential dangers that lie lurking in this deflationary approach to ontology are, I think, interestingly brought to light by considering the well-known objection from *motion in homogeneous spheres* as well as Judith Jarvis' Thomson's famous *ex nihilo* objection (Thomson (1983)). In the

first case, it turns out that, under certain circumstances, Sider's deflationary metaphysics (by his own admission) lacks the resources to make distinctions which are strikingly intuitive (such as that between a motionless homogeneous sphere and one that is rotating). In the second case, Sider's approach is unable to tell an interesting *causal* story where one might reasonably expect such a story to be told. For example, when we ask the Lewisian stage-theorist why momentary stages *go out of existence* when they do, it seems that the only answer we can hope to get is that "their time was up", so to speak.

In sum, there is, I think, still hope at the end of the day for the three-dimensionalist, despite Sider's powerful case for the opposing view. If the preceeding remarks were successful, however, they should also have brought out just how much is to be gained by wrestling with Sider's arguments. For many years to come, this book is sure to be the *locus classicus* with respect to which all those engaged with the literature on persistence must position themselves.

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