IDENTITY AND ORIGIN

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Analyses of identity through time must take account of cases in which what is generally called "continuity of form" is not accompanied by identity of parts. The potential conflict between these factors is dramatized by Hobbes'[1] "ship of Theseus" puzzle. A ship, X, composed entirely of 500 old wooden planks, is brought into dock A to be refitted with 500 new, but otherwise similar planks. On each of the following 500 days, one of the old planks is removed and a new plank is put in its place. At the end of this process there is in dock A a ship, Y, which is spatio-temporally continuous with the ship that sailed into dock A on day 1, but which has none of the parts which that ship had. It is further supposed that a dockside scavenger collects the planks removed from ship X and brings them to another dock, B, where on the 500th day they are assembled into a ship. This ship, Z, is not spatio-temporally continuous with the original ship (although its parts are), but it is composed of just the planks of which X was composed on day 1. The question is: Which ship, Y or Z, if either, is X? The claims of Y are based on continuity of form, those of Z on identity of parts.

Hobbes' judgment was in favor of Z, but I believe that Theodore Scaltsas is close to right in saying,

> The predominant opinion in current literature concerning artifact identity is that in cases of conflict, the continuity of form cannot be overruled by any other sufficiency condition for artifact identity, such as identity of parts, while the latter can be overruled by the former.[2]

Scaltsas himself does not share the "predominant opinion", but it is evident that he does not appreciate the source of its appeal. He writes,

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[1] *De Corpore*, in *The Metaphysical System of Hobbes*, ed. Mary Whiton Calkins (Chicago: The Open Court Publishing Co., 1917), pp. 84-86.

[2] "The Ship of Theseus", *Analysis*, 40.3, June 1980, p. 152.

...there are no established arguments for determining which sufficiency condition overrules the other... There is simply the possibility of being differently inclined on the subject of condition hierarchy from your fellow-men, and there is no evidence they can bring to you or you to them to convince one another who is right.[3]

In this paper I will offer an alternative to the predominant opinion, but I will do so after taking account of the quite impressive argument by which the latter can be supported.

(1)

The argument for the primacy of continuity of form is based on four metaphysical principles.

MP1: A material object can survive the replacement or destruction of a minor part, providing it does not thereby cease to be an object of the same sort.

MP2: Numerical identity is transitive.

MP3: Numerical identity is symmetrical.

MP4: A material object cannot be in different places at the same time.

The first principle is one that was denied both by Heraclitus and by Hume, but there are few philosophers today who would wish to take the extreme position with which they are associated. That objects are able to retain their identities while undergoing at least *some* change is presupposed by almost all of our beliefs about the world. We think of haircuts, oil filter replacements, and stain removals as processes which improve existing objects, not as processes which result in objects which had not previously existed. And we think, Heraclitus' dictum notwithstanding, that we *can* step twice into the same river. That we will be stepping into different water is judged irrelevant.

To rule that it is only "loosely speaking" that identity is retained in such cases, and that "strictly speaking" it is not, would, in the opinion of most philosophers, pointlessly deprive the concept of diachronic identity (identity through time) of its utility. For if the relation between the river outside my window today and the river that was there yesterday is not that of diachronic identity, then we would need some other name for the relation, and it would be this relation, not diachronic identity,

that would be of importance in our conceptual scheme. We would then have to inquire whether it is ship Y or ship Z which bears this relation to ship X.

This line of thinking, or something very much like it, persuades most philosophers not to take the extreme position of Heraclitus and Hume. In the pages ahead I will challenge MP1, but I will provide an alternative to it which allows for cases of identity through (some) material change. I will want to show that the primacy of continuity of form can be rejected without having to embrace the extreme position. This is a possibility which, I believe, has not been clearly perceived.

With respect to MP2, the principle that identity is transitive, I will note only that I am taking the relata of the identity relation to be enduring objects, not "temporal slices" of enduring objects. With that understood, there should be no doubts about MP2.[4] That identity is symmetrical, MP3, is uncontroversial.

As for MP4, the principle is to be understood as denying that an object can be *wholly* in one place and, at the same time, wholly in another. It is, of course, quite possible for *part* of an object to be in one place while another part of the object is in another.

Our next step will be to see how the four principles, taken together, entail the "Y-answer" in the ship of Theseus case and, more generally, the subordination of identity of parts to continuity of form.

On each of the 500 days there is some ship or other in dock A. The ship there on day 1 is ship X. Assuming that any one of the 500 planks of X is a "minor" part of X, principle MP1 would commit us to saying that the ship in dock A on day 2 is that same one ship: only one minor part has been replaced. (If there were hesitation about counting a plank as a "minor" part of a 500 plank ship, the case could be redescribed so that each day sees the replacement of some smaller part. In principle, it could be a single molecule.) Since the ship in dock A on day 3 differs from the ship there on day 2 by just one minor part, reapplication of MP1 yields the result that these two ships also are one and the same. In short, MP1 tells us that the ship on day 3 = the ship on day 2 and that the ship on day 2 = the ship on day 1. But then by the transitivity of identity, MP2, we get the result that the ship on day 3 = the ship on day 1. Reiterated applications of MP1 and MP2 lead finally to the result that the ship in dock A on day 500 = the ship in dock A on day 1. That is, $Y = X$.

So far we have deduced that Y is X; we have not yet deduced that

[3] Ibid., p. 154.

[4] For an account with temporal slices as the relata, and in which identity is non-transitive, see E.J. Borowski, "Diachronic Identity as Relative Identity," *Philosophical Quarterly*, 1975.

Z isn't. No doubt the latter is an obvious consequence of the former, but it is only fair to give credit to the metaphysical principles which enable us to take this further step. For purposes of *reductio*, suppose that Z *is* X. Then, by MP3, X is Z. Since we have already deduced that Y is X, we can infer, by MP2, that Y is Z. But then, on day 500, a single ship is wholly in dock A and, at the same time, wholly in dock B. This is contrary to MP4, and so we must conclude that Z is not X.

Thus the four principles lead to these results: (1) ship Y is ship X, and (2) ship Z is not ship X. The first result entails that identity of parts is not a necesary condition of identity through time. The second entails that it is not a sufficient condition. Ship Y does not, on day 500, have even a single part that was had by ship X on day 1. Despite that, Y is X. Ship Z is, on day 500, composed of all and only the parts of which X was composed on day 1. Nevertheless, Z is not X. The condition that is met by ship Y, but not by ship Z, is that of continuity of form. The four principles seem to give decisive support to the "predominant opinion" that in cases of conflict, continuity of form overrules identity of parts.

(2)

It is a pleasing feature of the "Carriage" and "ship of Theseus" puzzles that pre-analytic intuitions concerning them seem to be quite evenly divided. One class of undergraduates will tilt one way; the next will tilt the other. It is in just such situations that the philosophical strategy of seeking mutual accomodation between our intuitions about principles and our intuitions about cases directs us to turn for guidance to our principles. And, as we saw in the preceding section, there are principles of a high order of plausibility which do dictate a particular resolution of the puzzle cases. There is, however, an obstacle to accepting the indicated resolution.

In a response to Brian Smart's "How to Reidentify the Ship of Theseus",[5] Francis Dauer suggests that continuity of form may ordinarily be a sufficient condition for identity, but that it would not suffice in certain extraordinary cases. Dauer tells this story. An ancient temple, the Parthenon, stands on the island nation of Oudamou. Agents of the unscrupulous Lord Elgin contrive, under cover of night, gradually to substitute modern replicas for the ancient marble slabs of the temple. The original slabs are transported to Lord Elgin's estate, where they are reassembled into their original form. Dauer believes it to be obvious

[5] *Analysis*, 32.5, April 1972, pp. 145-148.

that the temple on Lord Elgin's estate, not the one remaining on Oudamou, is the genuine Parthenon. Dauer remarks,

> Reidentifying ordinary ships is one thing, reidentifying a national treasure is another... where the history of the object has a decisive bearing on the object's significance the usual criteria for reidentification are inappropriate.[6]

The same sort of case was given recently by Nathan Salmon.

> ...[consider] a historically significant ship, say Columbus' *Niña*, and [suppose] that some unscrupulous philosopher had been commissioned to disassemble this ship, transport its disassembled parts to the Smithsonian Institution in Washington, D.C., and reassemble it there, all over a very long period of time. Suppose further that, intending to perpetrate a major hoax on the authorities, this scoundrel carefully replaces each plank by a new one before removing the next. He then smugly transports the original planks to Washington, for reassembly, believing that the real *Niña* remains standing in his garage. If the authorities discovered what had been done, they would probably be quite content to let this foolish rascal keep the ship standing in his garage. For it is nothing more than a *replica* of the genuine *Niña*...[7]

Salmon credits David Kaplan for the example, and Salmon notes that Kripke has in lectures used a similar example to make the same point.

In a reply to Dauer, Brian Smart[8] held to his position that continuity of form is a non-defeasibly sufficient condition for identity through time. Accordingly, he insisted that the temple remaining in Oudamou is in fact the temple that had been there all along. What has been spirited away is not the *temple*, but the Oudamou *national treasure*: the collection of ancient marble slabs. This collection of slabs, says Smart, *constitutes*, but is not identical with, the temple standing on Lord Elgin's estate. Smart suggests that 'the Parthenon' may be used in connection either with the sortal 'temple' or with the sortal 'collection of marble slabs'. If the former, then the Parthenon is indeed still in Oudamou. If the latter, it has been removed to Britain.

Presumably, Smart would take the same line on Salmon's *Niña* case. He would say that the ship on which Columbus sailed the Atlantic now stands in the garage of the unscrupulous philosopher. The Smithsonian contains only the planks of that historic ship—assembled into a replica of the original!

Although I don't want to argue the point, I think that the Dauer/Salmon/Kaplan/Kripke judgment is the correct one. Surely it is only

[6] "How not to Reidentify the Parthenon," *Analysis*, 33.2, December 1972, pp. 63-64.

[7] "How *not* to Derive Essentialism from the Theory of Reference," The Journal of Philosophy, Vol. 76, No. 12, December 1979, pp. 717-718.

[8] "The Ship of Theseus, the Parthenon, and Disassembled Objects," *Analysis*, 34.1, October 1973, pp. 24-27.

someone in the grip of a theory who would deny either that the *Niña* is a *ship* or that in spite of the bizarre scheme of Salmon's philosopher, the ship in his garage is not the *Niña*. The same applies to the Parthenon. It is a temple, and it is no longer to be seen in Oudamou. At least, this is what I will be assuming. My objective will be to identify the alternatives to the "predominant opinion" on which this judgment can be accomodate.

(3)

Consider these posible positions.

P1:   Any material object can survive the gradual replacement of all of its parts.

P2:   Some material objects can survive the gradual replacement of all of their parts; some cannot.

P3:   No material object can survive the gradual replacement of all of its parts.

Our judgment in the *Niña* and Parthenon cases has several consequences. (1) We must reject position P1. At one time, perhaps, the *Niña* could have survived the replacement of all of its parts; it could not do so now. (2) We must reject the "predominant opinion" that continuity of form is a non-defeasibly sufficient condition of identity through time. The ship in the philosopher's garage is spatio-temporally continuous with the ship on which Columbus arrived in 1492. Nevertheless, our judgment is that they are not one and the same. (3) We must reject principle MP1. As we saw in the first section, this principle, taken together with MP2, entails the non-defeasible sufficiency of continuity of form. I will take it for granted that if one of these two principles must be given up, it can only be MP1.

In the wake of these consequences, three questions arise. (1) Since we must reject P1, should we accept P2 or P3? (2) Since continuity of form is *not* non-defeasibly sufficient, what condition *is*? (3) Since we must reject MP1, how can we otherwise provide for cases of identity through (some) change of material composition

Let's look first at the answers suggested (though neither elaborated nor defended) by Dauer and Salmon. What they propose is to accept P2—to divide the world into objects which can and objects which cannot survive total replacement. Most objects are placed in the first category, but objects whose "history has a decisive bearing on their significance" must, if they are to retain their identities, retain at least some of their original parts. For first category objects, continuity of form remains a

sufficient condition of identity. For second category objects, a sufficient condition is identity of parts.

There is a simpler alternative. The rejection of MP1 removes the seemingly insurmountable obstacle to embracing identity of parts as a non-defeasibly sufficient condition of identity through time: the argument of section (1). It also frees us to opt for P3. We can hold that *no* object can retain its identity unless it retains some (or most) of its original parts. Finally, we can replace MP1 by MP1*: A material object can survive the destruction or replacement of a minor part, providing (a) it does not thereby cease to be an object of the same sort, and (b) it does not thereby cease to have some (or most) of its *original* parts.

One appealing feature of this approach is that it eliminates an apparent point of disanalogy between cross-time identity and cross-world identity. There are compelling reasons for thinking that although an object could have begun its existence made up of *some* different parts, it (the same one object) could not have begun its existence made up of all different parts.[9] The conjunction of MP1* and P3 entails that, analogously, an object can, while retaining its identity, change *some*, but not all, of its original parts.

What objections can be expected? The main objection is likely to take the form of pointing out some seemingly unwelcome consequences of denying MP1. Think again of the ship case described in section (1). To ease our discussion, let's use the expressions 'ship 1', 'ship 2', etc. to refer to the ship in dock A on day 1, the ship in dock A on day 2, etc. On the account I have proposed, ship 2 = ship 1 (assuming that ship 1 is composed, on day 1, of its original planks), but ship 500 ≠ ship 1. But then it may be asked: On which day does ship 1 cease to exist? And of course, it would be arbitrary for us to give any of the remaining 498 days as the answer. A further problem is this. If ship 500 ≠ ship 1, then there has to be an integer n ($1 \leqslant n < 500$) such that it is either false or indeterminate that ship $n+1$ = ship n. But, it may be asked, is it not unreasonable to hold that a ship could fail to be numerically identical with a ship from which it differs by a single plank—especially since we are holding that ship 2 = ship 1? To increase our discomfort, the objector could redescribe the case so that each day sees the replacement of but a single molecule. We would then be committed to saying that for some n, it is either false or indeterminate that ship $n+1$ = ship n, even though only a single molecule has been replaced.

I believe it is an adequate reply that the consequences to which the

[9] Cf. Graeme Forbes, "Origin and Identity," *Philosophical Studies*, Vol. 37, 1980, pp. 353-362.

objector draws attention are analogous to those to which we are committed in any case. *Prima facie,* it would be reasonable to say that for any person x and any time t, if x is a baby at t, then x is a baby at t plus 1 second (providing x still exists). But this principle entails that babies can never grow up! Accordingly, the principle must be rejected, notwithstanding the arbitrariness that would be involved in identifying a second at which a baby suddenly ceases to be a baby. And notwithstanding the surprising consequence that for any baby x that *does* grow up, there has to be a time t such that it is true that x is a baby at t, but either false or indeterminate that x is a baby at t plus 1 second.

In conclusion, we have before us two accounts from which to choose: the two-tier account of Dauer and Salmon and an alternative on which the identities of all material objects are tied to their original parts. Each account is internally consistent, and each is consistent with the small number of metaphysical principles we have here treated as axiomatic: MP2, MP3, and MP4. And, of course, each is consistent with our judgment in the *Niña* and Parthenon cases. My account will appeal to those who would welcome a principled basis, other than the extreme position of Heraclitus and Hume, on which to concur with Hobbes: Z, the ship with the original planks, is the ship that had long sailed under the flag of King Theseus. What remains to be seen is which account can better contribute to that coherent conception of the whole which is the goal of metaphysical inquiry.

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