Published in Travaux de logique 14, 23-55, 2001
which should be used for any reference to this work

IDENTITY AND COUNTERPARTHOOD

Christopher HUGHES

I.

I have never crossed the Himalyas, though I might have done. So there is a non-actual (or, if you prefer, a non-actualized) possible world (or possible state of the world) whose existence is a sufficient condition for the truth of "I might have crossed the Himalyas". At such a possible world, someone crosses some mountains. Is that person me, and are those mountains the Himalyas? Or are they (non-actual) individuals different from me and from the Himalyas?

According to David Lewis (1968), the latter suggestion is the better one:

> Where some would say that you are in several worlds, in which you have somewhat different properties and somewhat different things happen to you, I prefer to say that you are in the actual world and no other, but you have counterparts in several other worlds. Your counterparts resemble you closely in content and context in important respects. They resemble you more closely than do the other things in their worlds. But they are not really you. Indeed we might say, speaking casually, that your counterparts are you in other worlds, that they and you are the same; but this sameness is no more a literal identity than the sameness between you today and you tomorrow. It would be better to say that your counterparts are *the men you would have been*, had the world been otherwise.

For Lewis (1973), what an individual might have done (or might have been) is what its counterparts do (or are). (When the

possibility is unrealized, the counterparts will all be in other worlds).

Saul Kripke emphatically rejects counterpart theory:

> [For Lewis] if we say, "Humphrey might have won the election" (if only he had done such-and-such), we are not talking about something that might have happened to *Humphrey* but to someone else, a 'counterpart'. Probably, however, Humphrey could not care less whether someone *else*, no matter how much resembling him, would have been victorious in another world. Thus Lewis' view seems to me even more bizarre than the usual notions of transworld identification that it replaces. (Kripke 1972: n. 13)

> Even more objectionable is the view of David Lewis. According to Lewis, when we say "Under certain circumstances Nixon would have gotten Carswell through", we really mean "Some man, other than Nixon but closely resembling him, would have gotten some judge, other than Carswell but closely resembling him, through." Maybe that is so, that some man closely resembling Nixon could have gotten some man closely resembling Carswell through. But *that* would not comfort either Nixon or Carswell, nor would it make Nixon kick himself and say, "*I* should have done such and such to get Carswell through." The question is whether under certain circumstances Nixon *himself* could have gotten *Carswell* through. (Kripke 1971: 148)

Kripke appears to be saying here that, on Lewis' view, if we say "Humphrey might have won the election", we really mean "Someone different from Humphrey, but resembling Humphrey in certain ways, might have won the election": winning the election isn't (on Lewis' view) something that might have happened to Humphrey; it's something that might have happened one of his counterparts. Similarly, if we say "Under certain circumstances, Nixon would have gotten Carswell through", what we really mean is "Under certain circumstances, someone different from Nixon, but resembling him in certain ways, would have gotten someone different from Carswell, but resembling him in certain ways, through." But, Kripke thinks, it is obvious that if we say "Humphrey might have won the election", or "Nixon would have gotten Carswell through", we mean that *Humphrey*

might have won the election, or that *Nixon* would have gotten *Carswell* through.

It is obvious; but why exactly is this a problem for Lewis? Lewis holds that it is Humphrey's counterpart, rather than Humphrey himself, that wins the election (in another world); and it is Nixon's counterpart, rather than Nixon himself, who gets (a counterpart of) Carswell through (in another world). But he does not hold that it is Humphrey's counterpart, and not Humphrey himself, that *might have* won the election; and he does not hold that it is a counterpart of Nixon, and not Nixon, that *might have* gotten Carswell through. As Lewis sees it, it is true that Humphrey himself would have won, under different circumstances, precisely inasmuch as it is true that someone different from Humphrey (his counterpart) wins in an alternative possible world (Lewis 1983: 42). Still, it might be said, in the passages cited, Kripke has gotten hold of a difficulty for Lewis-style counterpart theory. The difficulty is that, intuitively, there is a gap between ordinary modal claims and the counterpart-theoretic claims that Lewis takes those ordinary claims to have the same truth-conditions as. For Lewis, a statement such as

(a) Nixon might have *F*ed.

is true if and only if someone existing in this world or in another possible world who is like Nixon in such-and-such and ways (someone who resembles Nixon in context and context, and resembles Nixon at least as much as any of his worldmates) *F*s. Thus for Lewis, (a) is true if and only if

(b) In some possible world someone like Nixon in such-and-such ways *F*s.

Now one would have thought that (b) was equivalent to

(c) It might have been that: someone like Nixon in such-and-such ways *F*s.

The trouble is that there is no guarantee that (a) and (c) will have the same truth-value.

It depends on what the predicate *F*s is. Suppose for example, *F*s = *comes from gametes different from these very gametes* [the

ones Nixon actually came from]. Then, it seems, (a) will be false – since Nixon couldn't have come from gametes different from the ones he actually came from– but (c) will be true – since someone like Nixon in content and context (and no less like Nixon than any of his worldmates) might have come from gametes different from the gametes Nixon actually came from. (For those who doubt the essentiality of origin, similar examples could be provided turning on the essentiality of constitution, or for that matter the necessity of identity)[1].

Here is another way to put essentially the same point. Lewis gives truth conditions for *de re* modal predication in terms of counterparts. As he sees it, the counterpart relation has two features: that $x = y$ is not a necessary condition of y's being a counterpart of x; and that x's having a counterpart that Fs is a sufficient condition for the truth of *x might have Fed*. The difficulty is that unless identity is a necessary condition of counterparthood, it is hard to see why *x has a counterpart that Fs* should be thought sufficient for *x might have Fed*. Some otherwordly individual y, resembling x in content and context (and resembling x at least as much as its worldmates) Fs. Why should that be thought to guarantee that x could have Fed?

Here a counterpart theorist might protest:

> Suppose that I have a counterpart that is F. Then there is a way things might have been such that, had things been that way, someone would have been F, and I would have been that someone. (As Lewis puts it in the passage cited earlier, your counterparts are the men you would have been, had things been otherwise). Now if there is a way things might have been such that, had things been that way, someone would have been F, and that someone would have been me, then it follows, as the night does the day, that I might have been F. So there is no mystery about why my having a counterpart who is F entails that I might have been F; by the same reasoning, there is no mystery about why the converse entailment holds.

1 For an objection of this type, see Salmon (1980: 235, n. 1).

The counterpart theorist may stipulate that "counterpart" is to be used in such a way that "My counterpart is *F*" guarantees the truth of "There is a way things might have been such that, had they been that way, someone would been *F*, and I would have been that someone." Given that stipulation, my having an *F*-ish counterpart will guarantee that I might have been *F*. But then it is less than obvious that an individual's resembling me (sufficiently) in content and context (at least as much as any of its worldmates) guarantees that that individual is my counterpart. Alternatively, the counterpart theorist could stipulate that "counterpart" is to be used in such a way that anything resembling me sufficiently in content and context (at least as much as any of its worldmates) is *eo ipso* my counterpart--whether or not it is numerically identical to me. But then it seems very doubtful that my having an *F*-ish counterpart is necessary and sufficient for the truth of "I might have been *F*".

Also, inasmuch as Lewis insists both that (a) your (otherwordly) counterparts aren't you; and (b) your (otherwordly) counterparts are who you would have been, had things been otherwise, this at least suggests that if things had been otherwise, you would have been somebody else. But, as Kripke has emphasized, there is a very strong feeling that under no (possible) circumstances would you have been anybody else.

A last worry about counterpart theory, suggested by Lewis's remark that you and your (otherwordly) counterparts are no more identical than you today and you tomorrow: suppose it is true that this apple is unripe, but it will ripen. Consider two accounts of what makes it true that this apple is unripe (now), but will ripen (in the future). On the first account, *this apple is unripe, but it will ripen* is true at time t_{now} because this apple exists at t_{now} and is unripe at t_{now},, and at some time t later than t_{now}, this apple exists at t and is ripe at t. On this account, the apple is a "trans-time" individual, existing at both the present time and future times. On the second account, the currently existing (unripe) apple exists only at the present time, though it has what we might call "continuers" at other (future) times. And *this apple is unripe, but it will ripen* is true at time t_{now} because this apple is unripe now, and for some time t later than t_{now} and some continuer c of this

apple, it is true at *t* that *c* is ripe. This apple itself is not ripe at any time (it is unripe now, and non-existent elsewhen)--but it is "vicariously ripe" through its ripe continuers[2].

It seems (to me, at any rate) that there is a presumption in favor of the first account.

I suppose this has something to do with the relative simplicity of the two theories. The first account makes reference to this apple, and to present and future times; the second account makes reference to two (momentary) apples, present and future times, and an additional relation (the continuer-relation holding between (some) pairs of (momentary) apples). In the absence of reasons to think the more complicated account is preferable, I am inclined to think we should prefer the simpler one.

Similarly, it seems to me that there is a presumption in favor of a simpler and more straightforward account of what would make it true that this apple is actually unripe, but it might have been ripe – an account that involves this apple and a plurality of worlds, rather than a plurality of (worldbound) apples, a plurality of worlds, and an additional relation (the counterpart relation).

Moreover, the second account differs from the first account not just in that it has more working parts, but also in that it provides truth-conditions that have to be defended against "open question" arguments. Suppose that at some future time *t*, some continuer of this apple is ripe. Given that the continuer relation is non-reflexive, there is a question about why this apple's having a ripe continuer should be considered both necessary and sufficient for the truth of *this apple will be ripe*. By contrast, there is no question about why this very apple's being ripe at a time *t* later than t_{now} should be deemed necessary and sufficient for the ruth of *this apple will be ripe*. And, all things being equal, (putative) truth-conditions that are invulnerable to open question arguments

2 Compare Lewis (1973: 39): «What our Ripov cannot do in person at other worlds, not being present there to do it, he may do vicariously through his counterparts. He himself is not an honest man at any world--he is dishonest here, and nonexistent elsewhere--but he is vicariously honest through his honest counterparts».

are preferable to (putative) truth-conditions that are vulnerable to them[3].

II.

Naturally, this is consistent with there being other considerations which overcome the (defeasible) presumption favoring trans-world individuals over counterparts. What might such considerations be?

Suppose that, like David Lewis, you accepted something very like the "foreign country" or "faraway planet" picture of possible worlds that Kripke dismisses. That is, suppose you thought that the actual world was the universe we inhabit, and other possible worlds were other universes, spatio-temporally unconnected to our own. Then, it might seem, you would embrace counterparts, and reject trans-world individuals, on the grounds that an individual can inhabit at most one universe. Kripke himself says (1971: 147) that counterpart theory is the most reasonable view to hold, for one who takes the foreign country view of worlds: "No one far away on another planet can be strictly identical with someone here". And various other philosophers have concurred with Kripke[4].

---

3 In this context, it is interesting to note that when Lewis provides satisfaction conditions for counterfactual conditionals (Lewis 1973: 38), the first set of conditions he considers presuppose that individuals exist in more than one world. He defends his rejection of those conditions by providing a range of arguments purporting to show the preferability of a counterpart-theoretic account of *de re* modal predication to an account involving trans-world individuals.

4 See for example M. Loux (1979: 63-64), and W. Lycan, (1990/1: 221). (Interestingly, although Lewis offers a number of considerations in favor of counterpart theory in *Counterfactuals* (39-41), none involve his conception of worlds as universes. In"Individuation by Stipulation and Acquaintance" (1983: 20-24) he does suggest that someone who thinks of possible worlds as universes has reason to believe in counterparts, lest properties that are not intuitively relations to worlds (or world-time pairs) turn out to be such relations. As Bigelow and Pargetter argue (1990: 168-69), this line of reasoning seems less than conclusive: someone who thinks possible worlds are universes might hold that it is at least as counterintuitive to deny that one and the same thing can exemplify roundness at different times and in different worlds, as it is to suppose that *being round* is a relation between individuals and world-time pairs. Thus Bigelow and Pargetter consider

But why exactly couldn't one thing be in two universes? After all, if (as Lewis supposes) the two universes don't share any times or places, this wouldn't be a case of one and the same thing being in two different places at the same time; it would be a case of one and the same thing being in two different places at two (temporally unrelated, and *a fortiori*) different times[5].

Sydney Shoemaker (1979) holds that an individual persists through time only if there are causal connections between the earlier stages of that individual's life (or, in the case of an inanimate object, existence) and the later stages; qualitative similarity plus spatio-temporal continuity, in the absence of causal connections, is insufficient for identity through time. In support of this contention, he describes a case in which an absent-minded deity first decrees that a stone tablet will disappear into thin air at just before noon, and then – having forgotten all about his disappearance decree – also decrees that a (qualitatively indiscernible) stone tablet will appear at exactly noon. In this case, Shoemaker says, there are two different stone tablets (the A.M. tablet and the P.M. tablet), even though, to anyone not apprised of the deity's activity, it would look as though there were just one. The reason the A.M. tablet and the P.M. tablet cannot be identified is the absence of any (and, *a fortiori*, of the right sort) of causal relations between the A.M. stages of the existence of the table there before noon, and the P.M. stages of the existence of the table there from noon on.

If the identity of this individual at this time with that individual at that (distinct) time requires that there be causal connections between a this-timely stage of this individual's existence and a that-timely stage of that individual's existence, then individuals existing at different times in different (spatio-temporally disjoint) universes are identical only if there are causal connections between events in spatio-temporally disjoint universes.

---

it an open question whether a universalist should believe in counterparts or trans-world individuals.

5 Loux writes: «It is easy to see why Lewis anxious is so anxious to deny that a single individual can exist in more than one world... If all possible worlds are equally real... then you and I can exist in but a single world; we cannot, so to speak, inhabit two worlds at once». (*The Possible and the Actual,* 47). But why does it follow from the fact that we cannot inhabit two worlds *at once*, that we cannot inhabit two worlds?

But it is very doubtful that someone who thinks that alternative possible worlds are universes spatio-temporally disjoint from the one we inhabit can countenance the idea that there are causal connections between events in disjoint universes. For if there are causal links between, say, what is happening now in this universe, and what is happening in some disjoint universe, then surely the disjoint universe is not a an alternative possible world (a *merely* possible world); it is a part of the actual world (spatio-temporally unconnected to, though causally connected to, the part we inhabit)[6].

So there is a line of thought suggesting that if possible worlds are universes, the individuals inhabiting those worlds are world-bound[7]. But I am uncertain how cogent it is. Shoemaker's thought-experiment seems to show that even if table T is spatio-temporally continuous and continguous with table T', it does not follow that $T = T'$. But one can accept this claim, without conceding that the cross-time identity of x at t with y at t' requires causal relations between the t-stage of x (or, for the three dimensionalist, the t-stage of x's career) and the t'-stage of y (or the t'-stage of y's career). After all, some philosophers would maintain that it is logically possible for a thing and all its parts to go out of existence at an earlier time, and then, after an interval of non-existence, come back into existence, in spite of the absence of any causal relations between the phase of the thing's career just before its existence, and the phase of the thing's career after it came back into existence. Their intuition is that just as a thing could (uncausedly) pop into existence, or (uncausedly) pop out of existence, a thing that had (uncausedly, say) ceased to exist could (again, uncausedly) pop back into existence after an interval of non-existence. Why not? Perhaps the worry is that that nothing could ground the fact that we have the same entity before and after

6 The idea that there could be causal connections between something happening now in this universe, and something happening in a universe spatio-temporally disjoint from ours is in any case a problematic one, independently of whether or not disjoint universes are alternative possible worlds.

7 Most mediaeval philosophers held that God was the aspatial and atemporal first cause of the universe. Surely no one could (coherently) maintain both that the existence of the universe is the effect of a divine choice, and that God and the relevant choice-event were merely possible individuals and events, found only in alternative possible worlds.

the interval of non-existence. But why couldn't the identity of the pre-demise and post-demise thing be a primitive fact, not grounded in anything else?

In sum: it is not clear that the identity of *x* existing at *t* with *y* existing at *t'* presupposes the existence of causal relations between the *t*-stage of *x*'s existence, and the *t'*-stage of *y*'s existence. And if we can have non-causally-mediated cross-time identity between two things in the same universe, it is unclear that we couldn't have it between two things in different universes.

Suppose, though, that we can get from (what I shall call) a "universalist" conception of possible worlds to counterpart theory. Unless (we have reason to think) that possible worlds are universes, that doesn't give us a reason to accept counterpart theory. For unoriginal reasons, I share the (widely held) view that possible worlds are abstracta, and not universes. So I doubt there is much mileage in trying to support counterpart theory by appeal to a universalist conception of possible worlds.

III.

Considerations of a very different sort--involving identity and extrinsicality--might be thought to support counterpart theory. Suppose that in the actual world **G** a certain ship *S* is built from a set of planks, sinks on its maiden voyage, and gradually falls to bits on the sea floor. Suppose that in an alternative possible world **H**, the same set of planks are put together in the same way at the same time and place by the same shipwright. The resulting ship does not sink on its maiden voyage, but all its original planks come to be dispersed. They are subsequently reassembled by the same shipwright who originally assembled them, in just the way they were originally assembled. Is the ship resulting from the reassembly *S*? Well, it depends. Suppose that in **H**, the dispersal of the original planks went hand in hand with the replacement of original planks by new planks (in a structure-preserving way), in the course of ordinary maintenance and repairs. Then, it appears, the ship whose planks were gradually replaced is ship *S*, and the ship resulting from the reassembly of the original planks is a

different ship (a new ship made from old planks). Suppose on the other hand that in **H**, the plank-dispersal was not accompanied by plank-replacement; the sailors took the ship to bits in order to more easily transport it overland, intending all the while that the shipwright would put the ship back together when they got to the next sea. Then, it seems, the ship resulting from the reassembly of the original planks is the ship *S*. (This assumes that the replacing planks have a dominant claim to constitute the original ship, and the reassembled planks a recessive one. The reader who thinks that the reassembled planks have a dominant claim may modify the story accordingly).

A counterpart theorist might say: whether or not the ship in **H** resulting from the reassembly of the old planks is the ship *S* would have been, had **H** been actual, depends on whether there is another ship in **H** that has a stronger claim to be the ship *S* would have been under those circumstances. This is perfectly compatible with counterpart theory, according to which whether an individual *i* in an alternative world is a counterpart of an actually existing individual *i'* depends, not just on the intrinsic properties of *i* and *i'*, but also on the relational or extrinsic properties of *i*--in Lewis' words, on *i*'s context as well as its content. Suppose on the other hand that individuals are trans-world, so that the ship *S* would have been in such-and-such circumstances is literally identical to *S*. Then it cannot be that whether a certain ship in another world is the ship *S* would have been, depends on whether in that world there is something else that has a stronger claim to be the ship *S* would have been. So--the counterpart theorist might conclude--inasmuch as the would-have-been relation has extrinsic determinants, it is not identity: the ship *S* would have been, had **H** been actual, is not *S*, but a counterpart of it.

The trouble with this argument--as Salmon has pointed out (1982: Appendix I)--is that the champion of trans-world identity (henceforth, "the (trans-world) identitarian") will deny that there is a particular ship in **H** which is the ship *S* would have been if but only if nothing else in **H** has a better claim to be the ship *S* would have been. Instead, the identitarian will say, there is a set of planks in **H** which constitutes the ship *S* would have been (that is, constitutes *S*) at a given time if but only if no other set of

planks in **H** has a better claim to constitute *S* at that time. This has the (at least initially surprising) result that which ship some planks constitute has extrinsic determinants, but the identitarian may find that acceptable (and independently plausible).

Suppose the champion of counterpart theory could tell a story like the story of *S*, in which (i) we are inclined to say that whether or not an otherwordly individual *y* is the individual an actual individual *x* would have been has extrinsic determinants; and (ii) this inclination cannot be explained away by appeal to the idea that constitution has extrinsic determinants. That would be a weighty consideration in favor of counterpart theory. But I do not see how such a story would go. If we could tell a story like the story of *S* that involved simples-things constituted only by themselves--that would do the trick. But I don't know how to do that.

IV.

A different line of reasoning purporting to favor counterparts over trans-world individuals takes as its starting point the idea that two different things cannot have all the same parts at all the same times. Why should this principle favor counterparts over trans-world individuals? Suppose that individuals are trans-world, so that an individual might have been *F* if and only if that individual is *F* in some world. Then *i* and *i'* must be distinct, as long as there is some property *F* such that *i*, but not *i'*, might have been *F*. (If there is a world *w* and a property *F* such that *i* is *F* in *w*, but *i'* is not *F* in *w*, then *i* and *i'* are discernible, and thus distinct). But there seem to be cases in which it is true both that this thing and that thing have all the same parts at all the same times, and that this thing, but not that thing, might have been *F*. An example discussed by Kripke involves a plant that never "grows past" its stem: the plant and the stem have all the same parts at all the same times, but it is true of the plant, and not of the stem, that it might have grown past its stem. Various other examples have been discussed in the literature[8].

8 See Gibbard (1975), and Lewis, "Counterparts of Persons And Their Bodies" (1968). In Gibbard's example, a (human-shaped) statue and a lump of clay come into and go out of

Actually, one could believe in trans-world individuals, and also think that different things cannot have all the same parts at all the same times, as long as one believes in few enough kinds of individuals. Peter Van Inwagen (1989) holds just this pair of views, because he doesn't think there are such things as stems, or bodies, or lumps of clay, or statues...only simples and living things. But those of us who are ontologically more generous must choose between the view that things with all the same parts at all the same times are identical, and the view that individuals exist in more than one possible world.

Still, given a modicum of ontological generosity, won't we have to deny that (permanent) co-constitution is identity, whether we accept an identitarian or a counterpart-theoretic account of modal predication? If *i*, but not *i'* might have been *F*, then (for the counterpartist) *i* but not *i'* has an *F*-ish counterpart, so *i* and *i'* are distinct.

Since Lewis wants to say that (permanent) co-constitution is identity, he suggests a modification of his original counterpart theory, which allows him to say that (1968). It involves multiple and intersecting counterpart relations, and works like this: one and the same (world-bound) individual can have different sets of counterparts, under different counterpart relations, corresponding to different sortals. For example, it can happen that one and the same world-bound individual is both a person and a body, and has one set of person-counterparts, and a different (though intersecting) set of body-counterparts; or that one and the same world-bound individual, is both a statue and a lump of clay, and has one set of lump-counterparts, a different (though intersecting) set of statue-counterparts. In a sentence such as "This statue might have been *F*", the subject term denotes a world-bound individual, and selects a counterpart-relation--in this case, the statue-counterpart relation. "This statue might have been *F*" will

existence together, and thus have all the same parts at all the same times; the lump, but not the statue, might have survived being squeezed into a ball while the clay was still soft. In Lewis' example, a person and his body come into and go out of existence together, and thus have all the same parts at all the same times; the person, but not the body, might have switched bodies with someone else. (The reader doubtful about the possibility of body-switching may substitute: the body, but not the person, might have outlasted the person).

accordingly be true just in case the individual denoted by "this statue" has a statue-counterpart that is *F*. Similarly, "This lump might have been *F*" will be true just in case the individual denoted by "this lump" has a lump-counterpart that is *F*. If this statue and this lump of clay are (permanently) constituted by all the same parts, then it will be true that this statue = this lump, even though it is true that this lump might have been spherical (because the statue-cum-lump has a lump-counterpart that is spherical), and false that this statue might have been spherical (because the statue-cum-lump has no statue-counterpart that is spherical).

Again, though, these considerations favor counterpart theory only if (permanent) co-constitution is identity. Why suppose that it is? Harold Noonan (1985) has argued that if we don't, then we shall have to say that purely material things, having the same material constitution at all times are nevertheless distinct, simply in virtue of having different modal, or dispositional, or counterfactual properties. This last view (Noonan holds) «is...surely...astonishing» (1993: 135) it implies that material objects can be *actually* distinct, simply in virtue of the fact that they have different properties in *counterfactual* circumstances. But (Noonan thinks) differences in modal or dispositional properties have to be grounded in differences in "categorical" (non-modal) properties.

Here someone might object that if, say, a statue and a lump of clay are discernible with respect to modal or counterfactual properties, they will also be discernible with respect to some "categorical" properties, such as *being a statue* and *being a lump*[9]. Indeed, it might be maintained, the discernibility of the statue and the lump with respect to modal or counterfactual properties is grounded in their discernibility with respect to *being a statue* and *being a lump*. (It is because the lump is a *lump*, rather than a statue, that it could survive being squeezed into a ball).

---

9 See Burge (1977: 114). Although Burge does not discuss statues and lumps, or persons and bodies, he considers the case of a positronium atom and a positon-electron pair that have all the same parts at all the same times. After noting that the pair, but not the atom, could have been scattered, he says it would be a mistake to think that the only differences between the positronium atom and the positron-electron pair are modal; the entities in question also differ in kind.

But is it clear that permanently co-composite objects could belong to different kinds? Following Alan Gibbard, let us suppose that our permanently co-composite statue and lump are (respectively) called "Goliath" and "Lumpl". Goliath has everything it takes to be a statue--the right sort of size, shape, origin, and history. But Lumpl has the same size, shape, origin, and history. So why isn't Lumpl a statue too? The identitarian, like the counterpartist, could accept that Lumpl has everything it takes to be a statue--but only at the cost of embracing the (unattractive) view that the sculptor who made Goliath made *two different statues*. The alternative is the (not obviously attractive) view that something with the same composition, size, shape, origin, and history as a statue, may yet not be a statue.

Bracketing the question of whether in the Goliath/Lumpl case, we have two statues, do we really have two things or two (material) objects? It is not obvious that we do. After all, suppose that Goliath is on the table, and weighs one pound. Suppose also (to put it neutrally) that anything on the table that weighs one pound permanently has the same constitution as Goliath. How many one-pound things are there on the table? For the (ontologically generous) identitarian, it would seem, there are (at least) two different one-pound things (two different material objects) on the table--Goliath and Lumpl. But are there? Suppose we take a non-philosopher, show her the table, equip her with a scale, and ask her how many one-pound things there are on the table. It is difficult to imagine her coming up with any answer other than "one". This suggests that the identarian sees plurality (and difference) where we are naturally disposed to see unity (and sameness).

The identitarian can grant that, when we count how many one-pound things there are on a table, we (ordinarily) count as though permanently co-composite things were identical. Still, he can say, we should not conclude that permanently co-composite things are (in every case) identical. He might say that we are (ordinarily) prone to undercount, although this tendency can be corrected by the right sort of metaphysical education. (In the case at hand, one comes to see that, since Goliath and Lumpl have different persistence conditions, they are two different one-pound things

on the table, so that there are in fact (at least) two one-pound things on the table.) Alternatively, he might borrow an idea originally championed by Peter Geach (1980), and say that counting by identity is just one way of counting. While one may count in such a way that things count as one if and only if they are identical, one may also count in such a way that things count as one if and only if they satisfy some weaker condition--e.g., are permanently co-composite. On this view, someone who says "there is just one one-pound object on the table" is not in error, and what she says is perfectly compatible with Goliath and Lumpl's being distinct. Of course, if Goliath and Lumpl are distinct, and each is a one-pound thing on the table, then there are two one-pound things on the table. That is, there are two one-pound things on the table [counting by identity]. Nevertheless, there is just one one-pound thing on the table [counting by some relation weaker than identity, as we are wont to do in non-philosophical contexts]. Finally, the identitarian might say that when we count one-pound things on the table, in that context, "thing" should be understood in a restricted sense, which covers, say, statues, but not bits of clay: given the restriction, there is just one one-pound thing on the table.

Still, the counterpartist may object, what reason is there to think that, in the case under discussion, someone who says there is just one one-pound thing on the table is either undercounting, or counting by some relation weaker than identity, or presupposing a restricted sense of "thing"? Well, the identitarian might say, suppose we modify the case somewhat, so that on the table there is a three-pound statue, made of some bronze that existed before the statue did, and everything on the table that weighs three pounds currently has the same constitution as the bronze statue. Once again, we take a person innocent of metaphysics, show her the table, equip her with a scale, and ask her how many three-pound things are on the table. In this case, just as in the original case, she will probably answer "one". But, the identarian will continue, it is clear that the statue is not identical to the bronze it is made of, since the statue and the bronze have different origins and histories. So in the modified case, either the person undercounted, or she counted by some

relation weaker than identity, or she was using a restricted conception of "thing". If that is what is going on in the modified case (involving wholly but only temporarily "overlapping" objects)--the identitarian may conclude-- it is incumbent upon the counterpartist to show that it is not what is going on in the original case (involving wholly and permanently "overlapping" objects. Failing that, our practices of counting one-pound objects in a place at a time do not favor the claim that Goliath is Lumpl (or favor counterparts over trans-world individuals).

In response, the counterpartist might deny that the bronze statue and the bronze it is made of are distinct, on the grounds that two (material) things cannot be in the same place at any (much less all) of the same times. In order to square this with the fact that the bronze existed before the statue did, the counterpartist would have to countenance a less than straightforward account of tensed predication to go along with her less than straightforward account of modal predication. She might, for example, say that in "this statue is bronze", "this statue" denotes a time-bound (as well as world-bound) individual, and selects both a counterpart relation (a way of tracing that (world-bound) individual through logical space) and a "continuer relation" or "temporal counterpart relation" (a way of tracing that (time-bound) individual through time). Then, she could say, "This statue will be [was] *F*" comes out true just in case the individual denoted by "this statue" has an *F*-ish statue-temporal counterpart at a later [earlier] time. And "This bronze will be [was] *F*" comes out true just in case the individual denoted by "this bronze" has an *F*-ish counterpart at a later [earlier] time. That will allow her to say that the statue and the bronze are identical, even though the bronze existed before the statue did.

It is not surprising, though, that Gibbard, Lewis, and most other philosophers who have maintained that permanent co-constitution is identity, have not wanted to say that current co-constitution is identity. For one thing, there is something very odd about the supposition that even though statements such as *this bicycle has existed for twenty years* are true, no individual exists for more than a moment. For another, on the account of (tensed and modal) predication just sketched, there is no such

thing as the history, or the origin of an individual, any more than there is such a thing as the essence of an individual: just as Goliath/Lumpl has one essence *qua* statue, and another *qua* lump, the bronze statue/bronze will have one origin and history *qua* statue, and another origin and history *qua* bronze. And it is very hard to believe that individuals don't have unique origins and histories.

The moral would seem to be that what might be called "counting-based" arguments for the identity of permanently co-composite things are inconclusive.

This leaves the rather different argument to the effect that the identitarian must choose between too many statues, and things that have everything it takes to be a statue, and yet are not statues. The identitarian might try to meet this argument by supposing that in Goliath/Lumpl type cases, there are two statues counting by identity, but only one counting by the relation we normally count by. But he needn't take this (unappealing) line. The identitarian typically distinguishes the 'is' of identity from the 'is' of constitution, and the 'is' of (what I shall call) co-constitution. (For the *locus classicus* of this view, see Wiggins: 1980). In "Hesperus is Phosphorus", the "is" expresses the relation of identity. In "the ring is gold", the "is" expresses a constitution relation (holding between gold and the ring, and more generally between a (kind of) stuff and a thing. In "the copse is a bunch of trees" or "the statue is a piece of bronze" the "is" expresses a co-constitution relation (*being (currently) made of the same matter as*). (Because the 'is' of co-constitution expresses a tensed relation, one and the same copse can be different bunches of trees at different times).

Since he recognizes the co-constitutive 'is', as well as the 'is' of identity, the identitarian can say that anything with the same composition, size, shape, origin, and history as a statue is itself a statue – where 'is'expresses co-constitution, not identity.

Someone who thinks permanent co-constitution is identity runs into the following difficulties in arguing for that view. She can start from relatively uncontroversial premisses (say, about how we count material objects, or material objects of a certain kind; or about whether things just like statues are (in some sense

of 'are') statues). Then--as we have soon--the identitarian can grant the premisses, but insist that the premisses (properly construed) do not entail that permanent co-constitution is identity. Alternatively, she can start from a strong metaphysical premiss, such as the claim that a thing's modal properties supervene on its origin *cum* history *cum* constitution *cum* qualities (so that necessarily, any two things that are indiscernible with respect to their origin, history, constitution, and qualities, are also indiscernible with respect to their modal properties). Then there won't be any daylight between the premisses and the conclusion; but the identitarian will simply reject the premisses. This is not to say that the modal supervenience principle at issue doesn't have a certain intuitive appeal (I think it does); it is just difficult to know what to say to those that find it intuitively unappealing.

On the other hand, there are principles I find initially plausible, which are inconsistent with the modal supervenience principle, and the sufficiency of permanent co-constitution for identity. Suppose we call a fact *soft* just in case its being a fact depends (logically) on how the future goes, and call a fact *hard* otherwise. That I will never walk on the moon is a soft fact; that I have lived in Castello is a hard fact. I find it intuitively very plausible that facts about how many material objects there are in a given place at a given time are hard facts: how can what happens in the future make any difference to how many things are here *now*? Suppose, though, that Goliath is Lumpl, and Goliath is on the table right now. That Goliath is the same material object as Lumpl will be a soft fact (since its factuality depends on whether or not some future event puts an end to Goliath, without at the same time putting an end to Lumpl). So whether we have n or $n + 1$ material objects on the table now will be a soft fact. This unwelcome consequence is avoided if Goliath and Lumpl are conceived of as as different trans-world individuals with difference essences: it will then be a hard fact that Goliath and Lumpl have different modal properties, and are two material objects, rather than one.

Those who would identify Goliath and Lumpl can respond that there is a fact about how many material objects there are on the table now – on the supposition that we are counting by current

total overlap, rather than identity[10]. But isn't there are hard fact about how many material objects there are on the table right now, even if we are counting by identity? Aren't Goliath and Lumpl one *and the same*, or not, irrespective of what happens in the future?

One reason the identitarian is likely to think the answer is obviously 'yes', is that he is likely to believe that material objects are "wholly present", not just at different worlds, but also at different times. Given this (Anselmian)[11] picture, it is hard to see how one could avoid thinking that either there are two (currently overlapping) material objects on the table, or just one, and nothing could change that. By contrast, a counterpartist may well suppose that material objects are present at different times by having different temporal parts that are present at those times, in much the way that events are present at different times by having different temporal parts that are present at different times. Given this picture, it is natural to suppose that there can be soft facts about how many material objects there are here now. Suppose a battle is being fought now. It could be that, depending on how the future goes, that battle will turn out to have been part of one war, or two. If so, there won't be a hard fact about how many wars (and how many events) are getting underway now. Similarly, if what is wholly present on the table (or, rather, the current stage of the table) is a temporal part or stage of a (four-dimensional)

---

10 Notice, though, that if we are counting by current total overlap, then how many material objects there are *hic et nunc* can no more (logically) depend on the past, than it can (logically) depend on the future. But, I have argued elsewhere, how many material objects there are here and now can depend on the past (see my (1997)).

11 The view that material objects are temporal-part-less, and wholly present at all the times they exist, is often associated with Aristotle; and that view certainly does go very naturally with the Aristotelian account of change. As far as I know, though, Anselm is the first philosopher to argue explicitly that material objects and other substances lack temporal parts, and are wholly present at every time they exist, unlike processes or events, that are present at different times by having different parts present at those times. See *Monologion* 21:

> If this Nature were to ext as a whole distinctly and successively at different times (as a man exists as a whole yesterday, today, and tomorrow), then this Nature would properly be said to have existed, to exist, and to be going to exist... its lifetime... would not exist as a whole at once but would be extended by parts throughout the parts of time. (1974: 34)

material object, then there won't be a hard fact about whether that stage is a part of two different four-dimensional material objects (a statue, and a lump), or just one (a statue-cum-lump). So there won't be a hard fact about how many material objects are there on the table right now. This suggests that a serious objection to the thesis that permanent co-constitution is identity can be met if, but only if, material objects are not Anselmian.

Peter Van Inwagen has suggested that, in order to defend a four-dimensionalist account of physical objects against a certain objection, the four-dimensionalist must reject an identitatarian account of modal predication. I am suggesting that, in order to defend a counterpart theoretic account of modal predication against a certain objection, the counterpart theorist must reject a three-dimensionalist account of persistence. The view that objects are wholly present in different worlds, and the view that objects are wholly present at different times are as it were made for each other, and someone who rejects one is well advised to reject the other.

V.

We have not yet found any arguments decisively favoring counterparts over trans-world individuals. But we have not yet considered what Lewis (and, it seems, Kripke) consider the strongest argument for their view, which could be put as follows:

> The identitarian thinks that the person you would have been, had things been different, is just you, and that the would-have-been relation is just identity. (We may speak of the would-have-been relation in order not to prejudge whether the relation is identity or some (qualitatively based or non-qualitatively-based) counterpart relation). But the would-have-been relation does not have the right logical properties to be identity.

Why not? Suppose that a bicycle B_0 is made by a bicycle-maker from (small) parts $P_1.....P_n$[12]. It seems that the bicycle maker could have made that same bicycle from all the same (small) parts except one (as long as she had put the parts together in the same way, in the same place and time, etc.). On the other hand, it seems that no bicycle maker could have made that very bicycle from a completely different set of (small) parts: a bicycle made from completely different (small) parts would have been a different bicycle[13]. There is a problem, though, about reconciling these two claims. In the actual world **G** our bicycle-maker makes B_0 from (small) parts $P_1.....P_n$. Since she might have made B_0 from all the same (small) parts but one, there is a possible world $\mathbf{H_1}$ in which she makes B_0 from $P_1.....P_{n-1}$, P'_n (where P'_n is distinct from but just like P_n: in what follows, a P' will always be distinct from a P). Now if she had made B_0 out of $P_1.....P_{n-2}$, P_{n-1}, P'_n, it would then have been true that she could have made B_0 out of $P_1.....P_{n-2}$, P'_{n-1}, P'_n. So, it seems, there is a possible world $\mathbf{H_2}$ in which she makes B_0 from $P_1.....P_{n-2}$, P'_{n-1}, P'_n. Continuing in this way, we reach a possible world $\mathbf{H_n}$ in which our bicycle-maker makes B_0 from a set of parts $P'_1.....P'_n$ completely different from B_0's actual parts $P_1.....P_n$. If there is such a world, then the bicycle maker could after all have made the bicycle that she actually made from one set of parts, from a completely different set of parts. Given that we accept the (intuitively plausible) claim that a bicycle could have had a slightly different set of parts, we seem to be stuck with the (intuitively implausible) claim that a bicycle could have been made from a completely different set of parts[14].

The counterpart theorist can, however, take the better without the bitter. As she sees it, it could have been that B_0 was made from $P_1.....P_{n-1}$, P'_n, since B_o has a counterpart that was made

---

12 Assume that all of the parts $P_1.....P_n$ are small, and that the bicycle has no parts disjoint from each of $P_1.....P_n$. Thus even the bicycle's frame can be broken down into many small parts.

13 Here it is important that each of the bicycle's parts overlap with some of (the small parts) $P_1.....P_n$. If, say, the frame and the handlebars did not overlap with any one of $P_1.....P_n$, it could be argued that the bicycle could have (originally) lacked all of $P_1.....P_n$.

14 The example is taken from Chandler (1976), though, as we shall see, the moral Chandler draws from it is quite different.

from P_1.....P_{n-1}, P'_n. And it could have been that it could have been that B_0 was made from P_1.....P_{n-2}, P'_{n-1}, P'_n, since B_0 has a counterpart that has a counterpart that was made from P_1.....P_{n-2}, P'_{n-1}, P'_n. By the same reasoning, it could have been that it could have been that....it could have been that B_0 was made from P'_1.....P'_n, since B_0 has a counterpart that....that has a counterpart that was made from P'_1.....P'_n. Still, the counterpartist can say, B_0 could not have been made from P'_1.....P'_n, since B_0 has no counterpart made from P'_1.....P'_n (even though it has a counterpart that has a counterpart that...has a counterpart made from P'_1.....P'_n). The counterpart relation need not be transitive; in fact, if it is similarity-based, one would expect it to not to be (since a lot of little differences can add up to a big difference).

So, the counterpart theorist may say, the bicycle case shows that the would-have-been relation is non-transitive. Corresponding to our sequence of possible worlds **G**, $\mathbf{H}_1$.....$\mathbf{H}_n$, we have a sequence of bicycles B_0, B_1.....B_n. Each (non-initial) B_j is the bicycle that B_{j-1} would have been (had $\mathbf{H}_j$ been actual); but B_n is not the bicycle B_0 would have been, had $\mathbf{H}_n$ been actual. Since the would-have-been relation is non-transitive, it isn't identity.

All this presupposes that a bicycle could not have been made from a completely different set of parts. That assumption is contestable. But I doubt there is much mileage in trying to block the argument by contesting it. The argument depends on the idea that an individual could have been slightly different along a certain dimension (in this case, the parts it was made from and originally made of), but could not have been too different along that dimension. Even if a bicycle could have had been made from a completely different set of parts, there will surely be some individual and some dimension such that that individual could have been slightly different, but not too different, along that dimension. For instance, it seems that a clay statue might have had had an (original) shape slightly different from its actual (original) shape. But it could not have had an (original) shape hugely different from its actual (original) shape. A cup made by a potter could have been originally made of slightly more or slightly

less matter than the amount of matter it was initially made of. But it could not have been originally made of an amount of matter sixteen times greater, or sixteen times less, than the amount of matter it was actually originally made of. Richmond Park might have a slightly different original location--it might have (originally) extended slightly into what is actually Wimbledon Common--but it surely could not have originally been entirely within the city limits of Edinburgh. And so on. Denying all these claims would commit us to an appreciable (and unappealing) degree of hypoessentialism.

Similarly, there is not much mileage in blocking the argument by denying the premiss that a bicycle could have been made from all the same parts except one. If we blocked similar arguments in the same way, we would end up with a version of hyperessentialism--at least with respect to the properties an individual has at its first moment of existence.

Of course, all of the kinds of entities appealed to in arguing for the non-transitivity of the would-have-been relation are at least somewhat ontologically controversial: van Inwagen, for one, would deny the existence of every one of them. But anyone who (like van Inwagen) countenances living beings will face problems concerning the transitivity of the would-have-been relation. After all, it seems possible that someday we shall be able to grow cells individually, and subsequently "assemble" them in such a way as to get an organism. Moreover, it seems that the same organism might have been "assembled" from almost-all-but-not-quite-all the same cells, but couldn't have been "assembled" from a completely different batch of cells. That is enough to call into question the transitivity of the would-have-been relation. (The point may be worth emphasizing, inasmuch as van Inwagen has averred that opposition to, or even skepticism about trans-world identity, is simply the result of one or another sort of confusion). Perhaps we can avoid problems for the transitivity of the would-have-been relation if our ontology includes only simples--say, space-time points *vel similia.* I take it, though, that an ontology this bare is not significantly more attractive than hypo or hyper essentialism.

In any case, most philosophers who have addressed the problem under consideration have conceded the existence of the

entities that give rise to the problem, and rejected both hypoessentialism and hyperessentialism. For example, Kripke (tentatively) accepts that an artefact could have been made from and originally of slightly different parts or matter, and insists that an artefact could not have been made from or originally of completely differents parts or matter. So how would Kripke respond to the argument just sketched? Judging from note 18 of *Naming and Necessity*, surprisingly concessively:

> ...If a chip, or molecule, of a given table had been replaced by another one, we would be content to say that we have the same table. But if too many chips were different, we would seem to have a different one. The same problem can, of course, arise for identity over time.
>
> Where the identity relation is vague, it may seem intransitive; a chain of apparent identities may yield an apparent nonidentity. Some sort of 'counterpart' notion (though not with Lewis' underpinnings of resemblance, foreign country worlds, etc.), may have more utility here. One could say that strict identity applies only to the particulars (the molecules), and the counterpart relation to the particulars 'composed' of them, the tables. The counterpart relation can then be declared to be vague and intransitive. It seems, however, utopian to suppose that we will ever reach a level of ultimate, basic particulars for which identity relations are never vague and the danger of intransitivity is eliminated.

Although Kripke expresses himself rather tentatively ("we would be content to say... we would seem... may seem intransitive... may have more utility"), he seems to concede that there are cases in which what I have been calling the would-have-been relation at least appears to be intransitive, and that a counterpart-theoretic account of modal predication--unlike an identitarian one--can obviously accommodate this (apparent) fact. If it turned out that an identitarian account of modal predication cannot be squared with the idea that a bicycle could have been made from some different parts, but not from completely different parts, or the idea that a table could have been made from an only slightly different portion of wood, but not from a completely different bit of wood, that certainly would strongly favor a

counterpart-theoretic account of modal predication over an identitarian one. And inasmuch as the former account clearly and unproblematically accommodates the (apparent) fact at issue, and the latter account does not, that favors the former account over the latter one[15].

Hugh Chandler has suggested, though (1976), that the identitarian can accept that a bicycle could have (originally) lacked some but not all of its original parts (without contesting the transitivity of identity). His idea is that somewhere in the sequence of worlds that begins with **G** and ends in $\mathbf{H}_n$, we pass from possible worlds to impossible worlds[16]. $\mathbf{H}_1$ is possible relative to **G** (that is, everything true at $\mathbf{H}_1$ is possibly true at **G**). And each (non-initial) $\mathbf{H}_j$ is possible relative to $\mathbf{H}_{j-1}$. But $\mathbf{H}_n$ is not possible relative to the actual world **G** (although it is possibly possibly possibly....possible with respect to **G**). It follows that the relation of relative possibility is not transitive, so that any modal logic at least as strong S4 (according to which relative possibility is transitive) is too strong. It will not in general be true that $\Box A \supset \Box\Box A$, or that $\Diamond\Diamond A \supset A$. Moreover, some possible states of affairs are only contingently possible. Suppose, for the sake of simplicity, that a bicycle with *n* small parts could have been made from a set of small parts fewer than half of which were different from the small parts that bicycle was actually made from, but could not have been made from a set of small parts half of more of which were different from the small parts the bicycle

15 In note 18, Kripke at least suggests that it is the (apparent) vagueness of the would-have-been relation that gives rise to its (apparent) intransitivity. But as Anil Gupta has noted (1980: 102-103) even if we supposed there was a perfectly precise answer to the question, "how many of its original parts could this bicycle have lacked, and still existed?", the would-have-been relation would still be intransitive – unless the answer was "none" or "all" Although the fact that a bicycle could have (originally) lacked some but not all of its original parts provides at least a *prima facie* reason to think that the would-have-been relation is intransitive, it is unclear that it provides a (*prima facie*) reason to think that it is vague (see Salmon 1980: 240-250).

16 Chandler suggests that we do not pass from a (definitely) possible $\mathbf{H}_j$ to a (definitely) impossible $\mathbf{H}_{j+1}$; instead we move from possible worlds to impossible worlds "via a region of indeterminacy" where the worlds are presumably neither definitely possible nor definitely impossible. Thus the relation of relative possibility will have the vagueness, as well as the intransitivity, that some counterpart theorists have wanted to ascribe to the would-have-been relation.

was actually made from. Given that B_0 was actually made of $P_1.....P_n$, it could have been made from $P'_1.....P'_{n/2-1}$, $P_{n/2}.....P_n$. Moreover, B_0 could have been made from $P_1.....P_{n-1}$, P'_n. But if it had been, then it wouldn't have been possible for it to have been made from $P'_1.....P'_{n/2-1}$, $P_{n/2}.....P_n$ (since that would entail B_0's being made from a set of small parts half of which were different from the small parts it was actually made from).

My first reaction to all this was disbelief: it seemed paradoxical that what possiblities there are could depend on which of the possiblities that there are is actualized. Moreover, consider the state of affairs, *B_0's being made of* $P'_1.....P'_{n/2}$, $P_{n/2+1}.....P_n$. Given our assumptions about how many of its actual parts a bicycle would have to have been made from, this is a (just barely) impossible state of affairs. But it is not, as it were, intrinsically impossible--impossible simply in virtue of being the state of affairs it is. If B_0 had been made from $P_1....P_{n/2-1}$, $P'_{n/2}$, $P_{n/2+1}....P_n$ – as it perfectly well might have been – then *B_0's being made of* $P'_1.....P'_{n/2}$, $P_{n/2+1}.....P_n$ would have been a (just barely) possible state of affairs. So *B_0's being made of* $P'_1.....P'_{n/2}$, $P_{n/2+1}.....P_n$ is impossible only because it happens to be just a bit too far from actuality. And how could the (metaphysical) impossibility of a state of affairs be a contingent and extrinsic feature of that state of affairs?

Although I continue to resonate to these intuitions, I am no longer sure how much weight they should be accorded. For the defender of Chandler could say that, however plausible it might be *ex ante* that what is possible does not depend on which possibilities are actualized, or that metaphysical impossibility is an intrinsic feature of a state of affairs, cases involving artefacts show – by appeal to robust and widely shared intuitions – that relative possibility is intransitive, and that both of the (initially plausible) principles just mentioned have counterexamples.

Indeed, two commonly made criticisms of Chandler can be played off against each other. It is often held to be intuitively obvious – or at least very plausible – that (where metaphysical possibility is at issue), whatever is possible is necessarily

possible[17]. And it is often said that Chandler's solution to the bicycle problem is *ad hoc*, inasmuch as Chandler provides no independent reason for thinking that relative possibility is intransitive[18]. Chandler could reply that (i) the bicycle case and its congeners provide (tolerably) clear counterexamples to the transitivity of relative possibility (sufficiently motivating the denial of transitivity), and (ii) counterexamples to the transitivity of relative possibility are relatively hard to come by – which explains the initial appeal of principles such as "whatever is possible is necessarily possible" (and the related principles discussed in the last paragraph). An analogy: many non-philosophers, and even some philosophers, are initially disposed to regard as intuitively obvious the claim that if this material object and that material object are in the same place at the same time, then this material and that material object are identical[19]. But most (contemporary analytic) philosophers deny the claim, and explain its initial appeal in terms of our failure to initially think of the kind of cases that are counterexamples to it. It is open to Chandler to make the same kind of move with respect to the intuitive appeal of the principles incompatible with his treatement of the bicycle case.

Here the champion of counterparts might object:

> As Kripke notes, the same sorts of difficulties concerning vagueness and intransitivity arise for identity through time that arise for identity across worlds: a chain ofapparent identities can lead to an apparent non-identity. So, for example, a minuscule deformation of the bit of clay a statue will result in the (minuscule) deformation of the statue, and not in the statue's demise. But a long enough series of minuscule deformations will result in the statue's demise, and its replacement by something else[20]. How is this possible? We cannot answer this question along Chandler's lines (since the temporal analogue of the

17 See, e.g., Plantinga (1974: 51-55).

18 See Gupta (1980: 101).

19 I put the principle this way, rather than in terms of the impossibility of having two material objects at the same place at the same time, to avoid complications concerning whether we are counting by identity or some other relation.

20 I have switched from bicycles to statues, because it is by no means clear that a bicycle could not survive the total replacement of all its original small parts, even if could not have been made from a completely different set of small parts.

> relative possibility relation (the earlier-than-or-simultaneous-with-or-later-than relation) is unquestionably transitive. Thus Chandler's approach is unsatisfactory, because it does not provide a general solution to a problem that comes in both a modal and a temporal version.

It is true that Chandler's approach can not be brought to bear on the (superficially similar) statue problem. But what would an account providing a uniform solution to the modal and temporal problems look like? One such account would hold that identity through time is genuine identity, and avoid the paradox by maintaining that some of the relevant alleged (cross-time) identities are false. On this approach, in the statue case described above, we deny that for all times t and $t + \varepsilon$, if the clay statue exists at t, and the clay the statue is made of still exists at $t + \varepsilon$, and is only minimally deformed with respect to its shape at t, then the statue existing at t = the statue existing at $t + \varepsilon$. At some point, when the statue gets too far away from its original shape, a slight deformation of the clay it is made of becomes fatal to it. On an alternative account, we would say that an identity statement may be completely true, or completely false, or something in between. And we would say that some of the relevant identities are less than completely true: at some point, a slight deformation results in its no longer being completely true that the statue survives.

If we treat the temporal case along these lines, a parallel treatement of the modal case would look like this: identity across worlds is genuine identity, and some of the alleged (cross-world) identities are false. We deny that for for any worlds **H** and **H'**, if the bicycle existing at **H** differs from the bicycle existing at **H'** only with respect to one small part, then the bicycle at **H** = the bicycle at **H'**. Alternatively, we say that identities may be completely true, completely false, or something in between, and we deny that for any worlds **H** and **H'**, if the bicycle existing at **H** differs from the bicycle existing at **H'** only with respect to one small part, then it is completely true that the bicycle at **H** = the bicycle at **H'**.

I don't find either of these uniform treatments of the modal and temporal problems especially appealing: I am inclined to think the two problems, in spite of their apparent similarity, have different

solutions. But for present purposes, what matters is that the defender of counterpart theory cannot champion either of them, inasmuch as they presuppose that identity across worlds is genuine identity. If the counterpartist wants a uniform treatment of the temporal and modal cases, then she is going to need to suppose that there is a cross-time counterpart relation, as well as a cross-world counterpart relation, and that the cross-time counterpart relation, like the cross-world counterpart relation, is non-transitive. On this approach, in the statue case, we will have a series of times $t_0 \ldots\ldots t_n$, and a series of individuals $i_0 \ldots\ldots i_n$, where i_0 is a statue, each i_{j+1} is the individual that i_j will be (when t_{j+1} is present), but i_n is *not* the individual that i_0 will be (when t_n is present). The trouble is that, on this approach, it won't in general be true that if it will be that it will be that...this is F, then it will be that this is F. (For it won't follow from the fact that this thing has a (future) "temporal counterpart" that has a (future) temporal counterpart...that is F, that this thing has a (future) temporal counterpart that is F). Surely, though, if a statue is going to be going to be spherical (or going to be going to be going to be spherical, or going to be going to be going to be....spherical), then it is going to be spherical.

To put essentially the same point in a slightly different way, treating the bicycle case and the statue case in a uniform counterpart-theoretic way is unappealing, because whether or not the would-have-been relation is transitive, the will-be relation certainly is. (It is often objected to "memory theories" of personal identity that, on such theories, it can happen that P_3 at t_3 is the person that P_2 at t_2 will be, and P_2 at t_2 is the person P_1 at t_1 will be, but P_3 at t_3 is not the person that P_1 at t_1 will be. Few philosophers would be tempted to defend the memory theory on the grounds that the will-be relation is intransitive).

The moral is that the counterpart theorist is in no position to impugn the adequacy of Chandler's solution to the bicycle problem on the grounds that what is wanted is a solution that can also solve the statue problem: the counterpartist theorist, just as much as Chandler, is committed to the problems' having different solutions.

Having considered four lines of argument for counterpart theory, we can take stock. Kripke and others have argued (to my mind, persuasively) that, in virtue of its simplicity and straightforwardness, an identitarian account of modal predication is the "default" option, in the absence of considerations favoring a counterpart-theoretic one. As Kripke concedes, such considerations might be forthcoming. And some will find some of those considerations (e.g., what I have called the modal supervenience principle) persuasive. But none of the considerations touched upon here are likely to persuade someone initially impressed by the simplicity and straightforwardness of an identitarian account that a counterpart-theoretic account is, all things considered, preferable to it.

King's College London
Strand
London WC2R 2LS
e-mail: chughes3@nd.edu

REFERENCES

ANSELM ST. (1974). Monologion. In: J. Hopkins & H. Richardson (eds.), *Anselm of Canterbury*. Toronto: Edwin Mellen Press.

BIGELOW J. & PARGETTER R (1990). *Science and Necessity*. Cambridge: Cambridge University Press.

BURGE T. (1977). A Theory of Aggregates. *Noûs* 11, 97-117.

CHANDLER H. (1976). Plantinga and the Contingently Possible. *Analysis* 37, 152-159.

GEACH P. (1980). *Reference and Generality*. Ithaca: Cornell University Press (3rd edition).

GIBBARD A. (1975). Contingent Identity. *Journal of Philosophical Logic* 4, 187-221.

GUPTA A. (1980). *The Logic of Common Nouns*. New Haven: Yale University Press.

HUGHES C. (1997). Same-Kind Coincidence and the Ship of Theseus. *Mind* 106, 53-67.
KRIPKE S. (1971). Identity and Necessity. In: M. Munitz (ed.), *Identity and Individuation*. New York: New York University Press.
KRIPKE S. (1972). Naming and Necessity. In: D. Davidson & G. Harman (eds.), *Semantics of Natural Language*. Dordrecht: D. Reidel: 253-355.
LEWIS D. (1968). Counterpart Theory and Quantified Modal Logic. *Journal of Philosophy*, 113-126.
LEWIS D. (1971). Counterparts of Persons and Their Bodies. *Journal of Philosophy*, 203-211.
LEWIS D. (1973). *Counterfactuals*. Cambridge: Harvard University Press.
LEWIS D. (1983). Individuation by Acquaintance and Stipulation. *The Philosophical Review*, 3-33.
LOUX M. (1979). *The Possible and the Actual*. Ithaca: Cornell University Press.
LYCAN W (1990/1). Two--No Three--Conceptions of Possible Worlds. *Proceedings of the Aristotelian Society*.
NOONAN H. (1985). The Closest Continuer Theory of Identity. *Inquiry* 28.
NOONAN H. Constitution is Identity. *Mind*, 133-145.
PLANTINGA A. (1974). *The Nature of Necessity*. Oxford: Clarendon Press.
SALMON N. (1982). *Reference and Essence*. Oxford: Basil Blackwell.
SHOEMAKER S. (1979). Identity, Properties, and Causality. In: P.A. French, T.E. Uehling (Jr.), H.K. Wettstein, (eds.), *Midwest Studies in Philosophy*. Morris: University of Minnesota Press, 321-342.
VAN INWAGEN P. (1989). *Material Beings*. Ithaca: Cornell University Press.
WIGGINS D. (1980). *Sameness and Substance*. Cambridge: Harvard University Press.