Identity through time

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The identity of a person is a perfect identity; wherever it is real, it admits of no degrees; and it is impossible that a person should be in part the same, and in part different. . . For this cause, I have first considered personal identity, as that which is perfect in its kind, and the natural measure of that which is imperfect.

Thomas Reid[1]

1. The Ship of Theseus

To understand the philosophical problems involved in persistence, in the fact that one and the same thing may endure through a period of time, we will begin with what Reid would have called the 'imperfect' cases and remind ourselves of some ancient philosophical puzzles. One such puzzle is suggested by the familiar dictum of Heraclitus: 'You could not step twice in the same river; for other and yet other waters are ever flowing on'[2] Another is the problem of the Ship of Theseus.[3]

Updating the latter problem somewhat, let us imagine a ship—the Ship of Theseus—that was made entirely of wood when it came into being. One day a wooden plank is cast off and replaced by an aluminum one. Since the change is only slight, there is no question as to the survival of the Ship of Theseus. We still have the ship we had before; that is to say, the ship that we have now is identical with the ship we had before. On another day, another wooden plank is cast off and also replaced by an aluminum one. Still the same ship, since, as before, the change is only slight. The changes continue, in a similar way, and finally the Ship of Theseus is made entirely of aluminum. The aluminum ship, one may well argue, is the wooden ship

1. Thomas Reid, *Essays on the Intellectual Powers of Man,* essay III, ch. 14 in Sir William Hamilton (ed.), *The Works of Thomas Reid, D.* D. (Edinburgh: Maclachlan & Stewart, 1854), p. 345.
2. Fragment 41-2, as translated in Milton C. Nahm, *Selections from Early Greek Philosophy* (New York: F. S. Crofts, 1934) p. 91.
3. See Plato, *Phaedo,* 58A, and Xenophon, *Memorabilia,* 4. 8. 2. Leibniz speaks of the Ship of Theseus in *New Essays Concerning Human Understanding,* II, ch. 27, sect. 4, noting that any ordinary physical body may be said to be 'like a river which always changes its water, or like the ship of Theseus which the Athenians were always repairing' (Open Court edn), p. 240.

we started with, for the ship we started with survived each particular change, and identity, after all, is transitive.

But what happened to the discarded wooden planks? Consider this possibility, suggested by Thomas Hobbes: 'If some man had kept the old planks as they were taken out, and by putting them afterwards together in the same order, had again made a ship of them, this, without doubt, had also been the same numerical ship with that which was at the beginning; and so there would have been two ships numerically the same, which is absurd.'[4] Assuming, as perhaps one has no right to do, that each of the wooden planks survived intact throughout these changes, one might well argue that the reassembled wooden ship *is* the ship we started with. 'After all, it is made up of the very same parts, standing in the very same relations, whereas that ugly aluminum object doesn't have a single part in common with our original ship.'

To compound the problem still further, let us suppose that the captain of the original ship had solemnly taken the vow that, if his ship were ever to go down, he would go down with it. What, now, if the two ships collide at sea and he sees them start to sink together? Where does his duty lie—with the aluminum ship or with the reassembled wooden ship?

'The carriage' is another ancient version of the problem. Socrates and Plato change the parts of their carriages piece by piece until, finally, Socrates' original carriage is made up of all the parts of Plato's carriage and Plato's carriage is made up of all the parts of Socrates' original carriage. Have they exchanged their carriages or not, and if so, at what point?

Perhaps the essence of the problem is suggested by an even simpler situation. Consider a child playing with his blocks. He builds a house with ten blocks, uses it as a garrison for his toy soldiers, disassembles it, builds many other things, then builds a house again, with each of the ten blocks occupying the position it had occupied before, and he uses it again as a garrison for his soldiers. Was the house that was destroyed the same as the one that subsequently came into being?

These puzzles about the persistence of objects through periods of time have their analogues for the extension of objects through places in space. Consider the river that is known in New Orleans as 'the Mississippi'. Most of us would say that the source of the river is in northern Minnesota. But what if one were to argue instead that the source is in Montana, where it is known as 'the Missouri'? Or that its source is in Pittsburgh, where it is known as 'the Ohio', or that its source is farther back where it is called 'the Allegheny', or in still another place where it is called 'the Monongahela'?'

The accompanying diagram (Fig. 1) provides us with a schematic illustration. Of the river that has its central point at (d), one might wonder whether it flows south-easterly from (a), or due south from (b), or south-westerly from (c). (For

4. Thomas Hobbes, *Concerning Body,* ch. 11 (`Of identity and difference'), sect. 7.
5. Cf. W. V. Quine: 'Thus take the question of the biggest fresh lake. Is Michigan—Huron admissible, or is it a pair of lakes? . . . Then take the question of the longest river. Is the Mississippi—Missouri admissible, or is it a river and a half?' *(Word and Object* (New York: John Wiley, 1960), p. 128).
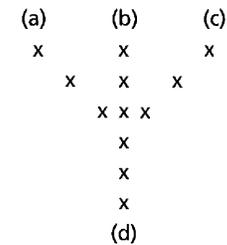

Figure 1

simplicity, we ignore the Allegheny and the Monongahela.) If we are puzzled about the beginning of the Mississippi, we should be equally puzzled about the end of the Rhine. Reading our diagram from bottom to top (and again oversimplifying), we could say that if the Rhine begins at (d), then it ends either with the Maas at (a), or with the Waal at (b), or with the Lek at (c).[6]

Perhaps we can imagine three philosophers looking down at the river(s) that end(s) at (d). One insists that the river flows between *(a)* and (d), another that it flows between *(b)* and *(d)* and the third that it flows between *(c)* and (d); and each insists that, since the arms (or tributaries) to which the other two philosophers refer are distinct not only from each other but from the river itself, neither of the other two can be right. Their dispute, clearly, would be analogous in significant respects to the problem of the Ship of Theseus.

What are we to say of such puzzles? We might follow the extreme course that Carneades took and simply deny the principle of the transitivity of identity.[7] In other words, we might say that things identical with the same thing need not be identical with each other. But if we thus abandon reason and logic at the very outset, we will have no way of deciding at the end what is the most reasonable thing to say about ourselves and *our* persistence through time.

We might be tempted to deny the possibility of alteration. Thus one could say: 'Strictly speaking, nothing alters—nothing is such that at one time it has one set of properties and at another time it has another set of properties. What happens is, rather, that at one time there is a thing having the one set of properties and at the other time there is another thing having the other set of properties.' But this supposition, if

6. Using terms not commonly applied to rivers, we may note for future reference that when our diagram is read from top to bottom it illustrates *fusion* and when it is read from bottom to top it illustrates *fission.*
7. See note c of the article `Carneades' in Pierre Bayle's *A General Dictionary: Historical and Critical,* trans. Rev. J. P. Bernard, Rev. Thomas Birch, John Lockeman et al. (io vols, London: James Bettenham, 1734-41): 'He found uncertainty in the most evident notions. All logicians know that the foundation of the syllogism, and consequently the faculty of reasoning, is built on this maxim: Those things which are identical with a third are the same with each other *(Quae sunt idem uno tertio sunt idem inter se).* It is certain that Carneades opposed it strongly and displayed all his subtleties against it:

we apply it to ourselves, is inconsistent with the data with which we have begun. Each of us knows with respect to himself that he now has properties he didn't have in the past and that formerly he had properties he doesn't have now. ('But a thing *x* isn't identical with a thing *y* unless they have all their properties in common. And if the present you has one set of properties and the past you another, how can they be the same thing?') The answer is, of course, that there aren't two you's, a present one having one set of properties and a past one having another. It is rather that you *are* now such that you have these properties and lack those, whereas formerly you *were* such that you had those properties and lacked these. The 'former you' *has* the same properties that the 'present you' now has, and the 'present you' *had* the same properties that the 'former you' then had.[8]

Bishop Butler suggested that it is only in 'a loose and popular sense' that we may speak of the persistence of such familiar things as ships, plants and houses. And he contrasted this 'loose and popular sense' with 'the strict and philosophical sense' in which we may speak of the persistence of *persons.*[9] Let us consider these suggestions.

2. Playing loose with the 'Is' of identity

We will not pause to ask what Butler meant in fact. Let us ask what he could have meant. He suggested that there is a kind of looseness involved when we say that such things as the Ship of Theseus persist through time. What kind of looseness is this?

It could hardly be that the Ship of Theseus, in contrast with other things, is only loosely identical with itself. Surely one cannot say that, while some things are only loosely identical with themselves, other things are tightly identical with themselves.[10] The statement 'This thing is more loosely identical with itself than that thing', if it says anything at all, tells us only that the first thing is more susceptible than the second to loss of identity, and this means only that the first is more readily perishable than the second.

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8. Further aspects of this kind of problem are discussed in Roderick M. Chisholm, *Person and Object* (La Salle, Ill.: Open Court, 1976), Appendix A ('The Doctrine of Temporal Parts').

9, Dissertation 1, in *The Whole Works of Joseph Butler,* LL.D. (London: Thomas Tegg, 1839), pp. 263-70. But compare Locke's third letter to the Bishop of Worcester: 'For it being his body both before and after the resurrection, everyone ordinarily speaks of his body as the same, though, in a strict and philosophical sense, as your lordship speaks, it be not the very same.'

10. I have heard it suggested, however, that (a) whereas the evening star is strictly identical with the evening star, nevertheless (b) the evening star is identical but not strictly identical with the morning star. The facts of the matter would seem to be only these: the evening star (i.e., the morning star) is necessarily self-identical; it is not necessarily such that it is visible in the evening or in the morning; it would be contradictory to say that the evening star exists and is not identical with the evening star, or that the morning star exists and is not identical with the morning star; but it would not be contradictory to say that the morning star exists and the evening star exists and the morning star is not identical with the evening star; and whatever is identical with the evening star (i.e., with the morning star) has all the properties that it does.

We should construe Butler's remark as saying, not that there is a loose kind of identity, but rather that there is a loose sense of 'identity'—a loose (and popular) use of the 'is' of identity.

What would be a *loose* sense of 'A is B', or 'A is identical with B'—a sense of 'A is B' which is consistent with a denial of the *strict* sense of 'A is B'? I suggest this: we use the locution 'A is B', or 'A is identical with B', in a *loose* sense, if we use it in such a way that it is consistent with saying 'A has a certain property that B does not have' or 'Some things are true of A that aren't true of B'.

Do we ever use the locution 'A is B' in this loose way? It would seem, unfortunately, that we do.

I will single out five different types of such misuse.

(1) One may say: 'Route 6 is Point Street in Providence and is Fall River Avenue in Seekonk: Here we would seem to have the 'is' of identity, since it is followed in each occurrence by a term ('Point Street' and 'Fall River Avenue') and not by a predicate expression. But since Point Street and Fall River Avenue have different properties (one is in Providence and not in Seekonk, and the other is in Seekonk and not in Providence), the statement may be said to play loose with 'is'.

As our brief discussion of the rivers may make clear, this use of 'is' is readily avoided. We have only to replace 'is' by 'is part of' and then switch around the terms, as in: 'Point Street in Providence is part of Route 6 and Fall River Avenue in Seekonk is part of Route 6'. Or we could also say, of course: 'Point Street is part of Route 6 in Providence and Fall River Avenue is part of Route 6 in Seekonk'.[11]

(2) One may say 'This train will be two trains after Minneapolis', or, traveling in the other direction, 'Those two trains will be one train after Minneapolis'. In the first case ('fission'), we are not saying that there is one thing which will subsequently be identical with two things. We are saying, rather, that there is one thing which will be divided into two things, neither of them being identical with the original thing, but each of them being a part of the original thing. And in the second case ('fusion'), we are not saying that there are two things which are subsequently to become identical with each other, or with a third thing. We are saying rather that there are two things which will both become parts of a third thing. (Why not cite an amoeba as an instance of 'fission'? There is the offchance that amoebas are persons, or at least may be thought to be persons, and in such a case, as we shall see, our treatment would have to be somewhat different.)

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11. This example of the roads, like that of the rivers above ('the Mississippi—Missouri'), may suggest that the key to our puzzles about identity through time may be found in the doctrine of 'temporal parts'. According to this doctrine, every individual thing *x* is such that, for every period of time through which x exists, there is a set of parts which are such that *x* is made up of them at that time and they do not exist at any other time. (Compare: every individual thing x is such that, for every portion of space that x occupies at anytime, there is at that time a set of parts of x which then occupy that place and no other place.) I consider this doctrine in detail in *Person and Object,* Appendix A. I there conclude that it will not help us with our problems about identity through time and that there is no sufficient reason for accepting it.

(3) One may say: 'The President of the United States was Eisenhower in 1955, Johnson in 1965, and Ford in 1975.'[12] Here one may seem to be saying that there is, or was, something—namely, the President of the United States—which was identical with Eisenhower in 1955, with Johnson in 1965, and with Ford in 1975. And so, given that Eisenhower, Johnson and Ford were three different people, one may seem to be saying that there is one thing which has been identical with three different things. But this talk, too, is readily avoided. We have only to reformulate the original sentence in such a way that the temporal expression ('in 1955','in 1965' and "in 1975') may be seen to modify, not the verb 'was', but the term 'the President of the United States'. Thus we could say: 'The President of the United States in 1955 (the person who officially presided over the United States in 1955) was Eisenhower; the President of the United States in 1965 was Johnson; and the President of the United States in 1975 was Ford.'[13]

(4) Pointing to a musical instrument, one man may say to another: 'What you have there is the same instrument that I play, but the one that I play isn't as old as that one.' The first 'is' might be taken to be the 'is' of identity, for it would seem to be followed by a term ('the same instrument that I play'), but the man is saying, of the thing designated by the first term ('what you have there'), that it is older than the thing designated by second. But of course he didn't need to talk that way. He could have said: 'What you have there is an instrument of the same sort as the one that I play.'

We note a second example of this way of playing loose with 'is'—not because the example introduces any new considerations (for it doesn't), but because it has attracted the attention of philosophers.

Consider the following list:

Socrates is mortal.
Socrates is mortal.

12. Contrast P. T. Geach, *Reference and Generality* (Ithaca, NY: Cornell University Press, 1962), p. 157 '. . . different official personages may be one and the same man: Possibly an illustration would be: 'The fire-chief isn't the same personage as the Sunday-school superintendent (for one is charged with putting out fires and the other with religious instruction); yet Jones is both.' But here one seems to be playing loose with 'isn't', for what one has in mind, presumably, is something of this sort: 'Being the fire-chief commits one to different things than does being the Sunday-school superintendent, and Jones is both.'

13. There may be temptations in thus playing loose with 'is'. Suppose there were a monarchy wherein the subjects found it distasteful ever to affirm that the monarch vacated his throne. Instead of saying that there have been so many dozen kings and queens in the history of their country, they will say that the monarch has now existed for many hundreds of years and has had so many dozen different names. At certain times it has been appropriate that these names be masculine, like 'George' and 'Henry', and at other times it has been appropriate that they be feminine, like 'Victoria' and 'Elizabeth'. What, then, if we knew about these people and were to hear such talk as this: 'There has existed for many hundreds of years an x such that *x* is our monarch; *x* is now feminine, though fifty years ago x was masculine, and fifty years before that x was feminine'? We should not conclude that there was in that land a monarch who is vastly different from any of the people in ours. We should conclude rather that the speakers were either deluded or pretending.

How many sentences have been listed? We could say either 'exactly one' or 'exactly two'. That these incompatible answers are both possible indicates that the question is ambiguous. And so it has been suggested that, to avoid the ambiguity, we introduce the terms 'sentence-token' and 'sentence-type' and then say 'There are two sentence-tokens on the list and one sentence-type'. But if we say this, then we can say: 'The first item on the list is the same sentence-type as the second (for they are syntactically just alike and say the same thing), but the two are different sentence-tokens (for they are two, one being in one place and the other in another): Here, once again, we are playing loose with 'is'.[14] We *needn't* speak this way in order to deal with the ambiguity of 'How many sentences are there?' We could say there *are* two sentence-tokens and they are tokens *of* the same (sentence-)type. The example does not differ in principle, then, from 'The instrument Jones plays is the same as the one Smith plays but is somewhat older'.

It is sometimes said that we should distinguish the two locutions 'A is identical with B and A is a so-and-so' and 'A is the same so-and-so as B'. It has even been suggested that, for purposes of philosophy, the first of these two locutions should be abandoned in favour of the second.[15] According to this suggestion, we should never say, simply and absolutely, 'A is identical with B'; we should 'relativize the ascription of identity to a sortal', and say something of the form 'A is the same so-and-so as B', where the expression replacing 'so-and-so' is a count-term, or sortal, such as 'man', 'dog'. 'horse'. But this suggestion has point only if we can find instances of the following:

A is the same so-and-so as B, and A is a such-and-such but is not the same such-and-such as B.

Are there really any such A's and B's?

What would be an instance of the above formula? In other words, what would be an instance of an A which is 'the same so-and-so' as something B, but which is not 'the same such-and-such' as B? The only instances which have ever been cited, in defending this doctrine of 'relativized identity', would seem to be instances of one or the other of the four ways of playing loose with 'is' that we have just distinguished. For example: 'Different official personages may be one and the same man' or 'This is the same word as that'. What the suggestion comes to, then, is that we abandon the strict use of 'is' and replace it by one or more of the loose uses just

14. Other examples are suggested by: 'He has a copy of *The Republic* on his desk and another on the table, and he doesn't have any other books. How many books does he have?' He played the *Appassionata* once in the afternoon and once again in the evening, but nothing further. How many sonatas did he play?'

15. Compare P. T. Geach in *Logic Matters* (Berkeley and Los Angeles: University of California Press, 1972), pp. 238-49; and *Reference and Generality,* pp. 149ff. The suggestion is criticized in detail by David Wiggins, in *Identity and Spatio-Temporal Continuity* (Oxford: Blackwell, 1967), pp. 1-26. Compare W. V. Quine in a review of *Reference and Generality* in *Philosophical Review,* 73 (1964), pp. 100-4, and Fred Feldman, `Geach and relativized identity', *Review of Metaphysics* 22 (1968), pp. 547-55.

discussed. There may be advantages to this type of permissiveness, but it will not help us with our philosophical problems.[16]

Do these ways of playing loose with 'is' suggest a true interpretation of the thesis we have attributed to Bishop Butler—the thesis according to which it is only in 'a loose and popular sense' that we may speak of the persistence through time of such familiar physical things as ships, plants and houses? Is it only by playing loose with 'is' that we may say, of the Ship of Theseus, that it is one and the same thing from one period of time to another?

We *can,* of course, play loose with 'is' in one or another of these ways when we talk about the Ship of Theseus. Knowing that it is going to be broken up into two ships, we might say; 'It's going to be two ships.' Or knowing that it was made by joining two other ships, we might say: 'Once it had been two ships.' Or knowing that it makes the same ferry run as does the Ship of Callicles, we might say: 'The Ship of Theseus and the Ship of Callicles are the same ferry! But the Ship of Theseus doesn't have to be talked about in these loose and popular ways any more than anything else does.

(5) It may be that the Ship of Theseus and the carriage and other familiar things involve still another way of playing loose with 'is'. Thus Hume said that it is convenient to 'feign identity' when we speak about things which, though they 'are supposed to continue the same, are such only as consist of succession of parts, connected together by resemblance, contiguity, or causation'.[17] What Hume here has in mind by 'feigning' may have been put more clearly by Thomas Reid. (Though Reid and Hume were far apart with respect to most of the matters that concern us here, they seem to be together with respect to this one.) Reid wrote:

All bodies, as they consist of innumerable parts that may be disjoined from them by a great variety of causes, are subject to continual changes of their substance, increasing, diminishing, changing insensibly. When such alterations are gradual, because language could not afford a different name for every different state of such a changeable being, it retains the same name, and is considered as the same thing. Thus we say of an old regiment that it did such a thing a century ago, though there now is not a man alive who then belonged to it. We say a tree is the same in the seed-bed and in the forest. A ship of war, which has successively changed her anchors, her tackle, her sails, her masts, her planks, and her timbers, while she keeps the same name is the same.[18]

I believe that Reid is here saying two things. The first is that, whenever there is a change of parts, however insignificant the parts may be, then some old thing ceases to be, and some new thing comes into being. This presupposes that, strictly speaking,

the parts of a thing are essential to it, and therefore when, as we commonly say, something loses a part, then that thing strictly and philosophically ceases to be.[19]

The second thing I take Reid to be saying is this. If, from the point of view of our practical concerns, the new thing that comes into being upon the addition of parts is sufficiently similar to the old one, then it is much more convenient for us to treat them as if they were one than it is for us to take account of the fact that they are diverse. This point could also be put by saying that such things as the Ship of Theseus and indeed most familiar physical things are really 'fictions', or as we would say today, 'logical constructions'. They are logical constructions upon things which *cannot* survive the loss of their parts.

If Reid is right, then, 'The Ship of Theseus was in Athens last week and will be in Kerkyra Melaina next week' need not be construed as telling us that there *is* in fact a certain ship that was in Athens last week and will be in Kerkyra Melaina next week. It does not imply that any ship that was in the one place is identical with any ship that will be in the other place. And so if this is true, and if all the same we say 'A ship that was in Athens last week is identical with a ship that will be in Kerkyra Melaina next week', then, once again, we are playing loose with the 'is' of identity.

3. An interpretation of Bishop Butler's theses

We have found a way, then, of interpreting Bishop Butler's two theses.

According to the first, familiar physical things such as trees, ships, bodies and houses persist 'only in a loose and popular sense'. This thesis may be construed as presupposing that these things are 'fictions', logical constructions or *entia per alio.* And it tells us that, from the fact that any such physical thing may be said to exist at a certain place P at a certain time *t* and also at a certain place Q at a certain other time *t*, we may *not* infer that what exists at P at *t* is identical with what exists at Q at *t'*.

According to the second thesis, persons persist 'in a strict and philosophical sense'. This may be construed as telling us that persons are not thus 'fictions', logical constructions or *entia per alio.* And so it implies that, if a person may be said to exist at a certain place P at a certain time *t* and also at a certain place Q at a certain other time *t',* then we *may* infer that something existing at P at *t* is identical with something existing at Q at *t'*.

We now consider the two theses in turn.

4. Feigning identity

Could we think of familiar physical things, such as ships and trees and houses, as being logical constructions? Let us consider just one type of physical thing, for what we say about it may be applied, *mutatis mutandis,* to the others (see Fig. 2).

16. Compare P. T. Geach: 'Even if the man Peter Geach is the same person as the man Julius Caesar, they are certainly different men; they were for example born at different times to a different pair of parents' (*God and the Soul* (Loudon: Routledge & Kegan Paul, 1969). p.6). John Locke says very similar things; see the Fraser edn. of the *Essay Concerning Human Understanding*, pp. 445, 450ff.

17. David Hume, A *Treatise of Human Nature.,* bk I, sect. 6; L. A. Selby-Bigge edn., (Oxford: Clarendon Press, 1896), p. 255.

18. Reid, *Essays on the Intellectual Powers of Man, p.* 346.

19. This thesis is discussed and defended in my *Person and Object,* Appendix 13 ('Mereological essentialism').

Mon	AB
Tue	BC
Wed	CD

Figure 2

Consider the history of a very simple table. On Monday it came into being when a certain thing A was joined with a certain other thing B. On Tuesday A was detached from B and C was joined to B, these things occurring in such a way that a table was to be found during every moment of the process. And on Wednesday B was detached from C and D was joined with C, these things, too, occurring in such a way that a table was to be found during every moment of the process. Let us suppose that no other separating or joining occurred.

I suggest that in this situation there are the following three wholes among others: AB, that is, the thing made up of A and B; BC, the thing made up of B and C; and CD, the thing made up of C and D. I will say that AB 'constituted' our table on Monday, that BC 'constituted' our table on Tuesday, and that CD 'constituted' our table on Wednesday. Although AB, BC and CD are three different things, they all constitute the same table. We thus have an illustration of what Hume called 'a succession of objects'.[20]

One might also say, of each of the three wholes, AB, BC and CD, that it 'stands in for' or 'does duty for' our table on one of the three successive days. Thus if we consider the spatial location of the three wholes, we see that the place of the table was occupied by AB on Monday, by BC on Tuesday, and by CD on Wednesday. Again, the table was red on Monday if and only if AB was red on Monday, and it weighed 10 pounds on Monday if and only if AB weighed 10 pounds on Monday. And analogously for BC on Tuesday and for CD on Wednesday.

The situation may seem to involve two somewhat different types of individual thing. On the one hand, there is what might be called the *ens successivum—the* 'successive table' that is made up of different things at different times.[21] And on the other hand, there are the things that do duty on the different days for the successive table: namely,

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20. See Hume, *Treatise of Human Nature,* bk I, pt iv, sect. 6 (Selby-Bigge edn.. p. 255): 'all objects, to which we ascribe identity, without observing their invariableness and uninterruptedness, are such as consist of a succession of related objects.' In this same section Hume affirms a version of the principle of mereological essentialism.

21. We could define an *ens successivum by* saying, with St Augustine, that it is 'a single thing … com-posed of many, all of which exist not together'; *see Confessions,* bk IV, ch. II.   St Thomas says in effect that a *successivum* is a thing such that some of its parts do not coexist with others of its parts ('una pars non est cum alia parte'); see the *Commentary on the Sentences,* bk I, dist. VIII, Q.2, Art.i, ad 4, The term *ens successivum* has traditionally been applied to such things as periods of time (e.g., days, weeks, months) and events; compare Aristotle's *Physics,* bk III, ch. 6, 206a.

AB, BC and CD. But any *ens successivum* may be viewed as a logical construction upon the various things that may be said to do duty for it.

Considering, then, just the simple situation I have described, can we express the information we have about the *ens successivum* in statements that refer only to the particular things that stand in or do duty for it? It should be clear that we can, but let us consider the situation in some detail.

Looking back to our diagram, we can see that Monday's table evolved into Tuesday's table, and that Tuesday's table evolved into Wednesday's table. We began with AB; then A was separated from B and replaced by C, but in such a way that there was a table to be found at every moment during the process; then, in a similar way, B was separated from C and replaced by D. We could say, then, that BC was a 'direct table successor' of AB and that CD was a 'direct table successor' of AB.

Making use of the undefined concept of *part,* or *proper part,* we may define the concept of 'table successor' in the following way:

D. III.1 x is at t a direct table successor of y at t' =$_{df}$ t does not begin before t'; (ii) x is a table at t and y is a table at t'; and (iii) there is a z, such that z is a part of x at t and a part of y at t', and at every moment between t' and t, inclusive, z is itself a table.

Thus z is a table which is a proper part of a table. (If we cut off a small part of a table, we may still have a table left. But if the thing that is left is a table, then, since it was there before, it was then a table that was a proper part of a table.) The concept *part,* as it is understood here, is discussed in detail in Appendix B ('Mereological essentialism').[22]

We may also say, more generally, that the CD of Wednesday is a 'table successor' of the AB of Monday, even though CD is not a *direct* table successor of AB. The more general concept is this:

D. III.2 x is at t a table successor of y at t' =$_{df}$ (i) t does not begin before t'; (ii) x is a table at t, and y is a table at t'; and (iii) x has at t every property P such that (a) y has P at t' and (b) all direct table successors of anything having P have P.

The definition assures us that a direct table successor of a direct table successor is a table successor; so, too, for a direct table successor of a direct table successor . . . of a direct table successor.[23]

We may now say that things that are thus related by table succession 'constitute the same successive table'.

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22. See Chisholm, *Person and Object.*

23. Definition D. III.2 thus makes use of the general device by means of which Frege defined the ancestral relation; see G. Frege, *The Foundations of Arithmetic* (Oxford: Blackwell, 1950), sect. 79. A more intuitive reading of clause (iii) might be: '(iii) x belongs at t to every class c which is such that (a) y belongs to c at t' and (b) all direct table successors of anything belonging to c belong to c.'

D. III.3 x constitutes at t the same successive table that y constitutes at t' =$_{df}$ either (a) x and only x is at t a table successor of y at t', or (b) y and only y is at t' a table successor of x at t.

Each such thing may be said to 'constitute a successive table'.

D. III.4 x constitutes at t a successive table =$_{df}$ There are a y and a t' such that y is other than x, and x constitutes at t the same table that y constitutes at t'.

We are on the way, then, to reducing our successive table to those things that are said to constitute it.

Certain propositions, ostensibly about the successive table, may be reduced in a straightforward way to propositions about the things that are said to constitute it. For example:

D. III.5   There is exactly one successive table at place P at time t =$_{df}$ There is exactly one thing at place P at time t that constitutes a successive table at t.

Our definition of 'constituting the same successive table' (D. III. 3) assures us that nothing will constitute more than one successive table at any given time.

Some of the properties that the table has at any given time are thus such that the table borrows them from the thing that constitutes it at that time; but others are not. An example of a property of the first sort may be that of *being red;* an example of a property of the second sort may be that of *having once been blue.* How are we to mark off the former set of properties?

Some properties may be said to be 'rooted outside the times at which they are had'. Examples are the property of *being a widow* and the property of *being a future President.* If we know of anything that it has the former property at any given time, then we can deduce that the thing existed prior to that time. And if we know of anything that it has the latter property at any given time, then we can deduce that the thing continues to exist after that time. Let us say:

D. III.6   G is rooted outside times at which it is had =$_{df}$ Necessarily, for any x and for any period of time t, x has the property G throughout t only if x exists at some time before or after t.

Some properties may—but need not—be rooted outside the times at which they are had. An example is the property of *being such that it is or was red.* Our successive table may derive this from its present constituent—if its present constituent is red. But it may derive it from a former constituent—if its present constituent is not red. The definition of this type of property is straightforward:

D. III. 7 G may be rooted outside times at which it is had =$_{df}$ G is equivalent to a disjunction of two properties one of which is, and the other of which is not, rooted outside times at which it is had.

Some properties, finally, are *not* such that they may be rooted outside the times at which they are had.[24] An example is *being red.*

Of the properties that our successive table has at any given time, which are the ones that it borrows from the thing that happens to constitute it at that time? The answer is: those of its properties which are *not* essential to it, and those of its properties which are *not* such that they may be rooted outside the times at which they are had. But the essential properties of the successive table—e.g., that it is a successive table—and those of its properties which may be rooted outside the times at which they are had—e.g., that it was blue or that it was or will be blue— are not such that, for any time, they are borrowed from the thing that constitutes the successive table at that time.

We may say, more generally, of the *ens successivum* and the thing that constitutes it at any given time, that they are exactly alike at that time with respect to all those properties which are such that they are not essential to either and they may not be rooted outside the times at which they are had.

Consider now the following definitional schema:

D. III.8   The successive table that is at place P at time t is F at t =$_{df}$ There is exactly one thing at place P at t that constitutes a successive table at t, and that thing is F at t.

This definition is applicable only if the predicates that replace the schematic letter 'F' are properly restricted. For the properties designated by such predicates should be those which are not essential to either and are not such that they may be rooted outside the times at which they are had. Hence acceptable replacements for 'F' would be: 'red', '10 feet square', and 'such that it weighs 10 pounds'.

But not all the properties of the successive table are derivable in this straightforward way from the properties of things that constitute it. For example, if AB ceased to be after Monday, we could say of the successive table on Monday, but not of AB, that it was going to persist through Wednesday. Or if CD came into being on Wednesday, we could say of the successive table on Wednesday, but not of CD, that it is at least two days old. Moreover, on Monday, the successive table, but not AB, was such that it would be constituted by CD on Wednesday; while on Wednesday, the successive table, but not CD, was such that it was constituted by AB on Monday.

Nevertheless all such truths about the successive table may be reduced to truths about AB, BC and CD. That this is so should be apparent from these definitions.

D. III. 9 The successive table that is at place P at time t has existed for at least three days =$_{df}$ There is exactly one x such that x is at place P at time t and x constitutes a successive table at t; there are a y and a time t' such that x is

24. The distinction among these several types of property are used in my *Person and Object,* ch. 4, to mark off those states of affairs that are *events.* (We had noted in the previous chapter that, although 'John is walking' refers to an event, 'John will walk' and 'John is such that either he is walking or he will walk' do not refer to events.)

at *t* a table-successor of *y* at *t'*; and *t* and *t'* are separated by a period of three days.

This definition tells us, then, what it is for a successive table to persist through time. And the following definition suggests the way in which, at any time, the successive table may borrow its properties from things that constitute it at *other* times:

> D. III.10 The successive table that is at place P at time *t* is constituted by *x* at *t'* =$_{df}$ There is a *y* such that *y* is at place P at time *t;* *y* constitutes a successive table at *t;* and either *x* is identical with *y,* and *t* is identical with *t',* or *y* constitutes at *t* the same successive table that *x* constitutes at *t'*.

It should now be obvious how to say such things as 'the successive table is red on Monday and green on Wednesday'.

One may object, 'You are committed to saying that AB, BC, CD, and our table are four different things. It may well be, however, that each of the three things AB, BC, CD satisfies the conditions of any acceptable definition of the term "table". Indeed your definitions presuppose that each of them *is* a table. Hence you are committed to saying that, in the situation described, there are *four* tables. But this is absurd; for actually you have described only *one* table.'

We will find a reply to this objection, if we distinguish the strict and philosophical sense of such expressions as 'There are four tables' from their ordinary, or loose and popular, sense. To say that there are four tables, in the strict and philosophical sense, is to say that there are four different things, each of them a table. But from the fact that there are four tables, in this strict and philosophical sense, it will not follow that there are four tables in the ordinary, or loose and popular, sense. If there are to be four tables in the ordinary, or loose and popular, sense, it must be the case that there are four things, not only such that each constitutes a table, but also such that no two of them constitute the same table. In other words, there must be four *entia successiva,* each of them a table.

We may, therefore, explicate the ordinary, or loose and popular, sense of 'There are *n* so-and-so's at *t'* (or 'The number of so-and-so's at *t* is *n'*) in the following way:

> D. III.11 There are, in the loose and popular sense, *n* so-and-so's at *t* =$_{df}$ There are *n* things each of which constitutes a so-and-so at *t,* and no two of which constitute the same so-and-so at *t*.

The term 'so-and-so' in this schematic definition may be replaced by any more specific count-term, e.g., 'table' or 'ship'. And the *definiendum* could be replaced by 'The number of successive so-and-so's at *t* is *n'*.

Hence the answer to the above objection is this: in saying that there are exactly *three* tables in the situation described, one is speaking in the strict and philosophical sense and not in the loose and popular sense. In saying that there is exactly *one* table, one is speaking in the loose and popular sense and not in the strict and philosophical sense.

But the statement that there are *four* tables—AB, BC, CD and the successive table—is

simply the result of confusion. One is trying to speak both ways at once.[25] The sense in which we may say that there is the successive table is not the sense in which we may say that there *is* the individual thing AB, or BC, or CD.[26]

The foregoing sketch, then, makes clear one way in which we may feign identity when what we are dealing with is in fact only a 'succession of related objects'. The ways in which we do thus feign identity are considerably more subtle and complex. Playing loose with 'is' and 'same', we may even speak of the sameness of a table when we are dealing with successions of objects which are related, not by what I have called table succession, but in much more tenuous ways. Nevertheless, it should be clear that if we are saying something we really know, when we thus speak of the sameness of a table, what we are saying could be re-expressed in such a way that we refer only to the related objects and not to the ostensible entities we think of them as making up. And so, too, for other familiar things—ships and trees and houses— that involve successions of related objects that stand in or do duty for them at different times.

We could say, then, that such things are *entia per alio*. They are ontological parasites that derive all their properties from other things—from the various things that do duty for them. An *ens per alio* never is or has anything on its own. It is what it is in virtue of the nature of something other than itself. At every moment of its history an *ens per alio* has something other than itself as its stand-in.

But if there are *entia per alio,* then there are also *entia per se.*

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25. Compare Hume: 'Tho' we commonly be able to distinguish pretty exactly betwixt numerical and specific identity, yet it sometimes happens that *we* confound them, and in our thinking and reasoning employ the one for the other'. (*Treatise of Human Nature,* bk I, pt iv, sect. 6 ('Of Personal Identity'), Selby-Bigge edn., pp. 257-8.

26. It may be noted that we have defined the loose and popular sense of the expression 'There are *n* so-and-so's at *t'* and not the more general 'The number of so-and-so's that there ever will have been is *n'*. For the loose and popular sense of this latter expression is not sufficiently fixed to be explicated in any strict and philosophical sense. The following example may make this clear. In the infantry or the United States Army during World War II each private carried materials for half a tent— something like one piece of canvas, a pole and ropes. Two privates could then assemble their materials and create a tent which would be disassembled in the morning. On another night the two privates might find different tent companions. Occasionally, when the he company was in camp, the various tent parts were collected, stored away, and then reissued, but with no attempt to assign particular parts to their former holders. Supposing, to simplify the matter considerably, that all the tents that there ever will have been were those that were created by the members of a certain infantry company, how, making use of our ordinary criteria, would we go about answering the question 'Just how many tents *have* there been?' Would an accounting of the history of the joinings of the various tent parts be sufficient to give us he answer?