

It is customary to distinguish real essences of things from their nominal essences under descriptions. Now, however, we have a third, intermediate, kind of essence. My real essence consists of the properties common to all my counterparts. (Here I use the original single counterpart relation.) My nominal essence under the description 'person' consists of the properties common to all possible persons. My intermediate essence under the description 'person' consists of the properties common to all my personal counterparts. I have no reason to think that any two of these sets of properties are the same. It may even be that none of the three is properly included in any other, if my personal counterparts include some entities (robots, say) which are almost persons but not quite. Counterpart relations are vague, being dependent on the relative weights assigned to respects of similarity or dissimilarity. Hence real essences are vague in a way nominal essences are not. Intermediate essences under descriptions share this vagueness, for the new multiple counterpart relations are no less vague than the original counterpart relation.

In my original counterpart theory, any *de re* modal predication is referentially transparent. Something has the same counterparts however we may choose to refer to it. Given a *de re* modal predication, we find the thing denoted by the subject term in the actual world; then we consider what befalls that thing—or rather, its counterparts—in other worlds. Only the denotation of the subject term matters. We can substitute another subject term with the same denotation but different sense, and the truth value of the modal predication will not change.

But in the present revision of counterpart theory, *de re* modal predications are not in general transparent. Not only the denotation of the subject term matters, but also the counterpart relation it selects. If we substitute another subject term with the same denotation but different sense, it may change the truth value of the modal predication by selecting a different counterpart relation. Then even though the denoted thing here in our world remains the same, we have a different way of following the fortunes of that thing in other worlds.

Nevertheless, these modal predications are still *de re*, not *de dicto*. We still find the denoted thing in our actual world and then find counterparts of that thing elsewhere. We do not at all consider the things denoted by the subject term in other worlds, as we would in the case of a *de dicto* modal predication.

Transparency of modal predications can fail whenever the sense of the subject term is used to do anything beyond determining the actual denotation of the subject term. One further thing it might do is determine the denotation of the subject term in other worlds; that is the *de dicto* case. Another, and altogether different, further thing it might do is select a counterpart relation. (These two are not the only alternatives.) It is the latter, I suggest, that happens in the argument we are considering. Therefore we can accept (1') as a consequence of the possibility that I might have switched bodies, reject (2') as self-contradictory, and yet accept (T) and its consequence that if I occupy the same body whenever I or it exist then I am my body.

in: David LEWIS, "Philosophical Papers", New York:
OUP, 1983.

· FIVE ·

Survival and Identity

What is it that matters in survival? Suppose I wonder whether I will survive the coming battle, brainwashing, brain transplant, journey by matter-transmitter, purported reincarnation or resurrection, fission into twins, fusion with someone else, or what not. What do I really care about? If it can happen that some features of ordinary, everyday survival are present but others are missing, then what would it take to make the difference between something practically as good as commonplace survival and something practically as bad as commonplace death?

I answer, along with many others: *what matters in survival is mental continuity and connectedness*. When I consider various cases in between commonplace survival and commonplace death, I find that what I mostly want in wanting survival is that my mental life should flow on. My present experiences, thoughts, beliefs, desires, and traits of character should have appropriate future successors. My total present mental state should be but one momentary stage in a continuing succession of mental states. These successive states should be interconnected in two ways. First, by bonds of similarity. Change should be gradual rather than sudden, and (at least in some respects) there should not be too much change overall. Second, by bonds of lawful causal dependence. Such change as there is should conform, for the most part, to lawful regularities concerning the succession of mental states—regularities, moreover, that are exemplified in everyday cases of survival. And this should be so not by accident (and also not, for instance, because some demon has set out to create a succession of mental states patterned to counterfeit our ordinary mental

life) but rather because each succeeding mental state causally depends for its character on the states immediately before it.

I refrain from settling certain questions of detail. Perhaps my emphasis should be on *connectedness*: direct relations of similarity and causal dependence between my present mental state and each of its successors; or perhaps I should rather emphasize *continuity*: the existence of step-by-step paths from here to there, with extremely strong local connectedness from each step to the next. Perhaps a special place should be given to the special kind of continuity and connectedness that constitute memory;¹ or perhaps not. Perhaps the "mental" should be construed narrowly, perhaps broadly. Perhaps nonmental continuity and connectedness—in my appearance and voice, for instance—also should have at least some weight. It does not matter, for the present, just which version I would prefer of the thesis that what matters is mental continuity and connectedness. I am sure that I would endorse some version, and in this paper I want to deal with a seeming problem for any version.

The problem begins with a well-deserved complaint that all this about mental connectedness and continuity is too clever by half. I have forgotten to say what should have been said first of all. What matters in survival is survival. If I wonder whether I will survive, what I mostly care about is quite simple. When it's all over, will I myself—the very same person now thinking these thoughts and writing these words—still exist? Will any one of those who do exist afterward be me? In other words, *what matters in survival is identity*—identity between the I who exists now and the surviving I who will, I hope, still exist then.

One question, two answers! An interesting answer, plausible to me on reflection but far from obvious: that what matters is mental connectedness and continuity between my present mental state and other mental states that will succeed it in the future. And a compelling commonsense answer, an unhelpful platitude that cannot credibly be denied: what matters is identity between myself, existing now, and myself, still existing in the future.

If the two answers disagreed and we had to choose one, I suppose we would have to prefer the platitude of common sense to the interesting philosophical thesis. Else it would be difficult to believe one's own philosophy! The only hope for the first answer, then, is to show that we need not choose: the answers are compatible, and both are right. That is the claim I wish to defend. I say that it cannot happen that what matters in survival according to one answer is present while what matters in survival according to the other answer is lacking.

¹Better, *quasi-memory*: that process which is memory when it occurs within one single person, but might not be properly so-called if it occurred in a succession of mental states that did not all belong to a single person.

I. PARFIT'S ARGUMENT

Derek Parfit has argued that the two answers cannot both be right, and we must therefore choose.² (He chooses the first). His argument is as follows:

(a) Identity is a relation with a certain formal character. It is one-one and it does not admit of degree.

(b) A relation of mental continuity and connectedness need not have that formal character. We can imagine problem cases in which any such relation is one-many or many-one, or in which it is present to a degree so slight that survival is questionable.

Therefore, since Parfit believes as I do that what matters in survival is some sort of mental continuity or connectedness,

(c) What matters in survival is not identity. At most, what matters is a relation that coincides with identity to the extent that the problem cases do not actually arise.

Parfit thinks that if the problem cases did arise, or if we wished to solve them hypothetically, questions of personal identity would have no compelling answers. They would have to be answered arbitrarily, and in view of the discrepancy stated in (a) and (b), there is no answer that could make personal identity coincide perfectly with the relation of mental continuity and connectedness that matters in survival.

Someone else could just as well run the argument in reverse. Of course what matters in survival is personal identity. Therefore what matters cannot be mental continuity or connectedness, in view of the discrepancy stated in premises (a) and (b). It must be some better-behaved relation.

My task is to disarm both directions of the argument and show that the opposition between what matters and identity is false. We can agree with Parfit (and I think we should) that what matters in questions of personal identity is mental continuity or connectedness, and that this might be one-many or many-one, and admits of degree. At the same time we can consistently agree with common sense (and I think we should) that what matters in questions of personal identity—even in the problem cases—is identity.

I do not attack premises (a) and (b). We could, of course, say "identity" and just mean mental continuity and connectedness. Then we would deny that "identity" must have the formal character stated in (a). But this verbal maneuver would not meet the needs of those who think, as I do, that what matters in survival is literally *identity*: that relation that everything bears to itself and to no other thing. As for (b), the problem cases clearly are possible under Parfit's conception of the sort of mental continuity or connectedness that matters in survival: or under any

²Derek Parfit, "Personal Identity," *Philosophical Review* 80 (1971): 3–27.

conception I might wish to adopt. The questions about continuity and connectedness which I left open are not relevant, since no way of settling them will produce a relation with the formal character of identity. So we do indeed have a discrepancy of formal character between identity and any suitable relation of mental continuity and connectedness.

But what does that show? Only that the two relations are different. And we should have known that from the start, since they have different relata. He who says that what matters in survival is a relation of mental continuity and connectedness is speaking of a relation among more or less momentary person-stages, or time-slices of continuant persons, or persons-at-times. He who says that what matters in survival is identity, on the other hand, must be speaking of identity among temporally extended continuant persons with stages at various times. What matters is that one and the same continuant person should have stages both now and later. Identity among stages has nothing to do with it, since stages are momentary. Even if you survive, your present stage is not identical to any future stage.³ You know that your present stage will not survive the battle—that is not disconcerting—but will *you* survive?

II. THE R-RELATION AND THE I-RELATION

Pretend that the open questions have been settled, so that we have some definite relation of mental continuity and connectedness among person-stages in mind as the relation that matters in survival. Call it the *R-relation*, for short. If you wonder whether you will survive the coming battle or what-not, you are wondering whether any of the stages that will exist afterward is R-related to you-now, the stage that is doing the wondering. Similarly for other "questions of personal identity." If you wonder whether this is your long-lost son, you mostly wonder whether the stage before you now is R-related to certain past stages. If you also wonder whether he is a reincarnation of Nero, you wonder whether this stage is R-related to other stages farther in the past. If you wonder whether it is in your self-interest to save for your old age, you wonder whether the stages of that tiresome old gaffer you will become are R-related to you-now to a significantly greater degree than are all the other person-stages at this time or other times. If you wonder as you step into the duplicator whether you will leave by the left door, the right door, both, or neither, you are again wondering which future stages, if any, are R-related to you-now.

Or so say I. Common sense says something that sounds different: in wondering whether you will survive the battle, you wonder whether you—a continuant person

³Unless time is circular, so that it is in its own future in the same way that places are to the west of themselves. But that possibility also has nothing to do with survival.

consisting of your present stage along with many other stages—will continue beyond the battle. Will you be identical with anyone alive then? Likewise for other questions of personal identity.

Put this way, the two answers seem incomparable. It is pointless to compare the formal character of identity itself with the formal character of the relation R that matters in survival. Of course the R-relation among stages is not the same as identity either among stages or among continuants. But identity among continuant persons induces a relation among stages: the relation that holds between the several stages of a single continuant person. Call this the *I-relation*. It is the I-relation, not identity itself, that we must compare with the R-relation. In wondering whether you will survive the battle, we said, you wonder whether the continuant person that includes your present stage is identical with any of the continuant persons that continue beyond the battle. In other words: whether it is identical with any of the continuant persons that include stages after the battle. In other words: you wonder whether any of the stages that will exist afterward is I-related to—belongs to the same person as—your present stage. If questions of survival, or personal identity generally, are questions of identity among continuant persons, then they are also questions of I-relatedness among person-stages; and conversely. More precisely: *if common sense is right that what matters in survival is identity among continuant persons, then you have what matters in survival if and only if your present stage is I-related to future stages*. I shall not distinguish henceforth between the thesis that what matters in survival is identity and the thesis that what matters in survival is the I-relation. Either way, it is a compelling platitude of common sense.

If ever a stage is R-related to some future stage but I-related to none, or if ever a stage is I-related to some future stage but R-related to none, then the platitude that what matters is the I-relation will disagree with the interesting thesis that what matters is the R-relation. But no such thing can happen, I claim; so there can be no such disagreement. In fact, I claim that *any stage is I-related and R-related to exactly the same stages*. And I claim this not only for the cases that arise in real life, but for all possible problem cases as well. Let us individuate relations, as is usual, by necessary coextensiveness. Then I claim that *the I-relation is the R-relation*.

A continuant person is an aggregate⁴ of person-stages, each one I-related to all the rest (and to itself). For short: a person is an *I-interrelated aggregate*. Moreover, a person is not part of any larger I-interrelated aggregate; for if we left out any stages that were I-related to one another and to all the stages we included, then what we would have would not be a whole continuant person but only part of one. For short: a person is a maximal I-interrelated aggregate. And conversely, any maximal I-interrelated aggregate of person-stages is a continuant person. At least, I

⁴It does not matter what sort of "aggregate." I prefer a mereological sum, so that the stages are literally parts of the continuant. But a class of stages would do as well, or a sequence or ordering of stages, or a suitable function from moments or stretches of time to stages.

cannot think of any that clearly is not.⁵ So far we have only a small circle, from personhood to I-interrelatedness and back again. That is unhelpful; but if the I-relation is the R-relation, we have something more interesting: a noncircular definition of personhood. I claim that *something is a continuant person if and only if it is a maximal R-interrelated aggregate of person-stages*. That is: if and only if it is an aggregate of person-stages, each of which is R-related to all the rest (and to itself), and it is a proper part of no other such aggregate.

I cannot tolerate any discrepancy in formal character between the I-relation and the R-relation, for I have claimed that these relations are one and the same. Now although the admitted discrepancy between identity and the R-relation is harmless in itself, and although the I-relation is not identity, still it may seem that the I-relation inherits enough of the formal character of identity to lead to trouble. For suppose that S_1, S_2, \dots are person-stages; and suppose that C_1 is the continuant person of whom S_1 is a stage, C_2 is the continuant person of whom S_2 is a stage, and so on. Then any two of these stages S_i and S_j are I-related if and only if the corresponding continuant persons C_i and C_j are identical. The I-relations among the stages mirror the structure of the identity relations among the continuants.

I reply that the foregoing argument wrongly takes it for granted that every person-stage is a stage of one and only one continuant person. That is so ordinarily; and when that is so, the I-relation does inherit much of the formal character of identity. But ordinarily the R-relation also is well behaved. In the problem cases, however, it may happen that a single stage S is a stage of two or more different continuant persons. Worse, some or all of these may be persons to a diminished degree, so that it is questionable which of them should count as persons at all. If so, there would not be any such thing (in any straightforward way) as *the* person of whom S is a stage. So the supposition of the argument would not apply. It has not been shown that the I-relation inherits the formal character of identity in the problem cases. Rather it might be just as ill behaved as the R-relation. We shall examine the problem cases and see how that can happen.⁶

It would be wrong to read my definition of the I-relation as saying that person-stages S_1 and S_2 are I-related if and only if the continuant person of whom S_1 is a stage and the continuant person of whom S_2 is a stage are identical. The definite articles require the presupposition that I have just questioned. We should substitute the indefinite article: S_1 and S_2 are I-related if and only if a continuant person of whom S_1 is a stage and a continuant person of whom S_2 is a stage are identical.

⁵The least clear-cut cases are those in which the stages cannot be given any "personal time" ordering with respect to which they vary in the way that the stages of an ordinary person vary with respect to time. But it is so indeterminate what we want to say about such bizarre cases that they cannot serve as counter-examples to any of my claims.

⁶The argument also takes it for granted that every person-stage is a stage of at least one person. I do not object to that. If there is no way to unite a stage in a continuant with other stages, let it be a very short-lived continuant person all by itself.

More simply: if and only if there is some one continuant person of whom both S_1 and S_2 are stages.

One seeming discrepancy between the I-relation and the R-relation need not disturb us. The I-relation must be symmetrical, whereas the R-relation has a direction. If a stage S_2 is mentally connected to a previous stage S_1 , S_1 is available in memory to S_2 and S_2 is under the intentional control of S_1 to some extent—not the other way around.⁷ We can say that S_1 is R-related *forward* to S_2 , whereas S_2 is R-related *backward* to S_1 . The forward and backward R-relations are converses of one another. Both are (normally) antisymmetrical. But although we can distinguish the forward and backward R-relations, we can also merge them into a symmetrical relation. That is the R-relation I have in mind: S_1 and S_2 are R-related simpliciter if and only if S_1 is R-related either forward or backward to S_2 .

While we are at it, let us also stipulate that every stage is R-related—forward, backward, and simpliciter—to itself. The R-relation, like the I-relation, is reflexive.

Parfit mentions two ways for a discrepancy to arise in the problem cases. First, the R-relation might be one-many or many-one. Second, the R-relation admits in principle of degree, and might be present to a degree that is markedly subnormal and yet not negligible. Both possibilities arise in connection with fission and fusion of continuant persons, and also in connection with immortality or longevity.

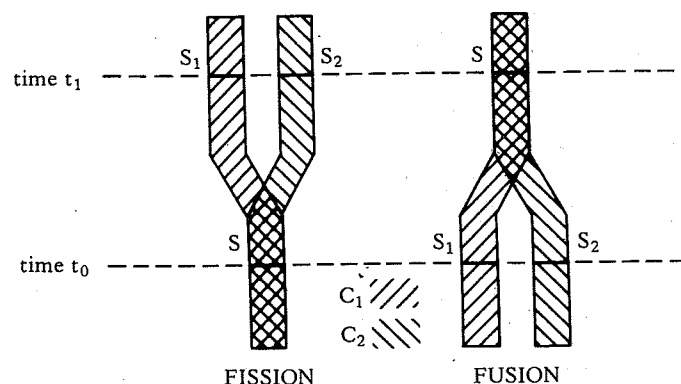
III. FISSION AND FUSION

Identity is one-one, in the sense that nothing is ever identical to two different things. Obviously neither the I-relation nor the R-relation is one-one in that sense. You-now are a stage of the same continuant as many other stages, and are R-related to them all. Many other stages are stages of the same continuant as you-now, and are R-related to you-now. But when Parfit says that the R-relation might be one-many or many-one, he does not just mean that. Rather, he means that one stage might be R-related to many stages that are not R-related to one another, and that many stages that are not R-related to one another might all be R-related to one single stage. (These possibilities do not differ once we specify that the R-relation is to be taken as symmetrical.) In short, the R-relation might fail to be transitive.

In a case of fission, for instance, we have a prefission stage that is R-related forward to two different, simultaneous postfission stages that are not R-related either forward or backward to each other. The forward R-relation is one-many, the backward R-relation is many-one, and the R-relation simpliciter is intransitive.

In a case of fusion we have two prefusion stages, not R-related either forward or backward to each other, that are R-related forward to a single postfusion stage. The forward R-relation is many-one, the backward R-relation is one-many, and the R-relation simpliciter is again intransitive.

⁷As before, it would be better to speak here of quasi-memory; and likewise of quasi-intentional control.



Identity must be transitive, but the I-relation is not identity. The I-relation will fail to be transitive if and only if there is partial overlap among continuant persons. More precisely: if and only if two continuant persons C_1 and C_2 have at least one common stage, but each one also has stages that are not included in the other. If S is a stage of both, S_1 is a stage of C_1 but not C_2 , and S_2 is a stage of C_2 but not C_1 , then transitivity of the I-relation fails. Although S_1 is I-related to S , which in turn is I-related to S_2 , yet S_1 is not I-related to S_2 . In order to argue that the I-relation, unlike the R-relation, must be transitive, it is not enough to appeal to the uncontroversial transitivity of identity. The further premise is needed that partial overlap of continuant persons is impossible.

Figure 1 shows how to represent fission and fusion as cases of partial overlap. The continuant persons involved, C_1 and C_2 , are the two maximal R-interrelated aggregates of stages marked by the two sorts of cross-hatching. In the case of fission, the prefission stages are shared by both continuants. In the case of fusion, the post-fusion stages are likewise shared. In each case, we have a shared stage S that is I-related to two stages S_1 and S_2 that are not I-related to each other. Also S is R-related to S_1 and S_2 (forward in the case of fission, backward in the case of fusion) but S_1 and S_2 are not R-related to each other. More generally, the I-relation and the R-relation coincide for all stages involved in the affair.

There is, however, a strong reason for denying that continuant persons can overlap in this way. From this denial it would indeed follow (as it does not follow from the transitivity of identity alone) that the I-relation cannot share the possible intransitivities of the R-relation.

The trouble with overlap is that it leads to overpopulation. To count the population at a given time, we can count the continuant persons who have stages at that time; or we can count the stages. If there is overlap, there will be more continuants than stages. (I disregard the possibility that one of the continuants is a time traveler with distinct simultaneous stages.) The count of stages is the count

we accept; yet we think we are counting persons, and we think of persons as continuants rather than stages. How, then, can we tolerate overlap?

For instance, we say that in a case of fission *one* person becomes *two*. By describing fission as initial stage-sharing we provide for the two, but not for the one. There are two all along. It is all very well to say from an eternal or postfission standpoint that two persons (with a common initial segment) are involved, but we also demand to say that on the day before the fission only *one* person entered the duplication center; that his mother did not bear twins; that until he fissions he should only have one vote; and so on. Counting at a time, we insist on counting a person who will fission as one. We insist on a method of counting persons that agrees with the result of counting stages, though we do not think that counting persons just *is* counting (simultaneous) stages.

It is not so clear that we insist on counting a product of fusion as one (or a time traveler meeting himself as two). We are not sure what to say. But suppose we were fully devoted to the doctrine that the number of different persons in existence at a time is the number of different person-stages at that time. Even so, we would not be forced to deny that continuant persons could overlap. We would therefore not be driven to conclude that the I-relation cannot share the possible intransitivities of the R-relation.

The way out is to deny that we must invariably count two nonidentical continuants as two. We might count not by identity but by a weaker relation. Let us say that continuants C_1 and C_2 are *identical-at-time-t* if and only if they both exist at t and their stages at t are identical. (More precisely: C_1 and C_2 both have stages at t , and all and only stages of C_1 at t are stages of C_2 at t .) I shall speak of such relations of identity-at-a-time as relations of *tensed identity*. Tensed identity is not a kind of identity. It is not identity among stages, but rather a derivative relation among continuants which is induced by identity among stages. It is not identity among continuants, but rather a relation that is weaker than identity whenever different continuants have stages in common. If we count continuants by tensed identity rather than by identity, we will get the right answer—the answer that agrees with the answer we get by counting stages—even if there is overlap. How many persons entered the duplication center yesterday? We may reply: C_1 entered and C_2 entered, and no one else; although C_1 and C_2 are not identical today, and are not identical simpliciter, they were identical yesterday. So counting by identity-yesterday, there was only one. Counting by identity-today, there were two; but it is inappropriate to count by identity-today when we are talking solely about the events of yesterday. Counting by identity simpliciter there were two; but in talking about the events of yesterday it is as unnatural to count by identity as it is to count by identity-today. There is a way of counting on which there are two all along; but there is another way on which there are first one and then two. The latter has obvious practical advantages. It should be no surprise if it is the way we prefer.

It may seem far-fetched to claim that we ever count persons otherwise than by identity simpliciter. But we sometimes *do* count otherwise. If an infirm man wishes

to know how many roads he must cross to reach his destination, I will count by identity-along-his-path rather than by identity. By crossing the Chester A. Arthur Parkway and Route 137 at the brief stretch where they have merged, he can cross both by crossing only one road. Yet these two roads are certainly not identical.

You may feel certain that you count persons by identity, not by tensed identity. But how can you be sure? Normal cases provide no evidence. When no stages are shared, both ways of counting agree. They differ only in the problem cases: fission, fusion, and another that we shall soon consider. The problem cases provide no very solid evidence either. They are problem cases just because we cannot consistently say quite all the things we feel inclined to. We must strike the best compromise among our conflicting initial opinions. Something must give way; and why not the opinion that of course we count by identity, if that is what can be sacrificed with least total damage?

A relation to count by does not have to be identity, as the example of the roads shows. But perhaps it should share the key properties of identity. It should at least be an *equivalence* relation: reflexive, symmetrical, and transitive. Relations of tensed identity are equivalence relations. Further, it should be an *indiscernibility* relation; not for all properties whatever, as identity is, but at least for some significant class of properties. That is, it ought to be that two related things have exactly the same properties in that class. Identity-at-time-*t* is an indiscernibility relation for a significant class of properties of continuant persons: those properties of a person which are logically determined by the properties of his stage at *t*. The class includes the properties of walking, being tall, being in a certain room, being thirsty, and believing in God at time *t*; but not the properties of being forty-three years old, gaining weight, being an ex-Communist, or remembering one's childhood at *t*. The class is sizable enough, at any rate, to make clear that a relation of tensed identity is more of an indiscernibility relation than is identity-along-a-path among roads.

If we are prepared to count a product of fusion as two, while still demanding to count a person who will fission as one, we can count at *t* by the relation of identity-at-all-times-up-to-*t*. This is the relation that holds between continuants C_1 and C_2 if and only if (1) they both exist at some time no later than *t*, (2) at any time no later than *t*, either both exist or neither does, and (3) at any time no later than *t* when both exist, they have exactly the same stages. Again, this is a relation among continuants that is weaker than identity to the extent that continuants share stages. Although derived from identity (among stages) it is of course not itself identity. It is even more of an indiscernibility relation than identity-at-*t*, since it confers indiscernibility with respect to such properties as being forty-three years old, gaining weight (in one sense), being an ex-Communist, and remembering one's childhood at *t*; though still not with respect to such properties as being, at *t*, the next winner of the State Lottery.

It may be disconcerting that we can have a single name for one person (counting by tensed identity) who is really two nonidentical persons because he will later fission. Isn't the name ambiguous? Yes; but so long as its two bearers are indiscer-

nible in the respects we want to talk about, the ambiguity is harmless. If C_1 and C_2 are identical-at-all-times-up-to-now and share the name "Ned" it is idle to disambiguate such remarks as "Ned is tall," "Ned is waiting to be duplicated," "Ned is frightened," "Ned only decided yesterday to do it," and the like. These will be true on both disambiguations of "Ned," or false on both. Before the fission, only predictions need disambiguating. After the fission, on the other hand, the ambiguity of "Ned" will be much more bother. It can be expected that the ambiguous name "Ned" will then fall into disuse, except when we wish to speak of the shared life of C_1 and C_2 before the fission.

But what if we don't know whether Ned will fission? In that case, we don't know whether the one person Ned (counting by identity-now) is one person, or two, or many (counting by identity). Then we don't know whether "Ned" is ambiguous or not. But if the ambiguity is not a practical nuisance, we don't need to know. We can wait and see whether or not we have been living with a harmless ambiguity.

This completes my discussion of fission and fusion. To summarize: if the R-relation is the I-relation, and in particular if continuant persons are maximal R-interrelated aggregates of person-stages, then cases of fission and fusion must be treated as cases of stage-sharing between different, partially overlapping continuant persons. If so, the R-relation and the I-relation are alike intransitive, so there is no discrepancy on that score. If it is granted that we may count continuant persons by tensed identity, then this treatment does not conflict with our opinion that in fission one person becomes two; nor with our opinion (if it really is our opinion) that in fusion two persons become one.

IV. LONGEVITY

I turn now to a different problem case. Parfit has noted that mental connectedness will fade away eventually. If the R-relation is a matter of direct connectedness as well as continuity, then intransitivities of the R-relation will appear in the case of a person (if it is a person!) who lives too long.

Consider Methuselah. At the age of 100 he still remembers his childhood. But new memories crowd out the old. At the age of 150 he has hardly any memories that go back before his twentieth year. At the age of 200 he has hardly any memories that go back before his seventieth year; and so on. When he dies at the age of 969, he has hardly any memories that go beyond his 839th year. As he grows older he grows wiser; his callow opinions and character at age 90 have vanished almost without a trace by age 220, but his opinions and character at age 220 also have vanished almost without a trace by age 350. He soon learns that it is futile to set goals for himself too far ahead. At age 120, he is still somewhat interested in fulfilling the ambitions he held at age 40; but at age 170 he cares nothing for

those ambitions, and it is beginning to take an effort of will to summon up an interest in fulfilling his aspirations at age 80. And so it goes.

We sometimes say: in later life I will be a different person. For us short-lived creatures, such remarks are an extravagance. A philosophical study of personal identity can ignore them. For Methuselah, however, the fading-out of personal identity looms large as a fact of life. It is incumbent on us to make it literally true that he will be a different person after one and one-half centuries or so.

I should imagine that this is so just in virtue of normal aging over 969 years. If you disagree, imagine that Methuselah lives much longer than a bare millennium (Parfit imagines the case of immortals who change mentally at the same rate as we do). Or imagine that his life is punctuated by frequent amnesias, brain-washings, psychoanalyses, conversions, and what not, each one of which is almost (but not quite) enough to turn him into a different person.

Suppose, for simplicity, that any two stages of Methuselah that are separated by no more than 137 years are R-related; and any two of his stages that are separated by more than 137 years are not R-related. (For the time being, we may pretend that R-relatedness is all-or-nothing, with a sharp cutoff.)

If the R-relation and the I-relation are the same, this means that two of Methuselah's stages belong to a single continuant person if and only if they are no more than 137 years apart. (Therefore the whole of Methuselah is not a single person.) That is the case, in particular, if continuant persons are maximal R-interrelated aggregates. For if so, then segments of Methuselah are R-interrelated if and only if they are no more than 137 years long; whence it follows that all and only the segments that are exactly 137 years long are maximal R-interrelated aggregates; so all and only the 137-year segments are continuant persons.

If so, we have intransitivity both of the R-relation and of the I-relation. Let S_1 be a stage of Methuselah at the age of 400; let S_2 be a stage of Methuselah at the age of 500; let S_3 be a stage of Methuselah at the age of 600. By hypothesis S_1 is R-related to S_2 and S_2 is R-related to S_3 , but S_1 and S_3 are not R-related. Being separated by 200 years, they have no direct mental connections. Since S_1 and S_2 are linked by a 137-year segment (in fact, by infinitely many) they are I-related; likewise S_2 and S_3 are I-related. But S_1 and S_3 are not linked by any 137-year segment, so they are not I-related. The R-relation and the I-relation are alike intransitive.

The problem of overpopulation is infinitely worse in the case of Methuselah than in the cases of fission or fusion considered hitherto. Methuselah spends his 300th birthday alone in his room. How many persons are in that room? There are infinitely many different 137-year segments that include all of Methuselah's stages on his 300th birthday. One begins at the end of Methuselah's 163rd birthday and ends at the end of his 300th birthday; another begins at the beginning of his 300th birthday and ends at the beginning of his 437th. Between these two are a continuum of other 137-year segments. No two of them are identical. Every one of them puts in an appearance (has a stage) in Methuselah's room on Methuselah's 300th birthday. Every one of them is a continuant person, given our supposition that Methuselah's

stages are R-related if and only if they are not more than 137 years apart, and given that continuant persons are all and only maximal R-interrelated aggregates of person-stages. It begins to seem crowded in Methuselah's room!

Tensed identity to the rescue once more. True, there are continuum many non-identical continuant persons in the room. But, counting by the appropriate relation of tensed identity, there is only one. All the continuum many nonidentical continuant persons are identical-at-the-time-in-question, since they all share the single stage at that time. Granted that we may count by tensed identity, there is no overcrowding.

V. DEGREE

We turn now to the question of degree. Identity certainly cannot be a matter of degree. But the I-relation is not defined in terms of identity alone. It derives also from personhood: the property of being a continuant person. Thus personal identity may be a matter of degree because personhood is a matter of degree, even though identity is not. Suppose two person-stages S_1 and S_2 are stages of some one continuant that is a person to a low, but not negligible, degree. Suppose further that they are not stages of anything else that is a person to any higher degree. Then they are I-related to a low degree. So if personhood admits of degree, we have no discrepancy in formal character between the I-relation and the R-relation.

Parfit suggests, for instance, that if you fuse with someone very different, yielding a fusion product mentally halfway between you and your partner, then it is questionable whether you have survived. Not that there is a definite, unknown answer. Rather, what matters in survival—the R-relation—is present in reduced degree. There is less of it than in clear cases of survival, more than in clear cases of non-survival.⁸ If we want the I-relation and the R-relation to coincide, we may take it that C_1 and C_2 (see Fig. 1 for cases of fusion) are persons to reduced degree because they are broken by abrupt mental discontinuities. If persons are maximal R-interrelated aggregates, as I claim, that is what we should expect; the R-relations across the fusion point are reduced in degree, hence the R-interrelatedness of C_1 and C_2 is reduced in degree, and hence the personhood of C_1 and C_2 is reduced in degree. C_1 and C_2 have less personhood than clear cases of persons, more personhood than continuant aggregates of stages that are clearly not persons. Then S and S_1 , or S and S_2 , are I-related to reduced degree just as they are R-related to reduced degree.

Personal identity to reduced degrees is found also in the case of Methuselah. We supposed before that stages no more than 137 years apart are R-related while states more than 137 years apart were not. But if the R-relation fades away at all—if it is a relation partly of connectedness as well as continuity—it would be more real-

⁸No similar problem arises in cases of fission. We imagine the immediate postfission stages to be pretty much alike, wherefore they can all be strongly R-related to the immediate prefission stages.

istic to suppose that it fades away gradually. We can suppose that stages within 100 years of each other are R-related to a high enough degree so that survival is not in doubt; and that stages 200 or more years apart are R-related to such a low degree that what matters in survival is clearly absent. There is no significant connectedness over long spans of time, only continuity. Then if we want the R-relation and the I-relation to coincide, we could say roughly this: 100-year segments of Methuselah are persons to a high degree, whereas 200-year segments are persons only to a low degree. Then two stages that are strongly R-related also are strongly I-related, whereas stages that are weakly R-related are also weakly I-related. Likewise for all the intermediate degrees of R-relatedness of stages, of personhood of segments of Methuselah, and hence of I-relatedness of stages.

It is a familiar idea that personhood might admit of degrees. Most of the usual examples, however, are not quite what I have in mind. They concern continuants that are said to be persons to a reduced degree because their stages are thought to be person-stages to a reduced degree. If anyone thinks that the wolf-child, the "dehumanized" proletarian, or the human vegetable is not fully a person, that is more because he regards the stages themselves as deficient than because the stages are not strongly enough R-interrelated. If anyone thinks that personhood is partly a matter of species membership, so that a creature of sorcery or a freak offspring of hippopotami could not be fully a person no matter how much he resembled the rest of us, that also would be a case in which the stages themselves are thought to be deficient. In this case the stages are thought to be deficient not in their intrinsic character but in their causal ancestry; there is, however, nothing wrong with their R-interrelatedness. A severe case of split personality, on the other hand, does consist of perfectly good person-stages that are not very well R-related. If he is said not to be fully a person, that *is* an example of the kind of reduced personhood that permits us to claim that the R-relation and the I-relation alike admit of degrees.

Let us ignore the complications introduced by deficient person-stages. Let us assume that all the stages under consideration are person-stages to more or less the highest possible degree. (More generally, we could perhaps say that the degree of I-relatedness of two stages depends not on the absolute degree of personhood of the continuant, if any, that links them; but rather on the relative degree of personhood of that continuant compared to the greatest degree of personhood that the degree of person-stage-hood of the stages could permit. If two wolf-child-stages are person-stages only to degree 0.8, but they are stages of a continuant that is a person to degree 0.8, we can say that the stages are thereby I-related to degree 1.)

If we say that a continuant person is an aggregate of R-interrelated person-stages, it is clear that personhood admits of degree to the extent that the R-relation does. We can say something like this: the degree of R-interrelatedness of an aggregate is the minimum degree of R-relatedness between any two stages in the aggregate. (Better: the greatest lower bound on the degrees of R-relatedness between any two stages.) But when we recall that a person should be a maximal such aggregate, confusion sets in. Suppose we have an aggregate that is R-interrelated to degree

0.9, and it is not included in any larger aggregate that is R-interrelated to degree 0.9 or greater. Suppose, however, that it *is* included in a much larger aggregate that is R-interrelated to degree 0.88. We know the degree to which it qualifies as an R-interrelated aggregate, but to what degree does it qualify as a maximal one? That is, to what degree does it qualify as a person, if persons are maximal R-interrelated aggregates? I am inclined to say: it passes the R-interrelatedness test for personhood to degree 0.9, but at the same time it flunks the maximality test to degree 0.88. Therefore it is a person only to degree 0.02!

This conclusion leads to trouble. Take the case of Methuselah. Assuming that R-relatedness fades out gradually, every segment that passes the R-interrelatedness test to a significant degree also flunks the maximality test to almost the same degree. (If the fadeout is continuous, delete "almost.") So *no* segment of Methuselah passes both tests for personhood to any significant degree. No two stages, no matter how close, are stages of some *one* continuant that is a person to high degree. Rather, nearby stages are strongly I-related by being common to many continuants, each one of which is strongly R-interrelated, is almost as strongly non-maximal, and therefore is a person only to a low degree.

We might sum the degrees of personhood of all the continuants that link two stages, taking the sum to be the degree of I-relatedness of the stages.

But there is a better way. Assume that R-relatedness can come in all degrees ranging from 0 to 1 on some scale. Then every number in the interval from 0 to 1 is a possible location for an arbitrary boundary between pairs of stages that are R-related and pairs that are not. Call every such number a *delineation* of this boundary. Every delineation yields a decision as to which stages are R-related. It thereby yields a decision as to which continuants are R-interrelated; a decision as to which continuants are included in larger R-interrelated aggregates; a decision as to which continuants are persons, given that persons are maximal R-interrelated aggregates; and thence a decision as to which stages are I-related. We can say that a certain continuant is a person, or that a certain pair of stages are I-related, *relative* to a given delineation. We can also say whether something is the case relative to a set of delineations, provided that all the delineations in the set agree on whether it is the case. Then we can take the degree to which it is the case as the size (more precisely: Lebesgue measure) of that set. Suppose, for instance, that two stages count as I-related when we set the cut-off for R-relatedness anywhere from 0 to 0.9, but not when we set the cut-off more stringently between 0.9 and 1. Then those two stages are I-related relative to delineations from 0 to 0.9, but not relative to delineations from 0.9 to 1. They are I-related to degree 0.9—the size of the delineation interval on which they are I-related. Yet there may not be any continuant linking those stages that is a person to degree more than 0. It may be that any continuant that links those stages is both R-interrelated and maximal only at a single delineation. At any more stringent delineation, it is no longer R-interrelated; while at any less stringent delineation it is still R-interrelated but not maximal.

The strategy followed here combines two ideas. (1) When something is a matter of degree, we can introduce a cutoff point. However, the choice of this cutoff point is more or less arbitrary. (2) When confronted with an arbitrary choice, the thing to do is not to make the choice. Rather, we should see what is common to all or most ways (or all or most reasonable ways) of making the choice, caring little what happens on any particular way of making it. The second idea is van Fraassen's method of supervenitions.⁹

On this proposal the I-relation admits of degree; and further, we get perfect agreement between degrees of I-relatedness and degrees of R-relatedness, regardless of the degrees of personhood of continuants. For at any one delineation, two stages are R-related if and only if they belong to some one maximal R-interrelated aggregate; hence if and only if they belong to some one continuant person; hence if and only if they are I-related. Any two stages are R-related and I-related relative to exactly the same set of delineations. Now if two stages are R-related to a degree x , it follows (given our choice of scale and measure) that they are R-related at all and only the delineations in a certain set of size x . Therefore they are I-related at all and only the delineations in a certain set of size x ; which means that they are I-related to degree x . The degree of I-relatedness equals the degree of R-relatedness. In this way personal identity can be just as much a matter of degree as the mental continuity or connectedness that matters in survival.

VI. PERRY'S TREATMENT OF FISSION

It is instructive to contrast my way and John Perry's way¹⁰ of overcoming the seeming discrepancies in character between personal identity and mental continuity or connectedness. Perry and I have the same goals, but our priorities differ. Perry does not need to resort to tensed identity to recue the common opinion that in fission there is only one person beforehand. However, Perry's way does not permit identification of the R-relation and the I-relation themselves, but only of certain time-dependent subrelations thereof. Further, he must introduce an unintuitive discrimination among the persons who exist at (have stages at) any given time. Some of them (all, except in the problem cases) are classified as *determinable* at that time. These are the ones who count. There may be others, not determinable at that time, who are left out of consideration for certain purposes.

Say that Stage S_1 is *R-related at time t* —for short, *R_t-related*—to stage S_2 if and only if stages S_1 and S_2 are R-related simpliciter, and also S_2 is located at time t . The *R_t-relation*, then, is the R-relation between stages at t and stages at other times (or at t).

⁹See Bas van Fraassen, "Singular Terms, Truth-Value Gaps, and Free Logic," *Journal of Philosophy* 63 (1966): 481–95. See also the discussion of vagueness in my "General Semantics," in this volume.

¹⁰John Perry, "Can the Self Divide?," *Journal of Philosophy* 69 (1972): 463–88.

Say that stage S_1 is *I-related at time t* —for short, *I_t-related*—to stage S_2 if and only if both S_1 and S_2 are stages of some one continuant person who is determinable at time t , and S_2 is located at time t . The *I_t-relation*, then, is the I-relation between stages at t and stages at other times (or at t), if we leave out any continuant persons who are not determinable at t .

Perry proposes that something C is a continuant person determinable at t if and only if, for some person-stage S located at t , C is the aggregate comprising all and only the stages *R_t-related* to S . A continuant person, in general, is a continuant person determinable at some time. (No one is doomed to permanent indeterminability.) If something is a continuant person according to this proposal, Perry calls it a *lifetime*. If something is a continuant person according to my proposal—that is, if it is a maximal R-interrelated aggregate of person-stages—Perry calls it a *branch*. In normal cases, all and only lifetimes are branches.

In a case of fission, however, some lifetimes are not branches (see Fig. 1 for cases of fission). Branch C_1 is a lifetime determinable at t_1 , since it comprises all and only the stages *R_{t₁}-related* to S_1 . Likewise branch C_2 is a lifetime determinable at t_1 . But C —the whole thing—though not a branch, is a lifetime determinable at t_0 , since it comprises all and only the stages *R_{t₀}-related* to S . Note that C_1 and C_2 are not yet determinable at t_0 , whereas C is no longer determinable at t_1 .

On Perry's proposal, the R-relation is not the same as the I-relation in this case. Since C is a lifetime, and hence according to Perry a continuant person, S_1 and S_2 are I-related. However, they are not R-related.

What does follow from Perry's proposal is that, for any time t , the *R_t-relation* is the same as the *I_t-relation*. Perhaps that is good enough. Any particular question of survival, or of personal identity in general, arises at some definite time. If the question arises at time t , it is the *R_t-relation* and the *I_t-relation* that are relevant. We want them to give the same answer. The rest of the R-relation and the I-relation are not involved. In particular, it is harmless that S_1 and S_2 are I-related, since they are neither *I_{t₀}-related* nor *I_{t₁}-related*, nor indeed *I_t-related* for any time t whatever.

On Perry's proposal, any person-stage existing at any time must belong to exactly one continuant person who is determinable at that time. Persons can share stages, to be sure. More so on Perry's proposal than on mine, in fact: stage S in the fission case belongs to three lifetimes (C , C_1 , and C_2) but only two branches (C_1 and C_2). Stage S_1 belongs to two lifetimes (C and C_1) but only one branch (C_1). But Perry's persons share stages only when all but one of the sharers is not determinable. Therefore we can count by identity, counting only the persons determinable at the time, and we will get the right answer. One determinable person (counting by identity) exists before the fission, but two exist afterward. There are three all along, counting by identity but including the nondeterminables; but at the fission one loses determinability and the other two gain it.

I grant that counting by tensed identity is somewhat counterintuitive; but isn't excluding the nondeterminable persons just as bad? They *are* (timelessly speaking) persons; they *do* exist at (have stages at) the time; they are *not* identical to persons

we are counting. If we want to count the persons at the time, is it not gratuitous to exclude them? Perry can say: Yes, but we just do. Or: we do it for excellent practical reasons. I will say the same about counting by tensed identity without any exclusions. Both are counterintuitive; neither is unbearably so; either is better than not having any way to count that gives the correct answer; either is better than permitting the possibility of fission to create a discrepancy between personal identity and what matters in survival.

Perry considers only fission and fusion, but his proposal can apply also to the case of Methuselah. I do not know whether Perry would wish so to apply it. He might prefer to let mental continuity predominate over connectedness in the R-relation, so that the whole of Methuselah is both a branch and a lifetime, and thus an unproblematic person.

Suppose as before, however, that the R-relation fades out with an (arbitrary) cutoff at 137 years. For me, the 137-year segments (the branches) are the continuant persons; for Perry, the 274-year segments (the lifetimes) are the continuant persons. For instance, a segment that begins on Methuselah's 420th birthday and ends at the same time on his 694th comprises all and only the stages R_t -related to a certain stage S on his 557th, t being the time of that stage. The lifetimes are not branches and the branches are not lifetimes. (With a trivial exception: the initial and final 137-year segments are both branches and lifetimes. More generally: the initial and final lifetimes are shorter than the others, being cut off by birth or death.) Any stage at any time belongs to exactly one person determinable at that time, and to infinitely many nondeterminable persons. Counting by identity gives the right answer, provided the nondeterminable hordes are left out. The R_t -relation and the I_t -relation are the same for any time t , but the R-relation and the I-relation disagree for any two stages separated by more than 137 years but no more than 274.

Perry says nothing about degrees of personal identity. However, there is nothing to prevent him from taking over all I have said. If the R-relation admits of degree, then so does personhood, no matter whether continuant persons are branches or lifetimes. Then the I_t -relations also admit of degree, and there is no obstacle here to identifying them with the corresponding R_t -relations.

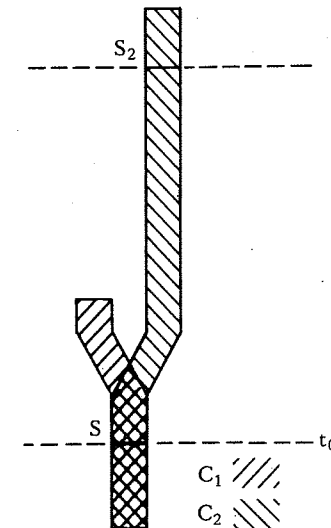
I have one serious misgiving about Perry's treatment of the problem. Perry has concentrated on making things come out as they should from the standpoint of any particular time, provided that persons not then determinable are not counted among the persons existing at that time. But what shall we do when we wish to generalize over persons existing at various times? Exclusion of the nondeterminables requires a definite point of reference, which is lacking. Overpopulation sets in again. Of course my cure for overpopulation—counting by tensed identity—also requires a definite point of reference. But let us count by identity, if we count from the standpoint of no definite time. How many persons were involved in an episode of fission long ago? I say: two. Perry says: three. Or else he says: none now determinable. Isn't two the correct answer?

Postscripts to

"Survival and Identity"

A. TWO MINDS WITH BUT A SINGLE THOUGHT

Derek Parfit rejects my attempt to square his views (which are mine as well) with common sense.¹ He objects that before I bring off the reconciliation, I must first misrepresent our commonsensical desire to survive. Consider a fission case as shown. I say there are two continuant persons all along, sharing their initial segments. One of them, C_1 , dies soon after the fission. The other, C_2 , lives on for many years. Let S be a shared stage at time t_0 , before the fission but after it is known that fission will occur. The thought to be found in S is a desire for survival, of the most commonsensical and unphilosophical kind possible. Since S is a shared stage, this desire is a shared desire. Certainly C_2 has the survival he desired, and likewise has what we think matters: mental continuity and connectedness (the R-relation) between S and much later stages such as S_2 . But how about C_1 ?



¹"Lewis, Perry and What Matters," in Amélie Rorty, *The Identities of Persons* (Berkeley: University of California Press, 1976), pp. 91-96.

I wrote that "if common sense is right that what matters in survival is identity . . . , then you have what matters in survival if and only if your present stage is I-related to future stages" where stages are I-related iff they belong to some single continuant person (page 59). If that is right, then C_1 has what he commonsensically desired. For C_1 's stage S at time t_0 is indeed I-related to stages far in the future such as S_2 . These stages are I-related via the person C_2 .—"But isn't this the *wrong* person?" says Parfit. C_1 himself survives only a short time. The one who lives longer is another person, one with whom C_1 once shared stages. If his desire is satisfied by this vicarious survival, it cannot really have been a commonsensical desire to survive.

If C_1 really had the commonsensical desire that he himself—the continuant person C_1 —survive well into the future, then I grant that his desire is not satisfied. But I don't think he could have had exactly that desire. I said that the desire found in S was to be *of the most commonsensical and unphilosophical kind possible*. And there is a limit to how commonsensical one's desires can possibly be under the peculiar circumstance of stage-sharing.

The shared stage S does the thinking for both of the continuants to which it belongs. Any thought it has must be shared. It cannot desire one thing on behalf of C_1 and another thing on behalf of C_2 . If it has an urgent, self-interested desire for survival on the part of C_1 , that very thought must also be an urgent, self-interested (and not merely benevolent) desire for survival on the part of C_2 . It is not possible that one thought should be both. So it is not possible for S to have such a desire on behalf of C_1 . So it is not possible for C_1 at t_0 to have the straightforward commonsensical desire that he himself survive.

If C_1 and C_2 share the most commonsensical kind of desire to survive that is available to them under the circumstances, it must be a plural desire: let *us* survive. Now we must distinguish two different plural desires: existential and universal, weak and strong.

(weak) Let at least one of us survive.

(strong) Let all of us survive.

Because these desires are plural instead of singular, they are not perfectly commonsensical. Because they are put in terms of survival of continuants rather than relations of stages, they are more commonsensical than the "philosophical" desire for R-relatedness of one's present stage to future stages.

If C_1 's (imperfectly) commonsensical desire for survival is predominantly the weak desire, then my reconciliation goes through. For C_1 's weak desire is satisfied even though it is his stage-sharer rather than himself who survives. The weak desire is indeed equivalent to a desire for I-relatedness to future stages. Then if I am right that the I-relation is the R-relation, it is equivalent also to the desire for R-relatedness to future stages.

If C_1 's desire is predominantly the strong desire, on the other hand, it is not satisfied. Then his desire for survival is not equivalent to the "philosophical" desire

for R-relatedness to future stages, and my reconciliation fails. (However, the strong desire is equivalent to a more complicated desire concerning R-relatedness of stages.) But should we say that C_1 has the strong desire, and that since it is not satisfied, he does not have what commonsensically matters in survival? I think not. For if we say that of C_1 , we must say it also of C_2 . If one has the strong desire, both do. The strong desire is no more satisfied for C_2 than it is for C_1 . But it seems clear that C_2 , at least, *does* have what commonsensically matters in survival.

It is instructive to consider a system of survival insurance described by Justin Leiber, in *Beyond Rejection*.² (But let us imagine it without the risks and unpleasantness that Leiber supposes.) From time to time your mind is recorded; should a fatal accident befall you, the latest recording is played back into the blank brain of a fresh body. This system satisfies the weak desire for survival, but not the strong desire. Let S at t_0 be the stage that desires survival and therefore decides to have a recording made; the fission occurs at the time of recording; C_1 dies in an accident not long after; C_2 survives. The only extra peculiarities, compared with a simple case of fission, are that C_2 is interrupted in time and undergoes a body transplant. If this system would fairly well satisfy your desire for survival—or if your misgivings about it concern the body transplant rather than the fission—then your desire is predominantly the weak desire.

So far, I have supposed that C_1 and C_2 at t_0 already anticipate their fission. Now suppose not. Now, cannot they share the perfectly commonsensical singular desire: let *me* survive? After all, the desire to be found in the stage S in this case is no different from the desire that would be there if S were what it takes itself to be: a stage of a single person with no fission in his future. I agree that C_1 and C_2 have the singular desire. But it is not a desire that can be satisfied, for it rests on the false presupposition that they are a single person. The "me" in their shared thought (unless it refers to the thinking stage) has the status of an improper description. It cannot refer to C_1 in C_1 's thought and to C_2 in C_2 's thought, for these thoughts are one and the same. But their desire to survive *is* satisfied; at least C_2 's is, and C_1 's is no different. Therefore their desire for survival cannot consist only of their unsatisfiable singular desire. They must have the weak plural desire as well, despite the fact that they don't anticipate fission. And so must we. Doubtless we seldom have it as an occurrent desire. But many of our urgent desires are not occurrent, for instance your present desire not to suffer a certain torture too fiendish for you to imagine.

(At this point the reader of "Attitudes *De Dicto* and *De Se*" (in this volume) may wonder how well I have learned my own lesson. There I taught that desire is a relation of wanting-to-have—take this as indivisible—that the subject bears to a property. Why can't C_1 and C_2 bear the very same wanting-to-have relation to the very same property of surviving, so that they think the very same thought, and yet each thereby desire his own survival? But recall that the subject that wants-to-have

²(New York: Ballantine, 1980).

properties was taken to be a stage, not a continuant. (See pages 143, 146.) Under this analysis, my point is that S's wanting-to-have the property

being such that the unique continuant of which it is a stage survives

is an unsatisfiable desire. That is so whether we think of it as a desire of S's or, more naturally, as a desire of C_1 and C_2 . S had better want survival on behalf of C_1 and C_2 by wanting to have a different property:

being such that some continuant of which it is a stage survives.

This is the satisfied desire for survival that C_1 and C_2 share.)

B. IN DEFENSE OF STAGES³

Some would protest that they do not know what I mean by "more or less momentary person-stages, or time-slices of continuant persons, or persons-at-times". Others do know what I mean, but don't believe there are any such things.

The first objection is easy to answer, especially in the case where the stages are less momentary rather than more. Let me consider that case only; though I think that instantaneous stages also are unproblematic, I do not really need them. A person-stage is a physical object, just as a person is. (If persons had a ghostly part as well, so would person-stages.) It does many of the same things that a person does: it talks and walks and thinks, it has beliefs and desires, it has a size and shape and location. It even has a temporal duration. But only a brief one, for it does not last long. (We can pass over the question how long it can last before it is a segment rather than a stage, for that question raises no objection of principle.) It begins to exist abruptly, and it abruptly ceases to exist soon after. Hence a stage cannot do everything that a person can do, for it cannot do those things that a person does over a longish interval.

That is what I mean by a person-stage. Now to argue for my claim that they exist, and that they are related to persons as part to whole. I do not suppose the doubters will accept my premises, but it will be instructive to find out which they choose to deny.

First: it is possible that a person-stage might exist. Suppose it to appear out of thin air, then vanish again. Never mind whether it is a stage of any person (though in fact I think it is). My point is that it is the right sort of thing.

Second: it is possible that two person-stages might exist in succession, one right after the other but without overlap. Further, the qualities and location of the second at its appearance might exactly match those of the first at its disappearance. Here

³On this topic I am much indebted to discussions with Saul Kripke and with Denis Robinson. Kripke's views on related matters were presented in his lectures on "Identity through Time," given at Princeton in 1978 (and elsewhere); Robinson's in "Re-Identifying Matter," *Philosophical Review* (forthcoming).

I rely on a *patchwork principle* for possibility: if it is possible that X happen intrinsically in a spatiotemporal region, and if it is likewise possible that Y happen in a region, then also it is possible that both X and Y happen in two distinct but adjacent regions. There are no necessary incompatibilities between distinct existences. Anything can follow anything.

Third: extending the previous point, it is possible that there might be a world of stages that is exactly like our own world in its point-by-point distribution of intrinsic local qualities over space and time.

Fourth: further, such a world of stages might also be exactly like our own in its causal relations between local matters of particular fact. For nothing but the distribution of local qualities constrains the pattern of causal relations. (It would be simpler to say that the causal relations supervene on the distribution of local qualities, but I am not as confident of that as I am of the weaker premise.)

Fifth: then such a world of stages would be exactly like our own simpliciter. There are no features of our world except those that supervene on the distribution of local qualities and their causal relations.

Sixth: then our own world is a world of stages. In particular, person-stages exist.

Seventh: but persons exist too, and persons (in most cases) are not person-stages. They last too long. Yet persons and person-stages, like tables and table-legs, do not occupy spatiotemporal regions twice over. That can only be because they are not distinct. They are part-identical; in other words, the person-stages are parts of the persons.

Let me try to forestall two misunderstandings. (1) When I say that persons are maximal R-interrelated aggregates of person-stages, I do *not* claim to be reducing "constructs" to "more basic entities". (Since I do not intend a reduction to the basic, I am free to say without circularity that person-stages are R-interrelated aggregates of shorter person-stages.) Similarly, I think it is an informative necessary truth that trains are maximal aggregates of cars interrelated by the ancestral of the relation of being coupled together (count the locomotive as a special kind of car). But I do not think of this as a reduction to the basic. Whatever "more basic" is supposed to mean, I don't think it means "smaller." (2) By a part, I just mean a subdivision. I do not mean a well-demarcated subdivision that figures as a unit in causal explanation. Those who give "part" a rich meaning along these lines⁴ should take me to mean less by it than they do.

⁴Such as D. H. Mellor, in his *Real Time* (Cambridge: Cambridge University Press, 1981), chapter 8.