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# This Side of Paradox (1993)

In his intriguing book, *Identity and Discrimination*, Timothy Williamson presents a modified version of a philosophical problem about modality sometimes called 'Chisholm's Paradox'.[1] Williamson proffers a solution based on the apparatus developed in the book, a solution that is at odds with an alternative solution to Chisholm's Paradox that I have defended and developed in a series of essays. Williamson argues[2] that his proposed solution is superior to mine, since it is tailored to handle a variety of philosophical difficulties involving identity, including the original version of Chisholm's Paradox, whereas my solution to the latter involves controversial general claims about modality that are altogether irrelevant to his own version of the paradox. Consider, then, a version of Chisholm's Paradox that I have presented in earlier work.[3] It proceeds from the following two modal principles:

(*A*) If a wooden table *x* is the only table originally formed from a hunk of matter *y* according to a certain plan *P*, and $y'$ is any distinct (possibly scattered) hunk of matter that very extensively (sufficiently) overlaps *y* and has exactly the same mass, volume, and chemical composition as *y*, then *x* is such that it might have been the only table originally formed according to the same plan *P* from $y'$ instead of from *y*.

(*B*) If a wooden table *x* is the only table originally formed from a hunk of matter *y*, and *z* is any hunk of matter that does not very extensively (sufficiently) overlap *y*, then *x* is such that it could not have been the only table originally formed from *z* instead of from *y*.

Principle (*A*) is a principle of modal tolerance; principle (*B*) is one of modal intolerance, or essentialism.[4] Chisholm's Paradox starts with the exceedingly

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[1] Timothy Williamson, *Identity and Discrimination* (Oxford: Basil Blackwell, 1990), pp. 126–143. A version of the paradox was apparently first noted by Saul Kripke, in *Naming and Necessity* (Cambridge, Mass.: Harvard University Press, 1980), p. 51 n. 18, where it is briefly discussed. Something directly akin to this paradox was also noted and discussed by Roderick Chisholm in 'Parts as Essential to their Wholes,' *Review of Metaphysics*, 26 (1973), pp. 584–586. The paradox is highly reminiscent of Chisholm's paradoxical queries concerning cross-world identity in his seminal 'Identity Through Possible Worlds: Some Questions,' *Noûs* 1 (1967), pp. 1–8.

[2] *Identity and Discrimination*, p.p. 127, 135, and 142.

[3] Nathan Salmon, 'Modal Paradox: Parts and Counterparts, Points and Counterpoints,' *Midwest Studies in Philosophy XI: Studies in Essentialism* (Minneapolis: University of Minnesota Press, 1986), pp. 80–81. See the first endnote of that work for further bibliographical references.

[4] These are the principles labelled '(II)' and '(III)', respectively, in 'Modal Paradox.' See p. 75 of that work for further modal principles more fundamental than these two. (Thanks to Theodore Guleserian for pointing out the need for a more careful formulation than I had originally given.)

plausible assumption that these two modal principles are not true merely as an accidental matter of contingent fact, but are necessary truths. Furthermore, principle (*A*), at least, is such that if it is true at all, then it is necessary that it is necessarily true, and it is necessary that it is necessary that it is necessarily true, and so on ad infinitum. In fact, on the conventionally accepted system *S*5 of modal propositional logic, any proposition is such that if it is necessarily true, then it is necessary that it is necessarily true, and it is necessary that it is necessary that it is necessarily true, and so on. The paradox consists in a modal propositional argument, which I call '(*CP*)'. The argument, which is valid in *S*5, has numerous premise, all of which seem true, and an explicit contradiction as a conclusion. The first premise is the following:

($P_0$) *a* is the only table originally formed from hunk of wood $h_0$ according to such and such a plan.

This is to be true by hypothesis. Let *n* be the total number of molecules in hunk $h_0$. We consider a sequence of (possibly scattered) hunks of wood $h_0, h_1, \ldots, h_n$, where each successive hunk of wood in the sequence differs from its predecessor by only one molecule, qualitatively identical to the one it replaces, in such a way that the final hunk $h_n$ has not a single molecule in common with table *a*'s original wood $h_0$. Premiss ($P_0$) is then joined by *n* premise of the following form, each of which is derived on the basis of the necessitation of principle (*A*), where $0 \leq i < n$:

($P_{i+1}$) Necessarily, if *a* is the only table originally formed from hunk $h_i$ according to such and such a plan, then it is possible that *a* is the only table originally formed instead from hunk $h_{i+1}$ according to the same plan.

These premise are followed finally by the premise,

($P_{n+1}$) It is impossible for *a* to be the only table originally formed from hunk $h_n$ according to such and such a plan,

which is derived from principle (*B*). The derivation of the contradictory conjunction of ($P_{n+1}$) together with that which ($P_{n+1}$) denies from the premise of (*CP*) is, in some sense, the canonical form of Chisholm's Paradox.

The solution I endorse (following Hugh Chandler) is based on a rejection of the *S*4 axiom, and hence also the *S*5 axiom, of classical modal logic.[5] In its absence, the premise of (*CP*) have no philosophically interesting consequences. A very interesting, and enlightening, consequence is generated, however, if each premise ($P_{i+1}$) is modified by replacing its initial single occurrence of the modal auxiliary 'necessarily' with *i* or more iterated occurrences—a switch that can be justified on the basis of the infinitely iterated necessitation of (*A*). In the absence of *S*4, the modified premise

[5] *Cf.* Hugh Chandler, 'Plantinga and the Contingently Possible,' *Analysis*, 36 (1976), pp. 106–109. The *S*4 axiom is, in effect, the claim that if it is possible that it is possible that *p*, then it is possible that *p*. The *S*5 axiom is the claim that if it is possible that it is necessary that *p*, then it is necessary that *p*. The *B* axiom is the claim that if it is possible that it is necessary that *p*, then *p*. The *S*5 axiom entails both the *B* axiom and the *S*4 axiom in the weak modal logic *T*. In 'The Logic of What Might Have Been,' *The Philosophical Review*, 98 (1989), pp. 3–34, I extend the fundamental argument against *S*4 (and *S*5) into a challenge to *B* propositional modal logic as well. (The work includes a lengthy bibliography.)

taken together with the initial premise ($P_0$) still do not have the consequence that it is possible for *a* to be the only table originally formed from hunk $h_n$, but a weaker consequence to the effect that the prospect of *a* being formed from $h_n$—which, according to ($P_{n+1}$), is impossible—is nevertheless possibly possibly possibly . . . possible.

Williamson objects that we have no good reason to believe that any of the premise of the canonical version (*CP*) yield counter-examples to the *S*4 axiom:

> For [the corresponding premise of analogous] temporal paradoxes are not counter-examples to the analogous principle that if it is at some time the case that it is at some time the case that *A* then it is at some time the case that *A*. They involve the failure of some other assumption; it will have a modal analogue; why should we suppose that the latter does not fail, and blame the *S*4 principle instead? Salmon can point to the intuitive plausibility of the other modal assumptions, but he has not shown it to be any greater than the intuitive plausibility of their temporal analogues, at least one of which is false. For what it is worth, the present author's intuitions are equally strong in the two cases. Furthermore, the *S*4 principle is not behind the modal paradox [presented here].[6]

The crucial wrinkle in Williamson's modified version of Chisholm's Paradox is that we do not begin with an actual artifact. This eliminates altogether the initial premise ($P_0$) of (*CP*). Instead we are asked to identify and distinguish merely possible artifacts that *would have been* constructed from various portions of matter.[7] A particular carpenter, whose job it is to construct a table from a single hunk of wood according to a specified plan, is repeatedly presented with the entire sequence of hunks $h_0, h_1, \ldots, h_n$ in rapid succession, alternating between sequential order and reverse sequential order. He need only pull a lever in order to select one hunk. Intending to choose at random, the carpenter dies suddenly just before making his selection.[8] Following Williamson's notation, let us abbreviate a modal description of the form 'the merely possible table that would have been the only table originally formed from hunk $h_i$, according to such and such a plan, had the carpenter selected that hunk and completed the job in that fashion' by '$o(h_i)$'. Intuitively, for each of the descriptions '$o(h_0)$', '$o(h_1)$', and so on, there is a unique possible table that the description designates (assuming each of the terms '$h_i$' designates a specific hunk of wood, and ignoring any lingering doubts one may harbor about designating the nonexistent). Furthermore, in considering the differences between the would-be construction of a table from any hunk $h_i$ and that from its immediate successor in the sequence, Williamson argues that, intuitively, such cross-world differences are

> too slight to amount to the distinctness of their products. The very same [table] would be made in both cases, but out of marginally different material. . . . The underlying intuition feels

[6] *Identity and Discrimination*, p. 142.

[7] Stephen Yablo informs me that John Drennan had presented a similar version of the paradox.

[8] Williamson's actual example involves fashioning a pair of semi-circular earrings by cutting along any diameter of a rotating metal disk. I have taken considerable liberties in modifying Williamson's example to make it more like the situation described in (*CP*). The various differences between Williamson's actual example and my modification of it are not differences on which Williamson places any emphasis. I believe that my modifications do not affect the philosophical points that either Williamson or I wish to make.

the same as that which gives plausibility to somewhat different principles such as Salmon's [modal principle (*A*)].[9]

Let (*W*) be the claim that the cross-world differences between the constructions of tables according to the same plan from neighboring hunks of wood are sufficiently slight to ensure the identity of their products. On its basis we obtain *n* equations of the form '$o(h_i) = o(h_{i+1})$' in place of the former premise ($P_{i+1}$). In place of the former final premise ($P_{n+1}$) we have '$o(h_0) \neq o(h_n)$'. Together these new premise entail a new contradiction in classical extensional logic, without any special modal axioms.

Williamson explicitly cites principle (*A*), seemingly approvingly, in support of the *n* equation premise. But recall that he also criticizes my solution to (*CP*), which challenges the modal reasoning involved, partly on the ground that analogous temporal paradoxes impugn the conjunction of modal assumptions involved in the premise of the argument. Williamson has confirmed that he accepts principle (*B*), and hence also the final premise ($P_{n+1}$) of (*CP*), while rejecting (*A*), or at least its necessitation, and hence also the conjunction of premise ($P_1$)–($P_n$) of (*CP*) which are justified on its basis.[10] His solution to Chisholm's Paradox thus involves embracing a fairly intolerant form of mereological essentialism, in many respects similar to (though perhaps not as extreme as) Chisholm's own brand of essentialism.

Williamson likewise ultimately rejects the conjunction of the first *n* premise in his own version of the paradox. Indeed, in light of the extreme plausibility of the final premise (and the logic of identity), it should be clear that not all of the equation premise can be true.[11] The claim made by (*W*) must be mistaken. Williamson

[9] *Identity and Discrimination*, p. 129.

[10] In correspondence, January 1992.

[11] David Cowles has pointed out that the infinite necessitation of (*B*) is insufficient by itself to justify Williamson's final premise that $o(h_0) \neq o(h_n)$. It is logically possible (although very likely metaphysically impossible) that while (*B*) is necessary, and necessarily necessary, etc., the amount of variation possible in the original matter of a typical table exceeds one-half of the totality of its molecules. In that case, all of the first *n* premise may be true. Against this logical possibility, there are at least two ways that Williamson's final premise might be justified. One may simply note that the possible table that would have been the only table originally formed from hunk $h_0$ if *both* hunks $h_0$ and $h_n$ had been simultaneously formed into two separate tables, both according to such and such a plan, is none other than $o(h_0)$, and likewise that the possible table that would have been the only table originally formed from hunk $h_n$ if both $h_0$ and $h_n$ had been simultaneously formed into two separate tables is $0(h_n)$. It immediately follows that $o(h_0) \neq o(h_n)$.

Stewart Cohen and David Cowles have pointed out that this argument does not also show that $o(h_0) \neq o(h_{n-1})$—unless $o(h_{n-1}) = o(h_n)$, or alternatively $o(h_0) = o(h_{n-1})$, where $h_{n-1}$ is a hunk of matter just like $h_0$ except for the replacement of the one molecule common to both $h_0$ and $o(h_{n-1})$. In lieu of the above argument, one may invoke a suitable generalization of (*B*), such as the infinitely many principles given by the following schema:

($B_i$) If *x* is a wooden table and *z* is any hunk of matter that does not very extensively overlap any hunk of matter *y* such that it is possible$^i$ that *x* is the only table originally formed from *y*, then *x* is such that necessarily$^{(i+1)}$, it is not the only table originally formed from *z* instead of from *y*.

Here 'possibly$^j$' is a string of *j* occurrences of 'possibly', and similarly for 'necessarily$^j$'. (The original (*B*) corresponds to ($B_0$).) We now make the plausible assumption that the amount of variation possible in the original matter of a typical table is less than one-half of the totality of its molecules. (This assumption may even be strengthened to some extent without significant loss of plausibility.) Let $w_0$ be any of the 'nearest' possible worlds (those most like the actual world) in utilizes his rich conceptual machinery to explain why that mistaken assumption seemed plausible.[12]

But he seriously overstates the case when he says categorically that *S*4 modal logic is not behind this problem. There is a clear sense in which what I would deem untrue instances of the *S*4 axiom are precisely what give the problem its air of paradox. I will explain.

Notice first a significant difference between (*CP*) and Williamson's version of the paradox. The latter, but not the former, is formulated in terms of the cross-world identity of possible tables, and indeed the elaborate apparatus that Williamson invokes to explain the intuitive appeal of the mistaken assumption (*W*) is explicitly designed for dealing with cases in which genuine identity is supplanted with certain sorts of approximations to identity. The primary question he poses is: 'Which portions of matter would constitute the same artifact?'[13] This is quite different from the questions posed at the beginning of his discussion of the modal and temporal paradoxes: 'How different could things have been, still being those things? How different could *they* have been?'[14] Although Chisholm originally cast his problem as one concerning identity across possible worlds, and although most others who have discussed the same or related problems (such as Kripke) have also posed those problems in terms of cross-world identity, identity is all but irrelevant to Chisholm's Paradox.[15] Certainly it is not a paradox *about* identity. In particular, the validity of (*CP*), unlike that of Williamson's replacement, does not depend in any way on the logic of identity. As I have argued elsewhere, Chisholm's Paradox is also not a sorites paradox, in the usual sense.[16] It is a paradox about modality.

What of the claimed analogy with the temporal paradoxes? Williamson's contention that the intuitive plausibility of the two modal principles involved in (*CP*) is no greater than that of their temporal analogues is incorrect. Williamson himself,

which the carpenter randomly selects hunk $h_0$. By our assumption, $h_n$ does not sufficiently extensively overlap any hunk $h_m$ that sufficiently extensively overlaps $h_0$. Hence, by the necessitation of ($B_1$), instantiated to $w_0$ (and the double necessitation of ($B_0$), doubly instantiated to worlds possible relative to $w_0$), there is no world possible relative to any world possible relative to $w_0$ in which the actual $o(h_0)$ originates instead from $h_n$. The actual world is clearly possible relative to $w_0$. Therefore, none of the nearest worlds in which the carpenter randomly selects hunk $h_n$ is one in which the resulting table is $o(h_0)$.

[12] In the correspondence mentioned above in note 10, Williamson offered a similar account of the plausibility of the necessitation of (*A*). I sharply disagree not only with Williamson's rejection of modal tolerance, but also with this positive component of his account. The positive account includes the claim that each of the *n* equation premise of his own version of Chisholm's Paradox is neither determinately true nor determinately false, because all of the singular terms '$o(h_i)$'—and even much more basic terms like 'that table'— 'fail of perfectly determinate reference' (pp. 133–134, 140–141). An alternative view is that each of the equation premise has a determinate truth-value, though it is not known which it has (over and above the knowledge that some or others are false). In the book Williamson dismisses this view as 'scarcely credible' (p. 133). The former view, in fact, strikes the present writer as far less credible than the latter (partly in light of the central argument of the appendix to 'Modal Paradox,' pp. 110–114), though I am deliberately avoiding these issues here. (Williamson says that he is now more sympathetic to the latter view, though he continues to regard the former as a serious candidate.)

[13] *Identity and Discrimination*, p. 131.

[14] *Ibid.*, p. 126.

[15] *Cf.* 'Modal Paradox,' p. 93, last paragraph.

[16] 'Modal Paradox,' p. 89.

like many others, accepts principle (*B*). And he should; it is extremely plausible. In fact, it is surely true. Yet situations like that of the Ship of Theseus pose a very powerful intuitive challenge to a straightforward temporal analogue. Specifically, the familiar tale forcefully challenges the claim that the following is true even of a ship that will undergo extensive refurbishment:

If *x* is the only ship constituted (or the only ship originally constituted) by a hunk of matter *y*, and *z* is any hunk of matter that does not very extensively overlap *y*, then *x* is such that it is never the only ship constituted by *z*.

A great many philosophers share the view that temporal change is more tolerant than modal accident in regard to artifacts and organisms. A table or ship could not have originated from entirely different matter, but once it has been constructed, it is claimed, its material constitution could gradually change, as with a living body, into entirely different matter. Of course, some philosophers (and Williamson is evidently one) favor the status quo, by denying that artifacts have the capacity for total material change.[17] They embrace principles of temporal intolerance, like that displayed above, on intuitive grounds. But then such philosophers should, and probably would, automatically reject temporal analogues of the necessitation of (*A*), on the same grounds. Those grounds strike the present author as comparatively strikingly weak. Perhaps it is not altogether implausible that physical-object artifacts cannot undergo total material change. But just as it is an empirical question whether a living body routinely undergoes gradual total material change, we cannot rule it out *a priori* that tables and ships are forever undergoing rapid total refurbishment right under our very noses—perhaps because of the handiwork of very busy elves, or even of natural processes. By contrast, it does not seem implausible that we can rule it out *a priori* that a table that originated from a hunk of wood might have originated instead from entirely different matter. A priori or not, the conjunction of the necessitations of the original (*A*) and (*B*) is part of my own metaphysical doctrine. It is, at least, a coherent position. Its (relevant) temporal analogue is patently incoherent.

A better temporal analogy to the modal paradoxes arises by replacing the modal auxiliary 'necessarily' with a restricted temporal operator like 'at every moment within the interval from the preceding thirty minutes to the subsequent thirty minutes' and 'possibly' by 'at some moment within the interval from the preceding thirty minutes to the subsequent thirty minutes'.[18] One might then accept appropriate counterparts of the necessitations of both (*A*) and (*B*), even as applied to Theseus's ship.[19] At least they are consistent. Here, of course, the analogue of the *S*4 principle clearly fails.

[17] This denial seems somewhat more plausible with regard to such things as languages, as with Williamson's Latin/Italian example (pp. 135–141). I find it considerably implausible with regard to living bodies, and altogether implausible with regard to Heraclitus's river.

[18] *Cf.* my 'Fregean Theory and the Four Worlds Paradox,' in *Philosophical Books*, 25 (1984), pp. 9–10. One may replace the word 'minute' by 'year' or even 'century', if doing so will help to make the point.

[19] In order to obtain the intended assumption, one must change the quantifier on '*y*′' in (*A*) to an existential, change the conditional to a conjunction, etc.

I accept the necessitations of both (*A*) and (*B*), and I argue from their joint truth—or merely from their joint coherence—to the invalidity of *S*4 modal logic.[20] The rejection of *S*4 is not supported merely on the grounds that it provides one way around Chisholm's Paradox. Even if there is a persuasive philosophical argument against principles like (*A*) and (*B*)—and I do not know of any—I would still argue that the position defined by the conjunction of the infinitely iterated necessitations of (*A*) and (*B*) is at least a coherent metaphysical position, and that *S*4 modal logic is thereby *seen to be* fallacious. That metaphysical position demonstrates how it is logically possible for something to be possibly possible without being possible. The mere coherence of the position *exposes* the fallacy in *S*4 modal logic—in something like the way that the overlooked possibility of empty general terms exposes the Aristotelian fallacy of inferring 'Some *S* are *P*' from 'All *S* are *P*'.

I have claimed that Williamson's version of the paradox is driven by the same logical fallacy that drives Chisholm's. Although the argument in Williamson's version of the paradox is classically valid in extensional logic, *S*4 modal logic lies in hiding at the very heart of that paradox. The relevance of *S*4 can be illustrated by means of a convenient (though by no means required) assumption. It is plausible that, although no hunk of wood is actually formed into a table by the carpenter, there is exactly one hunk $h_@$ such that if a selection had been made by the carpenter, it would have been of $h_@$. Notice that the fact that the carpenter would have selected 'at random' does not rule this out. Perhaps Williamson could construct the case in such a way as to rule it out (using quantum indeterminacies or some even stranger device) but pretend for the moment that there is a special such hunk of wood.[21] We may take the possible table that would have resulted from the selection of $h_@$ as having a special modal status—not quite actuality, but the next best thing: being nearest to actuality of all the possible tables in question. This allows us, given sufficient flexibility, to reduce Williamson's possible tables to 'the previous case'; i.e., to a case like (*CP*) in which we begin with an actual table.

Suppose we have the necessitation of the following essentialist principle:

($A'$) If a wooden table *x* is the only table originally formed from a hunk of matter *y* according to a certain plan *P*, and $y'$ is any hunk of matter that very extensively (sufficiently) overlaps *y* and has exactly the same mass, volume, and chemical composition as *y*, then there could not have been a table that is both distinct from *x* and the only table originally formed according to the same plan *P* from $y'$ instead of from *y*.

Notice that this is a significantly strengthened variant of the original principle (*A*) of modal tolerance, asserting under the relevant hypotheses not merely that *x* might have been the table formed from $y'$ according to plan *P*, but that *x* is the only

[20] *Cf.* 'The Logic of What Might Have Been.'

[21] Even if it is assumed instead that several distinct hunks are, so to speak, equally nearly-actual hunks of the carpenter's random selection, if they are close enough to each other in molecular composition (and it is plausible that they will be, as Williamson set up his example—see note 9 above), one may still go some considerable distance along the path we are now on. This is so, in fact, even if there are several such clusters of equally nearly-actual hunks of random selection.

possible table of which this is true.[22] Recall that $o(h_@)$ is the actual-but-for-the-grace-of-God table that would have been constructed had the carpenter lived long enough to finish the job. We may then be willing to say that a selection of a hunk of wood that differs only very slightly from $h_@$ (say by no more than a few molecules) would have resulted in this same nearly-actual table, $o(h_@)$, but that a selection of any hunk of wood that differs from $h_@$ by more than the required margin would have resulted in a different possible table. In fact, this follows from the necessitations of ($A'$) and ($B$) above, taken together with plausible assumptions to the effect that if it would have been the case, if $o(h_@)$ had existed, that $o(h_@)$ would have been the only table originally formed from $y'$ if $y'$ had been formed into a table, then that actually *is* the case even though $o(h_@)$ does not actually exist; and likewise if it would have been the case, if $o(h_@)$ had existed, that $o(h_@)$ could not have been the only table originally formed from $z$, then that actually *is* the case even though $o(h_@)$ does not actually exist. One cannot consistently say this, of course, about all the possible tables that might have been constructed by means of a selection from the relevant sequence of hunks of wood. This is what I mean by saying that we are exploiting $o(h_@)$'s near-actuality as the next best thing to actuality. We are assuming that, since $o(h_@)$ is the possible table that would have existed, if any of the relevant possible tables had existed, the relevant limitations on $o(h_@)$'s would-be possibilities (its relevant would-be impossibilities) are also limitations on its actual possibilities. (Of course, one need not attempt to justify the above claims about whether $o(h_@)$ would have resulted from selections of various hunks of wood by means of ($A'$) and ($B$).)

In saying that the selection of any hunk sufficiently overlapping $h_@$ would have resulted in $o(h_@)$ but that other selections would not have resulted in $o(h_@)$, we thereby reject ($W$)—an assumption which Williamson defends citing the original principle ($A$) but ultimately rejects. In fact, even if one rejects the facilitating claim that some hunk of wood is distinguished by being the one that would have been selected, the independent assumption that yields the $n$ equation premise is, as I have already said, clearly untrue in any case. Suppose it were built into the case instead that no hunk in the sequence is distinguished by being a selected-but-for-the-grace-of-God hunk, and that each hunk is instead equally nearly-actual—because of quantum indeterminacies, or whatever. It might then be indeterminable which of the $n$ equation premise is true and which false. But one can still rest assured that some of them are false.[23]

[22] Principle ($A'$) is a strengthened variant of a sort of combination of principle ($A$) and principle (I) from 'Modal Paradox,' p. 75. Under the hypotheses of the principle, hunk $y'$ might have been formed into a table according to plan $P$, since $y'$ is just like hunk $y$ in all relevant respects. Given ($A'$) together with this observation, the original principle ($A$) follows. To this extent, ($A'$) is a principle of modal tolerance (as well as a principle of intolerance, or essentialism). Strictly speaking, ($A'$) does not cover Williamson's original example involving possible earrings. (See note 9 above.) In that example, possible artifacts formed by selections of different hunks of matter are not formed, in their respective worlds, according to precisely the same plan, as I had meant the term. But we may construe the term 'plan' more liberally here, so that the same 'plan' is realized in any two such worlds.

[23] This much accords to a significant extent with Williamson's current stance with respect to his problem. See notes 10 and 11 above.

This solution to the problem can be made very similar to—in fact, nearly the same as—the treatment I have proposed elsewhere for a variant of (*CP*) in which each of the *n* premise ($P_{i+1}$) is replaced by:

($P_{i+1}'$) If it is possible that *a* is the only table originally formed from hunk $h_i$ according to such and such a plan, then it is also possible that *a* is the only table originally formed instead from hunk $h_{i+1}$ according to the same plan.[24]

This is more like a genuine sorites, or 'slippery slope,' paradox. Here the difficulty is not with the reasoning involved in the argument (which is just modus ponens), but with the premise ($P_{i+1}'$), not all of which can be true. The suspect modal logical axiom *S*4 remains behind this sorites version of Chisholm's Paradox, however. For one relies on *S*4 in justifying the new premise ($P_{i+1}'$) on the basis of the necessitation of principle (*A*)—or alternatively, on the basis of the legitimately derived former premise ($P_{i+1}$).[25]

Williamson's argument is much more like this slippery slope variant of (*CP*). The original argument essentially involves nested modality. Williamson might have set up his version of Chisholm's Paradox by citing the necessitation of ($A'$) in lieu of (*W*). In a sense, he should have. By setting it up in this way his problem would have involved nested modality, and thus, would have been significantly more like Chisholm's Paradox, in what I take to be its canonical form. If Williamson will permit it, I also take the result of substituting the necessitation of ($A'$) for (*W*) to be the canonical form of what I hereby dub 'Williamson's Paradox'. It is a deeper, subtler, more paradoxical paradox. This is partly because the necessitation of ($A'$) is enormously plausible—considerably more so than (*W*), which we both reject.

[24] The resulting argument is $(CP)'$ from section 4 of 'Modal Paradox,' pp. 87–89. See also p. 114 n. 3.

[25] Graeme Forbes suggests justifying the premise ($P_{i+1}'$) independently of *S*4 by means of the following modal principle:

(*F*) If $y'$ is any (possibly scattered) hunk of matter that very extensively overlaps a distinct hunk of mattery, and $y'$ has exactly the same mass, volume, and chemical composition as *y*, then if a wooden table *x* is such that it might have been the only table originally formed from hunk *y* according to a certain plan *P*, then *x* is also such that it might have been the only table originally formed instead from hunk $y'$ according to the same plan *P*.

This principle, which comes very close to (*W*), is equally objectionable. Indeed, given the essentialist principle (*B*), Forbes's principle (*F*) is immediately highly suspicious—and for much the same reason as are the typical general principles from which genuine sorites paradoxes proceed. Compare, for example, the general claim that for any height *h*, and for any distinct height $h'$ greater than but very close to *h*, if any adult human with height *h* is short then so is any adult human with height $h'$. One immediately worries about the 'borderline cases': heights *h* and $h'$ at or near, or in between, the boundary between being short and not being short. Better yet, consider the claim that for any natural number *n*, if *n* straws did not break the camel's back, then neither will $n+1$ straws. (Remarks to be made in the final paragraph below concerning the relation between (*W*) and the necessitation of ($A'$) apply, mutatis mutandis, to Forbes's principle (*F*) and the necessitation of the original principle (*A*). In particular, the sharp contrast between the very high degree of plausibility of (*A*) and the evident non-truth of (*F*) casts serious doubt on *S*4.)

This is ironic, since Williamson cites the plausibility of a close variant of (*A*′) as part of the intuitive defense of (*W*), the assumption he ultimately rejects. It is precisely here that *S*4 comes into play. The necessitation of (*A*′) entails the offending assumption—in *S*4 but not in *T*. One severs the connection between the switched assumptions by rejecting *S*4. I would suggest that the offending assumption (*W*) derives much of whatever appeal it may enjoy from the intuitive truth of the necessitation of (*A*′), and from a failure to distinguish between the two—perhaps as a result of implicitly committing what I call 'the fallacy of necessity iteration' or 'the fallacy of possibility deletion'; i.e., reasoning in accordance with *S*4. This is confirmed by Williamson's explicit citation of a close variant of (*A*′) in his defense of the assumption. Rejecting *S*4 paves the way to rejecting the assumption while retaining the necessitation of (*A*′). And, of course, rejecting *S*4 provides a solution—indeed, I maintain, the correct solution—to what I take to be the canonical form of Williamson's Paradox.