

In Defence of Three-Dimensionalism*

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Let us use the term ‘present’ in such a way that a material thing can be said to be present both in space and time. Thus on this usage we can say that the desk in front of me is present at any moment at which it exists and also that it is present at any position within its spatial location at that moment. We might similarly talk of presence throughout a *period* of time or a *region* of space and of the presence of other categories of objects, such as states or events.

Some philosophers, the ‘three-dimensionalists’, have thought that there is a distinctive way in which material things are present in time as opposed to space. They have thought that a thing is somehow ‘stretched out’ through its location at a given time though not through the period of during which it exists and that it is somehow present in its entirety at any moment at which it exists though not at any position at which it is located. Other philosophers, the ‘four-dimensionalists’, have denied that this was so; they have thought that a material thing is as equally ‘stretched out’ in time as it is in space and that there is no special way in which it is entirely present at a moment rather than at a position.

We might use the term ‘existence’ for the way in which 3D-ers have thought that a thing is present in time and ‘extension’ or ‘location’ for the way in which 4D-ers have thought that a thing is present in space. The 3D-ers have then held that things exist in time but are extended in space while the 4D-ers hold that things are extended both in space and in time.¹

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¹ My terms ‘presence’, ‘existence’, and ‘extension’ (deriving from my paper, ‘Compounds and Aggregates’, *Nous*, XXVIII, 2 (1994): 137–58)

But how is the distinction between existence and extension to be more precisely understood? It has been common, for 3D-ers and 4D-ers alike, to explain the distinction in mereological terms.² For a thing to be *extended* in time, that is, to be present in the distinctively 4D way, is for it to be composed of momentary temporal parts – parts which exist only for a moment and which together make up the thing; and for a thing to *exist* in time, that is, to be present in the distinctively 3D way, is for it to lack momentary temporal parts or perhaps temporal parts at all. Thus on this understanding, the issue between 3D-ers and 4D-ers is over whether or not the presence of the thing in time requires the presence of its temporal parts.

A major difficulty with this way of understanding the issue (not the only one!) is that there are a variety of reasons, apart from being a 3- or 4D-er, why one might wish to reject or to affirm the existence of momentary temporal parts. Thus even if one is a 4D-er one might reject the existence of momentary temporal parts on the grounds that nothing momentary exists and even if one is a 3D-er one might affirm the existence of temporal parts on the grounds that everything merely endures for an instant. It would be going too far to say that the issue between the 3D-er and 4D-er has nothing to do with the existence of temporal parts. But the issue over the existence of temporal parts is best seen as a symptom of an underlying dispute, one that arises once certain ancillary assumptions are accepted, and not itself the source of the dispute.³

In the light of such difficulties, one might attempt to refine the mereological criterion for distinguishing between the two kinds of presence or to find some other basis upon which they might be distinguished. But this whole approach to explaining the issue strikes me as misguided. For it presupposes that there is a unitary notion of generic presence to which both sides of the dispute can adhere. Given that there is such a notion, the question is then to find some way in which the more specific forms of presence might be differentiated.

correspond to the more familiar terminology of ‘persistence’, ‘endurance’, and ‘perdurance’. I prefer my own terminology since it is somewhat more general, allowing one to talk of existence or extension at a moment when one cannot very well talk of endurance or perdurance at a moment and allowing one to talk of existence or extension in space when one cannot very well talk about endurance or perdurance in space.

² As, for example, in Theodore Sider, *Four Dimensionalism* (New York: Oxford, 2001).

³ The difficulties with the mereological formulation and the connection between the various formulations will be further discussed in a forthcoming paper, ‘The 3D/4D Debate’.

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However, the 3D-er, in my opinion, is better regarded as endorsing two *radically different* forms of presence – one relating to how an object exists and the other relating to how it is, or ‘disposes of itself’, once it exists. These two forms of presence are not to be understood as *restrictions* on a more generic form of presence but as independent forms of presence in their own right. Thus rather than thinking of presence as a uniform phenomenon that stands in need of differentiation into distinct species or kinds, it is to be regarded as an essentially disjunctive phenomenon that must itself be understood in terms of the more specific kinds.⁴

On the usual way of understanding the 3D/4D dispute, there will be agreement on the distinction between existence and extension, whether explained in mereological or in other terms, and the question at issue will be over its application. Do material things belong to the one side of the divide or to the other? But on the present view, there is a more fundamental dispute over the nature of the distinction itself, quite apart from how it is to be applied. For where the 4D-er sees existence and extension as two species of a generic form of presence, the 3D-er will see them as independent forms of presence in their own right.

Given the 3D-er’s understanding of the distinction, he is likely to resist the demand to explain it in basically different terms. For if the two forms of presence are not to be explained as differentiations of a more generic form of presence, then it is unclear how a more basic understanding of either of them is to be achieved. Perhaps the best that can be done to elucidate the distinction is by way of the idea of ‘entire’ or ‘complete’ presence. When an object extends, or is located at, a given place, then it may either be located *in its entirety* or *in part* at that place. A chair, for example, will be located in its entirety at the region occupied by the chair but will only be located in part at the region occupied by the back of the chair. However, this is not how it is for existence. The point is usually put by saying that, for the 3D-er, a thing will exist, or be present, in its entirety at a given time. But this is somewhat misleading – for it suggests that 3D presence is simply the restriction of a more

⁴ Some authors have recently attempted to frame the 3D/4D dispute in locational rather than mereological terms, but by appeal to the notion of exact occupancy rather than the distinction between existence and extension (see, for example, pp. 103–04 of John Hawthorne, *Metaphysical Essays* (New York: Oxford, 2006)). However, it seems to me that the distinction is more basic and that *exact occupancy* is to be understood in terms of the distinction rather than the other way round.

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generic form of presence to those cases that are entire. The better way to make the point is that, whereas we can meaningfully distinguish between an object's being located in its entirety or in part at a given place, we cannot meaningfully distinguish in the analogous way between an object's existing in its entirety or in part at a given time. Location may be a matter of more or less but existence is not.

The 4D-er is unlikely to be moved by these explanations. For him, an object simply *resides* in the space-time continuum and it is not as if there were two facets to its presence in the world, one relating to its status as an existent in time and the other to its status as an occupant in space. To these philosophers, the 3D-er's assumption of a basic distinction between existence and extension will appear as an act of desperation, simply arising from his inability to explain the distinction in more satisfactory terms. However, I believe that such a response is unwarranted and that there are a number of considerations which strongly suggest that the distinction is to be understood and applied in just the way the 3D-er thinks. Some of these considerations concern our use of locative expressions in ordinary language, some our conception of composite objects, and some our conception of changing composition: and in each case, it is only the 3D-er's point of view that is able to provide a satisfactory account of the phenomena.

We should note, in the first place, that the distinction between existence and extension, as the 3D-er understands it, is already deeply embedded in our ordinary way of speaking. Let me provide a few illustrations of this, although there is an enormous amount of related linguistic evidence that might also be given. We begin with the locative use of 'is'. I may ask 'Where is Peter?' and 'Where is the party?' I may also ask 'When is the party?' But I cannot properly ask 'When is Peter?' Thus the locative use of 'is' is subject to the following pattern of distribution:

	Things	Events
Time	×	√
Space	√	√

with things and events standing in the 'is'-relation to space but with events, though not things, standing in the 'is'-relation to time. Thus the locative use of 'is' behaves in exactly the same way as the 3D-er's notion of extension and it is hard to avoid the impression that the one is simply the ordinary language expression of the other.

Of course, the 4D-er might argue that the locative use of 'is' embodies an implicit restriction of the generic notion of presence to the

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presence of things in space or to the presence of events in space or time. But such a view is not at all plausible. For 'is' is a relatively neutral term (unlike 'continues', say, or 'occurs') and there is nothing in our understanding of the term to suggest that its application might be restricted in regard to either category (thing versus event) or dimension (space versus time). The term would appear to be ideally suited to express the underlying locative relation of the 4D-er; and it is remarkable that it fails to signify the relation and that there is no other word or simple nondisjunctive phrase by which it might be expressed.

Similar remarks apply to the ordinary 'locative' use of 'exists'. I have so far used 'exists' in a technical sense to indicate a certain manner of presence but I think it corresponds pretty well to our ordinary use of the term. We may ask 'When did Plato exist?' or 'When did the party exist?' or 'Where did the party exist?'⁵ Thus the ordinary use of 'exists' has a complementary distribution to that of 'is':

	Things	Events
Time	√	×
Space	×	×

with things having existence in time but not in space and with events lacking existence either in time or in space. Thus the ordinary use of 'exists' exactly corresponds to the philosophical use and, again, it is hard to avoid the impression that the one is simply a term for the other.

Of course, the 4D-er might argue that the ordinary term 'exists' embodies an implicit restriction of the generic notion of presence to the presence of things in time. But 'exists', like 'is', is a relatively neutral term and it seems even less plausible than before that it might embody such a strong restriction. We should also note that 'exists' has a use that is not relative to a time or place (as in 'God does not exist' or 'There exist prime numbers between 8 and 15'). The relative and nonrelative uses of 'exists' would appear to be cognates; and so, from the 4D-er's point of view, it is quite bizarre that a term with a nonrelative nonlocative use should also enjoy a relative locative use.

⁵ One can perhaps say that Plato existed in Athens but it is a more episodic use of the term that is here in question and, on this use, one cannot sensibly say 'Plato exists (right now) in the Academy'.

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The linguistic evidence is not confined to locative expressions such as 'is' or 'exists'. One further example – concerning 'motion' – may be mentioned. A billiard ball may be in motion but the movement of the billiard ball is not thereby in motion. Whence the difference? After all, both the billiard ball and its movement undergo a change in position. Each is located at a certain position at the beginning and at the end of the movement and each changes in position continuously from one moment to the next.

The 3D-er may explain the difference by appeal to the general distinction between existence and extension. Motion involves change in position. But not any change will do. In order to have genuine motion rather than mere variation in position, it is necessary that the object should be 'entirely present' at each moment of the change. Thus without entire presence, or existence, genuine motion will not be possible.

No such explanation is available to the 4D-er. For him, the underlying phenomenon in the case of the billiard ball and its movement is the same – there is simply a variation in location from one moment to the next. Thus all that could possibly justify our speaking of 'motion' in the one case rather than the other is that our application of the term has a built-in restriction to things. But it is then a mystery why such arbitrary restrictions should be in force or why our language does not provide a more general vocabulary for describing the underlying phenomenon.

The 4D-er claims not to understand the 3D-er's distinction between existence and extension. But in the light of the linguistic evidence cited above, it is the 4D-er's insistence on a single generic form of presence that is baffling rather than the 3D-er's insistence on a distinction. For the 4D-er's notion has no basis in our ordinary way of talking about the presence of objects in space and time. It would appear to arise simply from a preconceived picture of how things must be rather than from an especially acute sense of how things are. He refashions the conceptual landscape in the light of his own metaphysical views and then expresses astonishment when others claim to see what, from his own vantage point, is not there to be found.

Not only is the distinction between existence and extension deeply embedded in our ordinary way of speaking, it would also appear to be deeply explanatory of our ordinary ways of thinking about part-whole. This is true both of our thinking about relative parthood, that holds relative to a time or place, and of our thinking about absolute parthood, that is not relative in this way.

We begin with the case of the absolute part. Consider a given quart of milk. It is composed in an absolute or timeless sense, of

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two pints – one at the bottom of the jug, say, and the other at the top.⁶ Let us now ask: When does the quart of milk exist (or, to put it neutrally, when is it *present* in time – nothing turns on my use of the word ‘exists’)? Presumably the answer is: when and only when both of the two pints of milk are present. If one of the pints were to cease to exist, then the quart would cease to exist; and, conversely, as long as the pints still exist then the quart will still exist. Given that the quart of milk exists at a given moment, let us now ask: Where is it at that moment? Presumably, where and only where the two pints are. For surely it is where they are and not anywhere else.

We see that the period of time during which the composite milk – the quart – exists is the *intersection* of the periods of time during which the individual pints exist and that, at any moment at which the composite milk exists, its location is the *union* of the locations of the pints. We may state the matter in terms of presence at a moment or at a position, where an object is said to be present at a position if its total location includes the position (all relative to a given time, of course). Supposing the quart of milk q to be the composite or sum $p1 + p2$ of the two pints $p1$ and $p2$, the quart q will then be present at a moment of time iff both $p1$ and $p2$ are present at that moment and, given that q is present at a particular moment, it will, at that moment, be present at a position in space iff either $p1$ is then present at that position or $p2$ is then present at that position. Thus a composite thing will conform to conjunctive conditions of presence with respect to time (corresponding to the intersection of the periods of existence) and to disjunctive conditions of presence with respect to space (corresponding to the union of the regions of location).

Consider now a composite event. Suppose that there is some lightning that is composed of two individual streaks of lightning. When does the lightning occur? Presumably when and only when either one of the individual streaks of lightning occurs. It begins with the one streak of lightning and ends with the other. Now given that the lightning occurs at a particular moment, where is it? Presumably, where and only where either one of the individual streaks of lightning is at that moment. For surely it is where they are and nowhere else.

We see that the period of time during which the composite lightning occurs is the union of the periods of time during which the

⁶ I am taking the quart of milk to be a *quantity* whose immediate material composition cannot change from one moment to the next. This kind of case and some of its implications are further discussed in my paper, ‘Compounds and Aggregates’.

streaks of lightning occur and likewise, at any moment at which the composite lightning occurs, its location is the union of the locations of the streaks. Or to state the matter in terms of relative presence, the lightning l , which we may take to be the composite or sum $s_1 + s_2$ of the two streaks s_1 and s_2 , will be present at a moment of time if either s_1 or s_2 are present at that moment and, given that l is present at a particular moment, it will, at that moment, be present at a position of space iff either s_1 is then present at that position or s_2 is then present at that position. Thus the lightning submits to disjunctive conditions of presence with respect to both space and time.

What explains the disparity in the conditions of presence? Why should the composite thing, the quart of milk, submit to different conditions of presence from the composite event, the lightning? And why should the conditions of presence for the composite thing be different for time than they are for space?

The 3D-er has a ready explanation. He will hold that things are present in space and time in a way that is different for events. A thing will exist in time and be extended in space, while an event will be extended both in space and in time. The 3D-er will also hold that objects sum differently with respect to existence and extension. Supposing two objects to exist at a given moment of time, their sum will exist at that moment if and only if both objects exist at that moment. But supposing two objects to be extended in space at a given moment of time, their sum will, at that moment, be located at a position in space if and only if one of the objects is then located at that position in space; and similarly, for when an object is extended in time. The difference in the presence conditions for the sums of things and events then immediately follows. For given that things exist in time and are extended in space, sums of things will acquire the conjunctive conditions appropriate to existence in time and the disjunctive conditions appropriate to extension in space; and, given that events are extended in both space and time, sums of events will acquire the disjunctive conditions appropriate to extension in space and time.

This explanation rests upon two assumptions. The first is that there is a difference in the way things and events are present in space and time, with things having an existential presence in time and an extensional presence in space and with events having an extensional presence both in space and in time. Once the distinction between existence and extension is granted, this difference in the existential and extensional profiles of things and events may reasonably be taken to be definitive of what it is of something to *be* a thing or to

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be an event. Thus no further explanation of why things and events should have the profiles that they do may reasonably be required.

The second assumption is that there is a difference in the conditions of presence for a sum in the cases of existence and extension, with the conditions being conjunctive for existence and disjunctive for extension. In this case, it might be wondered why there should be this difference in the presence conditions. Why should not both kinds of condition be disjunctive, for example, or both conjunctive?

I am not sure it is possible to derive the two types of presence condition from more basic assumptions but it is possible to show how the difference between them naturally flows from our intuitive understanding of the difference between the two forms of presence. For, as we have remarked, existence cannot meaningfully be qualified as partial or entire. Suppose now that a sum of two objects could be said to exist at a moment when only one of those objects existed. There would then be a clear sense in which the existence of the sum was partial – the object exists at the moment even though it is not entirely present at that moment. Disjunctive conditions of existence – or anything short of conjunctive conditions – are therefore ruled out by our very understanding of what it is for something to exist. Similarly, if extension can be partial, then there would appear to be nothing to prevent a sum of objects being present when or where only one of the objects is present.

The 3D-er's account of these cases is strikingly confirmed by some other cases. Suppose that some coffee is brewing on the stove, next to an open bottle of vanilla essence. The aroma of coffee and vanilla intermingle to create a composite aroma of coffee and vanilla. Supposing the composite aroma to be present at a certain moment of time, then where is it present? Presumably, where and only where aromas of coffee and vanilla are both present. For it is certainly present where both aromas are present and how could it be present where only the aroma of coffee or only the aroma of vanilla was present. Similarly, we may ask: *When* will the composite aroma be present? And presumably the answer is that it will be present when both individual aromas are present (and also, we might add, when there is a place at which both are present).

Thus composite aromas conform to conjunctive conditions of presence in space and time. But why should this be? The 3D-er can provide the same line of explanation that he gave before. For he will claim that aromas, sounds, physical fields and the like are the kind of object to exist in space as well as time. They enjoy an 'entire' presence at any place at which they are present and not just at any time (indeed, we may actually speak of an aroma *existing* here

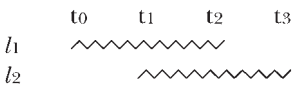
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or *existing* there). And given the existential profile of these objects, it will then follow that their sums conform to conjunctive conditions of presence in both space and time.

It is hard if not impossible to see how the 4D-er might account for any of these facts. Events, things, and ‘fields’ are all present in space and time in the very same way for him; and so what basis is there for drawing a distinction in the conditions under which their sums will be present in space and time? The 4D-er might perhaps respond by arguing that objects can compose wholes in different ways and that some methods of composition are subject to disjunctive conditions of presence while others are subject to conjunctive conditions or to a combination of disjunctive and conjunctive conditions. I had supposed that two pints of milk compose a quart in the same way that two streaks of lightning compose some lightning. But he will suppose that two different methods of composition are here in play and that it is this that accounts for the difference in the conditions of presence.

It is rather implausible to suppose that the objects compose differently. For in both cases we appear to have what one might call a ‘mere’ sum of the objects in question, something that might be indicated by the use of ‘and’ or by the plural. Thus the quart of milk, we want to say, is simply the two pints (or this pint and that pint) and the lightning is simply the two streaks of lightning (or this lightning and that lightning).

But there are difficulties for this view even if we grant that there are different methods of composition. For one would then expect to be able to compose events in the way we naturally compose things or to compose things in the way we naturally compose events. But we do not find that this is so. Consider again the lightning and suppose that the two individual streaks of lightning briefly overlap in time, as depicted below:



Is there then some composite lightning, composed of the two individual streaks, that lasts from t_1 to t_2 ? Surely not. There is indeed some simultaneous lightning that goes on during that period. But it does not have each individual streak of lightning as a part but merely those parts of the individual streaks that occur between t_1 and t_2 .

It is the same when we consider whether things might compose in the manner of events. For consider again the two pints of milk and

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suppose that, like the streaks of lightning, they briefly overlap in time. Is there then some composite thing, composed of the two pints of milk, that lasts from t_0 to t_3 ? If there is such a thing, then it is certainly not the quart of milk and nor is it anything that we would normally take to exist. Of course, the 4D-er will take it to be the fusion of the two pints of milk but it is only if one already accepts his position that one will find it plausible that there is such a thing!

The difficulties become even more acute when one asks whether things or events might sum in the same uniformly conjunctive manners as aromas. Consider two Siamese twins, joined at the hip. Is there then a composite object, composed of the two twins, that is entirely located in the region occupied by the hip – some sort of ‘essence’ of Siamese twin? We seem unable to form any intelligible conception of what such an object might be.

We turn finally to considerations of relative part. I have so far talked of parts in an absolute sense of the term. The quart of milk is composed in an absolute or atemporal sense of the two pints and the lightning of the two streaks of lightning; and so there is an absolute or atemporal sense in which the two pints are parts of the quart or in which the streaks of lightning are parts of the lightning. But there is also a relative or temporary notion of part. My car now has this tyre as a part and later has another tyre as a part; and this kidney, which was once a part of your body, is now part of my body.

The notion of temporary parthood has its natural home in talk of changing composition. Objects may change their composition over time and the composition of an object, at any given time, is given by its parts at that time. Thus for an object’s composition to change from one moment to the next is for its temporary parts to be different from one moment to the next.

As I already have observed, we are willing to talk about the changing composition of *things*. The car, for example, will change its composition from one tyre change to the next and my body from before and after a kidney transplant; and each of these things will change its composition in much less dramatic ways as well. But we are also willing to talk of the changing composition of *events*. The lightning, for example, will change its composition over time – consisting first of this streak of lightning, let us say, and later of this other streak; and the chiming of a door bell may consist first of this chime (an ‘E’) and then of that chime (a ‘C’). We may even talk of a change in the composition of a thing or event from one place to another. Thus we might say that my body is composed here of bone and there of flesh or that the simultaneous lightning is composed here of this streak and there of that streak.

Although we are willing to talk of changing composition in all of these cases, the sense in which the underlying notion of relative parthood is to be understood is very different in the case of things in time than in the other cases. To say that the lightning is at a given time part of the storm is to say, first, that it is in an atemporal or non-time-relative sense a part of the storm and second, that it occurs at the given time.⁷ Likewise, to say that this flesh is here a part of my body (at a given time) is to say, first, that it is in an aspatial or non-place-relative sense a part of my body (at the time) and, second, that it is located here (at the time); and similarly for the place-relative parts of events.

But the sense in which a tyre is a temporary part of a car is not like this. To say that a tyre is a part of the car at a given time is not to say that it is a part in an atemporal sense and that it exists at the given time. For the tyre is not, in the relevant sense, an atemporal part of the car at all. Whereas an event is a sum or composite of the various events that compose it at different times, a thing is not a sum or composite of the various things that compose it at different times. The sum of the various parts – the tyres, the spark plugs, the carburettors, and so on – that compose a car over its lifetime would be some kind of jumble rather than a car.

Of course, there is a sense in which the tyre is an atemporal part of the car. For we may take one thing to be an atemporal part of another if it is, at some time, a temporary part of the other. But this use of atemporal part is not what we are after. For surely the tyre may exist at a later time without then being a part of the car. But under the proposed account, it *will* later be a part of the car since it is both an atemporal part of the car and existent at the later time.

In describing the changing composition of an event, we do not appeal to events that predate or postdate the given event. In describing the changing composition of today's lightning, for example, we do not mention events that began yesterday or will end tomorrow; and similarly, in describing the varying composition of a thing or event through space, we do not mention things or events that do not lie within the spatial boundaries of the given thing or event. However, in accounting for the changing composition of a thing through time, we *will* characteristically appeal to things that predate or postdate a given thing. A tyre that is now a part of a car, for

⁷ This is most naturally taken to mean that it occurs *exactly* at the same time or period of time in question, although there is an attenuated sense in which it might be taken to mean that it occurs *partially* at the time or period of time in question.

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example, may have been manufactured before the car or may survive the car.

There appears to be a fundamental difference in our conception of relative part in the two kinds of case. When it comes to the relative parts of events in space or time or the relative parts of things in space, the relativity does not properly belong to the notion of parthood at all. As the above conjunctive analysis makes clear, the *underlying* notion of parthood is not relative to the dimension in question and the relativity qualifies the manner of presence of the part rather than the relation of parthood itself. But when it comes to the relative parts of things in time, the relativity does appear to qualify the relation of parthood rather than the manner of presence of the part. There appears to be a genuinely relative sense in which the one thing stands in the relation of parthood to the other.⁸

What can account for this remarkable difference in our conception of changing composition in the two kinds of case? For the 3D-er it is, of course, no accident that the difference in the cases aligns up exactly with his distinction between existence and extension. But to understand why this should be so, we need to delve more deeply into our conception of part-whole.

Parthood is a form of presence – not presence simpliciter but presence *in*. For one object to be part of another is for it to inhere or be present in the other. It is a characteristic feature of parthood that when one object is part of another it is *wholly* present in the other. One object is not part of another through having a part that is present in the other. A gallon of milk, for example, is not a part of a quart through containing a pint that is present in the quart.

When it comes to the relative notion of part, we would expect the characteristic features of parthood to be preserved – but subject, of course, to whatever kind of relativity is in question. Thus if one object is, at a given time, part of another, then we would expect it, at that time, to be wholly present in the other. But this entails that it should be wholly present at the given time. For how can one object be wholly present in another without being wholly present?

We thereby arrive at the following significant requirement on the notion of relative part: when one object is part of another at a given time or place, it should be wholly present at that time or place. This requirement, in its turn, has significant implications for the application of the notion of relative part to things and events.

⁸ It is for this reason that we may meaningfully talk of a thing gaining or losing or retaining its parts though not of an event gaining or losing or retaining its parts.

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A thing will be wholly present at each moment of the period of time throughout which it exists; and so we may properly talk of a thing being a part of something else at any given moment of its existence. An event, on the other hand, will not be wholly present at each moment of the period of time during which it occurs but only at the period of time itself; and so we can only properly talk of an event being part of something else at the whole period of time during which it occurs. There is perhaps a derivative sense in which we may talk of an event being a part at a moment but only because that moment belongs to the whole period of time throughout which the event occurs and is a part.

These considerations therefore account for the difference in our conception of relative part. In the case of things, the relativity can be seen to qualify the notion of parthood itself and it will be possible for there to be variation in whether one thing is a part of another at the different moments at which it exists. But in the case of events, the relativity merely serves to qualify the period of time throughout which the event occurs. The underlying notion of parthood is not itself relative to time; and variation in when one event is part of another will not be possible. (Similar considerations apply to the spatial case).

But how is the 4D-er to account for the difference in conception? He cannot appeal to the 3D-er's distinction between existence and extension and, in the absence of this distinction, it is not clear what he might say. He can, of course, agree that there are these different notions of part and that we bring the one notion to bear in the one case and the other notion to bear in the other cases. But this still does not explain why we should apply the two different notions in the way we do.

We should also note that the notion naturally applicable in the one kind of case is of dubious applicability to the other kind of case. This is of no difficulty for the 3D-er since he can account for the inapplicability in terms of his distinction between existence and essence. Thus events do not have temporary parts in the manner of things since they do not exist in time and things do not have temporary parts in the manner of events since they are not extended in time. However, no such explanation is available to the 4D-er and so it seems that he should accept that the two notions of temporary part should apply across the board to both events and things.

But consider the chime that is now a part of the ringing of the doorbell. What would be the analogue of this for things? It would have to be something like this temporal part of the car now being a part of the car. But this is plausible as a case of temporary part only if one already accepts the 4D-er's position.

In Defence of Three-Dimensionalism

The analogy is even more difficult to maintain in the other direction. The tyre is now a part of the car. What would be the analogue of this for events?⁹ That this series of C-chimes (stretching way into the past and future) is now a part of the ringing of the doorbell? This is a decidedly odd way of talking of temporary part. It is also not clear that it is the analogue of the notion of temporary part for things. For it seems to be based upon the idea that one object will be a part of another at a given time if the temporal part of the first object at the given time is an atemporal part of the second object. Thus it is only because the current temporal part of the series of C-chimes is a part of the ringing of the doorbell that we are willing to say that the series itself is now a part of the ringing of the doorbell.

This criterion of temporary part violates what we have taken to be fundamental to the notion. For we have supposed that if one object is part of another, then it is wholly present in the other. This may reasonably be thought to entail that if one object is a part of another then it is not a part through having a part that is a part of the other. Extending this principle to the case of temporary part, we then have that if one object is a part of another at a time then it is not a part at the time through having a part that is a part of the other at the time. But the proposed criterion is in direct conflict with this principle since it takes an object to be a temporary part of another via its temporal part.

The criterion also leads to absurdities on its own account. For take the fusion of Cleopatra and the tyre. The 4D-er may well take there to be such a thing. But given that there is, it should, by the criterion, be a current part of the car. Yet surely nothing that contains Cleopatra as a part can currently be a part of the car.¹⁰

These considerations strongly suggest that the criterion does not give us the notion of temporary part that we are after and, in the absence of any plausible alternative, we may conclude that the 4D-er has no basis for thinking that the notion of temporary part that we naturally apply in the case of things will have any genuine application in the case of events.

⁹ I here have 'episodic' events in mind rather than 'ongoing' events or processes. One might perhaps argue for a closer analogy to things in the case of processes.

¹⁰ Difficulties of this sort are further discussed in my paper, 'Things and their Parts', in Peter A. French and Howard K. Wettstein, eds., *New Directions in Philosophy: Midwest Studies in Philosophy*, Volume XXIII (Malden, MA: Blackwell, 1999), pp. 61–74.

I have presented a large body of data – from the language of location and our thinking about part-whole – that seems strongly to support the 3D position. The 3D-er is able to provide a single satisfying explanation of the data, the 4D-er is not. But how seriously should the 4D-er take these arguments? Might he not simply respond to them by claiming that our language is deficient and our thought in error?

In considering this question, it is important to bear in mind the particular way I have characterized the 3D/4D dispute and the particular arguments I have advanced in favour of the 3D position. On the usual way of characterizing the dispute, it concerns the existence of temporal parts, with the 3D-er denying their existence and with the 4D-er affirming their existence. Now when the dispute is so understood, it might indeed be claimed that the 4D-er's position is at odds with how we ordinarily speak or think. For we do not ordinarily take there to be a notion of temporal part or suppose that there are temporal parts.

But the conflict with our ordinary thought is relatively benign in this case. For the 4D-er is simply proposing an addition to our ordinary way of thinking, taking there to be concepts that we do not ordinarily acknowledge and taking there to be objects that we do not ordinarily take to exist. Such additions to our thinking are familiar from science and mathematics and are even perfectly consonant with our ordinary way of thinking as long as its purview is limited to the objects it takes to exist.

However, the conflict is much more serious in the present case. In the first place, the 4D-er is not simply extending our current repertoire of concepts; he is supposing that some of the concepts we take ourselves to have are not genuinely intelligible. In the second place, he must dismiss a good many of our ordinary judgements even when they are restricted to the objects of our ordinary ontology. Although his theory may reasonably be expected to explain the truth of these judgements, he must maintain either that the judgements are mistaken or that there is no explanation of their truth. Such a lack of respect for our ordinary way of thinking is not to be taken lightly and it is only the most compelling considerations on the other side, which I very much doubt exist, that could possibly lead us to condone it.