

## **MATERIALISM AND THE PSYCHOLOGICAL-CONTINUITY ACCOUNT OF PERSONAL IDENTITY**

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I am going to argue that a materialist should not accept a psychological-continuity theory of personal identity across time. I will begin by arguing that a materialist cannot consistently admit the possibility of a certain kind of case beloved of the proponents of psychological-continuity theories, so-called bodily transfer cases, and then attempt to generalize the essential point of the argument for this conclusion to show that a materialist should not accept a psychological-continuity account of personal identity.

Let us consider a representative philosopher who is a materialist and who believes that human persons really do exist and that they really do endure through time and that bodily transfer is possible. Sydney Shoemaker will do for my purposes. But I want to make it plain that it is not my purpose to attack Shoemaker or any other particular philosopher. My target is the combination of views that I have listed: materialism, realism about human persons and their endurance through time, and a belief in the possibility of bodily transfer. Here is a quotation from Shoemaker's well-known debate on the subjects of personal identity and dualism with Richard Swinburne:

A number of philosophers have envisaged the possibility of a device which records the state of one brain and imposes that state on a second brain so that it has exactly the same state the first brain had at the beginning of the operation. We will suppose that this process obliterates the first brain, or at any rate obliterates its current state... . Philosophers who have discussed this sort of case have differed in their intuitions as to whether the brain-state transfer would amount to a person's changing bodies—whether, as I shall put it, the procedure would be “person-preserving.” Some think it would. Others think that it would amount to killing the original person and at the same time creating...a psychological duplicate of him.

Initially, I think, most people are inclined to take the latter view. But one can tell a story which enhances the plausibility of the former view. Imagine a society in which...periodically a person goes into the hospital for a “body-change.” This consists in his total brain-state being transferred to the brain of [an artificial duplicate of

his body]. At the end of the procedure the original body is incinerated... . All of the social practices of the society presuppose that the procedure is person-preserving. The brain-state recipient is regarded as owning the property of the brain-state donor, [and] as being married to the donor's spouse...If it is found that the brain-state donor had committed a crime, everyone regards it as just that the brain-state recipient should be punished for it.

...If we confronted such a society, there would, I think, be a very strong case for saying that what *they* mean by "person" is such that the brain-state-transfer procedure *is* person preserving...But there would also be a strong reason for saying that what they mean by "person" is what we mean by it; they call the same things persons, offer the same sorts of characterization of what sorts of things persons are, and attach the same kinds of social consequences to judgments of personal identity...But if they are right in thinking that the brain-state-transfer procedure is person preserving, and if they mean the same thing by "person" as we do, then it seems that *we* ought to regard the brain-state-transfer procedure as person preserving.<sup>1</sup>

There is a good deal more to what Shoemaker has to say about the possibility of bodily transfer than what is represented in this passage. But most of what Shoemaker thinks about bodily transfer that is not represented in this passage consists in epicycles designed to handle certain problem-cases, particularly those that arise when the brain-states of a particular person are imposed on the brains of two or more artificial donors, and those that arise when the "original" brain continues to exist after its states have been imposed on some other brain or brains. Well, someone who holds this sort of view certainly does face problems when he or she confronts such cases, and Shoemaker is certainly right to devote a good deal of his time to attempting to solve these problems. But these problems will not be my concern. I will simply ignore the more elaborate cases and the epicycles they generate. I want to discuss only cases of the sort that Shoemaker discusses in the above passage, and I want to explain what I find incoherent about the sort of position he takes—roughly, the combination of materialism and an adherence to the possibility of bodily transfer.

Let us examine the story he tells. Many people would find it hard to accept the conclusion Shoemaker draws from it. As he says, "initially, most people are inclined to the latter view"—that is, to the view that the brain-state transfer operation is not person-preserving. But it is rather an understatement to say that most of us are "initially inclined" to suppose that a human being cannot go from one place to another simply in virtue of a transfer of information that could in principle be conveyed by fax or even by a letter carrier. This statement can be compared with the statement that most of us are initially inclined to suppose that you can't really bring a statue to life, or the statement that the majority of us have tentatively accepted, as a working hypothesis, the thesis that it is impossible to turn a woman into a laurel tree. In fact, it is in one way rather harder to believe that Shoemaker's story represents a real possibility than it is to believe that of the story of Pygmalion and Galatea or the story of the metamorphosis of Daphne—

for in those two stories there is at least material continuity between the “before” and “after” states of the central characters.

Before I present my main line of argument, I want to make some remarks about Shoemaker’s story that seem to me to be philosophically important. They are not so much a part of my argument as some things I want to get off my chest. Shoemaker is not much interested in the actual biology of human beings. He seems to suppose that it makes sense to talk about transferring the “state” of one brain to another, as if the living brain of an adult human being were a computer disk, a thing that had a well-defined “blank” state even when it was the size and shape of an adult brain (as opposed to the brain of a new-born infant) and which was capable of receiving the information stored in another brain in a way strongly analogous to the way in which a blank computer disk is capable of receiving the information stored on another disk. But suppose a living brain is more like, say, a city. A city stores plenty of information and, among lots of other things that a city does, it processes a flow of information—or at least there is no harm in talking that way. But a city does not have a well defined “blank” state into which just any information (provided there is not too much of it) can be programmed. To say, ‘Suppose the municipal state of New York were transferred to Beijing’ is to say words that have no meaning whatever. How do we know that there is any way to have a living human brain that is a blank? What would happen if we were able to clone human cells and grow a human being or the brain of a human being in a tank (and were so wicked as actually to do so)? By genetic design, a human brain is supposed to grow to its adult size over a span of years during which it receives a certain sort of sensory input and produces all sorts of outputs that influence its environment. We know that certain parts of the brain atrophy or fail to develop normally if the persons whose brains they are don’t engage in certain sorts of activities. That is why language acquisition is difficult if not impossible for those who are not allowed to participate interactively in a community of language-users while their brains are passing through certain developmental stages. If they grow to adulthood without being allowed to participate in such a community, their brains have missed the boat as far as the possibility of endowing their owners with full linguistic competence is concerned. Who knows how many boats would be missed by the brain of a human-adult-shaped thing grown from human DNA in a tank? Why suppose that there is any possible world in which the brain of anything grown from human DNA in a tank is capable of being the recipient of anything like the information stored in your or my brain? Maybe the brain of such a thing would be a brain only in terms of gross anatomy. Maybe it would not be at all analogous to a book with blank pages ready to be overwritten. Maybe it would be like a book with pages covered with random and indelible splotches or pages that came apart if you tried to write on them or pages where nothing at all would appear if you tried to write. How do we know that it is not a necessary truth that this is the way things are, that there is no possible world in which human beings enjoy the remarkable adventures that Shoemaker imagines?

Now that I have warmed up to this subject, I will take the opportunity to remark—even though the remark is even more tangential to my main line of argument—that I am similarly suspicious of all of the other imaginary technology that turns up in discussions of personal identity. The *Star Trek* transporter beam, for example, is suspect indeed. A one-second pulse of electromagnetic radiation that carried enough information to restructure a particular human organism—never mind whether the restructured organism would somehow be the same person as the original—that arrived at a receiver a few meters across would simply vaporize the receiver and everything else in the vicinity and everything it had happened to encounter on the way there. Similar considerations from the theory of signals show that it would take months or years to transfer the amount of information from one brain to another that is required by the brain-state-transfer machine; try to speed up the process significantly and you will just melt all those little wires attached to the shiny cap on the recipient's head. Remember how long it took all the information that is stored in your brain actually to get there. And I very much doubt whether this is a consequence of contingent features of the laws of nature. I am willing to bet that the statement 'For any given level of efficiency of information transfer, the greater the amount of information passing through a channel per unit time, the greater the amount of energy passing through that channel per unit time' is a necessary truth, a principle that is a consequence of any coherent set of laws of nature. (Couldn't we simply imagine that the transfer takes a much longer time than Shoemaker has imagined—a year, say? But the recipient's brain would be alive and, presumably, changing throughout the whole procedure. Can a painting be copied on a shifting canvas?)

Well, these are no more than the grumbles of an annoyed enemy of the philosophical employment of fantastic thought experiments—an employment that is, I believe, the result of the widespread adherence of philosophers to the nonsensical idea of "logical possibility." I won't pursue the points that these grumbles raise. Let's assume that the brain-state-transfer machine is in some sense possible: it really is possible, in some coherent sense of possible, any coherent sense at all, to put shiny caps on the heads of two human organisms and, by the electrical transfer of information across wires connecting the caps, to turn one organism into a psychological duplicate of the other. Having made this assumption, let us return to Shoemaker's story.

If I understand Shoemaker correctly, he believes that each of us really exists and that we really persist through time. He is concerned to establish the thesis that, in the story, a certain human person would persist through time in the same sense of 'persist' as that in which human persons normally persist through time. He has other things to say, epicycles to introduce, in cases involving "branching" and cases in which the brain-state donor continues to exist. But in the case he has described, he thinks that the brain-state recipient is identical with the brain-state donor. And that is the case I want to discuss. I am not satisfied that it makes any sense to talk of brain-state donation or reception, but it is clear that whatever an

episode of donation-and-reception is supposed to be, it does not require that anything but information move across space from the donor to the recipient. I understand that *part* of his view, and that much understanding will suffice for my purposes.

Shoemaker believes that I—to take one example of a person—exist and that I can change my position from place *x* to place *y* even though nothing passes from *x* to *y* but information—that the person at place *y* will, if the information transfer is done right, be literally I, literally the same person as the person who used to be at place *x*. Shoemaker is a sort of anti-realist about personal identity when he considers puzzle-cases like cases of “branching,” cases in which the state of one’s brain is transferred to two or more “blank” brains. In that case, it cannot be literally true that either of the brain-state-recipients *is* the donor—for it is obviously true that they can’t *both* be the donor, and there could be no reason to say that one rather than the other was the donor. In such cases, Shoemaker argues, it could be rational even for an ideally perfect egoist to prefer having his or her brain-states transferred to two blank brains to simple annihilation; the rational egoist may even be willing to make a significant sacrifice today to replace threatened annihilation next week with a “double” brain-state transfer next week. (Explaining how this could be rational is one of the functions of the epicycles.) But Shoemaker is not an anti-realist about personal identity in normal, everyday cases or in the simplest and most straightforward brain-state-transfer cases. He regards the simplest and most straightforward brain-state-transfer cases as, to use his term, person-preserving.

And what is wrong with his position? Don’t our intuitions tell us that we should survive a “simple” brain-state-transfer operation? If one had, in the normal course of events, six months to live, and if one’s goal were to live (more exactly, to exist as a conscious being) as long as possible, wouldn’t one accept the offer of a brain-state-transfer operation today—it’s today or never—even though this meant the destruction of one’s present brain today? The answer, of course, is Yes, and that shows how our intuitions run. And our intuitions are constitutive of our concept of a person, or at least display the features that belong to that concept.

This argument is deeply flawed. Our “intuitions” are simply our beliefs—or perhaps, in some cases, the tendencies that make certain beliefs attractive to us, that “move” us in the direction of accepting certain propositions without taking us all the way to acceptance. (Philosophers call their philosophical beliefs intuitions because ‘intuition’ sounds more authoritative than ‘belief’.) Our beliefs have all sorts of sources and can very easily be wrong. So even if it is true that most egoists would choose an immediate brain-state-transfer operation over a normal death that came significantly later, that fact (if it is a fact) does nothing whatever to establish the conclusion that the brain-state-transfer operation would be “person-preserving.” It could be that these hypothetical egoists are simply confused or at least philosophically mistaken or metaphysically misinformed. I think that they are. I shall try to explain why I think so.

You believe that human persons really exist. And you are a materialist. So what do you think these human persons that you think really exist are? Well, material things, obviously. Perhaps whole human organisms, perhaps parts of human organisms like brains or cerebral cortices or cerebral hemispheres, but some sort of material thing. For the sake of having a concrete example, I'll suppose that you think, as I do, that human persons are whole human organisms; but the argument that I shall give would "go through" for any sort of material thing. So you are a certain living organism,  $x$ . And, if you hold views like Shoemaker's on the possibility of bodily transfer, you believe that there could be another, numerically distinct living organism  $y$  such that, if the right sort of information flowed from  $x$  to  $y$ , you would become  $y$ . (Perhaps you think that if you are to become  $y$ , the destruction of  $x$  will also have to be accomplished. Perhaps you think that if you are to become  $y$ , the same sort of flow of information cannot occur between  $x$  and any third organism.) But when the matter is put this way, it is evident that your belief is simply impossible, a violation of the very well established modal principle that a thing and another thing cannot become a thing and itself. Or, if you prefer symbols:

$$\Box \forall x \forall y (x \neq y \rightarrow \sim \Diamond x = y).$$

And there are very good reasons why this principle is regarded as well established. Here is one that does not apply in all cases but does apply in the present case, which is a case in which an object is at one time not identical with another object and later becomes identical with it. In the present case, the objects under consideration have different histories. For example, you are here now and the physical object that you are going to become after the information has flowed from one brain to another is now over there—and each of them is in only one of these two places, not in both simultaneously. If you are this organism now at  $t_1$  and will be that organism over there later at  $t_2$ , then, at  $t_2$ , (the person who is) that organism over there will, by a simple application of Leibniz's Law, be able to say, truly, "At  $t_1$  I was right here and it is not the case that at  $t_1$  I was right here." If you want to see the application worked out in detail, it goes like this. Let's look at what you believe at  $t_2$ . Being a materialist, you believe that you are material. That is, that you are identical with some material thing—call it 'this human organism'. You believe, as a factual matter, that at  $t_1$  this human organism was right here. You believe, that, having become this human organism in virtue of a flow of information that came from a brain that was a part of a human organism that was *not* right here at  $t_1$ , at  $t_1$  *you* were not right here. That is, you believe:

You = this human organism;  
 At  $t_1$  this human organism was right here;  
 It is not the case that at  $t_1$  you were right here.

Here is Leibniz's Law:

$$x = y \rightarrow (\mathbf{F}\dots x\dots \leftrightarrow \mathbf{F}\dots y\dots).$$

And here is an instance:

$$x = y \rightarrow (\text{at } t_1 \text{ } x \text{ was right here} \leftrightarrow \text{at } t_1 \text{ } y \text{ was right here}).$$

It follows logically from what you believe and from this instance of Leibniz's Law that

At  $t_1$  you were right here and it is not the case that at  $t_1$  you were right here.

(This consequence can be demonstrated very simply using Euclid's Law—the principle of the substitution of identicals—which is an immediate consequence of Leibniz's Law: substitute 'you' for 'this human organism' in 'At  $t_1$  this human organism was right here'.) The lesson of this reductio is that you can't turn one thing into another thing simply by causing information to pass between them. You can't do that because you can't turn one thing into another thing at all. That is the lesson that one should draw from the reductio—if the reductio is really inescapable. Is there any way in which the friends of bodily transfer might avoid it?

As I have said, it is not my intention to try to refute Shoemaker. I have quoted him only to provide a concrete example of someone who holds a certain combination of views. Nevertheless, I should mention that Shoemaker is aware of a problem that is at least something like the problem I have posed and offers a solution to it, a solution that he admits is "prima facie counterintuitive." I think, however, that his proposed solution misses the real depth and difficulty of the problem he faces, and it is for that reason that I have used the words "a problem at least something like the problem I have posed." Shoemaker recognizes that, although his brain-state donor and brain-state recipient are (on his account) the same *person*, they are not the same animal or the same human being.<sup>2</sup> His solution to this difficulty is to say that I am not and you are not and, in general, persons are not, animals or human beings. That is, persons are not *strictly* animals or human beings: no person is identical with any animal or any human being. Rather, persons ("human" persons, anyway) "share their matter with" and "occupy the same space as" and have "the same non-historical properties" as human beings. And, of course, he holds that it is in principle possible for one and the same person to bear these relations to different human beings at different times.

One can see why Shoemaker would concede that this position is prima facie counterintuitive. I would add that this position seems to be hard to reconcile with the mind-body identity theory. If the thought that it is nearly time for lunch occurs to one at a certain moment, then, according to the identity theory, the occurrence

of this thought is identical with a certain physical event  $\phi$  that takes place in one's brain. But if one—that is, the thinker of this thought—shares the matter and “momentary” properties of a certain human being  $x$  (with which one is not, strictly speaking, identical), then  $\phi$  is an event not only in one's own brain but in  $x$ 's brain as well. (One's brain and  $x$ 's brain may or may not be identical. We need not decide that issue.) But then why is it not true that the thought that it is nearly time for lunch occurs to  $x$  at the moment  $\phi$  occurs in  $x$ 's brain? A generalization of this consideration suggests that there must be something it is *like* to be  $x$ , and that what it is like to be  $x$  must be just exactly what it is like to be *one*—the person, the first-mentioned thinker of the thought that it is nearly time for lunch. Why, then, is  $x$  not a person too? And if there are these *two* persons simultaneously present—two distinct mereological sums of the very same atoms—, which one would be preserved by the “person-preserving” brain-state-transfer device? And how does the device manage to preserve one of them rather than the other? If they have all of the same momentary properties, then the device would seem to be in a “Buridan's Ass” situation, for it is only the momentary properties of an object that confronts it that can differentially affect the operations of the device.

Let us leave this difficulty aside. It is a difficulty for Shoemaker's solution to a certain problem (the problem raised by the fact that operations of the brain-state-transfer device obviously do not preserve “animal identity”), but Shoemaker's solution is not a solution to the problem I have posed. Let us grant for the sake of argument that one is not, that persons in general are not, strictly identical with any human being or any animal. Nevertheless, if one is a materialist and if one believes that persons really exist, then one must concede that every person is strictly identical with *some* material thing. Someone who holds views like Shoemaker's is therefore committed to the proposition that there could be two simultaneously existing material things such that one of them could become strictly identical with the other simply in virtue of a flow of information between them. It is against this perfectly general proposition that my argument is directed. The argument does not essentially depend on the assumption (which was made only to supply two visualizable material objects to help us to focus our thoughts) that the two objects in the case considered are “human organisms.” Substitute in the argument any material-object category you like for “human organism” and the point of the argument is unaffected.

One way out of the difficulty I have raised is provided by the idea that “identity is always relative to a sortal term,” for if that notorious thesis were indeed correct, then it might be possible for  $x$  and  $y$  to be different *organisms* but nonetheless the same *person*. Shoemaker is aware of this possibility and rejects it. (That is, he rejects it as a solution to the problem that he considers, the problem of the relation between personal identity, on the one hand, and human or animal identity on the other.) Should he reconsider his rejection in the light of the fact that his solution is not a solution to the more general problem—and of the fact that his solution confronts all sorts of difficulties even as a solution to the special



problem? I think not. It would be impossible for me to go into all of the ramifications of the thesis that identity is always relative to a sortal term. I can only say that it has very radical logical and semantical consequences, and one might wonder whether any position in the philosophy of mind should be allowed to dictate radical consequences in logic and semantics. I will mention, without further comment, two of these consequences. First, if the classical conception of identity is abandoned, then the classical notion of reference or denotation (which essentially involves the idea that if a term denotes a certain object then it denotes those and only those things that are, in the classical sense, identical with that object) must be abandoned. Secondly, if the notion of “relative identity” is to do any work, the analogue of Leibniz’s Law must fail for at least some of the relative-identity predicates: there must be an  $x$  and a  $y$  such that, despite the fact that  $x$  is the same *something* as  $y$ ,  $x$  and  $y$  have different properties. Although I believe that a logic of relative identity can be developed in way that is at least formally coherent,<sup>3</sup> its consequences are so radical that one should be deeply suspicious of any theory of personal identity that requires relative identity as a part of the package; better—*much* better—to look elsewhere for a solution to puzzles about personal identity. If our “intuitions” present us with puzzles the only solution to which requires an appeal to relative identity, then those intuitions should be regarded as suspect.

Another possible escape from the *reductio* that threatens the combination of views I am considering is provided by what I have elsewhere called “four-dimensionalism.”<sup>4</sup> This is the thesis that the things we normally regard as enduring through time are extended in time as well as in space. Each physical thing, according to this way of looking at identity across time, is extended in three spatial dimensions (or maybe nine, if “superstring” theory is to be believed) and also in time.

This view of identity across time has been applied to the problems of personal identity with great power and subtlety by David Lewis.<sup>5</sup> The essential trick is this:

Any two spatiotemporal objects have a mereological sum that is itself a spatiotemporal object. Certain spatiotemporal objects count as persons—this word now being understood to apply to things extended in time as well as in space. A spatiotemporal object is a person if it is a maximal aggregate of person-stages. Leave aside the question of the meaning and purpose of the qualification “maximal.” A mereological sum of person-stages is an “aggregate” if the stages are psychologically continuous with one another in the right sort of way.

It is consistent with this abstract account of the spatiotemporal unity of a person that the operation of Shoemaker’s brain-state-transfer machine not represent a discontinuity in any sense that is incompatible with the “before transfer” temporal part of the “donor organism” and the “after transfer” temporal part of the

“recipient organism” both being temporal parts of a single temporally extended person. At any rate, abstract considerations of logic or semantics provide no reason for thinking that the operation of the machine would have that effect. The question whether the before-transfer temporal part of the donor organism and the after-transfer part of the recipient organism are temporal parts of a single person can be compared with the question whether North and South America are spatial parts of a single continent. In each case, the question reduces to the question whether a problematic patch “in the middle” displays an appropriate kind and degree of continuity.

To this approach to the problem of personal identity (considered as a proposal that would enable the friends of bodily transfer to avoid the threatened *reductio* I have laid out), I would say something similar to what I said about the previous proposal, the relative-identity proposal. There are many difficulties with the idea that time is sufficiently similar to space that it is appropriate to think of objects that endure through time as four-dimensional objects, extended in time as well as in space and composed of temporal parts. For example, I have argued elsewhere that this view of things commits its adherents to a counterpart-theoretical analysis of modal statements about individuals.<sup>6</sup> (Lewis, of course, being the inventor of counterpart theory, does not consider this a disadvantage of the four-dimensionalist theory of identity across time, but many will.) And isn't it just a strikingly queer idea that time is that much like space?

Writing a decade or so before the advent of special relativity and Minkowski spacetime diagrams, H. G. Wells presented (in the opening pages of *The Time Machine*) a powerful picture—perhaps partly inspired by Abbott's *Flatland*—of time as radically like space, as being “just another dimension.” According to this picture, if two events occur in the same place at different times, there exists a line between them that is at right angles to the North-South, the East-West, and the up-down lines that pass through that place. I think that a lot of philosophers have got their picture of time, directly or indirectly, from Wells. But if you look at a real Minkowski diagram, you will find that what you see tends to undermine the “Wellsian” picture of time. For one thing, in the Wellsian picture, any spacetime coordinate system can be transformed into any other by simple displacement of the origin and rotation of the axes, whereas in Minkowski space this is not true. But let us waive that problem, and look at a coordinate system established by a particular observer of the spacetime world who is in a state of uniform motion—a so-called inertial frame of reference. In a Minkowski diagram—a drawing of Minkowski spacetime that is centered on the representation of a particular inertial frame of reference, so that the time axis and the spatial axes of that frame are drawn at right angles to one another—the temporal axis has properties radically unlike those of the spatial axes. In a Minkowski diagram, a time-like path does not represent anything like a spatial distance, but rather represents time as measured by a clock whose world-line is that path. The analogue of the Pythagorean Theorem for Minkowski spacetime has *minus* signs in front of the squared spatial

variables, with the consequence that in many cases the longer a line representing a time-like path on the paper in front of you is, the *shorter* is the path through spacetime that it represents. (Any path traced out by a ray of light is of 0 length!) To my mind, these facts undermine the idea that the spacetime of the special theory of relativity is anything like the four-dimensional continuum through which Wells's time-traveler moved. If the Wellsian picture of spacetime were correct, it would make good sense to think of objects as being extended in time in the same sense as that in which they are extended in space. But I'm inclined to think that it isn't correct and that it doesn't make much sense to think of them that way. At least I don't understand that kind of thinking.

Even those who think that "four-dimensionalism" makes sense must agree that it is a controversial theory of persistence through time, one that makes very strong metaphysical claims. Shouldn't we regard any theory of *personal* identity across time that forced this general metaphysic of identity across time on us as suspect—at least if there were no independent reasons to accept it? (And I would argue that there are not, although that, of course, is a complex issue.)

I conclude that the only available escapes from the threatened *reductio* are too expensive. (I know of nothing else in the literature that offers an escape.) The combination of views that Shoemaker—along with many other philosophers—holds is not worth the price.<sup>7</sup> The materialist should, therefore, adopt either the extreme position that human persons do not really persist through time at all—that our talk of their persistence is some sort of fiction—or else the materialist should reject the possibility of bodily transfer.

But does it follow from the fact that a materialist should not believe in the possibility of bodily transfer that a materialist should not accept a psychological-continuity account of personal identity across time? Well, it is not altogether clear that it does. Perhaps the psychological-continuity account is consistent with the impossibility of bodily transfer. Perhaps there is some version of the psychological-continuity theory that has the consequence that, if each psychological state is a state of a material object, then psychological continuity is possible only within a single material object—that is, psychological continuity must consist in a succession of psychological states that are realized in the same material object. If this were so, then the psychological-continuity theory—or this hypothetical version of it at any rate—would not imply the possibility of bodily transfer. It would go rather against the spirit of the psychological-continuity theory if the continuity theorist were simply to stipulate that psychological continuity was possible only within a single body, for one of the advantages of the psychological-continuity theory is supposed to be that it is neutral in respect of the ontology of persons; it is generally supposed to be a feature of the theory—and one of its attractive features—that it is consistent with dualism and materialism and any other theory of the metaphysical nature of the persons to which it applies. It might nevertheless be possible to give some abstract account of psychological continuity that, in conjunction with the thesis that each psychological state is a state of a material

body, had the consequence that psychological continuity was possible only within a single body. I concede the possibility, but instead of exploring it, I want to proceed by generalizing the lesson of our examination of bodily-transfer cases.

If materialism and the psychological-continuity theory are both correct (and if there really are persons that strictly and literally persist through time), then it follows that there are cases of the following sort:  $x$  is a material object that exists at one time and  $y$  is a material object that exists at another time and whether  $x$  and  $y$  are identical is entirely a function of whether certain psychological states that are "tokened" in or realized in  $x$  are continuously connected with certain psychological states that are tokened in  $y$ . This seems to me to be a very strange thesis. It could be compared with the thesis that whether a computer that exists at one time and a computer that exists at another time are identical is entirely a function of whether the information processing that is going on in the former computer at the one time is causally continuous with the information processing that is going on inside the latter computer at the other time. There may be all sorts of difficulties about the persistence of computers through time—cases of the Ship-of-Theseus sort are easy to imagine—but I doubt whether any continuity-of-information-processing criterion of the identity of computers across time could be even superficially plausible. A computer is a material object, and it certainly looks as if we know enough about how to follow the careers of material objects through time to see that there are perfectly clear cases of the causal continuity of information processing between distinct computers and perfectly clear cases of the causal discontinuity of information processing within a single computer. If human persons are material objects, the situation would seem to be perfectly analogous. Let us look at a few cases in which we make different assumptions about what kind of material objects human persons are.

Suppose that human persons are living human organisms. Can the answer to the question whether a living human organism that exists at one time and a living human organism that exists at another time are identical really be entirely a function of the continuity of the psychological states that are tokened within the former organism at the one time with the psychological states that are tokened within the latter organism at the other time? Surely we know enough about how to follow the careers of living organisms through time to see that questions about the continuity of such psychological states as may be tokened within a living organism are not relevant to questions about the continued existence of that organism? Even if the correct analysis of psychological continuity should have the consequence that a psychological state tokened in a given organism could be continuous only with psychological states tokened in that same organism, we do not need to know this or to examine the psychological states tokened in that organism to find out whether it continues to exist. I should think, in fact, that if the correct analysis of psychological continuity did have the consequence that a psychological state tokened in a given organism could be continuous only with psychological states tokened in that same organism, what we should conclude is that in

order to find out whether a certain sequence of psychological states displayed “continuity,” we should first have to find out whether they were all states of the same organism. And that would require us to have a way of following the career of an organism through time that did not depend on our first determining whether the psychological states that were tokened in that organism satisfied some definition of continuity.

Suppose that human persons are human brains. Can the answer to the question whether a human brain that exists at one time and a human brain that exists at another time are identical really be entirely a function of the continuity of the psychological states that are tokened within the former brain at the one time with the psychological states that are tokened within the latter brain at the other time? Surely we know enough about how to follow the careers of brains through time to see that questions about the continuity of the psychological states that are tokened within a brain are not relevant to questions about the continued existence of that brain? Even if the correct analysis of psychological continuity should have the consequence that a psychological state tokened in a given brain could be continuous only with psychological states tokened in that same brain, we do not need to know this or to examine the psychological states tokened in that brain to find out whether it continues to exist. I should think, in fact, that if the correct analysis of psychological continuity did have the consequence that a psychological state tokened in a given brain could be continuous only with psychological states tokened in that same brain, what we should conclude is that in order to find out whether a certain sequence of psychological states displayed “continuity,” we should first have to find out whether they were all states of the same brain. And that would require us to have a way of following the career of a brain through time that did not depend on our first determining whether the psychological states that were tokened in that brain satisfied some definition of continuity.

Ask the corresponding question about the relevance of psychological continuity to identity across time for any sort of material object that is a plausible candidate for the sort of material object a human person is, and the answer seems in every case to be No. A material object is a material object, a thing that is at any given moment the mereological sum of certain quarks and electrons. The principles that govern identity across time for material objects, or for material objects in various categories, may be problematic, but whether a given material object will survive a given adventure does not seem to depend on any facts about the psychological states that may be tokened in it.

Suppose that a human brain is, after all, like a computer disk in that it has a well defined blank state. Suppose that you are unfortunate enough to encounter some phenomenon that drives your brain into its blank state, an encounter that would presumably leave you alive but a drooling idiot. (Or, if I am begging the question by saying “you,” I can at least say, “...would cause the matter that had composed you a moment ago now to compose a drooling idiot.”) What material object ceases to exist when your brain is driven into its blank state? Not the whole

organism; not the brain or either of the cerebral hemispheres or the cerebral cortex; not any cell; not any atom; not any electron. It seems to be impossible to find any material object that would cease to exist if your brain was driven into its blank state—just as it is impossible to find a material object that ceases to exist when the information on a computer disk is erased. But if no material object ceases to exist and if you are a material object, then you do not cease to exist, despite the fact that your brain's being driven into its blank state is a case of psychological discontinuity if anything is.

It is possible to argue that in this case you would cease to be a *person*. Well, perhaps that is so. I suppose it would depend on how one defined 'person', a word notoriously productive of mutually incompatible definitions. Suppose it is so: suppose that in the case imagined you would exist without being a person. Still, *you* would exist. Still, you would *exist*. If there are possible cases in which you would exist without being a person, their possibility shows only that not all problems about whether and in what manner and under what conditions you would exist should be described as problems about *personal* identity.

I conclude that a materialist who believes that you and I and such other referents of the personal pronouns as there may be really exist should not accept a psychological-continuity account of what it is for things in this category to persist through time. In my view, the reason that there are materialists who accept a psychological-continuity account of our identity across time is that these materialists have supposed that they could philosophize about personal identity from a materialist perspective without troubling themselves with general, metaphysical questions concerning what kind of thesis materialism is and what its ramifications are. They have rather vaguely supposed that all they have to do to be materialists is to say that all psychological states (or at least all state-tokens) are states of material objects. But a materialist has to do more than that, for materialism is a metaphysic. A materialist, like any other metaphysician, has to be concerned not only with states, whatever exactly states may be, but with objects in all ontological categories. One of the tasks that confronts the materialists is this: they have to find a home for the referents of the terms of ordinary speech within a world that is entirely material—or else deny the existence of those referents altogether. A materialist, for example, must either be prepared to say just what material object a cow is, or else deny that there are cows. And the same goes for the referents of the personal pronouns. In my view, such initial plausibility as the combination of materialism and the psychological-continuity account of our identity across time may have cannot survive a careful attempt to answer the question, Just what material objects are we?<sup>8</sup>

## Notes

1. Sydney Shoemaker and Richard Swinburne, *Personal Identity* (Oxford: Basil Blackwell, 1984), pp. 108–110.

2. See section 11, "Personal Identity and Animal Identity," of Shoemaker's contribution to *Personal Identity*, pp. 112–114.
3. See Section 3 of my essay "And Yet They Are Not Three Gods But One God" in Thomas V. Morris, ed., *Philosophy And the Christian Faith* (South Bend: The University of Notre Dame Press, 1988).
4. See my essay "Four-Dimensional Objects," *Noûs* XXIV 1990, pp. 245- 255.
5. See, for example, his "Survival and Identity," *Philosophical Papers, Volume I* (New York: Oxford University Press, 1983).
6. In "Four-Dimensional Objects."
7. I will remark that it is not at all clear to me that, with the important exception of David Lewis, any of the materialists who adhere to a psychological continuity theory of personal identity is aware that there is a price to be paid. (Of course Lewis would not concede that his four-dimensionalism was appropriately described as a *price*.) It is at least uncommon for such philosophers to concede that the combination of views they hold requires allegiance to some logical or metaphysical thesis (some thesis about the nature of identity or about the nature of time) that has important ramifications outside the problem of *personal* identity across time.
8. I am grateful to José Benardete and Sydney Shoemaker for comments on a draft of this paper. Versions of the paper have been read at a meeting of the Austrian Philosophical Society, and at departmental colloquia at the University of West Virginia, Arizona State University, the University of Arizona, the University of Florida, the University of Alabama (Tuscaloosa), and the University of Miami. I wish to thank the numerous people at these meetings whose comments and criticisms led me to think again about what I had said. Special thanks are due to Ned Markosian, David Cowles, and Dean Zimmerman. In all philosophical matters relating to personal identity and the ontology of the material world, I owe a great deal to Eric Olson.