

forthcoming in *Unity and Time as Problems in Metaphysics: Persistence and Individuality*,
Benedikt Schick, ed. (Berlin, Walter de Gruyter, 2009)

Identity Across Time: A Defense of Three-Dimensionalism

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Abstract: To determine how a material object exists throughout an extended period of time, it is useful to ask: How does an object undergo change and still survive? Both three-dimensionalists and four-dimensionalists can answer this question. Three- and four-dimensionalists differ, however, in key claims about time and existence. I defend three-dimensionalism, first by countering two four-dimensionalist objections to three-dimensionalism, then by considering untoward consequences of four-dimensionalism that three-dimensionalism avoids. Four-dimensionalism has an anemic conception of material objects: (i) it cannot account for the significance of ordinary objects' going out of existence altogether; (ii) it makes it difficult to understand ourselves; and (iii) it seems to clash with presuppositions of morality.

The question of persistence is the question of how a material object exists throughout an extended span of time. The question becomes vivid if we ask how a single object can undergo change and still survive. *Prima facie*, an object changes if it has different and incompatible properties at different times: a fence that is all-white is painted and later is all-green. But nothing can be both all-white and all-green. So, how can we understand the persistence of an object (the fence, say) through change?

There are broadly two ways to understand persistence and change: three-dimensionalism and four-dimensionalism. According to three-dimensionalism, every material object has three spatial dimensions, and persists by enduring through time; the whole three-dimensional object exists at different times.¹ A 3D object has spatial parts, but no temporal parts. Trivially, a three-

¹ It does not follow that all its properties or parts exist whenever the 3D object exists; as we shall see, a 3D object's parts and properties—as well as the 3D object itself—are temporally indexed: Your appendix is part of you at one time but not at another time. Nor is three-dimensionalism committed to presentism as a theory of time and existence. (See Haslanger,

dimensionalist may say, for example, that your adulthood is a temporal part of your life. But in contrast to a four-dimensionalist, a three-dimensionalist does not regard your adulthood as itself any sort of object. Your adulthood is part of your life or history or career, but it is not a part of the entity that is you. Your adulthood may be represented as an ordered pair of you and a temporal interval; there is no unique object that is you-during-that-interval. There is just you and times at which you exist. The career, or life, or history of a 3D object should not be conflated with the object itself. Although being in Berlin now is part of my career or life or history, if three-dimensionalism is correct, when I am in Berlin, literally all of me is in Berlin, not just a temporal part of me.²

According to four-dimensionalism, every material object has four spatiotemporal dimensions, and persists by “perduring”—having a series of four-dimensional temporal parts. Temporal parts are thought of as analogous to spatial parts. On the 4D view, just as there’s a part of you at each spatial sub-region of the spatial region that you occupy, there’s a part of you at each temporal sub-interval of the temporal region that you occupy. You are extended in time just as you are in space. What is present at any moment during an object’s existence is only a temporal part of the whole object. A temporally-extended temporal part (like your adulthood) is a sum of instantaneous temporal parts each of which exists only for an instant. According to four-dimensionalism, if this microphone exists from t_1 to t_5 , at each moment that it exists there is 323-326.) According to presentism, ontology is constantly changing. Only what exists currently is real. There is not even a prima facie conflict between three-dimensionalism and special relativity theory if three-dimensionalists reject—as I do—presentism. “There is an unproblematic sense in which an enduring object can occupy a four-dimensional volume in space-time without being itself four-dimensional.” Balashov, p. 452.

² Standardly, three-dimensionalism is characterized as an object’s being “wholly present” at moments of time. Recently, Thomas Hofweber and J. David Velleman have argued that this is incoherent. “If we can conceive of an object’s extent as divisible into sub-extents—into sub-regions of space or sub-intervals of time—then we can of the object itself as divisible into parts filling those sub-extents.” Hofweber and Velleman, p. 2. Although I think that the objection (like four-dimensionalism generally) conflates an object with its career or life or history, I avoid the term “wholly present”. If one takes temporal parts to be temporal extents, then temporal parts should not be treated as objects. But I cannot argue for that here.

a different temporal object—the microphone-at- t_3 , say. The whole microphone (the 4D entity or worm) is the mereological sum of the instantaneous parts. According to four-dimensionalism, neither you nor I is ever all in one place; only a part of you is in Berlin. You have different temporal parts at different places and times.³

The relation between the temporal parts or stages of an object is not strict identity. Strict identity is classical identity, necessary identity. If a and b are strictly identical, then a cannot exist unless b does and conversely; a and b cannot differ in any of their properties—including temporal and modal properties. If a is necessarily rational, so is b and conversely. If a and b are strictly identical, then a and b are one and the same object.⁴ We also use the term ‘identity’ for weaker relations—contingent identity, relative identity, temporal identity, and qualitative indiscernibility—but these relations are not strict identity.

If four-dimensionalism is true, then there is no strict identity across time. If x and y are strictly identical, then x and y cannot differ in any of their properties. Since the all-white fence and the all-green fence have incompatible properties—one is all-white, the other is all-green—it seems that the all-white fence is not strictly identical to the all-green fence. But if they are not strictly identical, how do we account for the change effected by the painting of the fence? The four-dimensionalist has a ready answer: the fence is a spacetime worm that is a succession of (spatio)temporal parts, one of which is all-white and another of which is all-green. The all-white temporal part of the fence is a distinct object from the all-green temporal part of the fence. And both of those temporal parts are distinct from the very short-lived temporal part in which exactly one half of the fence is white and the other half is green.

³ Sider, p. 58. Four-dimensionalists take an atemporal parthood relation to be primitive, but can define ‘part-at-t’, which three-dimensionalists take to be primitive.

⁴ The object a and the object b are numerically identical if and only if “they” are one thing. So, if a and b are strictly identical, they are numerically identical. But, on my Constitution View, the converse does not hold. If the object a constitutes the object b at t, they are numerically identical at t without being strictly identical. You and the body that constitutes you now are numerically identical now without being strictly identical. See Baker 2007a.

In order to solve the problem of change, the four dimensionalist must take the proper subjects of properties to be the temporal parts, not the fence as a whole. The fence changes color in virtue of having different temporal parts of different colors: the fence-at- t_1 is all-white, and the fence-at- t_2 is all green. The temporal parts undergo no change; they simply succeed one another. So, manifest change is explained in terms of entities that do not undergo any change. Persistence, according to four-dimensionalism, is not a matter of strict identity over time; rather 4-D persistence is a matter of being related by the some other relation such as *being a temporal part of the same 4D entity as*,⁵ where a 4D entity is either a temporal part or a mereological sum of temporal parts. Any matter-filled region of spacetime—no matter how gerrymandered or disconnected—is a four-dimensional object; so, every 4D bit of matter is a temporal part of uncountably many 4D entities.⁶

Taking David Lewis and Theodore Sider as paradigmatic four-dimensionalists, four-dimensionalism is committed to a radical conventionalism about the objects that we interact with. Ontologically speaking, all that fundamentally exist are instantaneous temporal slices of elementary physical particles and their sums. Ordinary objects are just sums of temporal parts that we choose to name: The temporal parts that I label ‘this-microphone-at- t_2 ’ and ‘this-microphone-at- t_4 ’ are parts of a single 4D entity solely because of how we choose to use the word ‘microphone’. Whether or not a particular sum of temporal parts is a microphone or a person or any other ordinary object depends on our semantic decisions.⁷ Some four-

⁵ Balashov, p. 451. Other names for this relation include “genidentity” (Carnap), the “unity relation” (John Perry), the “I-relation” (David Lewis). See Sider, p. 202.

⁶ Sider, p, 120.

⁷ There is an alternative to the worm view of four-dimensionalism: the stage view. According to the stage view, ordinary predicates and proper names (like ‘computer’ or ‘person’) refer to instantaneous stages rather than to whole worms (sums of instantaneous stages). The worm and stage views agree ontologically. Both the worm and stage views hold that what ultimately exist are instantaneous temporal parts or stages. On the stage view, no person or other ordinary object lasts more than an instant, but has counterparts at other instants. Sider, p. 193. (For another stage theory, see Hawley.) The difference between the worm and the stage views is just a matter of what we choose to call a person or a computer, or whatever; one view takes ordinary terms like ‘computer’ or ‘person’ to refer to worms, while the other takes those terms to

dimensionalists may want to avoid radical conventionalism of ordinary objects by taking the whole worm to be more fundamental than its temporal parts; but on that approach, the notion of temporal parts presupposes persistence and change and hence cannot explain them. Since on this weaker conception, temporal parts cannot explain persistence and change, I'll stick to the robust Lewis-Sider view.⁸

To sum up, a robust four-dimensionalist describes manifest change—as in the color of the fence—in terms of entities that do not themselves undergo change. A four-dimensionalist describes persistence through time in terms of series of temporal parts (each of which is a distinct object), not in terms of strict identity. For the four-dimensionalist, strict identity resides in the unchanging temporal parts; but the whole fence has different temporal parts at different times, and hence is not strictly identical across time. By contrast, a three-dimensionalist takes the whole 3D object to be fundamental, and describes change in terms of exemplifying different properties at different times (as in being white at one time and green at another), and different parts (as in having a rail replaced)—without appeal to entities that do not change. And the changing 3D entities are strictly identical over time (as I'll explain), despite their change of properties, of parts and of what constitute them.

In this paper, I am going to defend three-dimensionalism and strict identity across time. First, I'll sketch my Constitution View, a 3-D account of unity at a time. Next, I'll outline a view of time and existence that takes exemplification of properties to be time-indexed, and hence allows enduring 3-D objects to undergo change of properties. After mentioning two four-dimensionalist objections that beg the question against three-dimensionalism, I'll provide reasons to prefer three-dimensionalism to four-dimensionalism.

refer to stages. That is to say, the *only* difference between the worm and stage views is *semantic*: Both views suppose that what is a computer or any other ordinary object is a matter of semantic decision that makes no ontological difference. The ontology is the same for both the worm and stage views: What exists ultimately are instantaneous temporal parts or stages, and mereological sums of temporal parts. For convenience, I focus on the worm view.

⁸ For a weaker notion of temporal parts that presupposes persistence (and hence does not explain it), see Shoemaker, p. 255.

The Constitution View: A 3-D Account of Synchronic Unity

I distinguish between unity at a time and unity over time. I explain unity at a time in terms, not of identity, but of constitution, and I explain unity across time in terms of identity. For several years, I have been working on a nonreductionistic, 3-D account of unity that allows both for change and for strict identity over time. I call the view ‘the Constitution View.’ The idea behind the Constitution View, reminiscent of Aristotle, is that entities that we encounter are of various primary kinds essentially, and that things of different primary kinds have different persistence conditions and different causal powers. An object’s persistence conditions are the limits of the changes that the object can survive, and the persistence conditions for an object depend on the object’s primary kind. Primary kinds are ordered hierarchically, so that things of one primary kind in certain circumstances constitute things of a higher-primary kind. (The ordering is only partial.) For example, when pieces of wood are in certain circumstances, a new entity—a chair, say—comes into existence.

According to the Constitution View, everything that we encounter in the natural world is constituted by ‘lower-level’ entities in particular circumstances. The range of possible constitution relations of a thing is also determined by its primary kind. A screwdriver can be constituted by an aggregate or sum of pieces of metal and plastic, or many other things; but a screwdriver cannot be constituted by a leaf. A speck of marble dust is constituted by an aggregate of calcium, carbon, and oxygen atoms; but only when such an aggregate is in circumstances of chemical bonding is there a speck of marble dust. The speck of marble dust is not identical to its constituting sum of atoms since the marble dust would fail to exist if the relevant atoms existed in different places. So, constitution is not identity. Indeed, as we have seen, identity is a necessary relation; but constitution is not. An aggregate of calcium, carbon and oxygen atoms may constitute a speck of marble dust at one time but not another; a piece of paper may constitute a 20-Euro note at one time but not another; a human body may constitute a person at one time but not another.

Although constitution is not identity, it is not separate existence either. Constitution is a relation of unity without identity. A speck of marble dust is a fundamentally different kind of

thing from an aggregate of calcium, carbon and oxygen atoms, but there is a unity between the speck of dust and the atoms that constitute it; a person is a fundamentally different kind of thing from the body that constitutes her at a certain time, but there is a unity between the person and her body. The unity of constitution is indicated by the “sharing” of property instances. Objects related by constitution can share properties by a property derivatively (dependent on its constitution relations). The piece of paper that constitutes a 20-Euro bill at *t* has the property of being rectangular at *t* nonderivatively, but of being worth more than 20 USD at *t* derivatively; the 20-Euro bill that the piece of paper constitutes at *t* has the property of being rectangular at *t* derivatively, and of being worth more than 20 USD at *t* nonderivatively. I have the property of being a person now nonderivatively; indeed, I have the property of being a person at every moment that I exist since *person* is my primary kind. But the body that constitutes me now has the property of being a person derivatively now while it constitutes something that is a person nonderivatively.⁹ (This is just an overview of a theory that is worked out in great detail in Baker 2007a.)

Associated with each primary kind are persistence conditions—conditions under which objects of that kind can exist and cease to exist. *Human organism* is a primary kind, and *person* is a primary kind. Human organisms have third-person persistence conditions that depend on biological functioning; human persons have first-person persistence conditions that depend on first-person perspectives. So, you and the organism that constitutes you now can come into existence and go out of existence at different times. But you are strictly identical to yourself throughout the whole time that you exist, and your constituting organism is strictly identical to itself throughout the whole time that it exists. It is possible that you come to be constituted by something different from the organism that constitutes you now (say, a prosthetic body or a resurrection body); in that case, you would still be strictly identical to yourself then.¹⁰ You would just be constituted differently.

⁹ Not all properties may be had derivatively. Certain classes of properties—properties expressed by terms like ‘essentially,’ ‘possibly,’ ‘necessarily,’; properties expressed by ‘is identical to’ or ‘constitutes’; properties rooted outside the times at which it is had’; properties that are a hybrid of two primary kind properties, e.g., being a human person or a cloth flag.

¹⁰ In Baker 2007b, I argue that the Constitution View is superior to the biological view with respect to the metaphysics of resurrection.

The Constitution View allows for change of properties by indexing properties' exemplifications to times—either by taking the property itself to be relative to time (e.g., 'being 5-feet-tall-at-t') or by taking exemplification to be relative to time (e.g., 'exemplifying-at-t being 5 feet tall'). Thus, the Constitution View delivers a conception of strict identity across time—the very same entity exists at different times—and it allows for change of properties, change of parts, and change of constitution relations.

In sum, material objects are of various primary kinds, and they are constituted by objects of other primary kinds, or of sums of objects of other primary kinds. Depending on the sorts of primary kinds involved, there may be different constituters of a self-identical material object at different times. Although persistence conditions are vague, associated with each primary kind are persistence conditions that allow objects of that primary kind to undergo some range of changes and survive. So, constitution accounts for the unity of a material object at a time, and identity accounts for its unity across time.

Time and Existence

Now, I would like to sketch a 3-D view of time and existence that supports the Constitution View. My idea is this: There are two distinct basic ways of existing—in time (like you, me, and the all-white fence) and not in time (like numbers or perhaps God).¹¹ Existing-at-a-time is the mode of existence that we are most familiar with. Corresponding to the two ways of existing are two ways that properties may be exemplified—temporally or nontemporally. I call this 'the Bimodal View' because it recognizes two fundamental modes of existence and of property exemplification: temporal and nontemporal. All 3-D objects are temporal objects. The fundamental mode of existence for a 3-D object is existence at a time: a 3-D object exists *simpliciter* in virtue of existing at some time or other. And we who exist-at-times have properties at times.¹²

¹¹ Although there are two kinds of objects in the domain of the unrestricted existential quantifier—temporal objects and nontemporal objects—there are not two senses of 'exist'. There are, rather, two modes or ways of existing. Matthews 1971. and Matthews 1972.

¹² There are two ways to understand temporal instantiation of properties—one way, roughly, is to take properties themselves to be time-indexed—as in 'The fence had the property

In short, according to three-dimensionalism, diachronic unity is strict identity across time, where the conditions under which an object continues to exist are determined by the object's primary kind. If we think of the world as enduring through time (as a three-dimensionalist does), then it is natural to think of existing-at-a time as a fundamental mode of existence, and it is equally natural to think of the objects that we encounter as temporal objects—objects that exist in their entirety for the whole intervals at which they exist. This picture, of course, is precisely the three-dimensionalist picture of reality.

Four-Dimensionalist Worries

Let me briefly mention two objections that four-dimensionalists have mounted against 3-D views like the Constitution View, both of which beg the question against three-dimensionalism. The first is the charge that three-dimensionalists violate Leibniz' Law. Four-dimensionalists appeal to the following version of Leibniz' Law"

$$LL_{4D}: \Box[x = y \rightarrow \forall F(Fx \leftrightarrow Fy)]$$

This is clearly a four-dimensionalist version of Leibniz's Law. Four-dimensional objects conform to LL_{4D} , because the only objects that enjoy strict identity are temporal parts that do not undergo change.

However, the Bimodal View of existence that I just mentioned motivates a different version of Leibniz's Law for enduring temporal objects:

$$LL_{3D}: \Box[x = y \rightarrow \forall F,t(Fxt \leftrightarrow Fyt)]$$

This three-dimensionalist version of Leibniz' Law is clearly the appropriate one for enduring objects, and it allows that enduring objects that undergo change enjoy strict identity over time.

of being all-white-at- t_1 and had the property of being all-green-at- t_2 .' There is no conflict between being all-white-at- t_1 and being all-green-at- t_2 . Another way to understand property instantiation as temporally qualified is to take the instantiation relation itself to be time-indexed—as in 'The fence exemplified-at- t_1 the property of being all-white, and exemplified-at- t_2 the property of being all-green.'

So, I do not think that a three-dimensionalist need worry about violating (the appropriate version of) Leibniz's Law.

The second charge against three-dimensionalism is the so-called problem of temporary intrinsics, pressed by David Lewis. Like many other philosophers, Lewis is committed to taking intrinsic properties, like the property of *being bent*, as basic. Using the example of being bent (as opposed to being straight), his view is that we must analyze 'being bent at' a time in terms of 'being bent' *simpliciter*. Otherwise, we would have unanalyzed relations, and that, he thinks, would be intolerable. Lewis says, "[I]t is one thing to have a property, it is something else to bear some relation to it. If a relation stands between you and your properties, you are alienated from them."¹³ But I ask: How could your being happy at t_1 and not at t_2 possibly alienate you from your happiness at t_1 ?

The motivation for holding Lewis's view on 'temporary intrinsics', I believe, stems from his other metaphysical commitments about intrinsic properties—commitments that one need not share. Indeed, I want to suggest that all alteration, all change of properties of a temporal object, is relational. There is no obvious reason why the change in the fence from being all-white to being all-green should not be relative to time. A molecular duplicate of that fence would also change from being all-white to being all-green at exactly the same time. Having a property relative to a time is a fundamental kind of relationality for temporal objects—quite unlike the relationality of my body to the wall. It seems that molecular duplicates must share some relational properties (*viz.*, to times). All that follows is that intrinsic natures of objects cannot be captured by monadic properties. So, following a suggestion of Sally Haslanger's, I conclude that no temporary properties are monadic: "all temporary properties are relations to times."¹⁴

From a three-dimensionalist point of view, relations to times are ubiquitous and ineliminable. Indeed, I believe that philosophers have underestimated the scope of relational properties generally. If there really are temporal objects—objects that exist *simpliciter* only in virtue of existing at times—then it is not surprising that it is an irreducible fact about them that

¹³ Lewis, p. 5.

¹⁴ Haslanger, p. 330.

they have properties at some times and not at other times. The so-called problem of temporary intrinsics seems like a problem only from a point of view that rejects three-dimensionalism.

To sum up: Three-dimensionalism does not violate the three-dimensionalist version of Leibniz's Law, and, given a three-dimensionalist sketch of time and existence, the problem of temporary intrinsics just does not arise. In short, three-dimensionalists have an unscathed account of persistence that allows for change in enduring objects.

Consequences of Four-Dimensionalism as Reasons to Prefer Three-Dimensionalism

A main reason to prefer three-dimensionalism is that four-dimensionalism has some untoward consequences—all stemming from an anemic conception of an object. In particular, four-dimensionalists cannot find a ground in the nature of things for the unity of objects either at a time or across time, or for the significance of objects' going out of existence. Moreover, four-dimensionalism makes it difficult to understand ourselves, and, finally, seems to clash with presuppositions of morality.

First, consider the unity of objects: The 4D view offers no adequate account of the synchronic or diachronic unity of objects that we encounter. The unity of you is simply a matter of how we decide to use language and concepts. On the 4-D view, you today are an object on an ontological par with such a temporally disparate object as the sum of this microphone-today and the Eiffel Tower-100 yrs ago. Any four-dimensional space filled with matter, however disconnected, is an object—ontologically, as real as you or me. From the robust four-dimensional perspective under discussion, there is no unity in the nature of things; the appearance of unity is only a result of our interest-relative choices of which objects to recognize. Unity is just a matter of how we decide to use our concepts.

Four-dimensionalists need not deny that ordinary things like cats, rocks, microphones and people exist. What they deny is this: that they are *fundamentally* different kinds of things from each other, and that they are *fundamentally* different from arbitrary sums (like sum of my husband's eyebrows at t_1 , and the Pentagon at t_2). The ontology is one of filled spacetime

regions, period; and there are no fundamental differences among filled regions of spacetime, each one of which is “the total career of some object.”¹⁵

A related feature of four-dimensionalism is its treatment of ordinary objects’ going out of existence. Four-dimensionalism has the unhappy consequence that if you drop my lovely carved candle into hot water, and it melts, we may *say* that the candle went out of existence; but according to four-dimensionalism, we are saying no more, ontologically speaking, than we say when we say that the one-minute temporal part of the candle at noon on Christmas day in 1998 went out of existence in one minute, to be succeeded by a different temporal part of the candle. After the melting, the candle had no more temporal parts; but the sum of particles with which four-dimensionalists identify the candle continued to have temporal parts. We just stopped calling the continued temporal parts of the sum of particles a ‘candle’. I believe that when we say that a candle or anything else went out of existence, we mean something more robust than four-dimensionalism can deliver.

On the Constitution View, when the candle is melted, it goes out of existence altogether. It is not that we just stop calling the constituting sum of atoms a ‘candle’. The difference between the candle’s existing and not existing is an ontological difference, not just a semantic difference.

In contrast to the four-dimensionalist view, the Constitution View takes each ordinary object to be of a primary kind that is suited to be constituted by (and perhaps to constitute) objects of certain other primary kinds.¹⁶ The unity at a time of a constituted object is secured by the constitution relation. The unity across time of a constituted object is strict identity, and is secured by the primary kind of the constituted object. The primary kind can play this role of securing identity across time, because it determines the range of changes that the object can

¹⁵ Sider, p. 120. Sider’s own view is a stage version (not a worm version), according to which “the objects that we typically discuss, name, quantify over, and discuss....are stages.” (*Four-Dimensionalism*, pp. 190-191.) Whereas worms are temporally extended, stages are instantaneous.

¹⁶ Ontological simples, if there are any, are not constituted entities.

survive. So, whereas synchronic unity is a matter of constitution, diachronic unity is identity across time.

The other consequence of four-dimensionalism that I want to mention is the difficulty of making sense of ourselves in four-dimensionalist terms, and, particularly, the difficulty of making sense of our moral experience. First, consider everyday experience. Nothing that we are familiar with or care about has any ontological significance on the 4-D picture. For example, we care about persons, but if four-dimensionalism is true, then the only thing special about persons is that we care about them. A person has no more ontological significance than that an object that consists of that chair yesterday and this lectern today.

Think of how a four-dimensionalist must understand such ordinary phenomena as our making plans and then later, perhaps much later, carrying them out. Suppose that in 2006, I decide to travel to Berlin in 2007, and then in 2007, I go on the trip exactly as I planned it. How would a four-dimensionalist understand this? Well, there's one object, me-in-2006, and a distinct object, me-in-2007, and the first object makes a plan to travel to Berlin and the second object carries out the plan. Both objects are "me" because they are connected in the way that we choose to call a person. But the whole person "me" is nothing but a series of little 'me's—like me-in-2006 and me-in-2007. If I had been a four-dimensionalist, then the me-in-2006 making the plan should have been sad that she wouldn't be around to see the plan come to fruition. There are similar kinds of awkwardness when we think of anticipation and regret from a four-dimensionalist point of view. However, if three-dimensionalism is correct, then the entity who made the plan is strictly identical to the entity who carried it out. Similarly for anticipation and regret: the exact same entity who had eagerly anticipated dinner with the Chancellor was disappointed by it; the exact same entity who made a hasty decision later regretted it. Three dimensionalism offers a much more natural way to understand ourselves across time than does four-dimensionalism.

Even more jarring are the *moral* implications of four-dimensionalism. Strict identity across time seems required for a moral life. To accept responsibility is to own up to what one has done—not just to accept responsibility for what some no-longer-existing part of one has done. Suppose that you did something reprehensible yesterday—say, you mocked a student

mercilessly. Can you be held responsible today for mocking a student yesterday? *Ontologically* speaking, the entity who mocked the student yesterday is an entity that no longer exists. If you were a four-dimensionalist, you could say, “Oh, that mocker of the student was just a part of me that no longer exists. There’s no point in blaming me now; that part of me is long gone.”

If you apologize today for mocking the student yesterday, the only way that a four-dimensionalist can construe the apology is this: A temporal part today apologized for what a different temporal part yesterday did. There are two morally important consequences here: (1) What makes it true to say that you-today are the same person as you-yesterday is solely a matter of how we decide to use the word ‘person’. We could have chosen to use the word ‘person’ differently; indeed, we may make different semantic decisions in the future. Nothing in the nature of things makes it right or wrong to use ‘person’ one way or another. (2) The other moral consequence is that in the absence of identity across time, it is *never* the case that the very same entity who committed the offense gets blamed. A four-dimensionalist may object: “You are the same person (worm) today that you were yesterday; it’s just that what makes it the case that you are the same worm today is that there are distinct temporal parts yesterday and today standing in the person-relation.”

But that leaves the following question unanswered: Assuming that you are morally responsible today for having mocked a student yesterday, to what does a four-dimensionalist assign responsibility, in the first instance? The four-dimensionalist says: you are responsible in virtue of having a temporal part that is responsible. But moral properties of persons do not seem to derive from, or to be dependent on, properties of the person’s parts. (If you shoot someone, we do not hold your trigger-finger responsible.) It just seems false that your responsibility for mocking the student derives from the fact that a *part* of you is responsible. And even if it made sense to say that a part of you was responsible for mocking the student, the part of you that is responsible for mocking the students is not the same part that mocked the student. Anyone who thinks that justice requires identity of the exact entity who commits the offense with the entity subsequently held responsible for it should reject four-dimensionalism.

By contrast, the three-dimensionalist can say what seems to be obviously true: Moral properties like responsibility in the first instance attach to the whole person. On the Constitution

View, *person* is a primary kind, and hence being a person has ontological import. The whole human person exists from the time that a human organism acquires a rudimentary first-person perspective and comes to constitute a person, until the first-person perspective is permanently extinguished. There is no entity that is you-today; there is a single entity, you, who exist at least from birth to death. If you mocked the student yesterday, then your moral responsibility is a matter of your being strictly identical to the mocker. Again, anyone who thinks that moral accountability should be grounded in identity rather than in optional semantic decisions will prefer three-dimensionalism.

So, although both three- and four-dimensionalism have accounts of persistence and change, there are a number of reasons to prefer three-dimensionalism: Three-dimensionalism can handle both synchronic unity and identity across time, can understand going out of existence as an ontological—not just a semantic—matter, and can make sense of ourselves and of our moral experience. I do not claim that these reasons show that four-dimensionalism is false; they only point out the costs of being a four-dimensionalist. Four-dimensionalism gives us no ontological purchase on the things that we interact with and care about. By contrast, the three-dimensionalist Constitution View gives theoretical backing to what I take to be the natural way to understand reality.¹⁷

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¹⁷ I presented this paper at the conference on Unity and Time as Problems in Metaphysics: Persistence and Individuality, at Humboldt-Universität zu Berlin, 26-28 September, 2007. Thanks to participants and to Gareth B. Matthews for comments.

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