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From Mental/Physical Identity to Substance Dualism

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1.

“Mental properties are the same as physical properties,” “mental events are the same as physical events,” “mental substances are the same as physical substances”—says many a physicalist. “Mental properties and events supervene on physical properties and events,” and “mental substances supervene on physical substances”—says many another physicalist. Whether these claims are true depends first on what is meant by ‘substances,’ ‘properties,’ and ‘events,’ by ‘mental’ and ‘physical,’ and by ‘supervene,’ and then on what are the criteria for one property, event, or substance being the same as another.

The first issues can be dealt with quickly and to some extent stipulatively. I understand by a property a monadic or relational universal,¹ and by an event the instantiation of a property in a substance or substances (or in properties or events) at times. Any definition of a substance tends to beg philosophical questions, but I’ll operate with

a definition which does not, I think, beg the questions at issue in this paper. A substance is a thing (other than an event) which can (it is logically possible) exist independently of all other things of that kind (viz., all other substances) other than its parts.² Thus tables, planets, atoms, and humans are substances. Being square, weighing ten kilos, and being-taller-than are properties (the former two being monadic properties, the latter being a relational property which relates two substances). Events include my table being square now, or John being taller than James on March 30, 2001, at 10:00 a.m.

There are different ways of making the mental/physical distinction, but I propose to make it in terms of the privilegedly accessible/public.³ I believe that my way of making the distinction highlights the traditional worries about how the mental can be connected with the physical; but some other ways of making the distinction may do so as well, and similar results to mine are likely to follow from these other ways. So a mental property is one to whose instantiation the substance in whom it is instantiated necessarily has privileged access on all occasions of its instantiation, and a physical property is one to whose instantiation the substance necessarily has no privileged access on any occasion of its instantiation. Someone has privileged access to whether a property *P* is instantiated in him in the sense that whatever ways others have of finding this out, it is logically possible that he can use, but he has a further way (of experiencing it) which it is not logically possible that others can use. A pure mental property may then be defined as one whose instantiation does not entail the instantiation of a physical property. So 'trying to raise one's arm' is a pure mental property, whereas 'intentionally raising one's arm' is not; for the instantiation of the latter entails that my arm rises.⁴ My definitions have the consequence that there are some properties which are neither mental nor physical—let us call them 'neutral properties.' They include formal properties (e.g., 'being a substance') and disjunctive properties ('being in pain or weighing ten stone'). A mental event is one to which the substance involved has privileged access; normally this will consist in the instantiation of a mental property, but sometimes it may involve the instantiation of a neutral property (as, for example, does the event of me being-in-pain-or-weighing-ten-stone). A pure mental event is one which does not en-

tail the occurrence of a physical event. A physical event is one to which the substance involved does not have privileged access. A mental substance is one to whose existence that substance necessarily has privileged access, and a physical substance is a substance to whose existence that substance necessarily has no privileged access, that is, a public substance. Since having privileged access to anything is itself a mental property, and someone who has any other mental property has that one, mental substances are just those for which some mental properties are essential. And we may define a pure mental substance as one for which only pure mental properties are essential (together with any properties entailed by the possession of pure mental properties).

I understand the supervenience of one (kind of) property on another in a sense derived from Kim's sense of 'global supervenience'.⁵ A-properties supervene on B-properties iff there are no two possible worlds in each of which every substance has the same B-properties as some substance in the other, but not every substance has the same A-properties as some substance in the other which has the same B-properties as it (and no substance has A-properties without having B-properties). This leads to a natural definition of event supervenience as follows: A-events supervene on B-events iff there are no two possible worlds identical in their B-events but differing in their A-events. The difference between property and event supervenience lies in the fact that events are individuated in part by the substances in which the properties are individuated. If there can be two different substances (in different worlds) with the same B-properties (including relational properties), there could be event supervenience without there being property supervenience. For it could be that each substance S_n which had certain B-properties B_0 had to have determinate A-properties, but different ones for different substances— S_1 had to have A_1 , while S_2 had to have A_2 . Then there would be event supervenience. But there would still be two worlds in which two substances (S_1 in one and S_2 in the other) having all the same B-properties did not have all the same A-properties.

The natural extension of Kim's account of supervenience to substances is as follows: A-substances supervene on B-substances iff there are no two possible worlds identical in their B-substances but differing in their A-substances.⁶

So (pure) mental properties supervene on physical properties iff there are no two possible worlds in which every substance has the same physical properties as some substance in the other but not the same (pure) mental properties as some substance in the other which has the same physical properties as it (and no substance has mental properties without having physical properties). (Pure) mental events supervene on physical events iff there are no two possible worlds identical in their physical events but differing in their (pure) mental events (and no substance has mental properties without having physical properties). (Pure) mental substances supervene on physical substances iff there are no two possible worlds identical in their physical substances but differing in their (pure) mental substances.

A possible world is one which is metaphysically possible. I understand by a logically possible world, one whose full description entails no contradiction;⁷ whether a world is a logically possible world is therefore something discoverable a priori. Thirty years ago Kripke and Putnam drew our attention to the fact that there were many propositions which seemed not to entail any contradiction but were necessarily true or necessarily false with a necessity as hard as that of logical necessity, and whose truth or falsity were discoverable only a posteriori. These propositions were said to be metaphysically but not logically necessary or impossible. Hence the notion of a metaphysically possible world as one which was different from a merely logically possible world; it had to be *both* logically possible *and* one whose full description (in terms of logically contingent propositions) involves no metaphysically necessarily false propositions. Thus “Hesperus is not Phosphorus” or “Water is XYZ” (where XYZ is different from H₂O) might seem to entail no contradiction, and yet they hold in no metaphysically possible world. However, I share Chalmers’s view that the distinction between the logically and metaphysically possible “is not a distinction at the level of worlds, but at most a distinction at the level of statements. . . . The relevant space of worlds is the same in both cases” (Chalmers 1996: 68). That is, any logically possible world is a metaphysically possible world, and conversely. The Kripke/Putnam type of metaphysically (but not logically) necessary propositions are all ones in which some substance (or property, event, or time) is referred to by a rigid designator of a kind which is

rather uninformative about the nature of what is referred to. A rigid designator of a substance, property, event, or time is a word which picks out that substance, property, event, or time in every possible world. Rigidifying any uniquely identifying description will yield a rigid designator, but it may tell you very little about what is designated. If 'water' is used to refer to whatever has the same chemical essence as the actual stuff in our rivers (and so used with what Chalmers calls its "secondary intension"), we can use the term to say something about that stuff without knowing what the stuff is and so without being able to identify instances of it except the ones in our rivers. However, we can describe logically possible worlds more informatively by using rigid designators of a special kind which I shall call "informative designators." For a rigid designator of a thing to be an informative designator it must be the case that someone who knows what the word means (that is, has the linguistic knowledge of how to use it) knows a certain set of conditions necessary and sufficient (in any possible world) for a thing to be that thing (whether or not he can state those conditions in words, or can in practice ever discover that those conditions are satisfied). Two informative designators are logically equivalent if and only if they are associated with logically equivalent sets of necessary and sufficient conditions. To know these conditions for the application of a designator is to be able (when favorably positioned, with faculties in working order, and not subject to illusion) to recognize where it applies and where it doesn't and to be able to make simple inferences to and from its application.⁸ Thus "red" is an informative designator of a property, of which "the actual color of my first book" is a mere uninformative rigid designator. I can know what "red" means in the sense of being able to identify things as red, and make simple inferences using the word without knowing which things in our world are red. The ability to identify things as red can exist without the knowledge of which things are actually red. But knowing how to use the expression "having the actual color of my first book" does not give me the ability to recognize things other than my first book as having the color of my first book.

I am inclined to think that while being 'water' (as used in the eighteenth century) is an uninformative designator of a property,

being 'H₂O' is an informative designator of a property. It is the property of being composed of molecules consisting of two atoms of hydrogen and one atom of oxygen. To be an atom of hydrogen is to be an atom consisting of one proton and one electron. Or rather we may allow that negatively charged hydrogen—hydrogen with an extra electron—is still hydrogen; and so are isotopes of hydrogen, in which there are one or more additional neutrons in the nucleus. A proton is a proton in virtue of its mass, charge, and so on; and an electron is an electron in virtue of its mass, charge, and so on. And I can know what it is to have certain mass or charge without discovering which things have what mass or charge, merely by knowing what people would observe (in this case using instruments) if things did have such and such mass or charge. A similar account should be given of what it is to be an atom of oxygen. But maybe physicists in the future would count something as an electron only if it was made of the same stuff as the electrons in the atoms of such-and-such a particular volume of H₂O, while it would be possible for something to have the same mass, charge, and so on as an electron and not to be so composed. In that case knowing what 'H₂O' means would as such no longer allow me to recognize new instances of it. To do this, I would need also empirical knowledge of the composition of some actual volume of H₂O. But I believe that the current rules for the use of 'H₂O' count anything as an electron which has the same mass, charge, and so on. Whether a word is or is not an informative designator is a matter of the rules for its use in the language.

A full description of a world will include descriptions of its events in terms of informative designators. If all the events so described are logically compatible, no metaphysically false propositions will be true of that world, for if one were, so would be the logically false proposition obtained by replacing any uninformative designator which it contains by an informative designator of the property or whatever so designated. If "Water is XYZ" were true of it, so would be "H₂O is XYZ"—yet that entails a self-contradiction. Hence all logically possible worlds are metaphysically possible.

This claim of course holds only for worlds where metaphysical necessity is analyzable as above. Anyone who makes a claim about what is metaphysically possible or impossible where this is not ana-

lyzable in the above way owes the reader an explanation of what “metaphysically possible” means. It may well be, as Gendler and Hawthorne say, that “the notion of metaphysical possibility . . . is standardly taken to be primitive,” adding in a footnote “in contemporary discussions at any rate” (Gendler and Hawthorne 2002: 4). For myself, I simply do not understand what is meant by this notion, unless it is analyzable as above, or given some other technical definition. It is simply uninformative to say that it is the most basic conception of “how things might have been” (Gendler and Hawthorne 2002: 4–5). For since this “most basic conception” is supposed to be narrower than logical possibility, it is unclear how it is to be narrowed unless in the way I have analyzed.⁹

Given my understanding of a “possible world,” whether the physicalist’s claims of identity or supervenience are true now depends on the criteria for one property, event, or substance being the same as another. There are some identity criteria which will give him his result and some that won’t. Ordinary usage provides no clear criteria, and different aspects of usage can be systematized to provide different criteria. We need a metacriterion for choosing which criteria to use.

Now the history of the world is the history of one thing and then another thing happening, in a sense of “thing happening” which includes both things remaining the same and things changing. I suggest that the things that happen and the only things that happen are events in my sense. The history of the world is this substance existing (which can be analyzed as it having its essential properties) for a period of time, coming to have this property or relation to another substance at this or that time, continuing to have it and then ceasing to have it. I have adopted the construal of properties as universals (instantiable in more than one different substance) rather than as tropes (particular properties), for the reason that—as far as I can see—there is not anything more or less to the difference between this (e.g.) redness and that one (of exactly the same shade and shape) except in terms of the substances (and times) in which they are instantiated. And I suggest, there are no other things that happen except events in my sense. Some have cited flashes and bangs as examples of things which happen but are not events in my sense. But

they can easily be analyzed as the instantiation of properties in regions of space, or (if you do not think that regions of space are substances in my sense), as themselves substances which exist for a very short time.

So I suggest as a metacriterion that we individuate properties, substances, and times in such a way that if someone knows which properties were instantiated in which substances when, he is in a position to know everything that has happened. A canonical description of an event will say which properties, substances, and times it involves, by picking them out by informative designators—and conjointly the properties, times, and substances involved will form an informative designator of that event. Then it will be the case that someone who knows all the events that have happened under their canonical descriptions is in a position to know everything that has happened (and someone who knows all the events that have happened under their canonical descriptions in some spatiotemporal region is in a position to know all that has happened in that region). If you do not individuate properties, substances, and times in accord with a criterion derived from this metacriterion, then in order to give a full description of everything that has happened you would need additional metaphysical categories. It would need to be the case, for example, that as well as saying which properties were instantiated when, you would need to say which aspects or features those properties had. It is better not to multiply metaphysical categories beyond necessity. I predict that exactly the same kinds of issues would arise with a fuller system of categories as with the ones which I shall set out below using my system of categories, and that they would require exactly the same kinds of solutions. So I stick with my system of categories.

To give some person the knowledge of everything that has happened, it will suffice (given that that person has sufficient logical competence) to list any of many different subsets of all the events. For the occurrence of some events entails the occurrence of other events. There is one event of my walking from A to B from 9:30 to 9:45 a.m., another event of my walking slowly from 9:30 to 9:45, and a third event of my walking slowly from A to B from 9:30 to 9:45. But the third event is “nothing over and above” the first two events. To generalize—there is no more to the history of the world (or the

world in a region) than any subset of events whose canonical descriptions entail those of all the events; and no less than any least subset which will do this. There are different ways of cutting up the history of the world into events, and there are many different sets of events such that there is no more or less to the history of the world than the occurrence of all the events of that set. All this suggests that we should count as the same event not merely two events which involve the instantiation of the same properties in the same substances at the same time, but also two events whose canonical descriptions (their informative designators) entail each other. For if you know that the one has occurred, that puts you in a position (if you have sufficient logical competence) to know that the other has occurred, and conversely. The occurrence of one event is then nothing in the history of the world 'over and above' the occurrence of the other event. Two events could involve the same substances, properties, and times and so be the same event, while having two different canonical descriptions which do not entail each other, if, for example, there could be two informative designators of a substance which are not logically equivalent (and that can happen if there can be contingent identity between substances—a possibility which I shall discuss later in the paper). Conversely, the canonical descriptions of two events may entail each other without the properties, substances, and events involved all being the same. One case of this is where a substance having some property entails and is entailed by some part of that substance having that property. For example, a table is flat if and only if that table's top is flat; but the former is not an occurrence in the history of the world additional to the latter, nor is the latter an occurrence additional to the former.

On a Humean picture of the world we need no relations other than spatiotemporal relations between substances to state the history of the world. The history of the world is just this substance (with its properties) coming into existence, acquiring now this monadic property, now losing that one, changing its spatial relations to other substances, and, finally, ceasing to exist; and a similar history for all the other substances. Causation for Hume is analyzable in terms of regularities in the temporal patterns of acquisition of monadic properties and spatial relations. But on an account of causation in which causation is unanalyzable and so not reducible to events of

the former kind, the history of the world will involve not merely succession but causation. A substance or event causing an event is itself an event (of the instantiation of the relation of causation between the substance or event and the other event), and the history of the world will need then to include such events—though it need no longer mention as separate events, any events related by the relation of causation; their occurrence is entailed by the event of the one causing the other.

It is not, however, relevant to the present discussion whether a Humean or a non-Humean account of causation is correct. So—to return to the central theme—in order to satisfy my metacriterion how must we individuate properties and substances, so that someone who knew the canonical description of every event of some subset of events which entails the canonical descriptions of all the events would be in a position to know everything that had happened? (Our interest being only in the identity conditions for properties and substances which allow us to say whether there are mental as well as physical properties and substances, I shall not consider the interesting issue of what are the identity conditions for times—e.g., whether [if it is October 3, 2003, today] P being instantiated in S today is the same event as P being instantiated in S on October 3, 2003).

2.

To begin with properties—to satisfy my metacriterion each different feature of the world named by informative designators which are not logically equivalent has to count as a different property, though, since some entail others, we shall not need to mention them all in order to give a full account of the world. It is important to distinguish a description of a property P in terms of some property which it possesses, from an (informative or uninformative) rigid designator of P. ‘Green’ is an informative designator of the property of being green; it applies to it in all possible worlds, and someone who knows what ‘green’ means knows what an object has to be like to be green. ‘Amanda’s favorite colour’ or ‘the color of spring grass’ may function as a description of the property green in terms of its properties, possibly

(in our world) uniquely identifying descriptions. These words may be used to describe the property of being green by informatively designating a different property—the property of being Amanda’s favorite color or the property of being of the same color as spring grass—which properties the property of being green possesses. “Green is Amanda’s favorite color” is then a subject-predicate sentence where “Amanda’s favorite color” informatively designates the property of being Amanda’s favorite color and thereby (in our world) describes the property green. It says that the property ‘green’ has itself the property of being Amanda’s favorite color. If it were (unusually) being asserted as a statement of identity between two informatively designated properties, it would be false. But any property name can be turned into an uninformative rigid designator of another property which has the first property. “Amanda’s favorite color” can be used to rigidly designate that color which in the actual world is Amanda’s favorite color. In that case “Green is Amanda’s favorite color” will be a (true) identity statement. The device of rigidification allows us to turn any uniquely identifying description of something, including a property, into a rigid designator of that thing. But it does not make it into an informative designator of that thing. For someone who knows what the rigidified predicate “the color of spring grass” means need have no ability to identify any color property (other than that of spring grass) as being that color property—for they may never have seen spring grass.

It follows from all this that it is a purely a priori matter (a matter of logical entailment) whether one informatively designated property supervenes on other informatively designated properties. It follows straightforwardly that no mental properties (in the sense of properties which are such that necessarily their subject has privileged access on all occasions of their instantiation to whether they are instantiated in him) are the same properties as physical properties (in the sense of publicly accessible properties, such that no one substance ever has privileged access to whether or not they are instantiated in it)—for the simple reason that their informative designators are never logically equivalent. The property informatively designated by “being in pain” is just such a mental property. Others can find out whether I am in pain by studying my behavior and my

brain states. But I too can study my behavior (on a film) or my brain states (via mirrors); yet I have a further way of knowing whether I am in pain or not which the others do not have—I can actually feel it. The same goes for all the “qualia” properties, and in my view also for the intentional properties of having such and such beliefs, desires, and purposes. On the other hand the properties informatively designated by “being square” or “weighing ten kilos,” or the brain properties of patterns of electrochemical transmission, are physical properties in this sense. It follows for similar reasons that mental properties do not supervene on physical properties—since for any world in which some combination of physical and mental properties is instantiated, there is always a world in which the physical properties are instantiated but the mental ones are not. This follows because the canonical descriptions of the events of a world in which any combination of physical properties is instantiated never entail that mental properties are also instantiated, since what anyone can access equally can never entail what only one person can access in a privileged way. And since mental events are ones to which the substance involved has privileged access, and physical events are ones to which the substance does not have privileged access, no mental event can be the same as any physical event,¹⁰ nor can it supervene on one. Clearly, too, both mental events (including pure mental events) and physical events occur, and so the former cannot be omitted from a full description of the world.

3.

I turn now to substances.¹¹ For a substance at one time t_2 to be the same substance as a substance at an earlier time t_1 , two kinds of criteria have to be satisfied. First the two substances have to have the essential properties of the same species of substance which they are. Fairly clearly there are different ways of cutting up the world into species of substance, any of which would enable us to give a true and full description of the world. Suppose I have a car which I turn into a boat. I can think of cars as essentially cars. In that case one substance (a car) has ceased to exist and has become instead another substance

(a boat). Or I can think of the car as essentially a motor vehicle, in which case it has continued to exist but with different (nonessential) properties. All three substances exist—the car which is essentially a car, the boat which is essentially a boat, and the motor vehicle which is essentially a motor vehicle. Yet I can tell the whole story of the world either by telling the story of the motor vehicle or by telling the story of the car and the boat.

The second requirement for a substance at one time to be the same as a substance at another time is that the two substances should consist of largely the same parts, the extent to which this has to hold varying with the genus of substance. At least five kinds of thing have been called “substances”—simples, organisms, artifacts, mereological compounds, and gerrymandered objects (such as the right top drawer of my desk together with the planet Venus). Despite the view of some¹² that only some of these are really substances, my metacriterion gives no justification for such an arbitrary restriction. For each of these genera of substance there is its own kind of identity criterion, varying with the extent of replacement or rearrangement of parts which is compatible with the continued existence of the substance (e.g., for a mereological compound, no replacement is possible; for artifacts such as a car, boat, or motor vehicle a small amount of replacement is possible). A full history of the world will need to mention only certain genera of substances—for example, if it tells us the history of all the fundamental particles (considered as mereological compounds), that might suffice (if we forget for a few paragraphs about obvious problems arising from substances having mental properties). There is no more to any substance than its parts, and the history of the substance is the history of its parts. It might sometimes be explanatorily more simple if one took larger substances, for example organisms, rather than their parts as the substances in terms of which to trace the history of the world; but the causal properties of large substances including organisms are just the causal properties of their parts, even if the latter have causal properties such that when combined with other parts, they behave in ways different from the ways in which they behave separately. Alternatively, instead of telling merely the history of fundamental particles, we could include in our history of the world organisms and artifacts, saying when they

gained or lost parts, or their internal parts were rearranged. We might then need to describe the history of the fundamental particles only insofar as they did not form unchanging parts of the organisms or artifacts. And certainly we could do without describing the behavior of gerrymandered objects.

Being the same part may itself be a matter of having all the same subparts, and so on forever; or some replacement of subparts may be allowable, but in the end—if we are to operate with a sharp criterion of identity—we must define a level at which no replacement is possible if the subpart is to be the same subpart, a level of what I shall call ultimate parts. Being the same ultimate part will involve, as with any substance, having the essential properties characteristic of the kind—being this hydrogen atom will involve having a certain atomic mass, number, and so on. It will involve also something else, for it to be the same token of that kind—a principle of individuation.

What that principle is depends crucially on what sorts of thing substances are. One view is that substances are simply bundles of co-instantiated properties. The alternative view is that some substances have thisness.¹⁹ A substance has thisness iff there could exist instead of it (or as well as it) a different substance which has all the same properties as it, including past and future related properties such as spatiotemporal continuity with a substance having such and such monadic properties.

If no substances have thisness, then the history of the world will consist of bundles of co-instantiated properties having further properties, including spatiotemporal relations to earlier bundles, coming into existence and ceasing to exist, and causing the subsequent existence and properties of other bundles. There are many different ways (equally well justified by our initial metacriterion for a system of metaphysical categories) to cut up the world into substances at a time, according to the size of the bundle and which members of the bundle are regarded as essential to the substance which they form. And, according to which members of the bundle are regarded as essential, so there will be different ways of tracing substance continuity over time. Ultimate parts will also be individuated by properties. The obvious such property for individuating parts which occupy space is spatiotemporal continuity with a substance having the same

essential properties of the species, conjoined perhaps with causal continuity (that is, the earlier substance causing the existence of the later substance); for nonspatial substances, temporal plus causal continuity would seem to be the obvious requirement. And we need some uniqueness requirement, to ensure that at most one substance later than a given substance which satisfies both of these requirements is the original substance. But there are again alternative ways in which these requirements could be spelled out, any of which would allow us to tell the whole story of the world. If we make spatiotemporal continuity necessary for the identity of substances over time, then we shall have to say that if an electron disappears from one orbit and causes an electron to appear in another orbit without there being spatiotemporal continuity between them, they are different electrons. Yet if we insist only on causal continuity, then they will be the same electron. But we can tell the whole story of the world either way, and both stories will be true; electrons of both sorts will exist.

If, however, some substances have thisness, a full history of the world will have to describe the continuities not merely of bundles of co-instantiated properties, but of the thisness which underlies certain bundles (that is, of what it is which makes the difference between two bundles of the same properties with qualitatively the same history). So it must be a necessary condition of ultimate parts of substances being the same that they have the same thisness.¹⁴ For those physical substances which are material objects, thisness is being made of the same matter. We have then the hylemorphic theory that sameness of a material object requires sameness of essential properties of the species and sameness of underlying matter. We could, contrary to the Aristotelian model, insist that as well as sameness of matter, for an ultimate individual part to be the same individual some essential properties (in addition to those of the species) have to be the same. But it is more natural to insist only on preservation of the essential properties of the species; and in this way we can still tell the whole history of the world. In that case if (and only if) the electron in the new orbit is made of the same matter as the old electron, it is the old electron. Spatiotemporal continuity is now no longer an independent requirement for a substance continuing to exist, but probably (fallible) evidence that the same matter has continued to exist, and so

(given that the other arbitrarily chosen essential properties of the species are preserved) that the same material object exists. Spatio-temporal continuity is evidence of sameness of matter insofar as the best (i.e., most probable) physical theory of how matter behaves has the consequence that it moves along spatially continuous paths. I shall in future assume that this theory is probably true.

We do not know whether the inanimate material objects of our world have thisness, and in this respect we do not know what would constitute a full description of our world.¹⁵ If they do, then not any account of the world which describes the patterns of property distribution in the world will be a correct one. We need one which individuates the ultimate parts of inanimate material objects (picked out as such in some clear way) being the same substances only if they have the same matter. Then mereological compounds will have to have the same matter throughout their existence, while organisms may gradually replace matter.

Now, to give the full history of the world, I have claimed, involves listing all the events of some subset which entails all the events that have happened under their canonical descriptions. We saw in the case of properties that that involves picking out the properties involved by informative designators. And surely we need to informatively designate the substances too—merely giving a description of them, even a rigidified description, won't tell us what was green, or square or in pain. Informatively designating a property involves knowing a certain set of necessary and sufficient conditions for something to be that property. Similar considerations seem to apply to substances. But here we have to note that while we do know informative designators for many properties, we do not know informative designators for many substances. We often do not know the conditions necessary and sufficient for a substance to be that substance; for often we do not know what would make a later substance or a substance in another world that substance. The first reason for our inability to informatively designate substances is that we do not know with respect to some kinds of substances and in particular inanimate material objects, whether or not they have thisness (and so, for example, are to be individuated partly by their underlying mat-

ter) or whether they are to be individuated solely by properties, including (spatiotemporal and/or other) properties of continuity.

So in practice we often pick out material objects by uninformative rigid designators of a kind which we may call quasi-informative designators. They are words associated with a disjunction of two sets of necessary and sufficient conditions for a thing to be that thing (one disjunct applying if the substance has thisness, the other if it does not), but which in practice lead us to identify the same things in the actual world as the thing in question. Thus Hesperus is the actual planet which often appears in the evening sky. If material objects do not have thisness, then being Hesperus consists in being a planet which is a bundle of co-instantiated properties spatiotemporally continuous with those which constitute the planet which appears in the evening sky. If material objects do have thisness, then being Hesperus consists in being a planet made of a particular chunk of matter (i.e., with thisness). Since we do not know whether material objects have thisness, 'Hesperus' does not function as an informative designator. But although the nature of Hesperus differs in the two cases, we are likely (when positioned as favorably as we can be) to pick out the same planet as Hesperus on other occasions in both cases. For in the latter case we will use the criterion of spatiotemporal continuity with the matter of the actual planet as evidence of a chunk of matter being the same matter; but satisfying the criterion will be fallible evidence of the sameness of two planets, whereas in the former case it will be what constitutes sameness.

If material objects do not have thisness, then an informative designator of a substance will be a conjunction of informative designators of co-instantiated properties. If we learn that material objects do not have thisness, then we will be able to designate them informatively. 'Hesperus' can function as an informative designator of a planet spatiotemporally continuous with the planet (if any) which actually appears in the evening sky. 'Hesperus' is then an informative designator because I know what is involved in calling something Hesperus, and I can have the ability to identify things as Hesperus without having any empirical knowledge—I don't need to know that there are any planets in order to know what the informative designator means. But if material objects do have thisness and we learn this,

in practice humans would still be unable to pick them out by names. This is because we would be unable to identify a planet (e.g., one in the morning sky) as Hesperus without knowing of what chunk of matter the planet which appears in the evening sky is made; we might have fallible knowledge that the same chunk was or was not present in Phosphorus, but we still wouldn't know what that chunk was, except in terms of its properties, which wouldn't enable us to distinguish it from another chunk (in another world) with the same properties. Maybe God can tell the difference between two such chunks, but we humans can only distinguish chunks by properties. There will still be a true description of the world using informative designators of substances, but it will not be accessible to us.

Note that if material objects do have thisness, there will be informative designators of the planets currently picked out by the quasi-informative designators 'Hesperus' and 'Phosphorus'; call them 'H' and 'P'. Then 'H is P' will be a logically necessary truth, because in each case what constitutes being that planet will be the same—being a planet made of such and such a chunk of matter. But if material objects do not have thisness and 'Hesperus' and 'Phosphorus' are used in the way described at the beginning of the previous paragraph, then 'Hesperus is Phosphorus' will be a contingent truth; the identity it reports will be a contingent identity. This is because being Hesperus is being spatiotemporally continuous with such and such a planet; and being Phosphorus is being spatiotemporally continuous with such and such a planet; and it would be a contingent matter whether each was spatiotemporally continuous with the other. There would be worlds in which each existed but they were not spatiotemporally continuous.¹⁶ If we use 'Hesperus' and 'Phosphorus' only as quasi-informative designators, we will not know whether the identity is necessary or contingent.

However, having only an ability to pick out inanimate material objects by means of quasi-informative designators, we can still know quite a lot about which ones are or are not identical with or supervene on others. Merely knowing to which kind a substance belongs often enables us to say that two substances rigidly designated in different ways are not the same—since they do not satisfy some of the necessary conditions for sameness—even though we cannot nearly so

often say that two substances are the same. This table may or may not be the same as the one that was here last week, but it is certainly not the planet Hesperus—for Hesperus is essentially a heavenly body and the table is not. And sometimes quasi-informatively designating may enable us to say that this kind of substance supervenes on that kind. Suppose that there can be just three kinds of motor vehicles—ones which can travel on land (cars), ones which can travel on water (boats), and ones which can travel in the air (airplanes); and suppose that we have some criterion for determining to which of these kinds a dual- or triple-use vehicle belongs. Then motor vehicles supervene on boats, cars, and airplanes—there are no two possible worlds with the same cars, boats, and airplanes, but different motor vehicles. But cars, boats, and airplanes do not supervene on motor vehicles—there can be two possible worlds with the same motor vehicles, but different cars, boats, or airplanes (if, for example, what was a car in one world has been turned into a boat in the other world).

4.

Now suppose that no substances have thisness, and so the bundle view of all substances is correct. Mental substances are those substances which have mental properties essentially. Then whether there are mental substances depends on how one bundles together bundles of properties into substances. Mental properties with physical parts (such as the property of intentionally raising one's arm) are naturally thought of as belonging to the substance to which the physical part belongs. But one may either put pure mental properties (such as the property of trying to raise one's arm) in the same bundle as the physical property to which it is most closely related causally, the one which causes it to be instantiated or whose instantiation is caused by it;¹⁷ or, following Hume,¹⁸ put the pure mental properties into a bundle with other pure mental properties to whose instantiation it is related causally (and perhaps also related by relations of similarity and apparent memory). On the Humean model clearly there will be mental substances, for some bundles of properties would be individuated by their mental properties. It might seem, however,

that on the non-Humean model one could individuate substances solely by their physical properties and regard mental properties as merely contingent members of bundles, and then the only substances would be physical substances. Alternatively one could individuate substances at least partly in terms of mental properties, and then there could be mental substances. Either way of describing the world would yield a full description.

It is, however, not possible to have a full description of the world in which all substances are individuated only by physical properties. For it is an evident datum of experience that conscious mental events of different kinds (visual sensations, auditory sensations, etc.) are co-experienced, that is, belong to the same substance. Any description of the world which had the consequence that co-experienced events did not belong to the same substance would be a false one. Hence if the substance to which these events occur has physical properties and so a spatial volume, that spatial volume must include within it the total physical cause of those mental events. My having mental properties forces us to recognize as a substance something which (if it has physical properties) has spatial boundaries at a time and over time no narrower than those of the physical correlates of what I co-experience. The identity of the substance is thus constituted by a mental property, that its boundaries are no narrower than the boundaries of the physical correlates of what I co-experience. We cannot cut up the world in an arbitrary way and individuate substances solely by physical properties, and suppose that the mental properties are merely contingent properties of these substances. For even if (as seems not to be the case empirically) the brain basis of, for example, my visual sensations and my auditory sensations were the same, that would not still entail the datum of experience that they were both had by the same person. We can only include that datum in a full description of the world if we suppose that the identity of substances which have conscious mental properties is determined by whether the mental properties which they have at the same time are co-experienced.

It is also an evident datum of experience that certain mental events are had consecutively by the same person. Experiences take time—if only a second or two; and every experience which I have I

experience as consisting of two smaller parts. I am the common subject of the experience of hearing the first half of your sentence and the experience of hearing the second half of your sentence. And yet the mere fact that these experiences are caused by events in the same part of the physical substance which is my brain does not entail that. It follows for both of these reasons that we cannot describe the world fully except in terms of mental substances which—if they have physical properties—are the substances they are both at a time and over time, whose boundaries are no narrower than those of the physical correlates of what a subject co-experiences.

It will be evident that it will make no difference to the fact that there are mental substances if the bundle theory of all physical substances is false, and inanimate material objects including brain molecules have thisness (and so being the same substance is not solely a function of properties, but of the matter in which those properties are instantiated). For still nothing would follow from that for which mental properties were co-experienced. We can describe the facts of co-experience only if we allow the existence of mental substances.

This conclusion is reinforced when we consider some well-known neurophysiological data and thought experiments. The crucial issue when a patient's corpus callosum is severed is whether (on the assumption that experiences are produced by both half-brains) the experiences produced by his left brain are co-experienced with the experiences produced by his right brain. It is not merely that some ways of dividing up the brain or defining when it began or ceased to exist would provide simpler explanations of how the brain or body behaves than do others, but that some ways would entail the non-occurrence of a datum of experience, whose occurrence would be evident to its subject or subjects—that a subject had both sets of experiences, or that he had only one set. Whether there is one person or two is not entailed by which experiences are connected with which half-brains, or anything else physical. To describe what is going on we need to individuate persons in part by the experiences they have, and not by the extent of the unity of a brain. Merely to describe, not to explain, experience, we need mental substances individuated at least in part in this way.

This conclusion is further reinforced when we consider the thought experiment of half-brain transplants. S's brain is taken out of his skull, it is divided into two halves, these halves are put into two different skulls from which brains have been removed, a few additional bits are added from a clone of S, the bits are connected to the nervous system, and we then have two functioning persons with mental lives. But if we know only the history of all the physical bits, described in terms of their properties (and, if required, their underlying matter) and which mental properties are instantiated in all the persons involved, there seems to be something crucial of which we are ignorant—which (if either) of the subsequent persons is S. Whether S has survived such a traumatic operation seems an evidently factual issue, and yet one underdetermined by the physical and mental properties associated with physical substances. Only if S is a mental substance (to whom the co-experienced experiences occur) can there be an unknown truth about whether or not S has survived this operation—which surely sometimes there will be.

It follows that mental substances are not identical with and do not supervene on physical substances, since there can be worlds in which the physical substances (brains and the extent of their continuity) are the same but there are different mental substances (two in one world, only one in another).

5.

My final claim is that human beings, you and I, are pure mental substances (which do not supervene on physical substances). Many thought experiments in the spirit of Descartes seem to describe conceivable situations and so to be strong evidence of the logical possibility of me existing without a body, or continuing to exist when my body is destroyed. Let us take Descartes's original thought experiment:

I saw that while I could conceive that I had no body . . . I could not conceive that I was not. On the other hand, if I had only ceased from thinking . . . I should have no reason for thinking that I had existed.

From this I knew that I was a substance the whole nature or essence of which is to think and that for its existence there is no need of any place, nor does it depend on any material thing. (Descartes 1972: 101)

We can make sense of this and many similar suppositions (disembodied life after death, etc.); they do not appear to contain any contradiction—and that is strong evidence that what we appear to conceive is logically possible. But, says the objector, “maybe they are not ‘metaphysically possible.’” However, that possibility only arises if ‘I’ (or ‘Richard Swinburne’ as used by me) is not an informative designator, but only an uninformative designator (such as a quasi-informative designator) of some substance whose identity is constituted by some underlying factors whose nature is unknown. But clearly it is an informative designator. For I do know the conditions necessary and sufficient for a substance to be that substance. I can recognize (with faculties in working order, favorably positioned, and not subject to illusion) when it applies and when it doesn’t and make simple inferences from its application. For I can always pick out myself as the subject of experience and action—infallibly. In this I am, in Shoemaker’s phrase, “immune to error through misidentification” (Shoemaker 1994: 82). I cannot recognize that a present conscious experience is taking place and yet misidentify it as yours when it is really mine, or conversely. I can misidentify myself if I pick out myself by means of a body—for example, believing falsely that the person seen in the mirror is me—but that will be a case of illusion.¹⁹

Of course I can still misremember what I did in the past, and indeed misremember how I used the word “I” in the past. But this kind of problem arises with every claim whatsoever about the past. “Green” is an informative designator of a property, but I may still misremember which things were green and what I meant by “green” in the past. The difference between informative and uninformative designators is that (when my faculties are in working order, I am favorably positioned, and I am not subject to illusion) I can recognize which objects are correctly picked out at a present time by informative designators, but not generally when they are picked out by uninformative designators (in the absence of further information). And I

know what a claim about the past or future amounts to when it is made by informative designators, but not when it is made by uninformative designators. I know what would constitute a future or past experience being mine, what it is for some future or past person to be me. Not so with Hesperus or water. I don't know (in the sense defined) what would constitute past or a future substance being water or Hesperus if I am merely in the position of the 'water' user in the eighteenth century, or the 'Hesperus' user in the early ancient world; or even today—for reasons given above.

I conclude that, in the absence of some hidden logical (and I mean 'logical') contradiction in Descartes's description of his thought experiment—to suppose which would be immensely implausible—the experiment shows what it purports to show: Descartes is a pure mental substance. He could exist without anything physical existing, and so pure mental substances do not supervene on physical substances. Each of us can do the same experiment about ourselves and so show that we are pure mental substances.

There are, however, two kinds of pure mental substances—those which do not have a body as a contingent part, and those which do. Ghosts do not have bodies, for example, whereas human beings living on Earth do have bodies. But since the body which is currently mine could continue to exist as a living body without having any causal connection with any mental substance, or could become instead the body of a different mental substance; and since I could under such circumstances go on existing and have a mental life without a body, I now consist of two disjoint parts—my body (the contingent part of me) and the rest of me, which we can call my soul (the essential part of me). Since what is required for a mental life is the part of me other than my body, I have a mental life in virtue of my soul having a mental life. But that does not have the consequence that there are two events of thinking going on when I am thinking—my soul thinking and me thinking; since the two canonical descriptions of the event mutually entail each other, the events are the same. Human beings are thus a composite of substances of two genera—a soul which is, I suggest, a simple; and a body which is an organism.²⁰ We could therefore tell the whole story of the whole by telling the story of souls and bodies, and not mention human beings at all. But if

you do include the story of human beings, and their souls and bodies part company, we shall then need to include their separate histories.²¹

For me to exist, I need only to have some pure mental property (for example, having privileged access to my beliefs). I do not need to have any particular mental properties. I pick myself out as the subject of certain currently experienced mental properties. But I would pick out the same substance if I used fewer or more of the properties of which I am currently aware as co-instantiated. Thus suppose I pick out myself as the subject of two separate sensations (say, visual and tactual sensations). But if at the same time I also had two other sensations (say, auditory and gustatory), I could have picked out the same myself by means of those latter sensations. And if I had done so, the fact that I had the former (visual and tactual sensations) would have been irrelevant to who was picked out. But then the same person would have been picked out had I not had those (visual and tactual) sensations at all, the only ones I did have. So I would have been the same person if I had had quite other sensations instead. And since I could have had different mental properties, clearly I could have had different physical properties too (which gave rise to the different mental properties). Or—to take a temporally extended example—suppose I say to myself, “It is 5:00 and time to stop work.” I pick out myself as the substance who said all these words to itself. Now it would be the same substance if I had uttered only the first six words; and also the same substance if these had been followed by two different words—“It is 5:00 and time to work harder”; yet a quite different thought would have been had. The words uttered later cannot make a difference to who it was who uttered the earlier words. And it would have been the same substance if I had uttered only the last two words, and also the same substance if these had been preceded by six different words—“I am getting tired and must stop work.” Words uttered earlier cannot make a difference to who it was who uttered the later words. Hence, very different sensations or thoughts can be had by the same person from the ones he actually has. And yet a substance might only exist long enough to have these particular sensations or thoughts. The examples therefore suggest that for a substance who exists for a longer period of time, there can be no principled argument for claiming that there are any limits at all to

the kind and length of mental life which can be had by that substance. For there could be a sequence of overlapping experiences, each consisting of two parts, the later of which formed the earlier part of the next experience, from which it must follow that the same substance has all the experiences which form the chain, and the later members could be very different in character from the earlier members. So, since what makes me is not the particular mental or physical properties which I have and not the matter of which my body is made, I must have a further thisness which is independent of any thisness possessed by physical matter.

This point is brought out by the apparent conceivability of a world W_2 in which for each substance in W_1 there is a substance which has the same properties as it and conversely (and any physical matter underlying the properties is the same in both worlds), but where a person S who exists in W_1 does not exist in W_2 . The person who lives in W_2 the life (physical and mental) which S lives in W_1 is not S . And surely this world could be different solely in the respect that the person who lived my life was not me. For it is not entailed by the full description of the world in its physical aspects and in respect of which bundles of mental properties are instantiated in the same substance that I, picked out as the actual subject of certain mental properties, have the particular physical or mental properties which I do and am connected with the body with which I am connected. Human beings have a thisness which is quite other than any thisness possessed by the matter of which their bodies are made. In consequence of this and earlier thought experiments the Humean view of personal identity as constituted by the causal (and other relational) connections between our actual instantiated mental properties must be rejected.

Since I am a pure mental substance, I may hope to continue to exist after the destruction of my body, and perhaps then to be given a new body. My acquiring a new body will consist in the new body being brought into causal interaction with the pure mental substance which is myself. The "resurrection of the body" of all humans at the "last day" (the "General Resurrection") is a central Christian doctrine. Catholics, Orthodox, and many Protestants also believe that the person continues to exist without a body in the period between death and the General Resurrection. Both these doctrines are fully

compatible with the account of human nature which I have defended in this paper.

NOTES

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1. I shall count as ‘properties’ only hard properties, that is, properties the truth conditions for whose instantiation in a substance at a time are a matter of how things are with that substance at that time. I limit the class of properties in this way because we do not need to suppose that there are any other properties in order fully to describe the world. Times are periods of time. Causal relations or relations of spatiotemporal continuity relate substances at a period of time.

2. “The notion of a substance is just this—that it can exist by itself without the aid of any other substance” (Descartes 1984: 159).

3. There are in the literature other ways of understanding the mental/physical contrast, the most common of which are the intentional/nonintentional and the nonphysical science/physical science contrasts. I expound this solely in terms of events. On the former account a mental event is one which involves an attitude towards something under a description—it is fearing, thinking, believing so-and-so, when the subject does not necessarily fear, think, believe something identical to so-and-so; a physical event is any event other than a mental event. On the latter account the physical is what can be explained by an extended physics, and the mental is what cannot be so explained. The former account has the unfortunate consequence that pains and color qualia are not mental events; yet these are the paradigmatic troublemakers for “mind-brain” identity, and must count as mental if we are to deal in any way with the traditional mind/body problem. The latter account is hopelessly vague, for it is totally unclear what would constitute a science incorporating present-day physics as still being a physics. Hence my preference for my way of defining ‘mental’ and ‘physical’ properties, events, and—analogously—substances.

4. Mental properties will include both conscious properties and continuing mental properties. Conscious properties are ones of whose instantiation in a subject, that subject is necessarily aware while they are instantiated—for example, having the thought that today is Tuesday.

Continuing properties are ones for which the exercise of the subject's privileged access depends on her choice to introspect, but which continue to characterize her while she chooses not to ask herself about them—for example, the beliefs we have while asleep or thinking about other things, and the desires we have which are not currently influencing our behavior.

5. See Kim 1993: 80–82.

6. The corresponding definitions in terms of Kim's other sense of modal "supervenience," "strong supervenience," are as follows. A-properties strongly supervene on B-properties iff in all worlds any substance with the same B-properties has the same A-properties (and no substance has an A-property without having a B-property). A-events strongly supervene on B-events iff for any substance in all worlds in which it has the same B-properties it has the same A-properties (and no substance has an A-property without having a B-property). The natural definition for strong substance supervenience turns out to be the same as the definition for global substance supervenience. For both properties and events, strong supervenience entails global supervenience but not vice versa. If there is no global supervenience of properties, events, or substances, it follows that neither will there be strong supervenience.

7. My definition of a 'logically possible world' as one whose full description entails no contradiction is more satisfactory than a definition which defines a 'logically possible world' as a world describable by propositions not provable to be inconsistent by 'logic.' For clearly no world can be logically possible if it harbors any contradiction at all. Yet there are innumerable entailments which we can recognize without the entailment being captured by any system of logic so far devised. "This is red" obviously entails "This is colored," but no system of logic so far invented will show that it does. Our very understanding of a proposition involves some ability to recognize what it entails (quite apart from any system of logic), what one who asserts it is committed to. The notion of entailment is more basic than the notion of a 'logic.'

8. More precisely, if you have linguistic knowledge of the rules for using an informative designator of an object (substance, property, or whatever), then you can apply it correctly to any object if and only if (1) you are favorably positioned, (2) your faculties are in working order, and (3) you believe that (1) and (2). Thus 'red' being an informative designator means that someone who knows what 'red' means can apply it to an object correctly when (1) the light is daylight and he is not too far away from the object, (2) his eyes are in working order, and he believes that (1) and (2). Someone is subject to illusion if *either* {(1) and (2)} and not-(3) *or* {either not-(1) or not-(2)} and (3). By contrast, I shall argue (the designator words having their premodern senses), however favorably positioned you are and

however well your faculties are working, you may not be able to identify correctly some liquid not in our rivers and seas as 'water,' or some planet not in the evening sky as 'Hesperus.'

9. I myself have used "metaphysically necessary" to mean (roughly) whatever is the ultimate cause of things or is entailed by the existence of that ultimate cause; and so the 'metaphysically possible' is whatever is compatible with the existence of the actual ultimate cause. I give a more precise definition in Swinburne 1994: 118–19. But this is certainly not the sense which most writers who use the term have in mind.

10. It may be useful to compare my argument with Kripke's somewhat similar argument for the falsity of "my pain is my being in such-and-such a brain state." I analyze the version in Kripke 1971. Kripke claims, first, that "my pain" (which I shall understand as "me being in pain") and "my being in such and such a brain state" (which I shall understand as "me being in such and such a brain state") are "both rigid designators" (Kripke 1971: 162). Kripke and I are entitled to use these expressions in this way, and that is surely their normal use. But a conclusion will only follow about whether or not they rigidly designate the same event given an understanding of what it is for some event to be the event it is. In this case, Kripke claims, we pick out the events "by essential properties." That is, being a pain is essential to the first event and not the second event; and being a brain state is essential to the second event and not the first event. On my view (for which I have given reasons) an event is the event it is in virtue of the substances (or events), properties, and times involved in it. Since the substances and (I assume) times are the same in the events in question, the issue turns on whether the properties designated are the same. The conclusion that the two events are not the same will follow only if "being in pain" and "being in such and such a brain state" are being used not merely as rigid designators of properties, but as informative designators of the properties of being in pain and being in such and such a brain state—that is, do not designate some underlying property by means of its properties of being in pain or being in such and such a brain state. I am using the words in this way, and I would claim it to be the most natural understanding of them; and I am clearly entitled to use the words in this way. Kripke is equally entitled to think of the properties involved in the events as essential—but only given my view that we are entitled by definition to say which properties are essential to an event. Kripke's argument seems to be relying on an intuition that the properties stated are essential to the event; but there is no need for him to do that. He can make it a matter of definition. The conclusion of the nonidentity of the pain and the brain state does, however, need a further argument. It will only follow, given my criterion (or some similar criterion) for property identity—that to be identical two properties have to have logically equivalent informative

designators, that is, logically equivalent sets of necessary and sufficient conditions for their application (and I have given reasons for using that criterion). From that it will follow that the properties involved in the two events are not the same, and so the events are not the same. Without this an opponent of Kripke might say that the property of being in pain just is the property of being in such and such a brain state. I think that Kripke would be sympathetic to this final move, but he does not actually make it.

11. I shall assume for the sake of simplicity of exposition that substances “endure” rather than “perdure” through time; that is, in the case of the material objects of our world, that they are three-dimensional (spatial) objects rather than four-dimensional (three spatial and one temporal) objects. But I believe that this assumption can be dropped without any damage to the main argument.

12. See van Inwagen 1990: §13; and Merricks 2001. Van Inwagen considers that mereological compounds, artifacts, and gerrymandered objects do not exist, and so of course they cannot be substances.

13. For a more detailed account of thisness and of what would be evidence that material objects do or do not have thisness, see Swinburne 1995. This article has been subject to some detailed criticisms by John O’Leary-Hawthorne and J. A. Cover in their “Framing the Thisness Issue.” One quite unjustified criticism which they make is that my “principle concerns intra-world duplication *solo numero*” and that “it is surprising that Swinburne does not explicitly address inter-world versions of his principle” (O’Leary-Hawthorne and Cover 1997: 104). However, I did make it explicitly clear that all the principles which I discussed (including, therefore, that principle in terms of which I defined thisness) “concern not merely the identity of individuals in a given world, but across possible worlds” (Swinburne 1995: 390).

14. If ultimate parts have the same thisness, then the substance composed of these will have a thisness constituted by these and conversely. I thus reject a view which Gallois calls “strong haecceitism,” the view that two objects (O in world w , and O^* in world w^*) could yet be different, even if they have all the same properties and are composed of identical constituents. See Gallois 1998: 250–51.

15. See Swinburne 1995 on how physics may provide evidence on whether material objects do have thisness.

16. It is only identity over time (transtemporal identity) which can be contingent. Rejecting the necessity of identity for substances of certain kinds though preserving it for others requires understanding Leibniz’s law in a more restricted way for the former. It remains the case that necessarily if $a=b$, ϕa if and only if ϕb , only so long as ϕ is a nonmodal property. On how this is to be spelled out, see Gallois 1998: ch. 6. In espousing contingent identity, I do not commit myself to the stronger thesis of occasional

identity—that two objects can be the same at one time but different at another. Gallois brings out that this can only be maintained if transtemporal identity (identity between an object and an object at another time) is not identity (that is, if the relation is not transitive and symmetrical). See Gallois 1998: 113–17. The possibility of contingent identity arises because of the possibility that some substances are mere bundles of instantiated properties, and so the identity of a substance at another time will consist in the spatiotemporal continuity with it of some similar bundle. Contingent identity then allows the possibility that the same substance may be picked out by names that are not logically equivalent (because it is not a matter of logical necessity which bundles are continuous with which other bundles). Given that only hard properties count as properties (See note 1), the same possibility does not arise for properties.

17. As proposed by, for example, Shaffer (1961).

18. “The true idea of the mind, is to consider it as a system of different perceptions or different existences, which are linked together by the relation of cause and effect, and mutually produce, destroy, influence, and modify each other” (Hume, *Treatise* 1.4.6).

19. The need for some sort of qualification on Shoemaker’s phrase is the subject of recent discussion. See Coliva 2003.

20. In Olson 2001, Erik T. Olson argues that there are two serious difficulties for ‘compound dualism’ (the view that the person who I am has two parts—body and soul) which are not difficulties for simple dualism (the view that I am my soul). The first is that mentioned in the text—that if we (embodied on earth) are not souls, although souls think, then there are two thinking things—me and my soul. In the text I argue that this is unparadoxical, since there is only one act of thinking going on—I think in virtue of my soul thinking. Olson admits (2001: 76) that “there are some properties we have in a derivative sense. We are tattooed insofar as our skin is tattooed,” but seems to think this unimportant. But innumerable similar examples can be adduced (I give the example of the table and its top on p. 155), and it is all-important. Why these examples don’t have paradoxical consequences, is because the events are the same: me being tattooed just is my skin being tattooed. We have seen earlier that there are many different ways of describing the world, but some of them don’t describe anything “over and above” others of them. The other difficulty which Olson finds in compound dualism is that it has the “absurd consequence that one could come to be identical with something that was previously only a part of one” (Olson 2001: 81). Suppose I am embodied on Monday, but my body is then destroyed and I continue to exist in a disembodied state on Tuesday; then, Olson claims, (1) I on Monday am the same as I on Tuesday, (2) I on Tuesday am the same as my soul on Tuesday, (3) my soul on Tuesday is the same as my soul on Monday, from

which there follows a conclusion incompatible with compound dualism, (4) I on Monday am the same as my soul on Monday. But the false premise is (2). I on Tuesday have one and only one part on Tuesday, my soul. But I on Tuesday am not the same as my soul on Tuesday. This would be occasional identity, which runs into the problem mentioned in note 16. Clearly a substance (of many genera) gains or loses parts while remaining the same substance: and there is no good reason to deny that a substance might come to have only one part. The “absurd consequence” does not follow.

21. Our normal understanding of ourselves which I analyze in the text is that the parts of our bodies—arms, legs, and so on—are parts of ourselves; and so, given the arguments of this paper, we must think of whole bodies also as parts of ourselves. But, given that bodies are only contingent parts of human beings, we can think instead of ourselves merely as souls causally connected to bodies. Descartes himself seems to oscillate between these two ways of talking. For examples and commentary, see Smart 1977: 63–66.

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