



Kevin R. Busch

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Hume's Alleged Lapse on the Causal Maxim

KEVIN R. BUSCH

Abstract: In his account of our belief in the Causal Maxim Hume argued, among other things, that it is not absolutely necessary for any event to be caused. Harold Noonan attempts an objection to Hume's argument: in showing (i) the absolute possibility for any event to exist without its actual cause, Hume would not thereby show (ii) the absolute possibility for any event to exist uncaused. For this objection to succeed, Noonan needs two further assumptions: first, that Hume indeed could not move plausibly from (i) to (ii); second, that Hume needed to move from (i) to (ii) to show (ii). Both assumptions are false.

1. Introduction

During a brief investigation of our belief in the Causal Maxim—that is, in the necessity for any event to be caused—Hume delivered a negative argument of highest importance.¹ The argument concludes that the precedence of a cause to any event is not absolutely necessary, and thus is neither intuitable nor demonstrable. This, in fact, is one application of a general argument Hume deployed liberally throughout his science of human nature. He argued, for example, that the succession of any instance of one type and a constantly conjoined instance of another type is not absolutely necessary, and thus is neither intuitable nor demonstrable (T 1.3.6.5; SBN 89).

Kevin R. Busch, Faculty of Philosophy, University of Oxford, Radcliffe Humanities, Woodstock Road, Oxford, OX2 6GG, UK. Email: kevin.busch@philosophy.ox.ac.uk

Yet it seems to me that Hume's negative argument against the Causal Maxim has not received the attention it deserves. In particular, Harold Noonan's allegation that the first stage of that argument is invalid remains, to my knowledge, unanswered. At least, any attempt at a response has only misunderstood the objection. My aim here is to elucidate and disarm Noonan's objection, restoring Hume's negative argument to relatively secure footing.

I pursue this aim in five sections. Section 2 offers a reading of the first stage of Hume's negative argument, which denies the absolute necessity for any event to be caused. Section 3 clarifies Noonan's objection to that first stage of argument: in showing (i) the absolute possibility for any event to exist without its actual cause, Hume would not thereby show what he sought: (ii) the absolute possibility for any event to exist uncaused. Sections 4 and 5 dispute, respectively, two assumptions on which Noonan's objection rests: first, that Hume could not move plausibly from (i) to (ii); second, that Hume needed to move from (i) to (ii) to show (ii). Finally, section 6 briefly addresses an exegetical question raised by sections 4 and 5.

2. Hume's Negative Argument

The governing question in Hume's discussion of the Causal Maxim is, as he puts it, "[f]or what reason we pronounce it *necessary*, that every thing whose existence has a beginning, shou'd also have a cause?" (T 1.3.2.14; SBN 78). We are ultimately interested in a segment of reasoning Hume deploys on the way to answering this question. But a few ambiguities in the question itself threaten to take us afield. Let us start by confronting them.

First, is Hume thinking of causal relata as bodies, events, or something else? He speaks of the effect relatum as *either* a "new existence" or a "modification of existence" (T 1.3.3.3; SBN 80). As several authors have noted, the latter formulation encompasses all events whatsoever.² Hence Hume finds it appropriate to talk, for instance, of the *motion* of one body causing the *motion* of another (T 1.3.2.9; SBN 76–77). For simplicity, let us confine our attention to such "modifications of existence," substituting 'event' for Hume's references to either the cause or effect relatum.

Second, is our belief in the Causal Maxim a belief in the proposition *that any event has a cause*, or in the proposition *that it is necessary for any event to have a cause*? One reason to opt for the latter is that Hume nearly always refers to a belief in the *necessity* for any event to have a cause.³ Another reason is that Hume views it as a nontrivial question whether the precedence of a cause to any event is intuitable or demonstrable—enough, at least, to spend all of T 1.3.3 (SBN 78–82) arguing that it is not. Yet were we to believe merely in the precedence of a cause to any event, the question would be trivial, for only necessary relations are candidates for *absolutely* necessary relations, and so for intuitability or demonstrability. Why? For

Hume, intuition and demonstration compare objects and *discover* relations that are “invariable, as long as our [ideas or the objects so related]⁴ remain the same,” for example, the relation of equality between the angles of a triangle and two right angles (T 1.3.1.1; SBN 69). Since Hume understands the “absolute necessity” of a relation *in terms of* such invariability,⁵ a relation is intuitable or demonstrable only if it is absolutely necessary.

Third, are “we” who hold the relevant belief the vulgar or philosophers? Hume does say that the Causal Maxim, “a general maxim *in philosophy*,” is “commonly taken for granted in all reasonings, without any proof given or demanded,” though in the same breath describes it as “one of those maxims, which tho’ they may be deny’d with the lips, ’tis impossible for men *in their hearts* really to doubt of” (T 1.3.3.1; SBN 78–79; my emphases). This suggests a vulgar belief that even philosophers hold. Yet, Hume observes, philosophers also “suppose” that the Causal Maxim is “founded on intuition.” That is, philosophers make an *additional* supposition that our vulgar belief in the Causal Maxim is determined by or founded on intuitive reasoning, and that the relevant necessity featuring in the content of our vulgar belief is absolute. It is this additional philosophical supposition Hume sets out to repudiate in T 1.3.3 (SBN 78–82)—certainly not our vulgar belief in the Causal Maxim.⁶

With a clearer sense now of the question governing T 1.3.3 (SBN 78–82), let us turn to the negative argument at issue:

[H]ere is an argument, which proves at once, that the foregoing proposition [*whatever has a beginning has also a cause of existence*] is neither intuitively nor demonstratively certain. We can never demonstrate the necessity of a cause to every new existence, or new modification of existence, without showing at the same time the impossibility there is, that any thing can ever begin to exist without some productive principle; and where the latter proposition cannot be prov’d, we must despair of ever being able to prove the former. Now that the latter proposition is utterly incapable of a demonstrative proof, we may satisfy ourselves by considering, that as all distinct ideas are separable from each other, and as the ideas of cause and effect are evidently distinct, ’twill be easy for us to conceive any object to be non-existent this moment, and existent the next, without conjoining to it the distinct idea of a cause or productive principle. The separation, therefore, of the idea of a cause, from that of a beginning of existence, is plainly possible for the imagination; and consequently the actual separation of these objects is so far possible, that it implies no contradiction nor absurdity; and is therefore incapable of being refuted by any reasoning from mere ideas; without which ’tis impossible to demonstrate the necessity of a cause. (T 1.3.3.3; SBN 79–80)

Hume's argument can be divided into two stages: the first denies the absolute necessity for any event to be preceded by a cause of it; the second infers from this that the necessary precedence of a cause to any event is, contrary to what philosophers suppose, neither intuitable nor demonstrable. We will focus only on the first stage, of which the following is a simplified reading:

- (P1) If two ideas are distinct, then it is conceivable for the object of one idea to exist without the object of the other.
 - (P2) The idea of any event and the idea of a cause of the given event are distinct.
 - (P3) Whatever is conceivable is absolutely possible.⁷
-
- (C) It is absolutely possible for any event not to be preceded by a cause of it and, thus, *not* absolutely necessary for any event to be preceded by a cause of it.

Some clarification of premises is in order, starting with (P1). We may get a feel for what Hume means by "distinct" through his initial formulation of what Don Garrett calls the "Separability Principle":⁸ "that whatever objects are different are distinguishable, and that whatever objects are distinguishable are separable by the thought and imagination" (T 1.1.7.3; SBN 18). The "objects" Hume has in mind here are *ideas*. "Distinctness" appears as synonymous with "difference," which Hume earlier defines as a "negation of relation . . . oppos'd either to identity or resemblance. The first is call'd a difference of *number*; the other of *kind*" (T 1.1.5.10; SBN 15). Additionally, we should interpret Hume's "distinctness" as what Jani Hakkarainen calls "*real*" and not "*partial*": two numerically non-identical ideas are *really* distinct if and only if they do not share parts, and *partially* distinct if and only if they do share parts.⁹ Hereafter, then, we shall use "distinctness" only to characterize ideas that are at least numerically non-identical and do not share parts. My idea of a red point from the top of an apple and my idea of a resembling red point from the bottom of the apple are in this sense distinct. (P1) says, thus, that for any two ideas that are in this sense distinct, we could conceive the object of one idea as existing without the object of the other.

Now for (P2). When Hume says that "'twill be easy for us to conceive *any* object to be non-existent this moment, and existent the next, without conjoining to it the distinct idea of a cause or productive principle," he does not mean that the idea of a *singular* event and the idea of a cause of it are distinct. It would not guarantee the truth of (P2) that, say, the idea of a specific window-breaking and the idea of a heavy body striking the window are distinct. Hume is employing the *abstract* idea of an event, that is, the generally-signifying idea of a particular event. How, for Hume, does an idea signify generally? Well, we apply a general term to many determinate ideas of particular instances, upon noticing a resemblance among them.

This associates the general term with each of these particular ideas, whereby any one of them revives the disposition to have the other particular ideas. An abstract idea of an event is thus the idea of a particular event that revives a disposition to have other particular ideas associated with the general term 'event,' the complete set of which Don Garrett calls the general term's "revival set."¹⁰ (P2) says, thus, that any idea belonging to the term 'event's revival set is distinct from the idea of a cause of the event represented by the former idea.

That leaves (P3), often called the "Conceivability Criterion of Possibility." Hume originally delivers (P3) as follows: "nothing of which we can form a clear and distinct idea is absurd and impossible" (T 1.1.7.6; SBN 19–20). For Hume, at least one way to "conceive" or form an idea of X is to form an "image" of or positively imagine a "forceful" and "violent" impression X. "Image" here is to be interpreted loosely: one can have a non-visual "image" of a sound at A-flat. And an idea of X is "clear and distinct" when we are unlikely to confuse it with a qualitatively distinct image, that is, an image of a qualitatively distinct impression. But what kind of *possibility* does (P3) invoke? Hume says elsewhere that "whatever we *conceive* is possible, at least in a metaphysical sense."¹¹ So the possibility is metaphysical, which for Hume is synonymous with *absolute* possibility.¹² Something is thus absolutely possible for Hume if and only if it satisfies the barest condition on a thing's existence: internal consistency in its nature. (P3) says, thus, that for any simple or complex idea we can have without being apt to confuse it with a qualitatively distinct image, its object is metaphysically or absolutely possible.

I have said little to nothing about how Hume might *justify* each of (P1)–(P2)–(P3).¹³ This is because the justification of individual premises pertains to the soundness of Hume's argument, and so is of only secondary concern. We are primarily concerned with the argument's *validity*, which, as we shall see presently, is far from obvious.

3. The Alleged Lapse

Harold Noonan attempts the following objection to Hume's move from (P1)–(P2)–(P3) to (C):

Given the Separability and Conceivability Principles any object X, whose coming into existence is the effect of a particular cause C, might have come into existence in the absence of C. But it does not follow that X might have come into existence without *any* cause. For it is compatible with the argument that *in order for X to exist some cause must bring it into existence* even if *there is no particular cause which must bring X into existence if X is brought into existence*.

To see more clearly the consistency of these two forms of proposition consider a concrete case. One can imagine water in a pot boiling without any heat under it. Thus it is plausible to say that one can know what it would be like to establish the occurrence of *this* phenomenon without *this* cause. And since heat is the *actual* cause of boiling water this provides support for the proposition *that there is no particular cause which must be the one which brings about the boiling of water*. But I cannot imagine, in any similar way, water boiling without *any* cause, and I cannot imagine what positive experience would count in favor of such a discovery. Thus no positive experience I can imagine provides support for the proposition *that water may boil without any cause at all*. Thus the former of these italicized propositions does not entail the latter and so is consistent with its negation, namely, that *in order for the water to boil some cause or other of its boiling must be present*. Thus Hume's first argument against the Causal Maxim actually moves his case forward not at all.¹⁴

Let us be clear about what Noonan means to establish. The claim is that Hume moved illegitimately from the absolute possibility of any "beginning of existence" (event) with "no particular cause" (without its actual cause) to the absolute possibility of any beginning of existence without "some cause" (uncaused). It is easy to think, given what Noonan says, that he substantiates this claim with the imaginability or unimaginability of certain positive experiences, a strategy that is rightly criticized by Gregg Osborne.¹⁵ It is much more instructive, and charitable, to interpret Noonan simply as claiming that, *prima facie*, in showing the absolute possibility of any event existing without its actual cause, Hume would not *thereby* show the absolute possibility of any event existing uncaused.

Noonan does seem to be claiming that the absolute possibility for any event to exist without its actual cause does not *entail* the absolute possibility for any event to exist uncaused. In this he might be right. But *deriving* the latter possibility from the former would be a rather high bar for Hume to clear. Noonan fails to consider that Hume might nonetheless "move his case forward" for the latter possibility, without providing intermediate premises in light of which it is *logically implied* by the former possibility. For this reason, let us assume that Noonan is making the broader allegation: not only does the former possibility not entail the latter, but Hume could not even *move plausibly* from the former to the latter.

Let us see if we can put Noonan's objection even more plainly. Here is one conceivable reading of Hume's premise (P2):

(P2') The idea of any event and the idea of *its actual cause* are distinct.

"The actual cause" should be interpreted broadly as either *one* event that is sufficient to bring about an effect, or a *plurality* of events that are *jointly* sufficient

to bring about an effect. For Hume does allow that more than one object or event might be necessary to bring about an effect (T 1.3.15.10; SBN 174–75). That said, Hume appears to hold that there can be only *one* actual cause of any event, that is, to deny the possibility of causal overdetermination: suppose that priority, spatial and/or temporal contiguity, and constant conjunction are jointly sufficient conditions for a cause, and thus that some event e can have two actual causes in c_1 and c_2 . This would clash with Hume's *Enquiry* definition of a cause as “*an object, followed by another, and where all the objects, similar to the first, are followed by objects similar to the second. Or in other words, where, if the first object had not been, the second never had existed*” (EHU 7.29; SBN 76).¹⁶ For this definition implies, say, that had c_1 not been, c_2 would not then cause e .

Now, suppose (P2') is true. Then, for instance, the idea of water in a pot boiling is distinct from the idea of the actual cause of the water boiling: heat under it. It follows, granting Hume's Separability Principle (P1), that we can conceive (positively imagine) any event not being preceded by its actual cause. And it follows, granting Hume's Conceivability Criterion of Possibility (P3), that it is absolutely possible for any event not to be preceded by its actual cause. Let us formalize this interpretation of conclusion (C):

(ONE) For any events e and c_1 , where c_1 is the actual cause of e , it is absolutely possible for e not to be preceded by c_1 .

What would be the case were e not to be preceded by its actual cause c_1 ? A question we must answer first is what kind of possibility constrains the range of counterfactual scenarios. Say the possibility is *physical*, that is, that it constrains the range of counterfactual scenarios to those in each of which the cause of e would not be in violation of the actual laws of nature. Take Noonan's example. Heat under water in a pot actually causes it to boil. If we are considering physical possibility, then were water in a pot boiling not to be preceded by heat underneath it, it would be preceded by raising of the room temperature to 100°C, subjecting the water to a flash of terahertz radiation, or etc., for none of these causes would be in violation of the actual laws of nature.

There are two considerations against using physical possibility and for using *metaphysical* possibility, which constrains the range of counterfactual scenarios to those in each of which the cause of e *would or would not* be in violation of the actual laws of nature. First, Hume himself did not take the range of relevant counterfactual scenarios to be constrained by physical possibility. He thought that “all the laws of nature, and all the operations of bodies without exception, are known only by experience” (EHU 4.9; SBN 29). The *Treatise* carries this further to modality: “We can at least conceive a change in the course of nature; which sufficiently proves, that such a change is not absolutely impossible” (T 1.3.6.5; SBN 89). Second, it is simply more instructive to use metaphysical possibility in place of physical

possibility. The set of metaphysically possible causes of e is vastly greater than the set of physically possible causes of e , which would make it that much harder to show the absolute possibility of any event being uncaused where the range of counterfactual scenarios is constrained by metaphysical possibility. Since I intend to defend Hume, it will be instructive to see whether he could plausibly yield the broader and more ambitious result.

Let us get back to clarifying Noonan's objection. Again, what would be the case were e not to be preceded by its actual cause c_1 ? Well, in one such kind of scenario, a *different* event from c_1 would be the cause of e . Let c_2, c_3, \dots , and c_n be all the events each of which could metaphysically, instead of c_1 , be the cause of e . In one particular such scenario, c_2 and not c_1 would be the cause of e . In another, c_3 and not c_1 would be the cause of e . So on and so forth. Yet in another putative scenario, *none* of c_2, c_3, \dots , or c_n would be the cause of e . This latter scenario is one in which e would be *uncaused*: e would be preceded by *none* of the events each of which could metaphysically be the cause of e , including its actual cause c_1 . This is precisely what Hume intended to show absolutely possible in the first stage of his negative argument. He sought to show, in other words, that:

- (ALL) For any events e, c_1, c_2, \dots , and c_n , where c_1 is the actual cause of e and each of c_2, c_3, \dots , and c_n could metaphysically be the cause of e , it is absolutely possible for e not to be preceded by the plurality of c_1, c_2, \dots , and c_n .

Here, then, is Noonan's objection. In showing (ONE), Hume would not thereby show that *any* absolutely possible scenario in which e would not be preceded by its actual cause, c_1 , is a scenario in which e would not be preceded by the plurality of c_2, c_3, \dots , and c_n , that is, in which e would be *uncaused*. It could *prima facie* be that the only absolutely possible scenarios in which e would not be preceded by its actual cause, c_1 , are scenarios in each of which one of c_2, c_3, \dots , or c_n would be the cause of e . In short, even if Hume were to show (ONE), he would not thereby show what he sought in (ALL).

Again, take Noonan's example. Heat under some water in a pot actually causes it to boil. Were Hume to show (ONE), he would show that it is absolutely possible for the water boiling not to be preceded by the heat under it. *Prima facie*, however, it would not follow from this that any absolutely possible scenario in which the water in a pot boiling would not be preceded by the heat under it is a scenario in which the water in a pot boiling would not be preceded by the plurality of all events each of which could metaphysically be the cause of its boiling, for example, snapping one's fingers, humming a tune, and so on. It could *prima facie* be that the only absolutely possible scenarios in which the water in a pot boiling would not be preceded by the heat under it are scenarios in each of which *either* snapping one's fingers, *or* humming a tune, and so on, would be the cause of its boiling.

Let us take stock. Noonan has claimed that in inferring (ONE) from (P1)–(P2)–(P3) in the first stage of his negative argument, Hume has not thereby shown (ALL). For his objection to succeed, Noonan needs two further assumptions:

- (a) that Hume indeed could not move plausibly from (ONE) to (ALL);
- (b) that Hume needed to move from (ONE) to (ALL) to show (ALL).

In what follows, I shall argue that both assumptions are false.

4. From (ONE) to (ALL)

We begin with the first assumption. It is admittedly difficult to see how Hume might move plausibly from (ONE) to (ALL), which on the face of it seems quite the logical stride. Why should the absolute possibility for *e* not to be preceded by the *plurality* of c_1, c_2, \dots , and c_n , each of which could metaphysically be the cause of *e*, follow from the absolute possibility for any event *e* not to be preceded by the actual cause of *e*, c_1 ?

But Hume is not beholden to such a direct inference. He could seek to derive (ALL) from a proposition much closer to it formally. I am thinking in particular of the following:

- (EACH)** For any events *e*, c_1, c_2, \dots , and c_n , where c_1 is the actual cause of *e* and each of c_2, c_3, \dots , and c_n could metaphysically be the cause of *e*, it is absolutely possible for *e* not to be preceded by c_1 , it is absolutely possible for *e* not to be preceded by c_2, \dots , and it is absolutely possible for *e* not to be preceded by c_n .

The introduction of (EACH), however, does not necessarily make Hume's task any easier. He must now meet two conditions instead of one: first, move plausibly from (ONE) to (EACH); second, move plausibly from (EACH) to (ALL). I shall now demonstrate how Hume could meet each condition in turn.

4.1. From (ONE) to (EACH)

Our first challenge is to demonstrate how Hume could move plausibly from (ONE) to (EACH). The required approach is less straightforward than one might expect: what for Hume justifies (P2')—and thereby (ONE), since (ONE) follows from (P1)–(P2')–(P3)—is exactly what justifies a different premise that yields (EACH). This different premise is:

- (P2'') The idea of any event and the idea of any event that could metaphysically be its cause are distinct.

As (P1)–(P2')–(P3) yield (ONE), (P1)–(P2'')–(P3) yield (EACH). So, what is it that for Hume justifies (P2'), thereby (ONE), and also justifies (P2''), thereby (EACH)?

Let us first examine the former. Hume reveals a key premise while clarifying our idea of causation: “[t]he second relation I shall observe as essential to causes and effects, is . . . that of PRIORITY of time in the cause before the effect” (T 1.3.2.7; SBN 76). Here is that premise:

(PRIOR) For any events e and c_i , where c_i is the actual cause of e , c_i must be prior to e .

Hume actively defends (PRIOR). Though first toying with an inductive argument—that “experience in most instances seems to contradict this opinion [that a cause may be perfectly co-temporary with its effect]” (T 1.3.2.7; SBN 76)—he ultimately settles on a demonstrative argument: were it possible for a cause not to be prior to its effect, *no* cause would be prior to its effect, which contradicts the actual succession of causes we observe.¹⁷

But (PRIOR) alone does not yield (P2'). It must be conjoined with Hume's implicit premise relating priority to difference, or numerical non-identity, and so to distinctness:

(DISTINCT) For any events e and c , where c is prior to e , the ideas of c and e are different, or numerically non-identical, and so distinct.

For evidence that Hume accepted (DISTINCT), consider what he says on the origin of our idea of time: “[t]he idea of duration is always deriv'd from a succession of changeable objects, and can never be convey'd to the mind by any thing steadfast and unchangeable . . . since the idea of duration cannot be deriv'd from such an object, it can never in any propriety or exactness be apply'd to it, nor can any thing unchangeable be ever said to have duration” (T 1.2.3.11; SBN 37). The “objects” Hume has in mind here are *impressions*, not objects distinct from our impressions that continue to exist unperceived. Moreover, by “a succession of changeable objects” Hume means qualitatively, and so numerically, non-identical impressions. By “any thing unchangeable” Hume means a numerically, and so qualitatively, identical impression. The impression of an apple succeeded by the impression of a qualitatively (so numerically) non-identical apple is an example of the former; the impression of a numerically (so qualitatively) identical apple, an example of the latter.

When, thus, Hume concludes here that “nor can any thing unchangeable be ever said to have duration,” he means that our idea of any numerically (so qualitatively) identical impression cannot involve the idea of a duration or temporal extension. It follows from this, however, that any idea of temporal priority or succession must be of qualitatively (so numerically) non-identical impressions, the respective *ideas* of which must therefore also be numerically non-identical and so distinct. This just is (DISTINCT).

Together, (PRIOR) and (DISTINCT) yield:

(CAUSE) For any events e and c_1 , where c_1 is the actual cause of e , the ideas of c_1 and e must be different, or numerically non-identical, and so distinct.

(CAUSE) entails (P2'). For if the idea of any event *must* be distinct from the idea of its actual cause, then surely the idea of any event *is* distinct from the idea of its actual cause. What I wish to show now is that, just as (CAUSE) suffices to justify (P2') for Hume, it *also* suffices to justify (P2''). This is not too demanding. (CAUSE) says that it is necessary for the idea of any event e and the idea of its actual cause c_1 to be numerically non-identical and so distinct. The necessity here—since Hume putatively *demonstrates* (PRIOR), and (CAUSE) is derived from (PRIOR) and (DISTINCT)—is absolute or metaphysical. This restricts the range of counterfactual scenarios in each of which some other event c_2, c_3, \dots , or c_n is the cause of e , to those in each of which the idea of that other event is numerically non-identical to and so distinct from the idea of e . So, the idea of whatever could metaphysically be the cause of e is numerically non-identical to and so distinct from the idea of e . That is just what (P2'') says.

If, then, Noonan is willing to grant Hume (P2') on the basis of (CAUSE), then he should be just as willing to grant Hume (P2'') also on the basis of (CAUSE). And if Noonan is willing to allow Hume to derive (ONE) from (P1)–(P2')–(P3), then he should be just as willing to allow Hume to derive (EACH) from (P1)–(P2'')–(P3). This means, however, that what Noonan must deny—if he is still legitimately to assume that Hume could not move plausibly from (ONE) to (ALL)—is that Hume could move plausibly from (EACH) to (ALL). We consider this claim now.

4.2. From (EACH) to (ALL)

It might seem that Noonan's objection to the inference from (EACH) to (ALL) could be rather easily answered. All it takes, one might think, is recognizing that (EACH) is *equivalent* to (ALL). Something like this thought, at least, appears to be behind Gregg Osborne's response to Noonan.¹⁸ What Osborne fails to notice, however, is the *prima facie* distinction between (EACH) and (ALL). It is no help to Osborne, of course, that Noonan offers no putative counterexamples to the rule applied by the inference from (EACH) to (ALL). Here, I shall identify on Noonan's behalf two types of putative counterexample, before disarming them and shifting the onus back onto Noonan to offer a genuine counterexample Hume would have to admit.

First we should identify the rule applied by the inference from (EACH) to (ALL). The formal distinction between (EACH) and (ALL) offers a clue. (EACH) conjoins many absolutely possible propositions: *that a given event e is not preceded by event c_1 which could metaphysically be the cause of e ; that e is not preceded by event c_2 which could metaphysically be the cause of e ; . . . ; and that e is not preceded by event c_n which could metaphysically be the cause of e .* (ALL) asserts the absolute possibility

of the conjunction of the same propositions. This suggests that the inference rule in question involves factoring out absolute possibility over full conjunction. Call this inference rule “Absolute Possibility Factorization over Full Conjunction”:

$$(APFFC) \quad \diamond_a p_1 \wedge \diamond_a p_2 \wedge \dots \wedge \diamond_a p_n \rightarrow \diamond_a (p_1 \wedge p_2 \wedge \dots \wedge p_n)^{19}$$

Yet (APFFC) is still not the weakest rule that could be applied by the inference from (EACH) to (ALL). (APFFC) allows that any pair of propositions p_1, p_2, \dots, p_n are mutually exclusive, that is, that p_1 implies $\sim p_2$ or p_2 implies $\sim p_1$, that p_2 implies $\sim p_3$ or p_3 implies $\sim p_2$, ..., that p_{n-1} implies $\sim p_n$ or p_n implies $\sim p_{n-1}$. But the inference from (EACH) to (ALL) involves propositions each pair of which are mutually *inclusive*. If, for instance, a given event e is not preceded by event c_1 , then e can also not be preceded by event c_2 , and vice versa. As such, (APFFC) leaves the door open for Hume to insist, even if (APFFC) were shown invalid, that the inference from (EACH) to (ALL) applies the following weaker and *valid* rule:

$$(APFFC') \quad \diamond_a p_1 \wedge \diamond_a p_2 \wedge \dots \wedge \diamond_a p_n \rightarrow \diamond_a (p_1 \wedge p_2 \wedge \dots \wedge p_n),$$

*where no pair of propositions of p_1, p_2, \dots , and p_n are mutually exclusive.*²⁰

In charity to Noonan, then, let us hereafter focus only on the weaker inference rule (APFFC'). Here is a putative counterexample to (APFFC') one might put forward. Let w be the complex impression of the collection of all spatially and/or temporally contiguous qualities of particular water in a pot, for example, its color and figure, its texture, its taste, and so on, but notably its temperature, h_1 . Now, let w^* be the complex impression of the collection of all spatially and/or temporally contiguous *non-temperature* qualities of w , the complex impression of which is a proper part of w . And let p_1 be the proposition *that w^* exists without h_1 at time t* , p_2 the proposition *that w^* exists without temperature h_2 at t* , ..., and p_n the proposition *that w^* exists without temperature h_n at t* , where n is the total number of temperatures each with which w^* could metaphysically be conjoined. No pair of propositions of p_1, p_2, \dots , and p_n are mutually exclusive; for example, w^* 's existing without h_1 at t does not imply w^* 's existing with h_2 at t . It is absolutely possible *that p_1* , it is absolutely possible *that p_2* , ..., and it is absolutely possible *that p_n* . But, Noonan might claim, it is not absolutely possible *that p_1, p_2, \dots , and p_n* , that is, that at t w^* exists without any temperature at all.

Must Hume admit this putative counterexample? First, must he admit that it is absolutely possible *that p_1* , it is absolutely possible *that p_2, \dots* , and it is absolutely possible *that p_n* ? One might argue that Hume would admit the absolute possibility of no more than *one* conjunct; specifically, *that p_1* . For Hume's principle of individuation is “nothing but the *invariableness* and *uninterruptedness* of any object, thro' a supposed variation in time, by which the mind can trace it in the different periods of its existence, without any break of the view, and without being oblig'd to form the idea of multiplicity or number” (T 1.4.2.30; SBN 201). On

this reasoning, any change in the qualities that constitute a complex impression would destroy its identity.

I concede that, given Hume's principle of individuation, it is not absolutely possible for w to exist without its actual temperature h_1 . But this is not what the putative counterexample claims is absolutely possible. Rather, the claim is that it is absolutely possible for *one* proper part of w , the complex impression w^* of the collection of w 's spatially and/or temporally contiguous *non-temperature* qualities, to exist without *another* distinct proper part of w , its actual temperature h_1 . This Hume *would* admit, just as he holds that "[t]ho' a particular colour, taste, and smell are qualities all united together in this apple, 'tis easy to perceive they are not the same, but are at least distinguishable from each other" (T 1.1.1.2; SBN 2).

Second, must Hume admit that it is *not* absolutely possible that p_1, p_2, \dots , and p_n , that is, that at t w^* exists without any temperature at all? Here, we need only consider Hume's passing remark that "wherever by any accident the faculties, which give rise to any new impressions, are obstructed in their operations, as when one is born blind or deaf; not only the impressions are lost, but also their correspondent ideas; so that there never appear in the mind the least traces of either of them" (T 1.1.1.9; SBN 5). Hume allows that a blind person, for example, would lack any visual impressions even when she *would* have complex impressions of conjoined auditory, tactile, and other non-visual qualities. There is no obvious reason why the quality of heat or temperature would be any different for Hume. He should allow, equally, that it is absolutely possible for w^* to exist without any temperature at all. So, while Hume should admit that it is absolutely possible that p_1 , it is absolutely possible that p_2, \dots , and it is absolutely possible that p_n , he need not admit that it is absolutely impossible that p_1, p_2, \dots , and p_n . Hence Hume need not admit this putative counterexample.

In fact, Hume could exclude on principle any putative counterexamples of this sort. Let i be the complex impression of the collection of all spatially and/or temporally contiguous qualities of a particular chili pepper, for example, its color and figure, its texture, its odor, and so on, but notably its pungency, s_1 . Now, let i^* be the complex impression of the collection of all spatially and/or temporally contiguous *non-pungency* qualities of i , the complex impression of which is a proper part of i . And let p_1 be the proposition that i^* exists without s_1 at time t , p_2 the proposition that i^* exists without pungency s_2 at t , ..., and p_n the proposition that i^* exists without pungency s_n at t , where n is the total number of pungencies each with which i^* could metaphysically be conjoined. Hume should admit that it is absolutely possible that p_1 , it is absolutely possible that p_2, \dots , and it is absolutely possible that p_n . But he need not admit that it is absolutely impossible that p_1, p_2, \dots , and p_n , that is, that at t i^* exists without any pungency at all. The frequency of failed counterexamples of this sort could justify Hume in concluding that for any case

in which each individual conjunct (for instance, *that* p_n) is absolutely possible, the full conjunction (that is, *that* p_1, p_2, \dots , and p_n) is not itself absolutely impossible.

This might lead one to seek a different sort of counterexample in which the absolute impossibility of the full conjunction might be less disputable. Here is a candidate. Let b be the impression of a blue blotch, that is, of its color and, notably, its spatial extension d_1 . Now, let b^* be the impression of b 's blueness, which putatively is a proper part of b . And let p_1 be the proposition *that* b^* exists without d_1 , p_2 the proposition *that* b^* exists without extension d_2 , ..., and p_n the proposition *that* b^* exists without extension d_n , where n is the total number of extensions each with which b^* could metaphysically be conjoined. No pair of propositions of p_1, p_2, \dots , and p_n are mutually exclusive, for example, b^* 's existing without d_1 does not imply b^* 's existing with d_2 . Now, one might claim, it is absolutely possible *that* p_1 , it is absolutely possible *that* p_2, \dots , and it is absolutely possible *that* p_n . But it is not absolutely possible *that* p_1, p_2, \dots , and p_n , that is, that b^* exists without any extension at all.

Hume would indeed agree that it is not absolutely possible *that* p_1, p_2, \dots , and p_n , that is, that b^* exists without any extension at all. But this is just because he would deny the absolute possibility that b^* exists without b 's actual extension d_1 . Let me explain. For Hume, the idea of b^* is not genuinely distinct from the idea of b 's extension d_1 , and so b^* is not really separable from d_1 . Hence Hume says, "when a globe of white marble is presented, we receive only the impression of a white colour disposed in a certain form, nor are we able to separate and distinguish the colour from the form" (T 1.1.7.18; SBN 25). The *apparent* but not genuine distinction between the idea of b^* and the idea of b 's actual extension d_1 Hume would classify as a "distinction of reason." The first idea and the second are one and the same. And Hume's denial of the absolute possibility *that* p_1 would imply a denial both that it is absolutely possible *that* p_1, p_2, \dots , and p_n , and more relevant, that it is absolutely possible *that* p_1 , it is absolutely possible *that* p_2, \dots , and it is absolutely possible *that* p_n .

Yet is not a distinction of reason in *some* sense a genuine distinction? And what does it distinguish if not ideas or perceptions? Hume's answer is that it genuinely distinguishes the *token qualities*—*belonging to different quality-types*—of which one has a single idea. I do not have the idea of b^* that is distinct from my idea of b 's actual extension d_1 . But my single idea of b^* with extension d_1 is of two distinct token qualities belonging to different quality-types: a token shade of blue, which belongs to the quality-type *blueness*, and a token extension, which belongs to the quality-type *d_1 -extendedness*. A quality-type is demarcated by a class of resembling ideas. My idea of the particular extended blue shade belongs to the class of ideas that resemble each other in respect of their blueness, but also to the class of ideas that resemble each other in respect of their d_1 -extendedness. And it is entirely consistent for Hume to hold that distinct particular *ideas* resemble each other in

virtue of possessing tokens of a single *quality*-type, no token of which itself exists independently.

Again, Hume could exclude on principle any putative counterexamples of the above sort. Consider the same impression of blue blotch *b* with actual color l_1 . Let b^* instead be the impression of *b*'s extension, which putatively is a proper part of *b*. And let p_1 be the proposition *that b^* exists without l_1* , p_2 the proposition *that b^* exists without color l_2* , ..., and p_n the proposition *that b^* exists without color l_n* , where n is the total number of colors each with which b^* could metaphysically be conjoined. Hume would indeed agree that it is not absolutely possible *that $p_1, p_2, \dots, \text{and } p_n$* , that is, that b^* exists with no color at all. Yet he would not agree that it is absolutely possible for b^* to exist without l_1 . For the idea of b^* is not genuinely distinct from the idea of *b*'s actual color l_1 , and so b^* is not separable from l_1 . The apparent but not genuine distinction between b^* and *b*'s actual color l_1 would be for Hume another distinction of reason. And Hume's denial of the absolute possibility *that p_1* would imply a denial both that it is absolutely possible *that $p_1, p_2, \dots, \text{and } p_n$* , and that it is absolutely possible *that p_1* , it is absolutely possible *that p_2, \dots* , and it is absolutely possible *that p_n* . Likewise, the frequency of failed counterexamples of this sort could justify Hume in concluding that for any case in which the full conjunction (that is, *that $p_1, p_2, \dots, \text{and } p_n$*) is absolutely impossible, this is only because the relevant individual conjunct (that is, *that p_1*) is absolutely impossible and only *apparently* absolutely possible due to a distinction of reason.

Because these two types of putative counterexample are meant to be exhaustive, the onus is on Noonan to present a genuine counterexample to (APFFC'). The following candidate has recently been brought to my attention. Let p_1 be the proposition *that impression of red point r coexists alongside 0 exactly resembling impressions at time t* , p_2 the proposition *that r coexists alongside 1 exactly resembling impression at t* , ..., and p_n the proposition *that r coexists alongside $n-1$ exactly resembling impressions at t* , where $n-1$ is the total number of exactly resembling objects each alongside which *r* could metaphysically coexist at t . No pair of propositions of $p_1, p_2, \dots, \text{and } p_n$ are mutually exclusive, for instance, *r*'s not coexisting alongside 0 exactly resembling impressions at t does not imply *r*'s coexisting alongside 1 exactly resembling impression at t . One might think that it is absolutely possible *that p_1* , it is absolutely possible *that p_2, \dots* , and it is absolutely possible *that p_n* , but that it is absolutely impossible *that $p_1, p_2, \dots, \text{and } p_n$* , that is, that *r* neither coexists alongside any exactly resembling impression at t nor does *not* coexist alongside any exactly resembling impression at t .

This last qualification goes to the heart of the objection. The absolute impossibility that *r* neither coexists alongside any exactly resembling impression at t , nor does *not* coexist alongside any exactly resembling impression at t , is grounded on the absolute necessity for any proposition to be either true or false. Now, there is every reason to think that Hume accepts the Law of Excluded Middle, that is,

the absolute necessity for any proposition to be either true or false. The problem, however, is that p_1 is not a “proposition” in Hume’s relevant sense. Hume speaks of propositions as each implying a relation: “[t]hese relations are *resemblance, proportions in quantity and number, degrees of any quality, and contrariety*; none of which are imply’d in this proposition, *whatever has a beginning has also a cause of existence*” (T 1.3.3.2; SBN 79). Were p_1 a proposition, which relation would it imply? The *non*-spatial and/or temporal relation between r and any exactly resembling impression alongside which it could metaphysically coexist? This has no place in Hume’s presumably exhaustive catalogue of relations (T 1.1.5.3–9; SBN 14–15). At most, it qualifies as the *negation* of spatial and/or temporal relation, and not “any thing real or positive.” Since, then, p_1 does not qualify as a “proposition” in Hume’s relevant sense, he would not even admit *either* that it is absolutely possible *that* p_1 , it is absolutely possible *that* p_2 , ..., and it is absolutely possible *that* p_n , or that it is absolutely impossible *that* p_1 , p_2 , ..., and p_n .

Again, Hume could reject such cases on principle. Consider the same impression of red point r . Let p_1 be the proposition *that* r exactly resembles 0 other impressions at time t , p_2 the proposition *that* r exactly resembles 1 other impression at t , ..., and p_n the proposition *that* r exactly resembles $n-1$ other impressions at t , where $n-1$ is the total number of impressions each of which r could metaphysically resemble. p_1 is not a “proposition” in Hume’s relevant sense. At most, it implies the *non*-resemblance of r to any other impression at t . Yet this is not a relation, but its *negation*. Consequently, Hume would not even admit *either* that it is absolutely possible *that* p_1 , it is absolutely possible *that* p_2 , ..., and it is absolutely possible *that* p_n , or that it is absolutely impossible *that* p_1 , p_2 , ..., and p_n . Likewise, the frequency of such failed cases could justify Hume in concluding that for any case in which the absolute impossibility of the conjunction is putatively grounded on the absolute necessity that any proposition is either true or false, the conjunct *that* p_1 would not be a “proposition” in the required sense. Consequently, Hume’s move from (EACH) to (ALL) remains plausible. Furthermore, Noonan would be wrong to assume that Hume could not move plausibly from (ONE) to (ALL).

5. A Direct Route to (ALL)

The second assumption required by Noonan is that Hume needed to move from (ONE) to (ALL) to show (ALL). I wish to suggest here that Hume could exploit a more *direct* route to (ALL), which no attack on the move from (ONE) to (ALL) could foreclose. Recall that (P1)–(P2′)–(P3) directly yield (ONE), though not (ALL). Let us grant for the sake of argument that Hume could not move plausibly from (ONE) to (ALL). A direct route to (ALL) would involve a premise distinct from (P2′) and (P2″) that would, along with (P1) and (P3), permit a direct inference to the absolute

possibility for any event not to be preceded by the *plurality* of all events each of which could metaphysically be its cause. The most natural candidate, then, is a premise asserting the distinctness of the idea of any event and the idea of the plurality of all events each of which could metaphysically be its cause.

Yet is not the plurality of all events each of which could metaphysically be its cause potentially infinite? If so, how could Hume avail himself of the conception or idea of this potentially infinite plurality, which may simply lie beyond our finite cognitive capacities? This challenge only arises from the demand for a *non-abstract* idea of a potentially infinite plurality. We may grant that there is no such idea. Consider, instead, the *abstract* idea of a *plurality of events each of which could metaphysically be its cause*. The abstract idea would signify ideas of pluralities of two, three, four, or potentially infinite events each of which could metaphysically be its cause. Here would be the modified argument:

- (P1) If two ideas are distinct, then it is conceivable for the object of one idea to exist without the object of the other.
- (P2'') The idea of any event and the idea of any *plurality* of events each of which could metaphysically be its cause are distinct.
- (P3) Whatever is conceivable is absolutely possible.
-
- (ALL) For any events e, c_1, c_2, \dots , and c_n , where c_1 is the actual cause of e and each of c_2, c_3, \dots , and c_n could metaphysically be the cause of e , it is absolutely possible for e not to be preceded by the plurality of c_1, c_2, \dots , and c_n .

This *would* be a direct and valid route to (ALL) that does not involve deriving (ALL) from (ONE). Nor would (P2'') imply that we actually have an idea of any considerable plurality of events each of which could metaphysically be the cause of the given event, though it would imply in *some* sense a “power to produce” such an idea. Hume says, “when we mention any great number, such as a thousand, the mind has generally no adequate idea of it, but only a power of producing such an idea, by its adequate idea of the decimals, under which the number is comprehended” (T 1.1.7.12; SBN 23). Though we may have no adequate idea of the plurality of a thousand, we have in some sense a power to produce it by way of adequate ideas we do have. Similarly, though we may have no adequate idea of the plurality of all events each of which could metaphysically be the cause of the given event, we have in some sense a power to produce it by way of adequate ideas we do have.

How could Hume justify (P2'')? He would have to argue that every idea belonging to the term *event's* revival set is distinct from the idea of every plurality of events each of which could metaphysically be its cause. In view of this, Hume's justification could be straightforwardly inductive. The idea of an event—say, water in a pot boiling—has been seen to be numerically non-identical to and so distinct

from the idea of a plurality of *two* events each of which could metaphysically be its cause—say, snapping one’s fingers *and* humming a tune. Certainly, only one of these events could *actually* be the cause of the water boiling. But that would not prevent one from having the idea of the simultaneous occurrence of the two events.

Now, the idea of the water in a pot boiling has *also* been seen to be numerically non-identical to and so distinct from the idea of a plurality of *three* events each of which could metaphysically be its cause—say, snapping one’s fingers *and* humming a tune *and* tapping one’s foot. Again, only one of these events could *actually* be the cause of the water boiling. But that would not prevent one from having the idea of the simultaneous occurrence of the three events. Given enough such cases in which the idea of the water in a pot boiling has been distinct from the idea of a plurality of events each of which could metaphysically be the cause of the water boiling, one is justified in inferring that the idea of the water in a pot boiling is distinct from the idea of *any* plurality of events each of which could metaphysically be the cause of its boiling.

Moreover, the idea of another given event besides water in a pot boiling—say, a window-breaking—is numerically non-identical to and so distinct from the idea of any plurality of events each of which could metaphysically be the cause of the window-breaking, for example, the simultaneous occurrence of the rain falling *and* the radio playing *and* so on. Given enough such cases in which the idea of an event has been distinct from the idea of any plurality of events each of which could metaphysically be its cause, one is justified in inferring that the idea of *any* event and the idea of any plurality of events each of which could metaphysically be its cause are distinct. That is, one is justified in inferring (P2’’).

Should one worry that a potentially infinite plurality of events each of which could metaphysically cause the given event is *different in kind* from a finite plurality of such events, thereby undermining the inductive justification of (P2’’), one need only reflect on the nature of inductive justification. Such justification certainly requires good reason for believing, say, that the idea of any event is distinct from the idea of a potentially infinite plurality of events each of which could metaphysically be its cause. But this justification is also *defeasible*: new information could provide a reason for believing that the idea of any event is *not* distinct from the idea of a potentially infinite plurality of events each of which could metaphysically be its cause. Until such new information emerges, however, the inductive justification of (P2’’’) remains undefeated.

(P2’’’) therefore admits of inductive justification that fits comfortably within Hume’s framework. This gives him a direct route from (P1)–(P2’’)–(P3) to (ALL) that does not involve moving from (ONE) to (ALL). So, Noonan would be wrong to assume that Hume needed to move from (ONE) to (ALL) to show (ALL).

6. Conclusion

Hume's negative argument on the Causal Maxim is important not just in its own right, but also as one application of a general argument Hume deployed in other crucial instances. Noonan questions the validity of the first stage of this negative argument. He claims that in showing (ONE), Hume did not thereby show what he sought in (ALL). Noonan, however, needs two further assumptions for this objection to succeed: first, that Hume indeed could not move plausibly from (ONE) to (ALL); second, that Hume needed to move from (ONE) to (ALL) to show (ALL).

I have argued that both assumptions are false. The first assumption is false because Hume could move plausibly from (ONE) to (EACH), and could reject what appear to be the only two types of putative counterexample to the inference from (EACH) to (ALL). The second assumption is false because Hume could yield (ALL) directly by invoking the abstract idea of a plurality of events each of which could metaphysically be the cause of the given event, obviating the need to move from (ONE) to (ALL). If I have argued successfully, then the lapse Noonan ascribes to the first stage of Hume's negative argument is not real.

This saddles us with an interesting exegetical question. Our objections to the two assumptions required by Noonan yield two incompatible readings of the first stage of Hume's negative argument. The first reading treats Hume's premise (P2) as (P2') and takes him to move from the resulting conclusion, (ONE), to the desired conclusion, (ALL). The second reading treats Hume's premise (P2) as (P2'') and takes him to move directly to the desired conclusion, (ALL). Which reading gets Hume right?

There is no easy answer to this question, at least not without more information than Hume provides in T 1.3.3 (SBN 78–82). One might dispute the first reading because Hume never explicitly acknowledged moving from (ONE) to (EACH) or applying anything like rule (APFFC') in moving from (EACH) to (ALL). But it is entirely possible that Hume simply did not see the need to move *explicitly* from (ONE) to (EACH) as we have in section 4.1, and overlooked the types of putative counterexample to the inference from (EACH) to (ALL) that section 4.2 has undermined.

On the other hand, one might dispute the second reading because it seems to clash with what Hume literally says in T 1.3.3 (SBN 78–82). Recall premise (P2):

- (P2) The idea of any event and the idea of a cause of the given event are distinct.

What Hume literally says in referring to the second idea is “the distinct idea of a cause or productive principle.” Does this not mean that for the second idea, Hume had in mind the idea of the given event's *actual* cause, and so that the correct interpretation of (P2) is (P2')? It need not, in fact. Had Hume used the definite article “the” in front of “cause or productive principle,” then perhaps the only

plausible interpretation of (P2) would be (P2'). But the indefinite article allows for interpreting the object of the second idea as a *plurality of all* the events that *could metaphysically* be its cause.

Fortunately, we can remain neutral on this exegetical question. Hume must have meant *something* by “the distinct idea of a cause or productive principle.” (P2') and (P2''') outline the only two plausible options: Hume meant either the distinct idea of the *actual* cause of the given event, or the distinct idea of a *plurality* of events each of which could metaphysically cause it. *Either* reading would issue in Hume's prima facie justified conclusion that it is not absolutely necessary for any event to be caused. Perhaps there is an independent argument that either targets Hume's foundational premises about perception or cognition, or invokes additional foundational premises, thereby invalidating (APFFC') or defeating the inductive justification of (P2'').²¹ For now, in the absence of such an independent argument, Hume's negative argument on the Causal Maxim remains intact.

NOTES

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1 References to the *Treatise* are to Hume, *A Treatise of Human Nature*, ed. Norton and Norton, hereafter cited in the text as “T” followed by Book, part, section, and paragraph number, and to Hume, *A Treatise of Human Nature*, ed. Selby-Bigge, rev. by Nidditch, cited in the text as “SBN” followed by the page number.

2 See Penelhum, *David Hume: An Introduction to His Philosophical System*, 117; Osborne, “Hume's Argument in *Treatise* 1.3.3.3,” 228; and Allison, *Custom and Reason in Hume*, 98.

3 In T 1.3.3 (SBN 78–82) alone, Hume uses the title “*Why a cause is always necessary*,” and refers to “the general maxim in philosophy, that *whatever begins to exist, must have a cause of existence*” (T 1.3.3.1; SBN 78–79), and to “the opinion of the **necessity** of a cause to every new production” (T 1.3.3.9; SBN 82). The exception to this is a reference in T 1.3.3.2 (SBN 79) to “this proposition, *whatever has a beginning has also a cause of existence* [that] is not intuitively certain.” This exception might be what has led some authors to presume that Hume is not ultimately concerned with a belief in the relevantly modal proposition. See, for example, Beebe, *Hume on Causation*, 73: “Hume's ‘beating about’ in the neighboring fields in the *Treatise*—of which his discussion of causal reasoning is the major part—has revealed, amongst other things, first, that he does not *doubt* what is sometimes called the ‘causal maxim’: the maxim that every event has a cause (it's just that the maxim cannot be known *a priori*).” Though Beebe of course takes Hume

to hold that necessity figures into the content of our belief via the idea of a *cause*, she apparently does not take him to hold that a *distinct* necessity figures into our belief's content via the idea of the relation of precedence of a cause to any event. The textual exception in question, however, can be explained away: in T 1.3.3.3 (SBN 79–80), Hume treats the “intuitive or demonstrative certainty” of a relevantly *non-modal* proposition as *equivalent* to the intuitability or demonstrability of the corresponding relevantly *modal* proposition. So Hume's interest in the certainty of the relevantly non-modal proposition is perfectly in line with his broader interest in our belief in the relevantly modal proposition.

4 Hume thought that only relations of *ideas* are invariable so long as the ideas so related do not change. But he seemed to allow for the coherent supposition that relations of *impressions* might be invariable so long as they *as objects* do not change: “[t]he relations of *contiguity* and *distance* betwixt two objects may be chang'd merely by an alteration of their place, without any change **on the objects themselves** or on their ideas” (T 1.3.1.1; SBN 69; my emphases). This will be important in section 4.2 when we consider candidate invariable relations of impressions.

5 While in T 1.3.1–1.3.2 (SBN 69–78) Hume speaks of the comparison of ideas and discovery of “invariable” relations in which they stand, in a later controversial passage he speaks of the discovery of “[absolutely] necessary” relations in which ideas stand: “[t]hus as the [absolute] necessity, which makes two times two equal to four, or three angles of a triangle equal to two right ones, lies only in the act of the understanding, by which we consider and compare these ideas; in like manner the necessity or power, which unites causes and effects, lies in the determination of the mind to pass from the one to the other” (T 1.3.14.23; SBN 166). There is a deep and important question about whether Hume here is reducing absolute modality to a mind-dependent feature of relations. But I shall remain silent on that question.

6 In fact, Hume *presupposes* the justification of our vulgar belief in the Causal Maxim, and in T 1.3.3 (SBN 78–82) seeks to *explain* this justified belief. For evidence of this, see *A Letter from a Gentleman*, 26: “[t]he Author is charged with Opinions leading to downright Atheism, chiefly by denying this Principle, *That whatever begins to exist must have a Cause of Existence.*” Also, see a letter Hume wrote nine years later: “[b]ut allow me to tell you, that I never asserted so absurd a Proposition as that any thing might arise without a cause: I only maintain'd, that our Certainty of the Falshood of that Proposition proceeded neither from Intuition nor Demonstration; but from another Source” (*Letters of David Hume*, 1:186). This does raise questions about Hume's grounds for presupposing the Causal Maxim. One possibility is that he assumed a *probable* justification of our vulgar belief in the Causal Maxim, a prospect that only now is starting to catch; see, for example, Schmitt, *Hume's Epistemology in the Treatise*, 145n21, who notes that such justification would require the antecedent, independent justification of probable reasoning by way of a probable metainference, and Falkenstein who anticipates this strategy in “Hume's Answer to Kant,” 348. That Hume presupposes this probable justification would explain why he does not even consider the possibility that our vulgar belief in the Causal Maxim is determined by or founded on *defective* intuitive or demonstrative reasoning. For by presupposing the justification of our vulgar belief, Hume rules out its being determined by or founded on defective reasoning of any sort.

7 In “Hume on Conceivability and Inconceivability,” Lightner argues that Hume accepted the “Conceivability Principle” (P3) but not its inverse, the “Inconceivability Principle”: *that whatever is inconceivable is absolutely impossible*. But because Lightner’s position is congenial to the New Hume reading on which absolute causal necessity is inconceivable but not absolutely impossible (see, for example, Kail, *Projection and Realism in Hume’s Philosophy*, chap. 5), and not to the Old Hume reading, it may ultimately count against Lightner’s position if the New Hume reading turns out to be implausible (as Millican concludes it is in “Hume, Causal Realism, and Causal Science.”). In *Hume*, 49, Garrett offers us an alternative to Lightner’s position: Hume accepted the Inconceivability Principle where “the inconceivability results from a contradiction in the actual thought itself,” and not where it results from a particular subject’s deficient fund of ideas. To remain neutral on the question, I have formulated (P3) as a conditional and not biconditional.

8 See Garrett, *Cognition and Commitment in Hume’s Philosophy*, chap. 3.

9 See Hakkarainen, “A Third Type of Distinction in the *Treatise*.” Without qualifying “distinctness” here as real, Hume’s Separability Principle and (P1) would imply the false proposition that a complex perception, which is numerically non-identical to the perceptions composing it, is separable from those constituent perceptions, for example, that the idea of an apple is separable from the idea of its stem.

10 See Garrett, *Cognition and Commitment in Hume’s Philosophy*, 24.

11 See Hume, *An Abstract of A Treatise of Human Nature*, ¶11, in *A Treatise of Human Nature*, ed. Norton and Norton, and *A Treatise of Human Nature*, ed. Selby-Bigge, rev. by Niddich, 650.

12 Hume says: “we may easily conceive, that there is no absolute nor metaphysical necessity, that every beginning of existence shou’d be attended with such an object” (T 1.3.14.35; SBN 172).

13 For a charitable interpretation of Hume’s justification of (P1), see Garrett (*Cognition and Commitment in Hume’s Philosophy*, 66–69; *Hume*, 46–47), who takes Hume to reason as follows: first, whichever objects are numerically non-identical can always be considered parts of a whole; second, whichever objects are considered parts of a whole can be distinguished into parts of this whole, and so distinguishable full stop; third, the cognitive operation of making distinctions essentially depends on the separation of ideas in thought, and separating ideas in thought *just is* conceiving the separation of the objects of these ideas, that is, of the impressions exactly resembling these ideas. We shall discuss Hume’s justification of (P2) in section 4.1. As Hume made no explicit attempt to justify (P3), Garrett (*Hume*, 49) posits that he simply viewed the premise as self-evident: how *could* something that can be fully and accurately conceived with internal consistency not thereby *be* internally consistent in its nature? But an implicit inductive justification is not out of the question: every simple or complex impression of which we have had a clear and distinct image *so far* has also been absolutely possible. One is thus justified in inferring, in the absence of any defeating counterexample, that every simple or complex impression of which we have a clear and distinct image *in general* is absolutely possible.

14 See Noonan, *Routledge Philosophy GuideBook*, 106–107. Coincidentally, the same objection was made in the same year by Van Cleve, *Problems from Kant*, 32.

15 See Osborne, "Hume's Argument in *Treatise* 1.3.3.3," 235.

16 References to the first *Enquiry* are to Hume, *An Enquiry concerning Human Understanding*, ed. Beauchamp, hereafter cited in the text as "EHU" followed by section and paragraph number, and to Hume, *Enquiries concerning the Human Understanding and concerning the Principles of Morals*, ed. Selby-Bigge, rev. by Nidditch, hereafter cited in the text as "SBN" followed by page numbers.

17 See T 1.3.2.7 (SBN 76). Notably, this demonstrative argument is directed *only* against the claim that it is absolutely possible for a cause to be *simultaneous* with, and not *posterior* to, its effect.

18 See Osborne, "Hume's Argument in *Treatise* 1.3.3.3," 243n13.

19 Here is (APFFC) in more precise logical notation: $(\forall x)(Ex \rightarrow ((\bigwedge_a C_1x \wedge \bigwedge_a C_2x \wedge \dots \wedge \bigwedge_a C_nx) \rightarrow (\bigwedge_a (C_1x \wedge C_2x \wedge \dots \wedge C_nx))))$. The case at issue is one in which: E is the predicate 'is an event of which each of events c_1, c_2, \dots , or c_n could metaphysically be the cause'; C_n is the predicate 'exists without event c_n '; and n is the number of events each of which could metaphysically be the cause of x .

20 Here is (APFFC') in more precise logical notation: $(\forall x)((Ex \wedge (\sim((C_1x \rightarrow \sim C_2x) \vee (C_2x \rightarrow \sim C_1x)) \wedge \sim((C_2x \rightarrow \sim C_3x) \vee (C_3x \rightarrow \sim C_2x)) \wedge \dots \wedge \sim((C_{n-1}x \rightarrow \sim C_nx) \vee (C_nx \rightarrow \sim C_{n-1}x)))) \rightarrow ((\bigwedge_a C_1x \wedge \bigwedge_a C_2x \wedge \dots \wedge \bigwedge_a C_nx) \rightarrow (\bigwedge_a (C_1x \wedge C_2x \wedge \dots \wedge C_nx))))$.

21 A prominent candidate is Kant's Second Analogy of Experience (see *Critique of Pure Reason*, A189–211/B232–56), which would defeat either Hume's inductively-grounded dismissal of the first type of putative counterexample to (APFFC') (see section 4.2), or Hume's inductive generalization to the separability of any event from a potentially infinite plurality of events each of which could metaphysically cause it (see section 5).

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