THE NECESSITY OF ORIGIN: A LONG AND WINDING ROUTE*

In the last thirty years much philosophical discussion has been generated by Kripke’s proof of the necessity of origin for material objects presented in footnote 56 of ‘Naming and Necessity’. I consider the two most popular reconstructions of Kripke’s argument: one appealing to the necessary sufficiency of origin, and the other employing a strong independence principle allegedly derived from the necessary local nature of prevention. I argue that, to achieve a general result, both reconstructions presuppose an implicit Humean atomistic thesis of recombination, according to which any two (non-overlapping) possible objects can simultaneously coexist in one and the same world. Yet recombination ill accords with the other assumptions of the proofs. I also argue that the locality of prevention does not entail strong independence.

Key Words
Independence; Necessity of Origin; Prevention; Recombination; Sufficiency of Origin.

I. INTRODUCTION

‘Someone, let’s say, a baby, is born’.¹ Her parents call her Elizabeth. They might have given her a different name; ‘Priscilla’ and ‘Linda’ probably never crossed their minds, though they might have, but ‘Alexandra’ and ‘Mary’ might easily have been their first choice. Many things might have gone differently for the newborn baby, even things that were crucial in shaping her life and character. What if she had never become a queen? That might easily have come to pass, if only Mrs. Simpson had never crossed her uncle Edward’s path. So many contingencies have in fact literally made her life, and many ‘ifs’ could have shaped it differently. What if she had come from different parents?

But here we must stop. According to Kripke, this is one ‘if’ too many. ‘How could this very woman have come from different parents?’ we are asked. And if what is

* I started thinking on this topic some years ago when attending a UCLA seminar on Lecture III of Naming and Necessity led by David Kaplan and Joseph Almog. More recently, many conversations with Ori Simchen have been pivotal to the development of this paper. I thank Kaplan, Almog and Simchen, and also Sylvia Berryman, Louis deRosset, Eric Margolis, Sonia Roca, and Guy Rohrbaugh for comments to previous versions of this paper.

good for the goose is good for the gander, forget complex Elizabeth: How could even this very simple table have been made from a different block of wood? That it could not may well ring true and it certainly sounds intuitive. But appeals like these do not carry the day. Kripke falls into temptation and proposes a proof, at least for the apparently easier case of the table.²

In this paper, I consider Kripke’s sketch of a proof of the necessity of origin for material objects presented in footnote 56 of Naming and Necessity, and two reconstructions of the same, which employ the necessary sufficiency of origin and a strong independence principle of composibility, respectively. In section II, Kripke’s proof is briefly reconstructed. Section III discusses Salmon’s version of the proof based on the sufficiency of origin,³ and section IV Rohrbaugh and deRosset’s more recent proof based on a strong independence principle in place of sufficiency.⁴ In section V, I consider Rohrbaugh and deRosset’s claim that the strong independence principle they endorse finds its roots in the plausible idea that prevention is local. In section VI, I argue that only a limited proof of the necessity of origin can be grounded in the (alleged) local nature of prevention. In section VII, I argue that the locality of prevention cannot support a strong principle of independence that applies to all possible blocks of wood. In section VIII, I conjecture that a Humean principle of recombination naturally fills the gap between the locality of prevention and strong independence, thus making it possible to prove that a table cannot find its origin in any other possible block of wood. I also show that

² Though he should have known better: ‘Of course, some philosophers think that something’s having intuitive content is very inconclusive evidence in favor of it. I think it is very heavy evidence in favor of anything, myself. I really don’t know, in a way, what more conclusive evidence one may have about anything, ultimately speaking.’ Kripke, ibid., p. 42.
recombination is at work in the sufficiency proof too. Finally, in section IX I oppose the idea that the recombination-enriched locality proof reduces to inconsistency a Humean-Lewisian metaphysics that denies necessary connections between distinct existencies.\footnote{As is claimed in L. deRosset, ‘Production and Necessity’, \textit{Philosophical Review}, 118 (2009), pp. 153-81.}

II. Kripke’s Proof

In footnote 56 of \textit{Naming and Necessity} Kripke offers the following sketch of a proof for the necessity of origin:

A principle suggested by these examples is: \textit{If a material object has its origin from a certain hunk of matter, it could not have had its origin in any other matter.} Some qualifications might have to be stated … but in a large class of cases the principle is perhaps susceptible of something like proof, using the principle of the necessity of identity for particulars. Let ‘\(B\)’ be a name (rigid designator) of a table, let ‘\(A\)’ name the piece of wood from which it actually came. Let ‘\(C\)’ name another piece of wood. Then suppose \(B\) were made from \(A\), as in the actual world, but also another table \(D\) were simultaneously made from \(C\). (We assume that there is no relation between \(A\) and \(C\) which makes the possibility of making a table from one dependent on the possibility of making a table from the other.) Now in this situation \(B \neq D\); hence, even if \(D\) were made by itself, and no table were made from \(A\), \(D\) would not be \(B\). Strictly speaking, the ‘proof’ uses the necessity of distinctness, not of
identity. … In any event, the argument applies only if the making of $D$ from $C$ does not affect the possibility of making $B$ from $A$, and vice-versa.⁶

Let $W_1$ be the actual world, in which table $B$ is made from $A$, while nothing originates from $C$.⁷ Kripke extends $W_1$ to obtain a world $W_2$ in which $B$ is still made from $A$, but also a distinct table $D$ is made from $C$. He thus apparently presupposes an independence principle that allows this sort of extension by addition of a simultaneous table-making process.⁸ Given $W_2$, we then derive a world $W_3$ in which $D$ is still made from $C$, while this time nothing originates from $A$, employing a second independence principle that sanctions the removal of (some) parts of worlds, and in particular of a table-making process.

Thus the possibility of three distinct worlds has been established:

(W1) in which $B$ originates from $A$, and nothing originates from $C$;
(W2) in which $B$ originates from $A$, and $D$ originates from $C$;
(W3) in which nothing originates from $A$, and $D$ originates from $C$.

It is taken as evident that in $W_2$ $B$ is distinct from $D$, a relatively trivial assumption if blocks $A$ and $C$ do not overlap and tables $B$ and $D$ are simultaneously originally

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⁶ S. Kripke, *ibid.*, p. 114, fn. 56.
⁷ To facilitate the exposition, throughout the paper I assume that $C$ and $A$ are completely non-overlapping. This is a standard assumption, suggested by Kripke’s remark that ‘there is no relation between $A$ and $C$ which makes the possibility of making a table from one dependent on the possibility of making a table from the other.’ Some of the literature on this subject has focused on the questions raised by degrees of overlapping between the original blocks $A$ and $C$. See for example H. Noonan, ‘The Necessity of Origin’, *Mind*, 92 (1983), pp. 1-20; N. Salmon, ‘Modal Paradox: Parts and Counterparts, Points and Counterpoints’, *Midwest Studies in Philosophy*, 11 (1986), pp. 75-120; and T. Robertson, ‘Possibilities and the Argument for Origin Essentialism’, *Mind*, 107 (1998), pp. 731-50.
⁸ Something like Salmon’s principle ($P_1$) in Salmon 1979, p. 708.
constructed entirely from their respective blocks. By generalization, we conclude that any block of wood \( y \) distinct from \( A \) could give origin to a table \( x \) distinct from \( B \), even if \( B \) had not been made from \( A \).

As it stands, this is no proof of the necessity of origin. *At most* it has been proved that a table \( D \), distinct from \( B \), can be made from whatever block of wood \( C \) distinct from \( A \) it can be made from, regardless of whether \( A \) is worked into \( B \). But the original question was: Can \( B \) be made out of \( C \), despite its actual origin in \( A \)? The fact that \( D \) (too) can be made from \( C \) does not answer this question.

To establish a necessary connection between \( A \) and \( B \), we cannot merely argue in favor of some possibilities, like those exemplified by \( W2 \) and \( W3 \); on the contrary we need to exclude those possibilities that would break the alleged necessary tie between \( A \) and \( B \). In particular, it must be shown that the following two worlds are not possible:

(W4) in which \( D \) originates from \( A \), and \( B \) originates from \( C \);
(W5) in which nothing originates from \( A \), and \( B \) originates from \( C \).

Clearly, the impossibility of \( W4 \) and \( W5 \) is no immediate consequence of the sheer possibility of \( W2 \) and \( W3 \).

**III. SUFFICIENCY AND EXISTENTIAL COMPOSSIBILITY**

Salmon’s famous suggestion was to fix Kripke’s argument by supplementing it with a Sufficiency Premise, according to which:
(Sufficiency) If it is possible for a table $x$ to originate from a hunk of matter $y$, then necessarily, any table originating from hunk $y$ is the very table $x$ and no other.\(^9\)

Sufficiency rules out W4 and W5, by (on the basis of W1) cross-world fixing B as the table-product of A, thus forcing the table made from C in W2 to be distinct from B (under the assumption that a table has only one origin per world), thereby excluding W4. Sufficiency then keeps D fixed across worlds as the C-made table, thus excluding W5. Yet Sufficiency seems to defy the whole spirit of the table argument, which was to prove a strong controversial metaphysical thesis from less controversial assumptions, even if not just the necessity of distinctness. In fact, the new locality based reconstruction of the table argument endeavors to recover the intended force of the original footnote by avoiding Sufficiency.\(^10\)

We may think of Salmon’s proof as committed to a principle of Existential Independence or Compossibility,\(^11\) according to which making a table $x$ from $y$ is compossible with making a distinct table $x'$ from a distinct block $z$. The principle has existential import insofar as it declares that there is at least some possible table $x'$ which can be made from $z$ and is compossible with $x$’s being made from $y$. The strategy of Salmon’s proof consists in supplementing Existential Compossibility with Sufficiency. Sufficiency is needed, because Existential Compossibility is satisfiable even if the

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\(^9\) N. Salmon (1979), p. 711. I ignore Salmon’s subsequent qualifications of the principle, which are irrelevant to the central topic of this paper.

\(^10\) See G. Rohrbaugh and L. deRosset, *ibid*. R. Cameron, ‘A Note on Kripke’s Footnote 56 Argument for the Essentiality of Origin’, *Ratio*, 18 (2005), pp. 262-75 also contains, but criticizes, a reconstruction of Kripke’s proof that avoids Sufficiency and employs a form of independence.

\(^11\) The two terms are used interchangeably in the relevant literature. See T. Robertson, ‘Essentialism: Origin and Order’, *Mind*, 108 (2000), pp. 299-307 and Rohrbaugh and deRosset, *ibid.*, for excellent reconstructions of Salmon’s argument that clarify the role of Salmon’s principle of independence (P1) that allows the derivation of W2 from W1.
necessity of origin is denied. Suppose it is possible to make B from C. As long as another table can also find its origin in C, *Existential Compossibility* is satisfied. Even if every possible table can come from every possible block of wood, *Existential Compossibility* – in a stronger form generalized to any number of blocks – is satisfied, as long as the possible sources do not outnumber the possible products.

A lot of the discussion generated by Salmon’s proof has revolved around the role of *Sufficiency*, yet principles of independence that endorse additions and subtractions from worlds are equally central to the proof. The necessary sufficiency of origin and the denial of origin necessity are perfectly compatible if the cutting and pasting of parts of worlds is not sanctioned. Perhaps independence principles are intuitively plausible, nonetheless their grounds deserve further exploration.

**IV. UNIVERSAL COMPOSSIBILITY**

Kripke’s proof of the necessity of origin need not employ *Sufficiency*, as long as a stronger principle of *Universal Independence* or *Compossibility* is endorsed, according to which:

*(Universal Compossibility)* For any tables $x$ and $x'$ and any hunks of matter $y$ and $y'$, if it is possible for table $x$ to be constructed from hunk $y$ while hunk $y'$ does not overlap with hunk $y$, and it is also possible for table $x'$ to be constructed from hunk $y'$, then it is also possible for table $x$ to be constructed from hunk $y$ while table $x'$ is simultaneously constructed from hunk $y'$.

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12 This is a simplified version of Salmon’s Principle (*P5*), *ibid.*, pp. 114-5, fn. 11.
Salmon attributes the idea to independent suggestions of Stalnaker and Fine. In this section I present the original Stalnaker-Fine idea, recently revived by Rohrbaugh and deRosset (2004). Let us see how *Universal Compossibility* supplements Kripke’s original argument. Recall that the task is to prove that W4 and W5 are not possible. We focus on W5. Let \( y \) and \( y' \) be hunks A and C, respectively. Let \( x \) and \( x' \) be both instantiated to table B. *Universal Compossibility* says that if it is possible to make B from A and it is possible to make B from C, then it is also possible to construct B simultaneously from both A and C. Thus, *Universal Compossibility* licenses the inference from the possibility of W1 and W5 to the possibility of a world W6 in which table B is originally made from both of the distinct blocks A and C. Yet world W6 is not possible, since it violates the plausible intra-world principle of *Origin Uniqueness*:

\[ (OU) \text{ It is impossible for the same table to be constructed from hunk } y \text{ and at the same time to be constructed from a distinct hunk } y'. \]

From the impossibility of W6 and the endorsement of *Universal Compossibility* the impossibility of either W1 or W5 follows. Thus alternative possible origins for table B are ruled out. But what are the reasons to endorse *Universal Compossibility*?

V. A METAPHYSICAL APPROACH TO UNIVERSAL COMPOSSIBILITY

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13 This is a simplified version of Salmon’s Principle (P6). The principle must be at work also in the sufficiency proof, to rule out the identity of B and D in W2. In general, I leave out of the explicit formulation of all principles the qualifications that (i) distinct blocks of wood do not overlap; (ii) the tables are *originally* constructed out of the blocks; (iii) the tables are entirely constructed out of the blocks, both in the sense that each table is made up of the entire block it is made from, and that it is made up of no other matter.
In ‘A New Route to the Necessity of Origin’, Rohrbaugh and deRosset notice that the Stalnaker-Fine outline of an alternative proof contains the seeds of an independent, distinctive approach to the necessity of origin, and propose a principle of table independence similar to *Universal Composibility*:

\[(T-IND)\] Necessarily, given a table, \(T_1\), made from a hunk, \(H_1\), for any table, \(T_2\) which might be made from a hunk \(H_2\), distinct from \(H_1\), it is also possible that both \(T_1\) is a table made from \(H_1\) and \(T_2\) is a table made from \(H_2\).\(^{14}\)

Rohrbaugh and deRosset purport to derive this principle from a Locality of Prevention Thesis, according to which:

\[(LOP)\] For any possible factor \(F\), necessarily, if \(F\) prevents \(T_1\)’s coming from \(H_1\), then \(F\) makes a difference in the locale of the original production of \(T_1\) from \(H_1\).\(^{15}\)

I will return later to the pressing issue of whether this derivation is successful.

Naturally it is very hard to pinpoint exactly the locale of a production, but Rohrbaugh and deRosset suggest that despite the lack of an exact definition, we are able in many cases to judge whether or not the locale of the production is affected. They provide persuasive illustrations of the intended scope of *LOP*. In particular, they claim

\(^{14}\) Notice that the extra requirement of simultaneity has been dropped.

that the production of Kripke’s original table B from A cannot be necessarily affected by what happens to a disjoint block of wood C. They trigger our intuitions on the case by asking what it takes to prevent the production of B from A. Clearly, any such effort of prevention would have to interfere with the local production of B, by affecting block A or otherwise interfering with the process leading from A to B. Acting on block C per se, without interfering locally with the A-to-B process – as for example by smashing A using C, or by taking up all the remaining energy in the world to work on C so that none is left to make B from A – will not necessarily affect the original production process. In particular, making a table out of C will not so interfere. In ordinary circumstances what would you do to stop me from making B out of A? You would try to come in between me and A; you wouldn’t just start working on C.

The idea then seems to be that if we deny the necessity of origin by conceding that C may produce B, we must conclude counter-intuitively that C has, so to speak, the magic power of affecting A at a distance (non locally). That is, A is affected by what happens to C – its power of making B being inhibited – even if A is in no other way causally affected by the changes in C. Making B from C would inhibit A’s ability to originate B in the same world, despite the fact that no change has taken place in A or around A to explain this newly acquired inhibition. It is this mysterious power that the locality thesis rejects.

VI. A LIMITED PROOF OF THE NECESSITY OF ORIGIN
The locality proof has been charged with being no less controversial that the sufficiency proof. ¹⁶ This form of criticism focuses on cases of bare identity, according to which the exact same process that starting from A originally resulted in B may instead lead to the production of a distinct table D. In an effort to show how their argument does not rely on Sufficiency, Rohrbaugh and deRosset leave open such haecceitistic switches. In such cases no difference occurs in the locale of the production: we are in the business of denying Sufficiency, so by assumption the process leading from A to B is in no way altered, except for resulting in a numerically different table. But then the production of B from A is prevented with no local difference in A or the table making process, thus refuting LOP, which requires local intervention. Hence if LOP is true, it rules out the haecceitistic switches needed to refute Sufficiency, because it requires that the local process of table making be altered if a distinct table D is to be its result. Hence, the locality proof is not weaker in its assumptions than the traditional sufficiency proof.

The point is well taken.¹⁷ Yet, even if LOP entails Sufficiency, it is still independently motivated. All that can be legitimately concluded is that an independently motivated and relatively uncontroversial principle has the power to prove both the necessary sufficiency and the necessity of origin. So I do not question the novelty of the locality proof. What I question is LOP’s ability to sustain a principle of Universal Compossibility like T-IND.

By distribution of the necessity operator, LOP entails that any possible factor F that necessarily – that is, in any world in which it is present – prevents the A-to-B production, is such that it necessarily makes a difference in the locale of the A-to-B

¹⁶ See Cameron and Roca, ibid., and Robertson and Forbes, ibid.
¹⁷ Rohrbaugh and deRosset 2006 contains a revision of LOP to accommodate haecceitistic switches.
production.\textsuperscript{18} Suppose the production of B from C to be such a possible factor F. Obviously the production of B from C \textit{necessarily} prevents the production of B from A, in the sense that in every world in which the production of B from C takes place, the production of B from A is absent. The production of B from C and the production of B from A are mutually exclusive. Hence, by LOP, the production of B from C must \textit{necessarily} make a difference in the locale of the A-to-B production. \textit{But it does not necessarily make such a local difference} (this is a crucial assumption of the argument). Therefore, the production of B from C is refuted as such a possible factor F and deemed impossible. The possibility of making B from C is ruled out because in each world in which \textit{per impossibile} it takes place, it prevents the production in that same world of B from A and such a prevention does, at least in some of these worlds, take place without affecting the locale of the A-to-B production, an impossibility according to LOP.

The assumption that if it is possible to make B from C, then it is also possible to do so without making a difference in the A-to-B locale of production is no small assumption, despite its \textit{prima facie} plausibility. It amounts to the hypothesis that there is enough independence between distinct coexisting objects to allow for local changes that have no global effects. It is assumed, for example, that making a particular table from C \textit{can}, though it need not, happen with no far reaching effects on A. Intuitive as this seems, perhaps it is not true. If, for example, Leibniz is right, and the identity of a thing is connected to everything else that takes place in the world it inhabits, then any change in a world would alter the identity of all its members. As a consequence, it would be impossible to make a table from C without thereby changing the identity of A, a definitely local repercussion.

\textsuperscript{18} This is NLONP in Rohrbaugh and deRosset 2006, p. 377.
So the locality proof depends on the assumption that it is possible for distinct blocks of wood and distinct table making processes to be causally and, more importantly, metaphysically isolated. To prove the metaphysical, not just physical, necessity of origin, what the argument needs is metaphysical isolation, according to which the identity of A is not necessarily affected by changes in C. What is intuitive is some form of causal isolation, according to which C and its immediate environment can change without causally affecting A and its local environment. A bridge principle is needed to fill the gap. According to such a principle, metaphysical dependencies between material objects must be causally grounded, in the sense that the only way for changes in C to affect the identity of A has to go through a causal mechanism that causally affects A.

If, contrary to the assumption of the argument, distinct blocks of wood and distinct table making processes cannot be causally isolated, it becomes impossible to make B from C without affecting A’s locale of production. For the sake of argument, I grant both that (i) changes in the identities of material things must be causally grounded (there are no haecceitistic switches), and that (ii) it is possible to causally isolate block C from block A.

Both concessions seem plausible. Moreover, I take LOP to be an extremely attractive and very possibly true principle about prevention as an intra-world relation, namely as a form of causation, according to which F prevents G if and only if F causes the absence of G. Naturally, the intra-world nature of prevention (its connecting co-worldly relata) does not rule out a counterfactual analysis or any other analysis appealing to other worlds of prevention itself. This is a usual move. Famously, David Lewis holds that causation is an intra-world relation, and yet analyses it in counterfactual terms. So
understood, it seems correct that to prevent the coming into existence of a table, or of any other material object, we have to interfere with its material process of production. To stop the coming into existence of a table, we need to affect the causal historical path that leads to its production. Any post facto intervention will arrive too late, and any isolated effort that does not reach the path of production will inevitably be ineffective. That’s the way of the world.

The isolationist thesis (Isolation) that distinct processes of table production need not necessarily interfere with one another is also plausible, but only under a certain *limited* reading. If distinct, non-overlapping blocks A and C are both already given, namely they co-exist – by which I mean that *they are in the same world at the same time* – it seems indeed possible to causally isolate them. Nothing in their nature would seem to require further necessary connections, beyond those that were perhaps in place to bring them into existence to start with. Somehow, any necessary connection between A and C has to be established *before* they have *both* emerged into existence.

Indeed Rohrbaugh and deRosset grant that there may be ways for distinct blocks to be necessarily connected, for example in the case of a petrified block of wood emerging from a wooden block. The establishment of such necessary entanglements however seems to presuppose that at least one of the blocks doesn’t (yet) exist. It may very well be the case that the existence of block A, hence the possibility of making any table from it, is necessarily dependent on the non-existence of a distinct block C. The coming into existence of A may require the history of the world to have gone in such a way as to prevent the actualization of any causal-historical path that might have led to C. Or, alternatively, it may be the case that the existence of A requires the existence of C, as
in the case of the petrified block requiring the pre-existence of the wooden block from which it emerges.

Such necessary connections between (the productions of) distinct existences, and necessary preventions between competitors for existence may indeed be the norm, rather than the exception. In support of a limited isolationism, however, I would point out that once both blocks exist, it is too late for any additional necessary connections to be established between them. In particular, it is too late for the necessary pre-established harmony that the possibility of making the same table from either of them would require.\textsuperscript{19}

It seems then that Rohrbaugh and deRosset have indeed provided a new limited proof of the necessity of origin under the following assumptions: (i) that the life-stories, histories, of distinct co-existents (in a modal and temporal sense) need not be necessarily interrelated (though such necessary connections may have been required to bring them into existence); (ii) that intra-world prevention requires local intervention; and (iii) that questions of identity for material objects cannot float free from physical and causal mechanisms. Such a proof need not pass through a controversial Universal Compossibility Principle like T-IND applying to all possible table-making processes. Instead, given two already coexisting blocks, it argues for the universal independence of their products: anything that can be made from one block can be made without causally interfering with the other. The proof, however, is extremely limited in scope, insofar as it cannot be proved on the basis of LOP that all possible (non-overlapping) distinct wooden blocks are compossible, nor that all compossible blocks can exist at the same time. So it

\textsuperscript{19} A careful reading of Naming and Necessity reveals that the properties of an object that Kripke deems necessary are indeed all required to bring the object into existence. Once the object is given it is too late for necessary properties to be acquired.
is only proved that the same table cannot be made from *possibly simultaneously coexisting* blocks of wood.

Kripke claims that his proof applies in a *large* number of cases, and the natural understanding – though by no means the only one – of his assumption ‘that there is no relation between \(A\) and \(C\) which makes the possibility of making a table from one dependent on the possibility of making a table from the other’ is, and has been taken to be, the exclusion of overlapping blocks, not the exclusion of all non-possibly-simultaneously-coexisting blocks. Also, *T-IND* is stated so as to apply to all possible distinct hunks of wood \(H_1\) and \(H_2\), because such a *generalized principle, applying to all possible (distinct) blocks of wood*, is the required foundation for a full proof of the necessity of origin, whose target result is not just that a table could not have found its origin in any distinct block of wood possibly simultaneously coexisting with the actual block from which it came, but rather that a table could not have found its origin in any other possible distinct block of wood.

**VII. CASES OF NON-COMPOSSIBILITY**

In the previous section I have argued that The Locality of Prevention Thesis, with the addition of other plausible metaphysical assumptions like a limited isolationism and *Origin Uniqueness*, entails that the same table cannot find its origin in distinct possibly simultaneously coexisting blocks of wood. But can it support more *general* compossibility principles? We need the following: *for any possible* (distinct non-overlapping) blocks of wood \(A\) and \(C\), for any table \(x\) that can be made from \(A\) and for any table \(y\) that can be made from \(C\), it is possible that \(x\) is made from \(A\) and \(y\) is made
from C. For *LOP* to support a *general* compossibility principle, it must have the strength to prove that any two possible blocks can simultaneously coexist.

Cameron and Roca (2006) also claim that *LOP* does not entail *T-IND*. They argue that *LOP* can at best support *Existential Compossibility*: that is, given that *T*$_1$ actually comes from *H*$_1$, *LOP* entails that we can still make *some* table from *H*$_2$ but not *any* table that can possibly come from *H*$_2$, since we surely cannot make *T*$_1$ anymore. According to them, the universal principle holds only if it has already been assumed that *H*$_2$ cannot give origin to *T*$_1$. What I claim instead is that if *H*$_1$ and *H*$_2$ coexist, then *LOP* can be used to argue that *no* table that can be made from *H*$_1$ can also be made from *H*$_2$, though the argument brings in a lot of baggage concerning causation and metaphysical dependencies. The point I am after does not concern *existential* versus *universal* compossibility. My focus is on the distinction between a weak form of *Universal Compossibility* that applies only to co-existent hunks and a strong, generalized form of *Universal Compossibility* concerning all possible, even if perhaps not compossible, hunks.

Suppose now that *B* is actually made from *A* in the actual world *W*$_1$. Let *W*$_7$ be a world ruled by natural laws incompatible with the actual laws and that exclude the existence of *A* and of the entire causal path that brought it into existence to start with.\(^{20}\) Let *C*-Alien be a block of wood in *W*$_7$. Assume, against the necessity of origin, that in *W*$_7$ *B* is made from *C*-Alien. In such a scenario it is possible to make *B* from *A* under the actual laws, as well as from *C*-Alien under alternative laws. However, due to the incompatibility of the physical laws required to sustain the existence of *A* and *C*-Alien respectively, these two possibilities are not co-realizable, thus violating *T-IND*. So, if

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\(^{20}\) Ori Simchen suggested the example of a clash in laws.
*LOP* entails *T-IND*, this scenario must violate *LOP* too. But does it? Does W7 exemplify a non-local prevention?

The question under consideration is not so much whether a world like W7 is really possible, but rather whether it violates *LOP* by instantiating a non-local prevention of B’s production from A. If W7 instantiates a non-local prevention its impossibility is derivable from *LOP* which requires all prevention to be local, thus leaving unchallenged the thesis that *T-IND* follows from *LOP*. We can think of the laws of W7 as the possible factor F that necessarily excludes B’s origination from A. According to *LOP*, if F necessarily prevents B’s coming from A it must make a difference in the locale of the original A-to-B production. Do the laws of W7 make such a local difference?

In my view, *LOP* is obviously silent on such a case. The sense in which the obtaining of W7 with its alternative laws excludes the obtaining of the actual world W1 with its actual laws is not the intra-world sense of prevention ruled by locality. What we have here are two situations that are incompatible because of the clash in laws. One situation necessarily excludes the other but not in a causal sense. So, even if necessary intra-world prevention is necessarily local, necessary exclusion can spring from other sources, hence lack of compossibility may be due to factors on which *LOP* is silent. But then *LOP* cannot ground *T-IND* because it cannot rule out cases of necessary exclusion which are not cases of necessary intra-world prevention.²¹

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²¹ I borrow the evocative ‘prevention’ versus ‘exclusion’ terminology from Cameron and Roca 2006, though I use it somewhat differently. In their usage ‘prevention’ makes something impossible tout-court, ‘exclusion’ only rules out co-possibilities. Instead I am after the distinction between (causally) making something not happen and a neutral notion of modal incompatibility.
Yet perhaps it can be said that in W7 the locale of the original production has been affected in the sense of having been completely removed.\textsuperscript{22} Then \textit{LOP} can be modified to say that: For any possible factor F, necessarily, if F prevents \textit{T}_1’s coming from \textit{H}_1, then F makes a difference in the locale of the original production of \textit{T}_1 from \textit{H}_1, \textit{either by affecting such a locale or by removing it completely}. However, from this revised version of \textit{LOP}, \textit{T-IND} does not follow. Once we consider removing the entire locale – in the extreme the whole world – of production as a local form of prevention, W7 exemplifies a case of necessary prevention that is also necessarily local, hence it is not excluded by \textit{LOP}. Yet W7 still violates \textit{T-IND} and spoils the locality argument.

It seems then that the only way to retain the connection between \textit{LOP} and \textit{T-IND}, is to regard W7 as a case of non-local prevention, insofar as the locale of the original production of \textit{B} from \textit{A} – whether understood in the restricted sense of the A-to-B production or in an extended sense including the entire causal history that actually led to the existence of block \textit{A} first and then of table \textit{B} – is totally absent from it. Thus W7 can be deemed impossible because it violates \textit{LOP}.

Notice however how costly such a route is. We are supporting the \textit{Locality-Independence} link by stretching \textit{LOP} beyond its natural domain. I have already argued that the plausibility, naturalness, and low metaphysical cost of \textit{LOP} derives from its restriction to intra-world causal prevention. If \textit{LOP} instead is now stretched to rule out spoilers to \textit{Universal Compossibility} like W7, its plausibility strongly diminishes. \textit{LOP} is now taken to rule out not only intra-world magic, at a distance (in the sense clarified

\textsuperscript{22} That this would be Rohrbaugh and deRosset’s preferred line of defense is suggested by the following passage in 2004, p.702, fn. 2: ‘Many cases of prevention cannot be thought of as strictly causal … Consider the following case. \textit{T}_1 fails to eventuate because life failed to evolve and there are no trees and, thus, no \textit{H}_1. Here there is no identifiable causal process involving \textit{H}_1 or the production process, but ‘because’ expresses a relation of responsibility nonetheless.’
earlier) causal relations, but also worlds with incompatible laws of nature, by deeming them somehow equally mysterious and magic. This stronger reading of LOP is acceptable only insofar as we already deem non-recombinable laws of nature impossible. Anyone who thinks that the laws of nature might have been different in such a way as not to be compatible with the actual ones, will give up LOP rather than W7.23

The important point is that the a world like W7 which is not a branch of the actual world, but is instead such that the entire causal process leading from A to B – going back to the big bang itself if you like – is absent, cannot be indicted on the charge of magic. W7 cannot be ruled out by accusing its laws of mysteriously preventing making B from A, nor on the charge of excessive globalization precluding proper causal isolation. No such questions arise if A and the history that brought it into existence are totally absent to start with. Given any block of wood, or any thing whatsoever for that matter in W7, the making of B from that thing cannot be deemed impossible because of its lack of compossibility with the A-to-B process of production in W1, since such a lack of compossibility has already been accounted for by the clash of laws between the two worlds.

This is not to deny that it may be independently argued that any world whose laws of nature exclude the existence of block A must also exclude the existence of table B. Perhaps it is a world where matter as we know it does not exist, or a world where composite objects cannot be formed. Though I sympathize with this position, I regard it

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23 G. Rohrbaugh, ‘I Could Have Done That’, British Journal of Aesthetics, 45 (2005), pp. 209-28 extends the locality proof from the necessity of origin of material objects to the necessity of authorship for works of art. Rohrbaugh acknowledges the possibility of non-local preventing factors for works of art. His examples do not appear to me as genuinely non-local, yet what matters to us is Rohrbaugh’s acknowledgement that when such factors are present, the Locality of Prevention Thesis cannot ground fully unqualified Independence/Compossibility principles.
as marginal to our question. The point under consideration is whether the Locality of Prevention Thesis in and of itself has the power of ruling out as impossible all scenarios in which A does not exist, yet B does. I have argued that it does not, hence it cannot support a proof of the necessity of origin that makes use of T-IND.

One possibility to save the proof is to grant that not all factors F excluding the origination of B from A are local, and yet argue that every factor F that consists in making B from something other than A must make a local difference. Then all factors F that prevent making B from A without affecting the locale of the A-to-B production, as in our example, are not cases of alternative origins for B, hence they pose no obstacle to the necessity of origin. Yet this claim remains to be proved. The easiest way to do so is by assuming additional essentialist theses, like that table B is essentially made of matter as we know it etc., thus transforming the proof into one about the entailment between distinct essentialist theses.

Or perhaps our example can be resisted. Maybe all worlds are recombinable, including those ruled by incompatible laws. So all cases of alternative origins are ultimately intra-world cases to which considerations of locality of prevention apply. Perhaps so. Yet, I see no reason why LOP ought to apply to a world ruled by two sets of incompatible laws, which has to contain causally disconnected parts. Moreover, this line of defense embeds the proof in an extreme anti-essentialist framework. Either way we cannot win. The proof must either be supplemented by more and more background essentialist assumptions that remain to be proved, or be cast in an anti-essentialist perspective that I will discuss in the next section.
So, if I am right, the locality of prevention cannot by itself rule out the possibility that some parts of some worlds be necessary incompatible, i.e. non-recombinable because mutually exclusive. A third way to supplement the proof is to embed it into a causal-historical branching-times interpretation of modality that excludes totally disconnected worlds like W7. It is such an interpretation of possibility, not LOP, that may lead to the rejection of W7. If W7 excludes from its very beginning the entire actual causal path leading to B, it can hardly exemplify an alternative history of the actual world.\(^{24}\) So, absent additional controversial essentialist theses or a recombination hypothesis, LOP cannot support T-IND in a neutral setting about modality. It is only in the branching-times interpretation of modality, where distinct possible worlds are meant to be distinct causal histories of the actual world, that all ways of ruling out the compossibility of two states of affairs can plausibly be held to be cases of necessary prevention. However, it is exactly under such an interpretation of modality that it cannot simply be assumed that all possible objects are composible, given that alternative branches may represent mutually exclusive causal developments. The result is at best the limited version of the proof that I have previously reconstructed.

For LOP to entail T-IND, it would have to be the case that a recombination of possibles can be ruled out only if the two recombined events or processes locally interfere (I am setting aside logical contradictions). In fact, Rohrbaugh and deRosset employ LOP to distinguish the necessary sufficiency from the necessity of origin. They argue that, in the case of the A-to-B and A-to-D possible productions needed to defeat sufficiency –

\(^{24}\) This move must be unwelcome to Rohrbaugh and deRosset who intend their proof to be independent from any particular view of modality. See Rohrbaugh and deRosset 2004, p. 723: '[T]he independence approach is distinct from both branching and sufficiency approaches and does not rely on their primary assumptions.' Emphasis added.
one block producing two distinct tables – local prevention explains their lack of recombinability, since each process employs and, so to speak, takes over block A. Hence, the mutual exclusion of the two processes is due to a local interference in the form of competition for A. Therefore, the necessary sufficiency of origin does not follow from LOP. But recombination cannot be ruled out in the absence of local interference, and, when it comes to the necessity of origin, C-to-B need not interfere with A-to-B, leaving their incompatibility unexplained. Thereby establishing that one of the two processes at least is not possible. But then the role of LOP is not to ground T-IND, as Rohrbaugh and deRosset claim, but rather to guarantee recombination of complex possibilities that may be causally isolated. This can succeed only if T-IND is already assumed and causal dependence is taken as the only obstacle to recombination, at least for material processes that do not flatly contradict each other. Yet, granted that local interference may result in non-combinability, it does not yet follow that lack of such interference guarantees recombination. Lack of local interference may let compossibles independently flourish, so to speak, but does not make them compossible to start with.

One general point emerges: proofs of the necessity of origin that make use of Kripke’s methodology in footnote 56 face a possibly insurmountable task. They attempt to show the necessity of origin by finding reasons to rule out any alternative possible origin, rather than arguing for such a necessity directly. Yet it is very hard to justify a principle strong enough to do so in one fell swoop. LOP does not have the appropriate strength. The proof then needs to be supplemented by more and more background assumptions that may or not be true and may or may not fit well with one another, but

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25 Cf. Rohrbaugh and deRosset (2006), pp. 380-1. I am ignoring the previously considered objection that just switching the final product of a process does not count as a change in the locale of production.
that inevitably create the impression of a piecemeal *ad hoc* patchwork. Supplementation of the proof by the branching model gives not a full result; supplementation by additional essentialist premises requires that they be independently proved. Both strategies moreover violate the alleged neutrality between alternative conceptions of modality of the proof. What remains to be considered is an anti-essentialist recombination strategy that, in contrast to the branching addition, promises a full result and, in contrast to essentialist supplementations, can get it in one relatively simple move.

**VIII. RECOMBINATION**

What is needed is a general compossibility or recombination principle, according to which any two distinct possible objects are compossible, *i.e.* they can simultaneously coexist. Such a principle is required to guarantee the possible co-existence of blocks A and C. Once this is granted, the locality proof can be run employing only *LOP*, the limited plausible version of *Isolation*, and *Origin Uniqueness*. *LOP* is needed to achieve *universal*, as opposed to existential, compossibility (concerning *any* table, not just *a* table coming from C) and thus avoid *Sufficiency*, but only under the prior recombination assumption that any two *possible* blocks of wood can coexist.

It is important to notice that to achieve a full result Salmon’s proof employing sufficiency is equally in need of a recombination thesis. The difference between the two proofs resides in the way in which – *after recombination is used* to guarantee that any two possible blocks are compossible – it is then argued that such blocks cannot give origin to one and the same table even in distinct worlds. It seems that *any* reconstruction
of Kripke’s proof must be committed to recombination to get a full result in one simple move.\textsuperscript{26}

Traditional discussions of the sufficiency-based proof fault it because of its commitment to a controversial essentialist thesis while in the process of proving another such thesis. If I am right, the main fault of the proof lies not so much in the commitment to \textit{Sufficiency} in and of itself, rather in the endorsement of the odd combination of \textit{Sufficiency} and recombination.

In the sufficiency proof, recombination warrants that A and C can co-exist. \textit{Existential Compossibility} – whose plausibility must rest on some form of \textit{Isolation} – and \textit{OU} then entail that distinct tables can be made from the two blocks. Finally, \textit{Sufficiency} rules out the possibility of the tables’ switching origins. The locality proof starts in the same way with recombination and the possibility of making two tables from the two blocks. When we then detach A from C and consider a world where only C exists, what rules out the possibility that B be its product? It is easy to see how the \textit{necessary} sufficiency of origin, a cross-world principle, can handle the job, but how can the intra-world Locality Thesis achieve the result? In my view, the basic claim of the locality proof is that if C-to-B as well as A-to-B are both possible table-making-\textit{processes}, they have to be recombinable too, otherwise their lack of recombinability remains unaccounted for.

By \textit{OU}, of course, the two processes A-to-B and C-to-B are mutually exclusive, and the sufficiency proof does not raise any further question on this incompatibility.

Whatever reasons support \textit{OU} speak also of the mutual exclusion of the processes. That is

\begin{footnotesize}
\textsuperscript{26} N. Damnjanovic, ‘No Route to Material Origin Essentialism?’, \textit{Erkenntnis}, 73 (2010), pp. 93-110, also argues that the sufficiency and the locality proofs share a common shortcoming and that there are reasons to think that all sensible reconstructions of footnote 56 will suffer of the same problem. According to Damnjanovic’s all such proofs will inevitably prove too much, for example that the place of origin is essential too.
\end{footnotesize}
why Sufficiency is needed to get the lack of possibility of C-to-B on top of its incompatibility with A-to-B. In the locality proof instead, the mutual exclusion of the two processes is enough to entail that they are not both possible. Once A and C are placed in the same world, Locality and Isolation guarantee that from the mere possible coexistence of A and C, the universal independence of all possible processes starting from them follows. I think of this new proof as (i) based on the rejection of haecceitistic switches as magic (it is in this vein that I interpret LOP), and as (ii) demanding more than just an appeal to Origin Uniqueness to stop the (default) recombination of processes like A-to-B and C-to-B.

Setting aside simultaneity, which cannot be treated here, recombination seems to be exactly what David Lewis was endorsing with his Humean Principle of Plenitude:

I suggest that we look to the Humean denial of necessary connections between distinct existences. To express the plenitude of possible worlds, I require a principle of recombination according to which patching together parts of different possible worlds yields another possible world.27

According to Lewis, such a principle embodies a Hume inspired view of objects in a modal setting according to which there are no ‘strictly necessary connections between distinct existences.’28 The principle is clearly at odds with the essentiality of origin.

27 D. Lewis, On the Plurality of Worlds, (Oxford: Basil Blackwell, 1986), pp. 87-8. Ultimately, Lewis does not literally hold that parts of different worlds can really be patched together, since in his view no individual exists in more than one world. So, he has to reformulate the principle in terms of duplicates. This issue is marginal to the main point under scrutiny. For Lewis the possibility that A and C coexist is captured by the existence of a world in which a duplicate of A coexists with a duplicate of C.

28 Lewis, ibid., p. 89.
But why accept *Plenitude*, the claim that there are no necessary connections between distinct things, so that they can be freely detached and recombined? As a Humean thesis about the nature of objects, *Plenitude* ought to have no appeal whatsoever for someone in the process of proving the necessity of origin. Recently, deRosset has proposed to read the Locality proof, and in general Kripke’s footnote 56, as a *reductio* of Hume’s metaphysics. Such an interpretation of the proof might explain the strange implicit adoption of Humean theses while in the process of proving an essentialist result. Exegetically, I do not share deRosset’s new interpretation of the proof. In footnote 56, and throughout *Naming and Necessity*, Kripke gives no hint of assuming a thesis that he himself does not endorse in order to prove the necessity of origin – even from such hostile assumptions, so to speak. Be that as it may, in the next section I argue that the proof does not work even as a *reductio* of Hume’s metaphysical picture.

**IX. A REDUCTIO OF HUMEANISM?**

Given its basic commitment to recombination (*Plenitude*) and *Isolation*, one may conjecture that, if it works, the locality proof shows that a full Humean position is incoherent, insofar as such a position is naturally wedded both to (i) recombination for distinct existences in a modal setting (A and C can coexist), and (ii) *Isolation*, in an intra-world setting (A and C can be causally isolated). The Humean metaphysician must deny one of his basic tenets, either modal recombination or causal isolation, or accept the unwelcome consequence that there are after all some necessary connections between distinct existences, block A and table B in our worn-out Kripkean example. An anti-Humean necessary connection between distinct existences A and B is proved under the

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29 See L. deRosset 2009.
Humean assumption that no necessary connections exist between A and C, so that A and C can not only coexist, but also coexist without locally interfering.

One simple way to see the dilemma for the Humean metaphysician is that if he insists that there are no necessary connections between distinct existences, so that B can come from either one of A and C, he has to deny the recombinability of any two parts of distinct worlds, including entities like the processes A-to-B and C-to-B that partially overlap. This last seems to be deRosset’s (2009) claim: either the necessity of origin holds and a necessary tie between A and B exists, or it does not hold and we have a necessary repulsion, between A-to-B and C-to-B, i.e. the impossibility to recombine them. Either way Humeanism is defeated. But why so? After all, for all that has been said so far, Origin Uniqueness can still be rejected. And even if it is true, it may be the case that its rejection leads to a contradiction, thus explaining why A-to-B and C-to-B are incompatible. Moreover, Humeans need not endorse the recombinability of overlapping processes like A-to-B and C-to-B.

Suppose then that Humeans endorse only the recombinability of non-overlapping entities. Can we still pressure them and show that, in order to stop the locality proof, they must still renounce either this limited form of recombination, namely the recombinability of even the non-overlapping hunks A and C, or causal isolation, the possible non-interference between A and C? I will argue that this last dilemma is a false one. Humeans can reject LOP and would naturally do so.

Inasmuch as the anti-Humean metaphysician will reject recombination as a thesis about modality and possibly unrestricted Isolation too as a thesis about causation, the Humean metaphysician ought instead to reject the Locality of Prevention. Such a
metaphysical principle is after all at odds with a Humean outlook. According to *LOP*, interference between material processes, at least in the form of prevention, is essentially local. The plausibility of this principle depends on understanding causation, and in particular prevention, as a robust link, at least robust enough to impose a locality restriction. But in a Humean outlook, in which the robustness of causation, connections, and dependencies is exactly what is questioned, why should a substantial metaphysical thesis on the nature of such connections be endorsed? A Humean may endorse *Origin Uniqueness*, yet not think of B’s coming from A as preventing C from giving origin to B in any metaphysically robust sense of prevention. To put it bluntly, Humeans are not afraid of magic. The threat of *non-local* preventions doesn’t scare those who embrace a disconnected world.

*LOP* may superficially sound like a Humean-friendly principle insofar as it rejects at least some dependencies – the non-local ones. But drawing a distinction between local and non-local dependencies is as anti-Humean as it can get. The intuitive support for *LOP* comes from the idea that the coming into existence of a thing depends on and only on its local process of creation. If no anti-Humean dependence between a thing and its process of creation is assumed, the requirement that prevention be local remains ungrounded. The denial of non-local causal connections based purely on their non-locality is deeply at odds with the Humean *tout court* denial of such connections, be they local or not. The requirement of locality for prevention makes sense only insofar as a background network of local dependencies is assumed.

Think of how Humeans will analyze prevention, causing something not to come to pass. In a Humean style, prevention can be understood as a form of regularity: X
prevents Y just in case whenever X occurs Y does not occur. But in this regularity sense, there can be prevention at a distance (in our loose sense). Surely whenever a table finds its origin in a block of wood, it does not find its origin in another block of wood, no matter how spatially distant and causally isolated. Alternatively, and still in a Humean style, we may offer a counterfactual account according to which X prevents Y just in case without X, Y would have taken place. Well, making B from A cannot be said to prevent making B from C in this sense, given that without the A-to-B process, the C-to-B process can still be absent – B need not be made after all or can be made from a third hunk of wood. Yet, unless one presupposes the necessity of origin, it is surely true that if A-to-B had not happened, C-to-B might have happened. And this last may be enough to claim that making B from A prevents making B from C, since something that might have come to pass cannot do so anymore. In these Humean ways of understanding prevention, there is no place for a locality thesis. Recombination and Isolation on the one hand and Locality on the other are, if possible, even more at odds with each other than recombination and Sufficiency. I conclude that Humeans can hold on to recombination and Isolation and let things fall where they may.⁴⁰

What is surprising in the two proofs is the tradeoff between metaphysical assumptions that uphold necessary connections on the one hand and combinatorial principles that reject such connections on the other. The sufficiency proof mixes recombination with Sufficiency. The Locality proof apparently weakens its metaphysical assumption from Sufficiency to LOP. However, I have argued that LOP is as much as Sufficiency an essentialist principle, implicitly presupposing necessary connections –

⁴⁰ And I bet they will fall in a Lewisian position.
dependencies – between distinct existences. In this respect, it stands in stark contrast to Isolation and recombination, which deny any such connections.\(^{31}\) Even if the proofs are sound, it is only on the basis of premises that do not naturally fit together in a single unified theoretical framework that the necessity of origin is proved.

\(^{31}\) deRosset (2009) argues for the Humean character of the Locality of Prevention and still claims that Table-Independence is one of its consequences. I have here argued against both of these claims.