## THERE ARE NO NECESSARY CONNECTIONS BETWEEN DISTINCT EXISTENCES

"There are no necessary connections between distinct existences" is a maxim often attributed to Hume and frequently invoked in contemporary arguments. Its most familiar name is "Hume's Dictum," and I shall follow that usage here, sometimes abbreviating it to HD.[1] My aim in what follows is to explore its meaning, its basis, and its uses in Hume; the range of its uses in contemporary philosophy and whether they are properly Humean; and some of the reasons for and against thinking it true.

## 1.The principle in Hume

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[1] Here is a quiz for the reader: pair each name on the left with the correct principle on the right:

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|---|---|
| 1. Hume's Dictum | a. Every proposition is either necessary, a priori, and analytic or contingent, empirical, and synthetic. |
| 2. Hume's Law | b. There can never be necessary connection between distinct existences. |
| 3. Hume's Principle | c. No ought-proposition ever follows from any is-proposition. |
| 4. Hume's Fork | d. The number of Fs = the number of Gs iff there is a one-to-one correspondence between the Fs and the Gs. |

My sense of the literature is that the most common pairings (and in some cases the invariable ones) are 1b, 2c, 3d, and 4a.
  I might suggest calling 1b Hume's Knife—except that rather than severing necessary connections between distinct existences, it says there are never any to start with.

In this section, I offer a list of passages in which Hume states, derives, or applies his Dictum. Some of the passages in which he applies it do not cite the principle itself, but one or both of the two deeper principles from which he derives it.[2]  It will be good, then, to start with these deeper principles.

First, there is what is generally called the Separability Principle, which gets its most official statement in the following passage:

> We have observ'd, that whatever objects are different are distinguishable, and that whatever objects are distinguishable are separable by the thought and imagination.  And we may here add, that these propositions are equally true in the *inverse*, and that whatever objects are separable are also distinguishable, and that whatever objects are distinguishable are also different.  (T 1.1.7.3; the earlier passage Hume refers to is T 1.1.3.4.)[3]

If we add two obvious consequences, Hume here propounds six propositions in all:  *different →
distinguishable, distinguishable → separable, different → separable, separable →
distinguishable, distinguishable → different,* and *separable → different*.  He sometimes uses 'distinct' as a synonym of 'different' (e.g., at T 1.4.3.7 and T Appendix, paragraph 12).

As far as I can tell, 'distinguishable' functions in these propositions only as a middle term to mediate the inference from the first and second to the third and from the fourth and fifth to the sixth.  The important principles among them, the ones that do the work in his philosophy, are *distinct → separable* and its converse, *separable → distinct*.

Second, there is the Conceivability Principle, the principle that whatever is conceivable is possible.  Here is an official statement of it**:**

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[2] May it be called a principle if Hume derives it from other principles?  Hume speaks twice in the Introduction to the *Treatise* of "ultimate principles," which would be a redundancy if principles had to be underived.

[3] 'T' stands for the *Treatise of Human Nature*, and my references are to book, chapter, section, and paragraph numbers in the edition edited by the Nortons, Hume 2000 (1739).  I generally include in parentheses page references to the Selby-Bigge and Nidditch edition of 1978.

> 'Tis an establish'd maxim in metaphysics, *that whatever the mind clearly conceives includes the idea of possible existence*, or in other words, *that nothing we imagine is absolutely impossible*. We can form the idea of a golden mountain, and from thence conclude that such a mountain may actually exist. We can form no idea of a mountain without a valley, and therefore regard it as impossible. (T 1.2.2.8 (32))

As the last sentence shows, Hume also apparently accepts a converse Inconceivability Principle.[4]

I will use 'Conceivability Principle' only for the original direction.[5]

The possibility Hume refers to here is the dual of what is nowadays called metaphysical or broadly logical necessity—necessity in the strongest sense of the word. Those things are possible whose negations are not necessary in that strong sense. This comes out in his talk of "absolute possibility," as well as in the remark that "whatever we conceive is possible, at least in a metaphysical sense" (T Abstract, paragraph 11).

Hume articulates and uses the Conceivability Principle in well over a dozen places in the *Treatise*. He uses it to show that there are no abstract ideas, that causes are not necessarily connected with their effects, that qualities do not need substances, and much more besides. Here are some representative statements of it:

> If this be absurd in *fact and reality*, it must also be absurd in *idea*; since nothing of which we can form a clear and distinct idea is absurd and impossible. (T 1.1.7.6 (19))

> We can at least conceive a change in the course of nature; which sufficiently proves, that such a change is not absolutely impossible. To form a clear idea of any thing, is an undeniable argument for its possibility, and is alone a refutation of any pretended demonstration against it. (T 1.3.6.5 (89))

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[4] This is disputed by Lightner (1997). He maintains (i) that the mountain-without-a valley example is the only passage where Hume seems to use the Inconceivability Principle, and (ii) that the real appeal there is to the Contradiction Principle. Against (i), I note that there is at least one other move from inconceivability to impossibility that Lightner overlooks, namely, the inconceivability of motion without a body moved at T 1.4.4.7 (28). Against (ii**),** I question whether Hume has any standard of contradictoriness independent of inconceivability itself.

[5] Commentators generally use 'Separability Principle' for a principle taking us *to* separability as consequent and 'Conceivability Principle' for a principle taking us *from* conceivability as antecedent. See, for example, Garrett 1997, 24, 43, and ch.3, and Baxter 2015.

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.  (T 1.3.3.3 (79-80))

The last quotation is important because it shows that Hume takes separability in two ways.  In the original statement of the Separability Principle, the separability in question was *mental* separability, the possibility of forming separate ideas of the two distinct things.  In the last quotation, Hume seems to be implicitly using the Conceivability Principle to move beyond mental separability to the possibility of *real* separation—the possibility of one of the things' existing in the absence of the other.  Following Baxter 2011 and 2015, I henceforth use Mental Separability as a name for the principle that if x and y are distinct, you can conceive of x without conceiving of y, and Real Separability as a name for the principle that if x and y are distinct, it is possible for x to exist without y.  The argument from Mental Separability to Real Separability using the Conceivability Principle receives further scrutiny below in section 3.  It will not escape the reader that Real Separability is none other than Hume's Dictum—it could be put using the words "there are no necessary connections between distinct existences."

I proceed now to the catalogue of passages in which Hume makes use of his Dictum or one of its underlying principles, noting in each case the intended conclusion, which is sometimes made clear by the surrounding context though not the quotation itself.

*Possibility of a vacuum.*  Here is an argument Hume takes seriously for the possibility of a vacuum:

It must also be allow'd possible, to conceive the annihilation of any part of matter by the omnipotence of the deity, while the other parts remain at rest.  For as every idea, that is distinguishable, is separable by the imagination; and as every idea, that is separable by the imagination, may be conceiv'd to be separately existent; 'tis evident, that the existence of one particle of matter, no more implies the existence of another, than a square figure in one body implies a square figure in every one.  (T 1.2.5.3 (54))

Hume takes the Dictum to support the premise that the existence of one piece of matter does not

necessitate the continued existence of others next to it.   In the end Hume denies the possibility

of a vacuum, but not because he rejects this premise.[6]

   *Non-necessity of the Principle of Universal Causation.*  In the following passage, Hume uses

Real Separability to show that it is not a necessary truth that every beginning of existence has a

cause:

> 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.  (T 1.3.3.3
> (79-80))

   *Non-necessity of the causal nexus.*  The foregoing denial of necessity must not be confused

with Hume's more frequent and famous denial of necessity—that there is no necessity that a

given cause be followed by whatever event is actually its effect, such as fire by smoke.  Hume

distinguishes these two questions about necessity at T 1.3.2.14-15 (78).  Here are applications of

Hume's Dictum to the second question:

> There is no object, which implies the existence of any other if we consider these objects in
> themselves, and never look beyond the ideas which we form of them.  Such an inference wou'd
> amount to knowledge, and wou'd imply the absolute contradiction and impossibility of
> conceiving any thing different.  But…'tis evident there can be no impossibility of that kind.
> (T 1.3.6.1 (86-87))

> There is nothing in any object, consider'd in itself, which can afford us a reason for drawing a
> conclusion beyond it. (T 1.3.12.20 (139))

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[6] At the very least, Hume denies the possibility of our having any *idea* of a vacuum.  See T 1.2.3-5.

When I see, for instance, a Billiard-ball moving in a straight line towards another; even suppose motion in the second ball should by accident be suggested to me, as the result of their contact or impulse; may I not conceive, that a hundred different events might as well follow from that cause? All these suppositions are consistent and conceivable. . . . In a word, then, every effect is a distinct event from its cause. It could not, therefore be discovered in the cause . . . . (EHU 4.1, 18-19)[7]

When we reason *a priori*, and consider merely any object or cause, as it appears to the mind, independent of all observation, it never could suggest to us the notion of any distinct object, such as its effect; much less, show us the inseparable and inviolable connection between them. (EHU, 4.1, 20).

In each case, Hume uses his Dictum to show that there cannot be any necessary inference from a cause to its effect.

*Perceptions without minds*. Sometimes Hume uses his Dictum to show that there is no necessity that any perception belong to a mind, even when a mind is construed not as a substance but as a bundle of perceptions:

Here then may arise two questions; *First*, How we can satisfy ourselves in supposing a perception to be absent from the mind without being annihilated? . . . As to the first question, we may observe, that what we call a *mind*, is nothing but a heap or collection of different perceptions, united together by certain relations, and suppos'd, tho' falsly, to be endow'd with a perfect simplicity and identity. Now as every perception is distinguishable from another, and may be consider'd as separately existent; it evidently follows, that there is no absurdity in separating any particular perception from the mind. (T 1.4.2.38-39 (207); see also T, Appendix, paragraph 12 (634))

*Qualities without substances.* Another use of Hume's Dictum or Real Separability is to show that qualities do not depend either on other qualities or substances:

Every quality being a distinct thing from another, may be conceiv'd to exist apart, and may exist apart, not only from every other quality, but from that unintelligible chimera of a substance. (T 1.4.3.7 (222))

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[7] 'EHU' stands for the *Enquiry Concerning Human Understanding*, and my references are to section, part, and page numbers in the Hackett edition.

*Independence of perceptions.* In the following passages, Hume uses Real Separability to show that all perceptions meet the independence criterion that is the traditional hallmark of substances. I scrutinize this argument in further detail below.

> Since all our perceptions are different from each other, and from every thing else in the universe, they . . .may exist separately. (T 1.4.5.5 (233))

> All these [our perceptions] are different, and distinguishable, and separable from each other, and may be separately consider'd, and may exist separately, and have no need of any thing to support their existence. (T 1.4.6.3 (252))

*Knowing and willing.* In the following passage, Hume's intended conclusion, not stated in the quotation itself, is that there is no necessary connection between knowing virtue and willing it:

> All beings in the universe, consider'd in themselves, appear entirely loose and independent of each other. 'Tis only by experience we learn their influence and connexion; and this influence we ought never to extend beyond experience. (T 3.1.1.22 (466))

As the assembled passages show, the Dictum has a great deal of work to do in Hume's philosophy. Contrary to the impression one may get from Wilson 2010, its *raison d'etre* is not simply to scotch the idea of a necessary connection between cause and effect.

## 2. Formulations of the principle in contemporary terms

How should Hume's Dictum be formulated in contemporary terms or written out in logic book style? The answer might seem obvious: $(x)(y)$(if $x \neq y$, then $\Diamond$(x exists & y does not exist)); equivalently, the existence of x does not necessitate the existence of y. But that would be too hasty; we should not automatically assume that 'distinctness' for Hume is mere numerical distinctness.

This comes out in the following passage, which is an affirmation of mereological essentialism, the view that a thing cannot persist identically through a change of parts:

Suppose any mass of matter, of which the parts are contiguous and connected, to be plac'd before us; 'tis plain we must attribute a perfect identity to this mass, provided all the parts continue uninterruptedly and invariably the same, whatever motion or change of place we may observe either in the whole or in any of the parts. But supposing some very *small* or *inconsiderable* part to be added to the mass, or subtracted from it; tho' this absolutely destroys the identity of the whole, strictly speaking; yet as we seldom think so accurately we scruple not to pronounce a mass of matter the same, where we find so trivial an alteration. (T 1.4.6.8 (255-56))

If whole w contains part x, however small, nothing could be w that did not contain x: so we must affirm, says Hume, when we are thinking accurately and not speaking loosely.[8] It is a plain consequence that necessarily, if w exists, so does x, notwithstanding their numerical distinctness. This consequence would violate Hume's Dictum if the latter were framed straightforwardly in terms of numerical distinctness.

To remedy this situation, I propose formulating Hume's principle as follows, understanding 'distinctness' to be mereological distinctness or disjointness:

(HD) (x)(y)(if x and y have no part in common, then ◊(x exists & y does not exist)).

'Disjoint' is the term used in some mereological calculi for the absence of overlap, and overlap is the having of a common part. I am saying along with several other commentators that distinctness should be taken as disjointness.[9] A whole and any part of it have as a common part that part itself and any of the part's own parts; hence HD as formulated above accommodates what Hume says about the mass of matter.

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[8] "How could Hume have affirmed such a counter-intuitive principle?" I am sometimes asked. Well, I can only say that I am with Hume in finding it intuitive, not counter-intuitive. And the same goes for many other philosophers of Hume's day. Mereological essentialism was affirmed, at least in regard to bodies, by Locke, Hobbes, Leibniz, Butler, and even the commonsense philosopher Thomas Reid. Locke: 1689, 2.27.2-3; Hobbes: see Adriaenssen and Alma for references and discussion; Leibniz: 1765, 2.27.11; Butler: 1736, 168; Reid: 3.4, 266-67.

[9] I advocated this understanding of Hume's Dictum in Van Cleve 1999 on p. 260, n. 14. Others with a similar understanding include David Lewis (1986c, 256) and Jani Hakkarainen (2012). Hakkarainen says Hume can allow necessary connections between things that are "partially distinct," that is, numerically distinct but overlapping. Distinctness in the mereological sense of *not* overlapping is often called "being *wholly* distinct."

My weakened HD may at first look *too* weak. Ross Cameron raises exactly this suspicion (2008, 8-9). Suppose someone insists, however unreasonably, that each of two houses with a common wall requires the existence of the other. That sounds like just the sort of necessary connection Hume wishes to rule out; yet HD as I have formulated it does not appear to apply to the situation, since the houses have a part in common.

Cameron underestimates the power of HD when combined with two other principles Hume accepts or would accept: the mereological essentialism already cited and weak supplementation, which is the axiom in many mereological theories that says if whole w has a proper part x, it also has another part y disjoint from x. (If x and y together exactly make up w, we may call y the remainder or mereological difference between x and y.) These principles together *do* rule out the scenario in which one of the overlapping houses requires the existence of the other.

Here is the proof: Let H1 and H2 be two houses with a common wall, W (and nothing else in common except parts of W). For reductio, assume that it *is* necessary that H1 exists only if H2 exists. By weak supplementation, H2 has some part disjoint from W—the rest of the house, as it might be, but just call it call it X. By mereological essentialism, it is necessary that H2 exists only if X exists. By the transitivity of necessitation, it is necessary that H1 exists only if X exists. That violates HD, since H1 and X have no common part. So HD as stated rules out the supposition that one of the houses requires the existence of the other.

Here is a seemingly slightly stronger variant of Hume's Dictum:

(HD*) (x)(y)(if y is not part of x, then ◊(x exists & y does not exist)).

I say seemingly stronger, because its antecedent is weaker. But as Philip Li has pointed out to me, a proof like the one I gave above shows it not to be stronger in the presence of the other principles.[10]

Nonetheless, HD* is an interesting principle to have on board. It has a noteworthy contrapositive—that all existential dependence is mereological dependence, or that nothing ever depends on anything except its own parts. Brentano's theory of "one-sided detachability," expounded in Chisholm 1982, may be seen as an attempt to accommodate HD*. In this theory, an accident (or a trope in one sense of that term) is a being that depends on the existence of its subject, such as the wisdom of Socrates. Brentano construed such beings as wholes with their subjects as their only proper parts—the wisdom of Socrates has Socrates as a proper part and nothing else. The upside of Brentano's view is that the parthood relation explains the dependence. The downside is that it denies weak supplementation, as well as the principle that wholes differ only if they differ in some proper part.

One more qualification to HD might be proposed. What if y is a necessary being—God, Newtonian space, or some Platonic abstractum—and is wholly distinct from some other things? Then those other things could not exist unless it did, and the HD would be false. The proposal to avoid this objection is to stipulate on the right-hand side of HD that y not be a necessary being.

Add the stipulation if you like, but Hume himself would see no need for it, believing that it is impossible for there to be necessary beings:

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[10] If y is not part of x, there are two cases to consider. Case 1: x and y have no part in common. Then original HD implies that x cannot necessitate the existence of y. Case 2: x and y do have a part in common. Then they are like the houses with a common wall, and original HD implies by the proof in the text that x cannot necessitate the existence of y.

Nothing that is distinctly conceivable implies a contradiction.  Whatever we conceive as existent, we can also conceive as nonexistent.  There is no being, therefore, whose non-existence implies a contradiction. . . . The words, therefore *necessary existence* have no meaning or, which is the same thing; none that is consistent. (*Dialogues Concerning Natural Religion*, section IX; cf. EHU 12.28)

**3. Two mistakes in Hume**

In this section I identify two mistakes related to Hume's use of his Conceivability Principle.

They are involved in the arguments for two of his substantive doctrines—that it is not necessary

that every event has a cause, nor necessary that every quality resides in a substance (or every

perception in a perceiver).  One of the mistakes is also involved in the methodological derivation

of the Real Separability principle from the Mental Separability Principle.

   I can best explain the first mistake by an excursus into the philosophy of Descartes.

Descartes's argument for mind-body dualism starts from the premise that he can conceive of his

mind apart from his body, or of his existing apart from his body's existing.  The phrase "I can

conceive of A apart from B" is ambiguous, however.  It can mean either

   (1) I can conceive of A without conceiving of B, symbolizable as C(A) & ~C(B).

or

   (2) I can conceive of the combination A-without-B, symbolizable as C(A & ~B).

In his objections to the *Meditations*, Arnauld took Descartes to be arguing from a premise of

form (1), perhaps 'I can conceive that I exist without conceiving that my body exists.'  He then

objected that from this premise, it does not follow that I could exist even though my body did

not.  He offered this counterexample:  someone might clearly and distinctly perceive that a given

triangle is a right triangle (perhaps because he sees that it is inscribed in a semicircle) without

clearly and distinctly perceiving that its hypotenuse is equal to the sum of the squares of its other

two sides; but this surely does not show that a right triangle might fail to obey the Pythagorean

theorem (Descartes 1985, 141-142).

Here is what Descartes said in reply:

True, that triangle may indeed be apprehended although there is no thought of the ratio prevailing between the squares on the base and sides; but we can never think that this ratio must be denied. It is quite otherwise in the case of the mind where, not only do we understand that it exists apart from the body, but also that all the attributes of body may be denied of it. (Descartes 1911, 102, or Descartes 1985, 159, for an alternative translation)

Descartes is saying that Arnauld has misconstrued his starting point, which is actually of form

(2), not form (1). Arnauld's counterexample is a counterexample to a possibility conclusion

drawn from (1), but Descartes's argument is an argument to a possibility conclusion drawn from

(2). To that, Descartes says, there is no similar counterexample.[11]

Similar points apply to the *in*conceivability of A without B. It could mean that no one can

conceive of A without also conceiving of B, or it could mean that no one can conceive of there

being case of (A & ~B). One might call the first the double-occurrence pattern (the verb

'conceive' appearing twice) and the second the single-occurrence pattern (the verb 'conceive'

appearing only once).

Now when Hume speaks of the conceivability (or not) of one thing apart from another, what

does he mean? Unfortunately, he is not sensitive to the distinction; his language sometimes

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[11] I have explained all this at greater length in Van Cleve 1983.

follows one pattern, sometimes the other.[12]  Moreover, his arguments sometimes use one where

the other is really what he needs.  I offer two cases in point.

The first occurs in T 1.3.3, "Why a cause is always necessary"—to which Hume's answer is

that it is not.  I reproduce his main argument here:

> 'Tis a general maxim in philosophy, that *whatever begins to exist, must have a cause of existence. . . .*
>
> But here is an argument, which proves at once, that the foregoing proposition is neither intuitively nor demonstrably 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.  . . . 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, <u>without conjoining to it the distinct idea of a cause or productive principle.</u>  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.  (T 1.3.3.3 (79-80))

My underlining indicates a clear case of double occurrence.

What Hume wants to show in this paragraph is

(1) It is not demonstrable (because not necessary) that every event has a cause.

For this it would suffice if he could show

(2) It is possible that some event has no cause.

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[12] Here is an instance of the single-occurrence pattern:  "Nothing of which we can form a clear and distinct idea is absurd and impossible" (T 1.1.7.6 (19)).  And here of the double:  "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" (T 1.3.3.3 (79-80)).  He also tends to use as though they were interchangeable phrases like "may be separately consider'd" (T 1.4.6.3 (252)), which suggests double occurrence, and "may be conceiv'd as separately existent" (T Appendix 12 (634)), which suggests single occurrence.

To show (2), it would suffice if he could show in regard to some event e, say the coming into existence of a certain rabbit, that

  (3) It is possible that e has no cause.

Now what he offers as a premise in support of (3) is something involving the Arnauldian or double-occurrence pattern, namely, that whatever c may be—the activity of other rabbits, the waving of a wand, an act of God—he can conceive of e without conceiving of c.  Let's zero in on the instance in which c is c\*, the waving of a certain wand.  We have

  (4) I can conceive that e happens without conceiving of its being preceded by the waving of this wand.  (Precedence is necessary for being a cause in Hume's view.)

But that would not show that the rabbit could come into being without the waving of the wand. Compare:  Someone could conceive of the number 10 without conceiving of its cube—young children do it all the time.  But that does not show that 10 could lack a cube!  This is Arnauld's charge against Descartes again.

    Much better for Hume's purpose would be the single-occurrence pattern:  he can conceive of (e without c\*), i.e., of the combination of the rabbit's coming into being without the wand's having been waved:

  (5) I can conceive that e happens and is not preceded by the waving of this wand, symbolizable as $C(e\ \&\ \sim c^*)$

If he can do this for all candidate causes of e, we would get:

  (6) $(c)C(e\ \&\ \sim c)$

Now add the Conceivability Principle,

  (7) $(p)(Cp \rightarrow \Diamond p)$

And we may conclude

(8) (c)◊(e & ~c).

Whatever the conjectured cause, e could have happened without it.  Using R for 'c caused e,' we

may rewrite this as

(9) (c)◊~cRe.

 I am now ready to describe the second mistake.  Suppose that by going through steps (5)-(9)

—or by any other route—Hume arrives at

  (1) (c)◊~cRe

where R is the causal relation.  What he needs to establish is

  (2) ~□∃c(cRe)

or equivalently by exchange of operators,

  (3) ◊(c)~cRe.

The problem is that (1) does not imply (3)—you cannot go from (c)◊ to ◊(c).  Elizabeth

Anscombe once made this point by charging Hume with a modal fallacy analogous to 'for every

color, it is possible that the rose lacks that color; therefore, it is possible that the rose has no

color'.  (Anscombe 1981).

 The gap between (1) and (3) could be filled by principle in modal logic sometimes known as

the Converse Buridan Formula:[13]

  (CB) (x)◊Fx → ◊(x)Fx

But the Converse Buridan Formula is not a theorem in any modal logic I know of, and there are

convincing counterexamples to it.  Here is one:  let the variable range over natural numbers, and

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[13] It is so called by Konyndyk (1986, 94), who credits Plantinga 1974 for the name.

let 'Fx' be interpreted as 'it will be the case that Jack has counted through x'. The antecedent is true, because if Jack lives long enough, he can count through any number, but the consequent is false, since even if he lives forever, Jack will never have counted through all the numbers.[14]

In sum, Hume's argument in T 1.3.3.3 needs to start from the single-occurrence pattern if it is to get anywhere, and even if it does start there, it can reach the finish line only if he uses the dubious Converse Buridan Formula. He can show that a given event need not have been caused by this, that, or the other, but not that it need not have been caused by anything whatever.

Essentially the same pair of criticisms may be leveled against Hume's argument in T 1.4.5, where he criticizes the traditional distinction between substances and accidents. He argues that under the common definition of a substance as an independent being, *everything* is a substance. Here is the argument:

> Whatever is clearly conceiv'd may exist; and whatever is clearly conceiv'd, after any manner, may exist after the same manner. This is one principle, which has already been acknowledg'd. Again, every thing, which is different, is distinguishable, and every thing which is distinguishable, is separable by the imagination. This another principle. My conclusion from both is, that since all our perceptions are different from each other, and from every thing else in the universe, they are also distinct and separable, and may be consider'd as separately existent, and may exist separately, and have no need of any thing else to support their existence. They are, therefore, substances, as far as this definition explains a substance. (T 1.4.5.5 (233))

This time I cannot quite say that Hume needs the single-occurrence pattern, but uses the double, since it is not clear which he uses. "May be consider'd as separately existent" suggests the single, but "separable by the imagination," especially if taken as an echo of Mental Separability, suggests the double. But this very vacillation invites the criticism that he is not clear about what he needs.

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[14] Here is another, offered by Hughes and Cresswell to the principle in its equivalent $\Box\exists xFx \rightarrow \exists x\Box Fx$ form: interpret 'Fx' as 'x is the number of planets'. The antecedent is true, since there must be some number (even if 0) that numbers the planets, but there is no number such that it must be the one (246).

In any case, I can again allege the second mistake, of making an inference that is either invalid or made valid only by the implausible Converse Buridan Principle. Let 'xRy' stand for 'x exists only if y exists', and grant that Hume can show that given an arbitrary perception x and any other perception y, one can exist without the other:

(1) $(y)\Diamond{\sim}xRy$

I sometimes leave unstated the proviso that x and y be distinct in whatever is the right sense. What Hume professes to show is that every perception is a substance, $(x)Sx$, where $Sx$ is defined as follows:

(2) $Sx =_{Df} \Diamond{\sim}\exists y(xRy)$

"A substance is *something which may exist by itself*." The definition may be restated equivalently as

(3) $Sx =_{Df} \Diamond(y){\sim}xRy$

So what Hume needs to show in regard to an arbitrary perception x is

(4) $\Diamond(y){\sim}xRy$

That is, x is such that it is possible that there is nothing distinct from it on which it depends. But the move from (1) to (4) is formally the same as what we discussed above, and it requires the Converse Buridan Formula for its validity. In brief: it may be that there is no specific other thing in the universe on which x depends, but that does not mean that x does not depend on there being something or other in addition to itself.

Hume states a parallel conclusion about perceptions and selves. Not only does any quality not depend on any other quality or any substance, but no perception depends on any other perception, any bundle of perceptions, or any supposed substantial self (T 1.4.6).

I turn now to the methodological argument connecting Mental Separability with Real Separability. To my knowledge, Donald Baxter was the first to point out that what is often simply called Hume's Separability Principle is really two principles that should be distinguished and given different names (Baxter 2011, 2015). The Mental Separability principle says any two distinct items are separable in imagination or thought. The Real Separability principle says that any two distinct items are separable in reality, one capable of existing without the other.

Here is Baxter's official explication of what it is to be mentally separable:

When Hume says objects are 'separable by the thought and imagination' he means that it is possible to cease thinking of one while continuing to think of the other (2015, 54-55).[15]

Thus the Mental Separability Principle says that if two things are distinct, we can conceive of one without conceiving of the other. The consequent conforms to the double-occurrence pattern, C(A) without C(B). But a few lines later, we find this:

Note that to retain an idea of one thing while ceasing to have an idea of the other is to clearly think of the first thing as existing without the other. (2015, 55)

That sentence equates the double-occurrence pattern with the single-occurrence pattern. I question the equation. If I keep thinking of Sally while ceasing to think of her friend, I am not thereby thinking of Sally as existing without her friend.

Baxter next observes that the Conceivability Principle may be used to bridge the gap between Mental Separability and Real Separability. He quotes three of Hume's formulations of the Conceivability Principle, including "whatever we conceive is possible" (T 1.4.5.10 (236); the

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[15] Baxter 2011 puts it this way: "When Hume says objects are 'separable by the thought and imagination' he means that it is possible to think of one without thinking of the other."

others are at T 1.1.7.6 (19-20) and T 1.2.2.8 (32)), all of them symbolizable as (p)(Cp → ◊p).

Here, in Baxter's words, is the argument he attributes to Hume (2015, 55):

1. If things are distinct, then we can think of them as distinct, that is, can clearly conceive of one continuing to exist without the other. [Mental Separability Principle]

2. The clearly conceivable is possible. [Conceivability Principle]

3. So [if things are distinct], one can continue to exist without the other. [Real Separability Principle]

Notice that in step 1 Baxter has rewritten the Mental Separability Principle in accordance with the equation I question, letting its consequent be 'we can think of them as distinct'. If he had not done that, premise 1 would not combine with premise 2 to yield 3.

It appears, then, that Mental Separability had better be understood from the outset in accordance with the single-occurrence pattern if it is to have Real Separability as a corollary.[16] We cannot simply slip from one of them to the other as Hume himself does.[17]

Having forged a link between Mental and Real Separability, Baxter goes on to reconstruct the argument in T 1.4.5 we discussed above for the ubiquity of substance in the independence meaning of it.[18] Here is his argument verbatim:

1. A perception is numerically distinct from everything else in the universe.

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[16] I know of one place, though, where Hume actually requires the double-occurrence pattern, and that is T 1.4.4 in the argument for the conceptual dependence of bodies on solidity. See Van Cleve 2021 for further discussion.

[17] Here is another case in which a commentator slips as easily as Hume himself from one pattern to the other: "If our perceptions are different, then by [the Mental Separability Principle], we can conceive them as being different. For any perception, we can conceive it without conceiving some other perceptions. By [the Conceivability Principle], if we can conceive of something as having certain features, then that thing can have those features" (Traiger 1988). This passage has the single-occurrence pattern in the first sentence, the double-occurrence pattern in the second, and the single again in the third.

[18] Hume's more usual line, as in T 1.4.3, is that we have no idea of substance because we have no impression of it. He uses the argument we are about to discuss in reply to those who would seek to circumvent the need for an impression by giving a definition.

2. So, the perception is mentally separable from everything else (by separating the ideas of them in the course of thought).

3. So the perception is really separable from everything else.

Baxter says 2 follows from 1 by Mental Separability and that 3 follows from 2 by Real Separability. As explained above, I think Mental Separability must be understood in the Cartesian or single-occurrence way for 3 to follow from 2. But Baxter's parenthetical justification for 2 suggests that he is thinking of it in the Arnauldian or double-occurrence way: you mentally separate two things by having two separate ideas of them.

The argument continues as follows:

4. So a perception can exist by itself.

5. So by definition a perception is a substance.

Letting 'x' stand for an arbitrary perception and leaving unstated the assumption that any ys we talk about are distinct from x, I symbolize the argument as follows:

3'. $(y)\Diamond(x$ exists & $y$ does not exist).

4'. So $\Diamond(y)(x$ exists & $y$ does not exist), i.e., $\Diamond(x$ exists & nothing else exists).[19]

5'. So x is by definition a substance.

The transition from 3' to 4' is valid only given the Converse Buridan Formula, namely, $(x)\Diamond Fx \rightarrow \Diamond(x)Fx$. Baxter's Hume commits the same mistake I have discussed above.

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[19] My clauses joined by "i.e." are equivalent in standard logic. I find that some readers tend to read the left-hand clause in too weak a fashion. They read it as just affirming the possibility that x could exist even if none of the things now existing in the actual world existed, whereas what it really affirms is that x could exist even in an otherwise empty universe—that is what it takes to be a substance.

In correspondence, Baxter has proposed to me that Hume could get from 3 to 4 without

Converse Buridan by letting one value of 'y' be the whole rest of the universe outside x.[20]  A

given perception x could exist *without all that.*  But that still does not get us beyond 3 to 4 and 5,

for two reasons.  First, a thing that could exist without the whole (a + b + c + . . .) existing might

still depend on there being some element or other within that whole.  Second, even if it is

stipulated that x could exist without anything in (a + b + c + . . .) existing, it would not follow

that x could exist alone.  You could say of an immanent or Aristotelian universal that it could

exist even if the sum total of individuals in the actual world did not exist, but that does not imply

that it could exist alone.  A true believer in Aristotelian universals would say each of them must

be instantiated by some individual or other, even if not by any individual now in existence.

Hume has yet to rule out the position of someone who says analogously that any perception must

exist "in" something else, even if not in anything now in existence.[21]

   If Hume had started with the Cartesian rather than the Arnauldian understanding of

conceivability apart, could he then have reached conclusion 5 or 5' without needing the Converse

Buridan Formula?  The answer is no.  The Cartesian starting point would have been

  (y)C(x exists & y does not exist)

which with the Conceivability Principle yields

  (y)◊(x exists & y does not exist),

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[20] Baxter mentions this possibility even though on his interpretation of Hume, Hume does not believe in any such whole—he only believes in pluralities and not any unities composed of them.  He and I differ on how radical Hume is in T 1.2.2.3 (30).  I think Hume's position is *no composite objects without simples*; Baxter thinks it is *no composite objects, period.*

[21] What if Hume had said that for everything conceivable or possible (even if not actual), a given thing could exist without that?  Even then, he would have needed the Converse Buridan Formula.

but that is none other than 3', which does not imply 4' without the Converse Buridan Formula.

Well, then, why not simply start with

C(y)(x exists & y does not exist)?

It is conceivable, that is, that x exists and nothing else does (or in the causal case, that e occurs and nothing causes it).  That, along with the Conceivability Principle, would enable Hume to show what he wants to show:  that perceptions need not inhere in anything else (or in the causal case, that events do not need causes).

These are starting points that will be hard to attain for Hume, given his anti-abstractionism and his pictorial view of thinking.  In general, it is hard to see how he can account for conceiving of negative existential propositions (e.g., *there are no unicorns in the universe*, *there are no causes for e*).  As I would put a point of Anscombe's, he must say these things with pictures, not relying on the captions of the pictures to do the work (1981, 98).  I can picture an event without picturing a cause for it, but that is not the same as picturing an event without a cause.  (See Appendix 1 for more on this point.)  I do not say these problems are insoluble, but they are difficult, and I cannot do justice to them here.  See Powell 2014 for a discussion of some of the problems in this area and proposed solutions for them.

**4. Strengthening the principle**

Above I resisted the suggestion that my formulation of HD was too weak, since it would allow one house to require the existence of another if they had a common wall.  In fact, HD in the company of two other Humean principles would *not* allow that.  Nonetheless, in this section I countenance two strengthenings of HD.

Both are involved in David Lewis's "recombination principle," which he says is Humean in spirit if not letter.  He encapsulates his principle in two clauses:

> Roughly speaking, the principle is that anything can coexist with anything else, at least provided they occupy distinct spatiotemporal positions. Likewise, anything can fail to coexist with anything else. (1986b, 87-88).

The first clause goes beyond Hume in one way: not only can the existence of Xanthippe not require the existence of Socrates, but it cannot preclude it, either. That, I believe, is quite Humean in spirit, and he does seem in some places to require that there be no necessary exclusions among individuals. Witness: "I ask any one if he sees a necessity that a coloured or tangible point should be annihilated upon the approach of another coloured or tangible point?" (T 1.2.4.6 (41)).

The second clause, "anything can fail to coexist with anything else," potentially goes beyond Hume in another way, depending on how we resolve an ambiguity. The clause could mean what I have already put forth as HD, namely,

Weak HD: $(x)(y)$(if x and y have no part in common, $\lozenge$(x exists & y does not exist).

But, as Cameron points out (2006), it could also mean something stronger, which he symbolizes as follows:

Strong HD: $(x)\lozenge(y)$(y is part of x).

Do not misread this formula. It does not imply that the Taj Mahal might have been part of me; it implies that everything that is not a part of me might have been destroyed or might never have existed.[22] In other words, it says everything is possibly such that nothing exists save what is part of it, which is perhaps more perspicuously symbolized as '$(x)\lozenge(y)$(y is not part of x → y does not

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[22]The difference is the difference between '$(x)\lozenge(y)$(y is part of x)' and' $(x)(y)\lozenge$(y is part of x)'. 'y' is free within the scope of $\lozenge$ in the second but not in the first.

exist)' (or equivalently, given what was said in section 2, '(x)◊(y)(y is disjoint from x → y does

not exist').

In still other words, it says that anything might have existed on its own—which is exactly

what Hume says in T 1.4.5.5 (233) when he argues that everything fits the traditional definition

of substance.  His argument, if seen as proceeding from the Real Separability Principle as I have

taken it so far, is valid only if supplemented by the dubious Converse Buridan Formula—he goes

from "no perception requires the existence of any other specified thing" to "no perception

requires that there be anything else; any perception can exist on its own."  So one move on his

behalf would be to spot him his result outright:  let the Real Separability Principle simply *be* the

stronger thing; let it be an axiom rather than a theorem.

The stronger version of HD has several interesting applications.  It rules out several categories

of beings that other philosophers have believed in and that would not be ruled out by Weak HD

alone.

First, the immanent universals of Aristotle and contemporary Aristotelians like Armstrong.

According to Aristotle and Armstrong, universals cannot float free in Plato's heaven; each must

be exemplified by some individual or other, though not by any specific individual (Armstrong

1989, 75-82).  Weak HD precludes universals that require the existence of specific bearers;

Strong HD precludes Aristotelian universals as well.

Second, the boundaries of Brentano.  What is the status of entities of fewer than three

dimensions, such as points, lines, and planes?  Some take them to be entities existing robustly in

their own right; others take them to be logical constructions, perhaps like the sets of nested

volumes of Russell and Whitehead.  Brentano took an in-between position:  a point can exist as

the utmost tip of a cone, but not on its own; there must be more of the cone for it to be part of—

not necessarily the whole cone, not necessarily the top half of it, not necessarily any part of it

however small, just more of it. Boundaries so conceived are dependent particulars, because no

boundary can exist unless it is part of some continuous thing larger than itself, but they do not

depend on any specifiable thing.[23] They do not violate Weak HD, but they would be prohibited

by Strong HD. Hume himself, by the way, does accept the existence of points, lines, and planes,

but his are capable of existing on their own, in conformity with Strong HD; see T 1.2.2.9 (32),

1.2.4.3 (40), and 1.2.4.9 (42).

It may be that an argument Hume presents for the possibility of a vacuum requires the strong

version of his Dictum (T 1.2.5.3 (54-55)). Consider a three-by-three array of tiles containing

rows with tiles numbered like this:

$$1 \quad 2 \quad 3$$

$$4 \quad 5 \quad 6$$

$$7 \quad 8 \quad 9$$

The argument contends that tile 5 could be annihilated while the others remain locked in place,

and that the result would be a vacuum where tile 5 used to be. Weak HD is not enough to

generate that possibility. It implies that there is no tile that has to be there if 1, 2, 3, 4, 6, 7, 8,

and 9 are all there, but does nothing to counter the vacuum denier who insists that the border tiles

cannot be there unless some new tile comes into being to replace 5. Strong HD would rebuff this

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[23] Another feature of Brentano boundaries is that two of them can wholly coincide despite being disjoint; this enables an analysis of touching as having coincident boundaries. See Chisholm 1989 for a Brentano-like view.

insistence; it would imply that the tiles that formerly surrounded tile 5 could exist and be arranged as they are even if nothing else existed.[24]

## 5. Uses of the principle in contemporary philosophy

There is a wide range of applications of Hume's Dictum in contemporary philosophy—some of them true to the real Hume and some not.  I review over a dozen of them here.

*Against nonreductive physicalism*.  Karen Bennett (2008) cites "the Humean dictum that there cannot be necessary connections between completely distinct existences" as implying the falsity of nonreductive physicalisms—physicalisms that deny that mental events are identical in type with physical events or analytically reducible to them.  She assumes, as many do these days, that a true materialist must hold that physical properties *metaphysically necessitate* mental properties, since mere nomological necessitation is something a property dualist could admit.  She takes Hume's Dictum to preclude metaphysical necessitation between distinct properties and therefore concludes that a genuine physicalist must somehow reduce mental properties to physical properties.

In my opinion, Bennett has misconstrued Hume's Dictum as ruling out necessary connections between distinct *properties* or *predicative facts*.  In fact, it only rules out necessary connections between the *existence* of distinct *individuals*.  I say more about this distinction in the next subsection and in Appendix 2.

*Against ethical nonnaturalism.*  Mark Schroeder (2014) invokes Hume's Dictum against G.E. Moore's view, now enjoying something of a resurgence, that value properties are (i) not definable or analyzable in any way in terms of natural properties, yet (ii) are supervenient on

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[24] "And be arranged as they are:" This part requires something stronger than Strong HD as I formulate it, which I admit is one piece of evidence against the interpretation I advocate in the balance of this paper.

natural properties, in a sense implying being metaphysically necessitated by them. Schroeder

thinks this combination is precisely one of the things Hume's Dictum rules out.

That ethical nonnaturalism à la Moore is incompatible with something called Hume's Dictum

is a fairly common assumption in meta-ethical literature.[25] Witness, for example, Toppinen

(2016, p. 447), drawing on a quote from Olson (2014, p. 92):

> Some critics of non-naturalism have suggested that the idea of a necessary link between the
> property of being right, as the non-naturalist understands it, and the property of being
> happiness-maximizing is unacceptably weird for the reason that there cannot be any necessarily
> coextensive and yet distinct properties. This claim – that "there can be no relations of necessary
> coextension between two distinct properties" . . . is called HUME'S DICTUM. (Toppinen
> 2016, 447, quoting Olson 2014, 92).

Distinctness here is simply numerical distinctness, and most who invoke such a dictum take it to

rule out necessary one-way implication just as much as necessary coextension.

My comment about Schroeder and Toppinen is the same as about Bennett—they are all taking

Hume's Dictum to be about *properties*, whereas Hume's own principle is only about *individuals*.

Again, see Appendix 2.

If Bennett, Schroeder, and company want to have Hume on their side, perhaps they still can,

but they would have to invoke a *different* Humean principle, namely, Hume's Fork. The Fork,

summarized in the first two paragraphs of *Enquiry* 4.1, says that every proposition falls on either

the left or the right side of a great divide (but not both). On the left side ("Relations of Ideas,"

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[25] See Gordon N.D. for references to the literature and defense of one argument mobilizing Hume against
nonnaturalism. A variation on arguments against ethical non-naturalism from Humean principles is given in
McPherson 2012. In place of Hume's Dictum, McPherson uses the principle of the "modest Humean:" commitment
to *brute necessary connections* between discontinuous properties *counts significantly against* a view. I would make
just two comments on the relation of the modest Humean to Hume. First, bruteness or unexplainability as such is
not anathema for Hume; he questions whether everything must have an explanation. (See the *Dialogues Concerning
Natural Religion*, section IX.) Second, he does not regard any supposed necessary connections between distinct
existences as brute; he regards them as *impossible.*

exemplified by *three times five = half of thirty*) are propositions that are intuitively or demonstratively *certain*, *a priori* ("discoverable by the mere operation of thought"), *necessary* (the opposite is impossible), and *analytic* (the opposite implies a contradiction). On the right side ("Matters of Fact," exemplified by *the sun will rise tomorrow*, are propositions that are *not* intuitively or demonstratively certain ("nor is our evidence of their truth, however great, of a like nature" with that for relations of ideas), *empirical* ("not ascertained in the same manner" as relations of ideas), *contingent* ("the contrary of every matter of fact is still possible") and *synthetic* (the opposite "can never imply a contradiction").[26] The Fork arguably implies that all necessary propositions are analytic propositions. If the notion of analyticity is tight enough, the Fork may deliver what Bennett and Schroeder say materialists and naturalists need: some kind of reducibility by way of identity or analysis of the mental to the physical and the normative to the natural.

Not all commentators agree, however, that Hume wields the Fork in a way implying that necessary propositions are one and all analytic. The prima facie reason for thinking he does is that (i) he says that necessary propositions have contraries that are not only impossible, but *contradictory*, and (ii) having a contradictory opposite is one of the Kantian marks of an analytic proposition. (Hume himself did not use the term 'analytic', which Kant introduced later.) If Kant's mark is to be a mark of serious analyticity, though, the contradiction spoken of here must be a hard logical contradiction of the $P \ \& \ \sim P$ variety—not just any old intuitively impossible proposition. Moreover, the sense in which necessary propositions "have" a contradictory opposite must be that from the opposite, you can derive a contradiction using purely logical and

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[26] Hume also mentions two other differentiating features: matters of fact have existential import and relations of ideas do not; matters of fact have contraries that are conceivable and relations of ideas do not.

definitional steps—with no appeal to auxiliary premises you accept just because their own opposites are inconceivable. (See Van Cleve 1999 20-21 on these two requirements.) Dicker (1991) has questioned whether Hume's own standards are this strict. He seems sometimes to allow derivations that use auxiliary assumptions simply because they are intuitively obvious.[27]

In any case, I think it is doubtful that Hume's Dictum as stated by Toppinen is a dictum of Hume's. Hume regards the properties of being a straight line (a.k.a. a right line) and being the shortest line between two points as necessarily coextensive, but distinct:

> Mathematicians pretend they give an exact definition of a right line, when they say, it is the shortest way betwixt points. But . . . I observe, that this is more properly the discovery of one of the properties of a right line, than a just definition of it. . . . In common life 'tis establish'd as a maxim, that the streightest way is always the shortest; which wou'd be as absurd as to say, the shortest way is always the shortest, if our idea of a right line was not different from that of the shortest way betwixt two points. (T 1.2.4.26 (49-50)).[28]

Let me give one more example of a necessary connection between distinct properties that Hume endorses. In a footnote to T 1.1.1.7 added when Hume wrote the Appendix to the *Treatise*, he says that *blue* and *green* are different simple ideas. In T 1.3.1.1-2 (70), he lists *contrariety* as one of the four necessarily-holding relations concerning which we may have certainty. A paradigm case of contrariety would be the contrariety of colors.[29] Here, then, is a necessary connection between distinct properties admitted by Hume—*blue* excludes *green*.[30]

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[27] In his explication and defense of the Fork, Millican (2017) affirms nominally that things on the *a priori* side of the Fork are all analytic, but he makes concessions that undermine the strict truth of this claim. For example, he says the negation of any intuitively true proposition P "intuitively implies" P & ~P, which lets go of the requirement that "implying a contradiction" means implying it with the help of definitions or identities and logic alone.

[28] A referee has asked where Hume says in the quoted passage that *straight line* and *shortest line* are necessarily coextensive. Well, if he thought they were *not* necessarily coextensive, he could object to the mathematician's supposed definition on that ground alone, but he does not do so.

[29] Despite what Hume says at T 1.1.5.6 (15)! Readers who take Hume at his word here may replace my case of exclusion with his case in the preceding paragraph of different degrees of color.

[30] There are nominalistically acceptable ways of putting this—for example, necessarily, whatever is blue is not green.

Of course, for the purpose of refuting ethical nonnaturalism, it doesn't matter whether what some authors call Hume's Dictum and what is more aptly called Hume's Fork was endorsed by Hume; it only matters whether it is true. I do not try to settle that question here. But my own sympathies are with Kant: there are propositions that are both necessary and synthetic. (See Van Cleve 1999, 21-27).

*Against things as bundles of tropes.* The view that a thing is just a bundle of properties is most defensible if the properties are particularized properties or tropes, rather than universals.[31] A trope is unrepeatable; it cannot exist both here and there at the same time; hence there is no problem of two bundles containing all the same properties with no way of differentiating the bundles. An objection to trope bundle theory is the "bare mass" objection, raised by Armstrong (1989, 115) and taken by Cameron (2006) to rely implicitly on Hume's Dictum. I divide the objection into two. The first is that a trope, say of mass or charge, could float free of anything else, which seems weird; mass and charge don't seem suitable to be the "substance of the world." If we sidestepped the objection by saying a trope can exist only as part of a bundle of tropes, we would be violating the Dictum. The second is that even if bundled with other tropes, a mass trope might not be bundled with any trope of solidity, which is also weird; how could a thing have mass without solidity?[32]

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[31] There are two main acceptations of the term 'trope' in contemporary philosophy. In the first, tropes are conceived of as dependent entities, existing if and only if a certain thing has a certain property (J. Bennett 1988, Lehrer and McGee 1992). In the second, tropes are conceived of as independent entities—"particularized properties," an assemblage of which could constitute a thing (Williams 1953, Campbell 1981). The bundle theory discussed by Cameron obviously requires tropes in the second sense.

[32] If having mass is either resisting acceleration or attracting other objects, and if solidity is either impenetrability or incompressibility, I don't see the problem in mass without solidity. But perhaps other property pairs may be used to make the same objection, e.g., color and extension

Cameron responds to the objections by saying both weirdnesses can be avoided without violating any version of Hume's Dictum he regards as plausible or plausibly Humean (2006). As for the first, the trope theorist can avoid it by insisting that a given trope can exist only as part of a wider bundle. That does not violate Weak HD, since a trope overlaps any bundle of which it is a part, so the antecedent of Weak HD is not satisfied.

In rebuttal, I repeat what was said above (section 2, p. 9 IN THIS DRAFT): Weak HD, together with other Humean principles, implies HD*, and HD* *would* be violated by the requirement that a given trope can exist only as part of a wider bundle, since the wider bundle is not part of the trope.

As for the second weirdness, Cameron says the trope theorist can avoid it by requiring that any mass trope be bundled together with *some solidity trope or other*. That requirement would not violate Weak HD, since it is not a case of two disjoint things (e.g., a mass trope and some particular solidity trope it is bundled with) being such that the first cannot exist without the second.

In rebuttal, I repeat something else I said above. We found reason to think Hume himself operates with something stronger than Weak HD, namely, Strong HD, which says any item could exist on its own. So if there were such things as mass tropes, they *could* exist on their own, without any solidity tropes, giving us precisely the second weirdness.[33]

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[33] There are no such things in Hume's philosophy as tropes, or what Campbell calls "abstract particulars" (1981). A trope theorist would say that a white globe has among its constituents a whiteness trope and a distinct roundness trope, the whiteness trope not being round and the roundness trope not being white. For Hume, that would be an impossible case of abstraction. In his view, the whiteness of the globe *is* the roundness of the globe, each being identical with the globe itself. See T 1.1.7.17-18 (24-25) and Van Cleve 2018 for further discussion.

*Against relational tropes*.  Phillip Bricker uses Hume's Dictum against relational tropes.  "Relational tropes must have relata.  But that is incompatible with a Humean recombination principle that demands that anything can exist all by itself" (talk handout at MIT, fall 2018).

*Against states of affairs.*  Lewis has used Hume's Dictum as an argument against Armstrong's ontology of states of affairs (Armstrong 1996, Lewis 1998).  Armstrong subscribes to the Truthmaker Principle—nothing contingent is ever true unless there is something whose sheer existence makes it true.  "Making it true" involves necessitating that it is true.  Suppose, then, that it is true that A has F, where F is an intrinsic property.  What could be the truthmaker for this truth?  Armstrong sees no viable candidate except for the *state of affairs* of A's being F, so he welcomes such entities into his ontology alongside individuals and properties.  Lewis finds it intolerably strange that the existence of one entity—the state of affairs—should require a distinct entity, A, to exist and be a certain way.  He thus rejects states of affairs as violating Hume's Dictum.[34]

Whether Lewis is making a fair use of Hume against Armstrong depends on whether A and the state of affairs of A's having F are distinct in the relevant mereological sense.  Armstrong calls A and F constituents of the state of affairs, and if constituents were parts, that would mean A and the state of affairs are not distinct in the sense I use in the antecedent of HD; they would have A as a common part, so necessary connections between them would be permitted.  But Lewis questions whether A and F are parts of the state of affairs, since the alleged composition relation that takes A and F into the state of affairs is "nonmereological."  The sheer existence of A and F is not sufficient for the existence of A's having F (as it would be for a mereological

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[34] One could argue in the same way against Kim's events (1993) or Fine's qua objects (1982).

whole or sum composed of them), for both may exist even if A does not have F. We may add that if there were some kind of whole composed of A and F but not identical with their sum, it would be hard to see what *more* there could be to this whole. There would have to be something more, given weak supplementation. So I side with Lewis in this application of Hume.[35]

*Against mixed accounts of haecceities.* Some philosophers who believe in individual essences or haecceities, such as Socrateity or being identical with Socrates, take them to be necessarily dependent on the individuals to whom they belong; others do not. Some who believe in haecceities believe them to contain individuals as constituents; others do not. Some believe in the combination "haecceities are dependent on individuals, but do not contain them as constituents." Matthew Davidson contends that this combination is impossible, since it violates Hume's Dictum (YEAR).

*Against "closest continuer" theories of personal identity.* Many theories of personal identity base it on some sort of psychological continuity—for example, I am identical with someone who existed last week or last year iff I have memories of things that person did and have various psychological traits because of the way that person was. Assuming there is a relation like this that grounds identity, let's call it R. A formidable objection to such theories exploits the

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[35] Gabriel Uzquiano has asked me whether the "distinctness" in Hume's Dictum might be understood not as "no mereological overlap" but as "free of," the primitive employed in Parsons 2007. The result would be a more restrictive version of the dictum with a stronger antecedent, since "free of" implies "does not overlap," but not conversely. Were Armstrong to say that only the more restrictive version of the dictum is true, he could sidestep Lewis's objection, since the state of affairs A's being F and the individual A (regardless of whether they overlap) are not free of each other and thus do not satisfy the stronger antecedent.

  I would resist the construal of Hume's Dictum in terms of "free of." One of Hume's prime uses of the dictum is to show that qualities and perceptions satisfy the traditional definition of substances as independent beings; they do not depend for their existence on any supposed instantiator of them (T 1.4.5.5 (233)). But if his dictum were only the "free of" version, an opponent could say, "this redness and the substance in which it inheres are not free of each other, so you cannot apply your dictum."

possibility of *fission*:   various techniques of cloning or teleportation or transplantation of software might be used to make it the case that *two* persons tomorrow stand in R to *one* person today.  In that case, R could not be a sufficient condition for identity.  One response to the objection is that it is not standing in R *simpliciter* that makes for identity; it is standing in R *when no other candidate does likewise*.  When cloning has succeeded twice over and there are two candidates, neither having a better claim to identity than the other, then neither is identical with the original, and the original has perished.  "You're still here," you might be told upon waking from an attempted download of your software into a new brain, "because the procedure worked. But if the procedure had also worked on that brain over there, you *wouldn't* be here."  Nozick advocates a theory like this under the name "closest continuer theory" (1981).

In opposition to such theories, many protest that whether A is identical to B should not depend on whether there is any entity C who is equally eligible—it should depend only on facts about A and B.  This feeling is encapsulated in Wiggins's *only A and B* rule (1980).  But what exactly is wrong with making the existence or nonexistence of C relevant to whether A is identical to B?

One answer has been given by Katherine Hawley, who says it is a fundamental flaw in a theory to have "unexplained correlations between distinct existences" (Hawley, 602)—an apparent echo of Hume.  Hawley does not invoke what I have been calling Hume's Dictum (which prohibits all necessary connections between distinct existences, not just unexplained ones), but Alexander Moran has ventured nonetheless that her point might be understood as an application of the Dictum (Moran N.D.).

Hawley describes the correlations she finds objectionable as follows:

> Compare a situation where f straightforwardly persists with a situation in which f divides symmetrically into g and h and thus perishes (according to CC accounts). If h had not existed, neither would g: f would have continued to exist. Similarly, if g had not existed, neither would h. The two fission products, g and h, depend counterfactually upon one another for their existence . . . without mutually sustaining one another causally. (612)

Closest continuer theories tend to be advanced in conjunction with perdurantist theories of identity through time, but it is easier to understand Hawley's reasoning if we take her f, g, and h to be enduring things—things that persist through time otherwise than by having different appropriately related temporal parts at different times.[36]

Start with the case in which the cloning procedure (or teleportation or whatever it may be) succeeds twice over and two persons, g on the left and h on the right, exist at t2. According to the closest continuer theory, g and h will be two *new* persons, neither having existed at t1 and neither being identical with the person f existing at t1 who fissioned into them. That person no longer exists at t2.

Now consider the case (counterfactual in relation to the first case) in which the procedure works just once, on the left. The conditions for person f continuing to exist on the left at t2 will be satisfied, for the person on the left will be R-related to the person f who existed at t1and nothing else will be. The person h from the previous case will not exist, the procedure having failed on the right. Nor will the person g exist, since the person on the left is f and not g. It looks as though we can say that if h had not existed, g would not have existed either.

Consider finally the case in which the procedure works just once, this time on the right. By reasoning similar to that in the previous paragraph, person f will exist on the right, person g from

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[36] I owe this insight and the explication of Hawley based on it to Matt Davidson.

the first case will not exist, and in consequence neither will person h. We can say this time that if g had not existed, h would not have existed.

We have just argued that according to closest continuer theories, if h had failed to exist, g would have failed to exist (and conversely). How bad, according to Hume, is that? If the conditional contraposes into 'if g had existed, h would have existed', that might appear to contravene the ban on necessary connections between distinct existences. In fact, however, there is not yet any violation of Humean principles. The conditionals implied by the closest continuer theory are subjunctive conditionals, not conditionals that hold with metaphysical necessity. That puts the assumption that they may be contraposed into doubt. Moreover, it also means that even if we obtained the conditional 'if g had existed, h would have existed', it would not conflict with the ban on metaphysically necessary connections between distinct existences. Hume has little if anything to say about conditionals stronger than universal material conditionals and weaker than entailments. So despite the anti-Humean flavor of closest continuer theories, they are not ruled out by Hume's Dictum.[37]

*For extended simples*. Kris McDaniel (2007) has used what he bills as a version of Hume's "no necessary connections" principle in an argument for the possibility of objects that are extended, yet simple (without parts). Ironically, Hume himself denied the possibility of extended simple objects (T 1.2.3.14 (38), T 1.2.4.3 (40)). I devote section 7 below to McDaniel's argument, contending that it is not aptly based on Humean principles.

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[37] It should also be noted that the Hawley reasoning as presented here relies on a conception of persistence as endurance, whereas on the interpretation I favor, Hume conceives of persistence as perdurance—an uninterrupted and unvariegated series of momentary temporal parts. See T 1.4.2.26-30 (200-201), Stroud 1977, 102-103, and Bennett 2001, 297-301. For an alternative interpretation, though, see Baxter 2008.

*For a deflationary account of sets and sums.* Ross Cameron claims that sets must be construed as "nothing over and above their members" (and mereological sums as nothing over and above their parts) lest we violate Hume's Dictum (2008). Take, for example, the mereological principle that if *a* and *b* and *c* all exist, so does the sum or fusion *a* + *b* + *c*. That would be an unacceptable necessary connection between distinct existences, says Cameron, unless the sum were really nothing more than its parts.

There is no conflict between the sum axiom and Hume's Dictum as I have construed it here. The sum *a* + *b* + *c* and its indicated parts are not distinct in the relevant sense, for the parts are not disjoint from the sum. It is all right for the sum to be something over and above its parts and still dependent on them.

*For temporal parts.* David Lewis has used what he calls the "patchwork principle" in an argument for the existence of person stages, which are temporal parts of persons (1983*,* 76-77). He presents the patchwork principle as an echo of Hume. I do not discuss the temporal parts application in particular, but I do devote section 8 below to Lewis's use of Hume more generally.

*Miscellaneous uses.* I find that I have used Hume's Dictum myself in four different connections, though not always under that name. (1) To argue that certain alleged entities are better regarded as logical constructions than as real entities, since as real entities, they would violate the Dictum. Case in point: shadows as theorized about by Roy Sorensen (2008). Sorensen takes shadows to exist in their own right (not just by courtesy of paraphrases about more substantial objects like sources and blockers of light), and he takes them to be individuated in such a way that a given shadow depends on a particular blocker. Since a shadow and its blocker have no part in common, Sorensen shadows offend against Hume (Van Cleve 2020). (2)

To banish sense data. In classical sense-datum theories, sense data are regarded as objects distinct from but ontologically dependent on acts of sensing. They, too, would violate the Dictum, and should be given up in favor of adverbially modified acts or the merely virtual objects of such acts (Van Cleve 1999, 8-12). (3) To brush aside one version of the Principle of the Identity of Indiscernibles or PII (Van Cleve 2002). Some philosophers distinguish between strong and weak versions of PII, maintaining that the weaker is tenable even if the stronger is not. According to the strong version (advocated by Leibniz), if two objects differ numerically, they must differ in at least one *intrinsic* property, such as color or shape. According to the weak version (proposed, though not advocated, in Armstrong 1989, 64-70), two objects may be just alike intrinsically, but must differ in at least one *relational* property; for example, one but not the other must be six feet from a certain flagpole. I say that the weak stands or falls along with the strong. If a world were possible in which two things differed only by their differing relations to the flagpole, so would be a world in which the two things were there without the flagpole or anything else. After all, there are no necessary connections between distinct existences! But in that world, the two things would violate the strong version of PII.[38] The weak allows nothing that does not generate exceptions to the strong, so it is not really weaker. (4) To argue that time without change is possible. Sydney Shoemaker presents a thought experiment designed to show that there could be inductive evidence for the existence of a period of time without change (Shoemaker 1969). A universe is divided into three sectors, one undergoing a total freeze every three years, another every four, and another every five. Pooling their evidence, denizens of the

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[38] The only way out I see for the proponent of the indiscernibility principle is to hold that identity is not an intrinsic relation—whether it holds between A and B can depend on what, if anything, exists besides A and B. In the world with no flagpole, A and B become one. That seems preposterous to me, even more so than violations of the "only A and B" principle discussed above.

three sectors can reasonably infer the existence of a universe-wide freeze every sixty years.

There is a problem in Shoemaker's account of the evidence available for pooling, but the

problem can be sidestepped and his conclusion gained directly by an application of Hume's

Dictum (Van Cleve 2011). If any one of the sectors is possible as part of the three-sector

universe, it is also possible as an isolated universe, giving us the possibility of a universe-wide

freeze.[39]

In this section, I have identified fourteen applications of Hume's Dictum in contemporary

philosophy. I expressed doubts about five of them (against nonreductive physicalism and ethical

nonnaturalism, for deflationary sums and extended simples, against closest continuer theories),

but I take the rest to be at least arguably cogent. The range of legitimate uses of the Dictum is

wide enough that it is important to know whether it is true.

## 6. Wilson's construal and critique of Hume

Probably the most elaborate articulation and assessment of Hume's Dictum to date is Jessica

Wilson's "What is Hume's Dictum, and Why Believe It?" (2010). Wilson is drawn to the topic

because she is a causal necessitarian—one who believes that causal connections hold with

metaphysical necessity—and she sees the refutation of that belief as the main purpose of the

Dictum. She considers a variety of interpretations of the Dictum, finding none to be both

philosophically acceptable and adequate to their intended purpose.

Her showcase quotation for the Dictum is this:

There is no object, which implies the existence of any other if we consider these objects in
themselves." (T 1.3.6.1).

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[39] Hume himself might dispute the possibility of the individual sectors. He holds that in order for a thing to have
duration, there must be change in *it*, not just in adjacent things. See T 1.2.3.7-11 (35-37) and 1.2.5.29 (65).

And her own preferred gloss of the dictum is this:

> There are no metaphysically necessary connections between distinct, intrinsically typed entities.

Why the reference to "intrinsically typed entities"? Wilson says it is the contemporary correlate of Hume's "if we consider these objects *in themselves*." I believe it is also meant to stave off cheap counterexamples to Hume, such as "it is necessary that if a husband exists, so does his spouse." Not a fair counterexample, Wilson could say, since husbands are not intrinsically typed entities.

I find the notion of an intrinsically typed entity obscure. I am a husband—that is one of my extrinsic properties—and I have intrinsic properties as well. So am I an intrinsically typed entity or not? The notion is simply not well defined.

I prefer to dismiss the counterexample of the husbands by invoking the distinction between *de dicto* and *de re* necessity (which Wilson pushes aside on p. 597). The following is a true statement of *de dicto* necessity (with 'H' for 'is a husband' and 'M' for 'is married to'):

(D) $\Box(x)(Hx \rightarrow \exists y(y$ is distinct from x & Mxy).

D does not imply the following statement of *de re* necessity:

(R) $(x)(Hx \rightarrow \Box\exists y(y$ is distinct from x & Mxy).

I am a husband, but it is not a necessary truth about me that I am married to someone distinct from me. It is only the statement of *de re* necessity that would give us an exception to Hume's Dictum, but that statement is false. Hume himself uses this very example to a similar end:

> They are still more frivolous, who say, that every effect must have a cause, because 'tis imply'd in the very idea of effect. Every effect necessarily presusupposes a cause; effect being a relative term, of which cause is the correlative. But this does not prove, that every being must be preceded by a cause; no more than it follows, because every husband must have a wife, that therefore every man must be marry'd. (T 1.3.3.8 (82))

Fortunately, any work to be done by the restriction to intrinsically typed entities may also be

done by talk of facts of the form *Fa* where F is an intrinsic property. That, in fact, is how Wilson

generally proceeds.

Wilson presents two main symbolic versions of Hume's Dictum, under each of which she

goes on to distinguish further versions depending on how certain key terms are understood. The

first is the particular or specific version, which I render in notation somewhat simplified from

hers as follows:

> Particular HD: You never have □(Fx → Gy & Rxy), where x and y are distinct entities, F and
> G are intrinsic properties, and R is any relation.[40]

This says there are no distinct things such that one's being F requires that it stand in R to the

other and that the other be G. If we take distinctness to be "no mereological overlap" and let F

and G both be existence, then this version of HD implies one of my formulations of Weak HD

above—namely, (x)(y)(if x and y have no part in common, ◊(x exists & y does not exist)—as a

special case.

The second is the general or generic version, which I again put in a simpler notation:

> General HD: You never have □(Fx → ∃y(Dxy & Gy & Rxy]), where D is distinctness, F and G
> are intrinsic properties, and R is any relation.

This says that for any intrinsic F and G, it's possible for something to be F even though there is

no G thing distinct from it to which it stands in relation R. Not only can x's being F not require

any other specified thing to exist as its R-relatum and be G; it cannot require that there be

*something or other* that exists as its R-relatum and is G. Wilson's Particular and General

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[40] After her initial string of quantifiers (which I have replaced by 'you never have'), Wilson has ◊(Fx & ~[Gy &
Rxy]). I have changed this to the equivalent ~(Fx → [Gy & Rxy]). Though I have not done so, I think we should
also change her '&' to 'v', since Hume wouldn't want Fx to imply *either* Gy *or* Rxy.

versions of HD correspond to the Weak and Strong versions of Hume's Dictum I distinguished in section 4.[41]

Wilson next proceeds to examine how Hume's Dictum fares under various possible meanings of 'intrinsic' and 'distinct'. Under some choices, the Dictum turns out to be analytic. For example, if an intrinsic property is defined as a property that anything could possess even if nothing distinct from it existed, the principle is analytic. But Wilson argues that analytic versions of Hume's Dictum are not adequate to their intended purposes. For example, they cannot be used to rule out versions of causal necessitarianism in which F events together with the right background conditions necessitate G events, since the background conditions might be specified extrinsically (e.g., there is no interference).

As for 'distinct', she considers five different candidate meanings. One of them is sheer numerical distinctness, $x \neq y$. Under that meaning, she says, Hume's Dictum is implausibly strong and open to counterexample. It would imply that the existence of the set $\{a, b\}$ cannot require the existence of either of its members, but surely it does.[42] Another meaning she considers is mereological nonoverlap (having no part in common), which was my favored meaning of 'distinct' above. Assuming membership is not a mereological relation, $\{a, b\}$ and $a$ do not overlap, so the set-theoretic counterexample would still be a counterexample.

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[41] That is, they correspond in so far as my Weak and her Particular both say "for any x and y, it could be that …," while my Strong and her General both say "for any x, it could be that there is no y …". The further logical relations between my Weak and her Particular, as well as those between my Strong and her General, depend on how 'distinct' and 'intrinsic' are explicated. For example, if 'distinct' is explicated as 'disjoint', her Particular entails my Weak (as noted in the text), but perhaps not conversely. If 'intrinsic' is explicated as 'anything that has it could have it even if nothing disjoint from it existed', then my Strong would be stronger than her General, since my Strong would be substantive and her General would be trivial.

[42] Let F and G be existence, presumably an intrinsic property, and let R be the relation of containing as a member. Since the set $\{a, b\}$ and the item $a$ are numerically distinct entities, HD would now imply that the existence of $\{a, b\}$ cannot necessitate that $a$ exist and be a member of it.

Wilson's overall take is that no analytic version of Hume's Dictum is adequate for its intended purposes and that no synthetic version is either intuitively evident or supported by an inference to the best explanation of anything.

To avoid the {a, b} counterexample to my version of Hume's Dictum with distinctness taken as no overlap, I would be tempted to introduce a broad notion of constituency, of which parthood and membership are two species, and then say that things are distinct when neither is a constituent of the other. Wilson anticipates such an attempt to save the Dictum by appeal to a notion of constituency or constitution, and she devotes the last portion of her paper to criticizing what she regards as the last best hope for the Humean—the principle of Constitutional Necessity:

> Constitutional Necessity: Intrinsically typed entities are (conditionally or unconditionally) necessarily connected just in case (i) the entities are not wholly distinct; **and** (ii) at least one entity constitutes the other. (623)

By 'constitutes' she means to include partial as well as full constitution; she would say that {a, b} is (partly) constituted by the entity *a*. Constitutional Necessity is supposed to be strong enough to rule out causal necessitarianism as Hume desires, yet no longer subject to the set-theoretic counterexample; it is all right for the existence of {a, b} to necessitate the existence of *a*, since {a, b} is partly constituted by *a*.

I believe there is an error in the statement of Constitutional Necessity as it appears in Wilson 2010: the connective on the right-hand side (bolded above) should be 'or', not 'and'. As stated, the principle says that the falsity of the conjunction of (i) and (ii) implies the absence of necessary connection between the entities concerned. In other words, the disjunction of ~(i) and ~(ii) suffices for "no necessary connection," which implies that either disjunct alone suffices, which means that being wholly distinct (having no mereological overlap) suffices. But that is

what the original unqualified version of Hume's Dictum said!  Since {*a*, *b*} has no mereological

overlap with *a*, Constitutional Necessity prohibits {*a*, *b*} from being necessarily connected with

*a*.  That is why I think Wilson's 'and' on the right-hand side was meant to be an 'or'.  Adding the

'constitution' clause in the principle of Constitutional Necessity does nothing to help Hume

unless it enters as a disjunct, for then Hume has one more way to allow necessary connections:

one of the two connected entities can be partly constituted by the other.

What does Wilson think wrong with the emended principle of Constitutional Necessity?  Her

prime objection is that it runs into trouble when we consider propositions like

  N1: Necessarily, whatever is scarlet is red.

Despite what some critics say, the trouble is not that Hume cannot accommodate the *truth* of

N1.[43]  Wilson thinks Constitutional Necessity allows for N1 to be true, since the property of

being scarlet is partly constituted by the property of being red.[44]   The problem is rather that the

best explanation of how we *know* N1 appeals to causal necessitarianism, which is what

Constitutional Necessity is designed to outlaw.  If we have knowledge of N1, Constitutional

Necessity is undermined.

According to Wilson, the best explanation of how we know N1 runs as follows.  First, colors

are individuated by their causal profiles.  The causal profile of a property P is the set of all other

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[43] I have in mind, for example, Daniel Stoljar, who claims that N1 asserts precisely the sort of necessary connection between distinct entities that Hume's Dictum disallows (2007).  I demur, for as I have made clear above, I think the Dictum is about necessary connections between *individuals*, not between *properties*.  N1 fits nicely in Hume's "Relations of Ideas" column, along with *three times five is equal to the half of thirty.*

[44] For my part, I am dubious about such alleged relations of partial constitution between determinates and determinables.  If being scarlet is partly constituted by being red—if part of what it is to be scarlet is to be red—then what is the rest of it?  There should be a property Q such that to be scarlet is (full constitution) to be red & Q, where Q is neither identical with nor necessarily equivalent to scarlet itself.  But what Q can you think of that fills the bill?  If the only Q is scarlet itself, we wind up saying that being scarlet is constituted by being scarlet and red, which violates the strong irreflexivity of constitution.

properties whose instances P's instances help cause. Second, the causal profile of being red is contained in the causal profile of being scarlet. If red things cause X, Y, Z, and charging by bulls, then scarlet things cause all these effects plus more, such as cheering by Rutgers fans. Third, causal profiles are "modally stable." If red causes bulls to charge in our world, then it also causes bulls to charge in any possible world in which red and bulls both exist.[45] Together these three facts entail N1. Moreover, we know or have access to these facts; that is how we know it is necessary that anything scarlet is red. But if that's the explanation, then some causal connections hold with metaphysical necessity—it is metaphysically necessary that red causes bulls to charge. That runs contrary to Hume's Dictum in the last best version of it.

For my part, I doubt that Wilson's explanation of how we know N1 is any better than Hume's. I suspect the average knower of N1 does not know all the facts in Wilson's explanation; some of them are too abstruse (profiles are modally stable) and others too numerous (think of how many facts are comprised in the fact that the causal profile of red is included in that of scarlet). In that case, her explanation cannot be the only explanation. Compare: How do we know that three is greater than two? Because a number is identical with the set of its predecessors, someone may say, and greater-than is the converse of the relation of set-inclusion. Even if that is the correct metaphysics of number, I doubt that any familiarity with it is required for knowing that three is greater than two.

What would Hume say about our knowledge of N1? The chief guides to what is possible or necessary in Hume's philosophy are of course the conceivability of a thing and the

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[45] What does the modal stability condition add to the individuation condition, some readers may ask. The answer is that by individuation Wilson only means individuation in the actual world: "properties actually having different causal profiles are different properties." I add one observation of a point often overlooked: that last claim is nothing special in the theory of properties, but simply a consequence of Leibniz's Law. See Van Cleve 1985, section I.

inconceivability of its opposite. We know it is necessary that whatever is scarlet is red because we find it inconceivable that anything be scarlet and not red. Conceivability and inconceivability may not be infallible guides, but I'll take Hume's explanation of our knowledge of N1 over Wilson's.

## 7. McDaniel's use of Hume against Hume

Kris McDaniel has offered what he bills as a Humean argument for two interesting metaphysical conclusions: the shape of an object is an extrinsic property of it, and extended simples are possible (McDaniel 2007). He calls the argument Humean because it uses a principle he labels 'NNC,' presumably for "No Necessary Connections." McDaniel does not address the question whether his conclusions are actually ones Hume would accept. I maintain that they are not, in which case his article may be read as a mobilization of Hume against Hume.

McDaniel's argument presupposes a dualism of physical objects and immaterial regions, which might or might not be occupied by objects. Dualists differ about which (if either) is primary—the shapes of objects or the shapes of regions. McDaniel's first conclusion is that region shape is primary and intrinsic, while object shape is extrinsic—"the shape of a material object is an extrinsic property had by that object in virtue of its occupying a region of space (or spacetime) which has that shape intrinsically" (134-35).

Here is the supposedly Humean principle that is supposed to deliver that result:

NNC: Let F and G be accidental, intrinsic properties; let R be a fundamental relation; let x and y be contingently existing non-overlapping entities. Then it is not the case that, necessarily, Rxy only if (Fx if and only if Gy). (135)

Note that McDaniel, like Wilson, takes Hume to proscribe necessary connections among predicative facts, not just among existence facts as in my reading of Hume. It is nonetheless of interest to explore the consequences of the dictum as McDaniel understands it.

The following proposition has every appearance of being a necessary truth: if object *o* exactly occupies region *r*, then *o* has a certain shape if and only if *r* has that shape. If all the provisos in NNC are met—if occupancy is fundamental, if having a certain shape is an intrinsic property both of objects and of regions, and so on—then NNC would be violated. There would be a bad necessary connection between the shape of an object and the shape of the region it occupies.

The best way to avoid violating NNC, says McDaniel, is to hold that the shape of an object is *not* an intrinsic property of it.[46] Instead, an object inherits its shape from the region it occupies. For an object to be round *is* for it to occupy a round region, and the necessary connection is no longer objectionable, being derivable by pure logic from the definition of object shape.

I maintain that a good Humean would not go along with McDaniel's argument. In the first place, a good Humean (and this includes Hume himself) is a relationalist about space and time, not admitting the existence of substantival regions of space or periods of time. "The ideas of space and time are therefore no separate or distinct ideas, but merely those of the manner or order, in which objects exist" (T 1.2.4.2 (39-40)). In the very next sentence, he says his views imply both the inconceivability of a vacuum (extension without matter) and of its analog for time (time without change). In the second place, Hume's own "no necessary connections" principle is

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[46] What McDaniel really needs for an exact presentation of his argument is not the notion of an intrinsic property, period, but the notion of a property that is intrinsic *to x*. His conclusion is that shapes are intrinsic to regions but not intrinsic to objects.

about things rather than properties; it says that any two nonoverlapping things are such that either could exist in the absence of the other. And that principle can be used to *disprove* the extrinsicness of shape. Here's how: An object and the region it supposedly occupies would be distinct existences—they would be numerically distinct, and they would have no part in common. Therefore, by Hume's Dictum as I understand it, the object could exist even if the region did not. But the object could not exist without having some shape or other. Therefore, it does not get its shape from its region.

Someone could evade the argument I just gave by saying a round object that occupies *r* could still exist and be round without *r*'s existing, but would still have to occupy *some round region or other*. But this suggestion is rebuffed by the stronger version of Hume's Dictum I have identified in section 4—any object could exist *on its own* (without anything disjoint from it existing), and therefore without any region distinct from it existing.[47] If it is a visible or tangible object larger than one of Hume's minima, it must have a shape, so having a shape does not require occupying a region.

Where, then, would Hume take exception to McDaniel's argument? I have already said: he would say you don't get putative exceptions to NNC because there are no such things as regions distinct from objects to begin with. Here is one more argument he could give in support of his anti-substantivalism: Space as Newton conceives of it is a huge immaterial substance with inseparable parts or subregions—there can be no shuffling of them about or zapping some out of existence while sparing others (cf. Locke 1689, 2.13.13-14.) Its parts are distinct, but

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[47] Wilson's General HD could also be pressed into service here; an instance of it would tell us that it cannot be necessary that if o is round, then there is some round region or other that o occupies.

inseparable.  But that contradicts Hume's principle that whatever is distinct is separable—
otherwise known as Hume's Dictum.

McDaniel's principal use of NNC is to prove a second conclusion, that extended simples are
possible.  An extended object is one that takes up more than zero space, and a simple object is
one that has no parts.  Many philosophers have thought extended simples impossible, but
McDaniel says NNC can be used to prove otherwise.

Among the philosophers who regard extended simples as impossible is Hume himself.  The
three classically recognized views about the structure of matter are that it is infinitely divisible
with no simple parts (what is nowadays called the "gunk" alternative), that it is composed of
simple extensionless parts, and that it is composed of simple extended parts.  It is abundantly
clear that Hume opposes infinite divisibility and believes in simple, indivisible parts.  But are his
simple parts extensionless or extended?  Pierre Bayle, whose work Hume knew, called
extensionless parts "mathematical points" and extended parts "physical points" (Bayle 1697,
article Zeno of Elea).  At T 1.2.4.3 (40), Hume says "The system of *physical* points . . . is too
absurd to need a refutation."  That seems to place him foursquare against extended simples.[48]

How does the argument from NNC to the possibility of extended simples go?  We could set it
up as inconsistent set in which we must choose which element to reject, this time letting F and G
be object structure and region structure (being simple or composite as the case may be) rather
than object shape and region shape:

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[48] Also citable against extended simples is T 1.2.3.14 (38).  Most commentators (including Raynor in his 1980 and
the Nortons in their 2000 critical edition of the *Treatise* at p. 437) do indeed take Hume's simples or minima to be
extensionless, despite his saying they must be either colored or tangible.  A case on the other side, though, is made in
George 2006.

1. NNC:  If F and G are accidental intrinsic properties, R is a fundamental relation, and x and y are contingently existing non-overlapping entities, then it is NOT the case that necessarily, Rxy only if (Fx iff Gx).

2.  Object structure and region structure are accidental properties, exact occupancy is a fundamental relation, and objects and regions are contingently existing and non-overlapping entities.

3.  Object structure and region structure are both intrinsic.

4.  Necessarily, if *o* exactly occupies *r*, then *o* has structure S iff *r* has structure S.

1-4 form an inconsistent set.  When F and G were object shape and region shape, McDaniel thought the best way out was to deny statement 3—object shape and region shape are not both intrinsic, because object shape is not.  When we switch over to object structure and region structure, however, he thinks denying 3 is no longer an option.  Defining an intrinsic property Lewis's way as a property that can never differ between duplicates, he demonstrates that mereological structure, whether of objects or regions, is an intrinsic property.  Any duplicate of a simple region would have to be simple, and any duplicate of a simple object would also have to be simple.[49]  We have to find something else in the set to deny.

This time McDaniel thinks the best way out of the inconsistency is to deny statement 4.[50] And if we do that, McDaniel says, "it is not true that, necessarily, a material object is a simple if

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[49] I pause here to note that McDaniel moves silently from one notion of intrinsic to another as he move from his first argument to the second.  The conclusion of the first argument is really that object shape is *derivative*—an object has a certain shape by virtue of occupying a region with that shape.  Properties that are derivative in this sense might or might not be intrinsic in the Lewis sense McDaniel uses in the second argument.  Compare these two cases:  (1) Sentence S is true iff S expresses a proposition that is true—sentential truth derives from propositional truth. Sentential truth is not intrinsic, as a duplicate of a true sentence need not be true.  (2) An object is white iff it exemplifies the form Whiteness, and Whiteness is itself white—this is Plato's view in the *Parmenides*.  It makes an object's being white derivative, but I bet many Platonists would say that it is intrinsic by the Lewis test—any duplicate of a white object would have to be white.  And I would say that a duplicate of a round object would have to be round, even if object shape is derivative from region shape.

[50] I have my doubts whether regions, if there be any such, would exist contingently and have their structures accidentally, but I set them aside here.

and only if it occupies a simple (read pointsized) region of spacetime. It follows that extended material simples are possible" (137).

There is a gap in McDaniel's argument. Statement 4, or the principle of which it is an instance, may be symbolized as (x)(y)(Oxy → [Sx ↔ Sy]). If we deny that, what follows is ◊∃x∃y[(Oxy & Sx & ~Sy) v (Oxy & ~Sx & Sy)]—in other words, it is possible that there are *either* simple objects occupying nonsimple regions (what McDaniel wants) *or* nonsimple objects occupying simple regions. McDaniel needs to tell us why he ignores the second variety of mereological mismatch and favors his own.

I see two ways in which we might try to close the gap. One relies on the thought that a region occupied by a composite object would have to be extended or be more than just a point; in that case, a simple region occupied by a composite object would *itself* be an extended simple, and the possibility of extended simples would have been gained.[51] But McDaniel is after something more—the conclusion he wants is that "extended *material* simples are possible" (137, my emphasis).

The other way to close the gap relies on a strengthening of NNC that I think would be quite in the spirit of McDaniel's use of it: what we prohibit under the provisos is not (x)(y)(Oxy → [Sx ↔ Sy]), but each of (x)(y)(Oxy → [Sx → Sy]) and (x)(y)(Oxy → [Sy → Sx]. In other words, we say that there cannot be necessary connections even in *one* direction between object structure and region structure. Then we could conclude that simple objects occupying composite spaces and composite objects occupying simple spaces are *both* possible.

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[51] For problems engendered by extended simple regions, though, see Kleinschmidt 2016.

We would still be concluding that extended simple objects are possible, contrary to Hume. So what if anything in the argument would Hume deny? As before, I think it would be McDaniel's underlying dualism of region and object, which is implicit in premises 2 and 3. That view can be ruled out (as shown above) by Hume's Dictum as I believe Hume himself understands it.

## 8. Lewis's touting and flouting of Hume

David Lewis declares that in much of his philosophy, he is following in the footsteps of an earlier David, David Hume. Looking for a common theme in his collected papers, he came up with *Humean supervenience,* "named in honor of the great denier of necessary connections:"[52]

> It is the doctrine that all there is to the world is a vast mosaic of local matters of particular fact, just one little thing and then another. . . . We have geometry: a system of external relations of spatiotemporal distance between points. Maybe points of spacetime itself, maybe point-size bits of matter or aether or fields, maybe both. And at those point we have local qualities: perfectly natural intrinsic properties which need nothing bigger than a point at which to be instantiated. For short: we have an arrangement of qualities. And that is all. There is no difference without difference in the arrangement of qualities. All else supervenes on that. (Lewis 1986a, ix-x)

He goes on to list the various features of the world that he takes to supervene on the Humean mosaic: laws of nature, counterfactuals, causation, persistence, mind and language, and more.[53]

I have no doubt that Hume himself would have said that some of these features do indeed supervene on the mosaic. Take laws of nature: once you know how all the tiles are arranged in the mosaic (for example, that every fiery tile is contiguous in space and time with a smoky

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[52] What it actually says on the printed page is "named in honor of the great*er* denier of necessary connections," but I like the way I have it better.

[53] Lewis 1994 calls attention to two tenets of Humean supervenience implicit but not emphasized in his earlier discussion: spatio-temporalism (all fundamental relations are spatio-temporal) and anti-haecceitism (worlds alike in their patterns of instantiation of qualities do not differ in what individuals there are or what qualities they have).

one),[54] you know what all the laws of nature are, and any world that had the same arrangement

would have the same laws.  But my topic is not the extent to which Hume himself believed in the

entire program of Humean supervenience; it is rather the relation of Hume's Dictum in particular

to Lewis's philosophy.[55]

One echo of Hume is sounded under the name "patchwork principle" in Lewis 1983 (three

years before "Humean supervenience"):

> I rely on a *patchwork principle* for possibility: if it is possible that X happen intrinsically in a
> spatiotemporal region, and if it is likewise possible that Y happen in a region, then also it is
> possible that both X and Y happen in two distinct but adjacent regions.  There are no necessary
> incompatibilities between distinct existences.  Anything can follow anything. (Lewis 1983,
> 76-77)

If you can have a red tile here and a green tile in another region remote from it, then somewhere

you can have a red tile next to a green tile.  If you can have a man and you can have a hat, then

somewhere you can have a man wearing a hat.

More strongly reminiscent of Hume would have been a *reverse* patchwork principle,

according to which if X and Y happen in adjacent regions, then it is possible that X happen

without Y happening in any adjacent region.  (Hume would state this without the regions:  it is

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[54] According to T 1.2, the tiles are composed of points, and infinite divisibility being impossible for Hume, there
really is such a thing as contiguity between points.

[55] Does Hume believe that all truth supervenes on the spatiotemporal distribution of qualities across points?  A
compressed case for 'yes' could be laid out as follows.  First, he believes that the ultimate constituents of the world
are pointlike (T 1.2).  Second, he divides relations into those that are determined by the qualities of the relata, such
as resemblance in color—internal, we could call them—and those that are not so determined, such as distance or
temporal contiguity—external, we could call them (T 1.3.1.1-2 (69-70)).  Third, the only relations he cites as
external are spatiotemporal relations, causal relations, and identity (or what Carnap called genidentity, a relation
between distinct time slices) (T 1.3.1.1 (69)).  Fourth, causal relations (T 1.3.14) and genidentity relations (T 1.4.2)
supervene for Hume on the qualities of things and the spatiotemporal relations among them.  It follows from these
four Humean assumptions that all truth supervenes on the spatiotemporal distribution of qualities.

possible for X to happen without Y following or being next to X.)  That is why there is no

necessary connection between a cause and its effect.

In *On the Plurality of Worlds*, the patchwork principle and the reverse patchwork principle are

brought together and called the *recombination* principle.  Seeking a principle of plenitude, a

principle to guarantee that there are no gaps in logical space, Lewis writes

> To which end, 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.  Roughly speaking, the principle is that anything can coexist with
> anything else, at least provided they occupy distinct spatiotemporal positions.  Likewise,
> anything can fail to coexist with anything else.  (1986b, 87-88).

"Anything can coexist with anything else" is the original patchwork principle, and "anything can

fail to coexist with anything else" is the reverse patchwork principle.  Gendler and Hawthorne

(2006) aptly call the conjunction of them a "cut-and-paste principle" for possibility, the second

conjunct letting you cut and the first letting you paste.

I suppress some of the qualifications Lewis finds necessary.  For example, since he does not

believe that anything literally inhabits more than one possible, he says not that there is a world in

which X is next to Y, but a world in which a duplicate of X is next to a duplicate of Y.

As noted in section 4, Cameron notes an ambiguity in "anything can fail to coexist with

anything else."  It could be symbolized as '(x)(y)(if x is distinct from y, then $\lozenge$(x exists & y does

not exist)'—given any two distinct things, one could exist without the other.  That is what I have

been calling Weak HD.  Or it could be symbolized as '(x)$\lozenge$(y)(y is part of x)'—given anything, it

is possible that nothing else exists but its own parts or, in other words, anything could exist on its

own.[56]  That is what I have been calling Strong HD.  We saw reason above to attribute Strong

HD to Hume, as it would license without fallacy his claim that anything whatever qualifies as a

substance in the independence sense.

   Having articulated his recombination principle, Lewis uses it to demonstrate various things of

which Hume would approve—for example, that laws of nature are not metaphysically necessary:

> Episodes of bread-eating are possible because actual; as are episodes of starvation.  Juxtapose
> duplicates of the two, on the grounds that anything can follow anything; here is possible world
> to violate the law that bread nourishes.  (1986b, 91)

He also uses it to demonstrate various things that Hume never had occasion to consider, such as

the nonexistence of Armstrongian states of affairs, discussed above in section 5.

   Jessica Wilson finds in Lewis's work an inference-to-the-best-explanation argument for

Hume's Dictum.  The truth of the Dictum is supposed to be the best explanation for the success

of the recombination principle in generating the space of all possibilities (2015).  She goes on to

question how successful the recombination principle actually is, arguing that there are various

possibilities it does not generate; for example, it does not generate the possibility of plaid

kangaroos, which involves co-instantiation of properties rather than co-existence of individuals

(2015, 150).[57]  Her points about undergeneration are well taken, but I do not think they

undermine any argument Lewis actually means to give in favor of Hume's Dictum.  For one

thing, I don't see the space between the Dictum and the recombination principle that must be

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[56] As noted in section 4, a more perspicuous symbolization than Cameron's would be '(x)◊(y)(if y is disjoint from x, then y does not exist)'.

[57] I note, though, that what Lewis calls "combinatorialism" in his 2009 goes beyond his recombination principle in allowing *properties* of the same category to be interchanged, which *would* make possible gray kilts and plaid kangaroos.

there if (as on Wilson's reading of Lewis) the former is to explain the latter. I think Lewis more or less identifies them. Witness:

> It is no surprise that my principle prohibits strictly necessary connections between distinct existences. What I have done is to take a Humean view about laws and causation, and use it instead as a thesis about possibility. Same thesis, different emphasis. (1986b, 91)

For another, I don't see the recombination principle as aiming to generate *all* possibilities. It is a principle that generates more possibilities from initial possibilities, but by itself, it does not give us any initial possibilities beyond the actualities.

Lewis is not in all ways Humean. He believes in chance (irreducibly statistical laws, that is, laws that do not give way to universal laws with more refined antecedents),[58] and he believes in regions as the repositories of qualities. But these differences are relatively minor for my purposes here. There are two more significant ways in which Lewis is not Humean.

The first is Lewis's metaphysic of many worlds. To carry out his program of Humean supervenience, he needs his mosaic in some cases to be more than just the actual mosaic, including other world-mosaics as well. Counterfactual conditionals are a case in point: a conditional with a false antecedent is true just in case every "closest" world in which the antecedent is true is a world in which the consequent is true. Since Lewis analyzes causation in terms of counterfactuals, causation would also require a supervenience base beyond the actual world.[59] What would Hume think of this? Well, Lewis's theory of worlds has the following consequence: there are things x and y that are spatially related to each other in the world they

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[58] Hume offers a theory of chance-based belief in T 1.3.11, but denies in EHU 6 that there is any such thing as chance metaphysically speaking.

[59] I have seen it claimed in an anonymized paper that for Lewis, counterfactuals are fixed by the actual mosaic plus the laws, while laws are fixed by the actual mosaic itself. It would follow that the actual mosaic is enough to fix counterfactuals, which in turn fix the causal facts. I am inclined to think on the contrary that Lewis needs at least one of the supervening features to supervene on a base including more than just the actual mosaic.

inhabit (one lying so far in a certain direction from the other) and things w and z that are spatially related to each other in our world, but x and y stand in no spatial relations whatever to w and z. I am inclined to think Hume would find that inconceivable—try forming an image of it!—and conclude that there cannot be things each related spatially to other things, but not to each other.[60]

The second and more serious breach with Hume comes with Lewis's counterpart-theoretic analysis of modal facts about individuals. *I could have been a contender*: for Lewis, that is to say that some counterpart of me *is* a contender. *My left foot is essentially extended*: for Lewis, that is to say that all my foot's counterparts in various worlds are extended. A thing's counterparts in other worlds resemble it, but they are distinct from it both numerically and mereologically, since no two counterparts have any part in common (lest the same individual inhabit two different possible worlds). These things being premised, Lewis's philosophy arguably generates the following chain of entailments from 1 through to 4 (with respect to any accidental property F that x might have had and might have lacked):

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| x exists | x is possibly F & | some counterpart of x is F & | some counterpart of x exists in |
|  | x is possibly not F | some counterpart of x is not F | another possible world |

By the transitivity of entailment, the existence of x would require the existence of something else mereologically distinct from it. That looks like a violation of Strong HD, which says that anything could exist in the absence of anything else save its own parts.

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[60] I can't be entirely sure about this, however, since I have read at least one Hume scholar (I cannot remember which one) who thinks that only the things in a given mind stand in spatial relations to one another, making for a plurality of private spaces.

Why is the chain of entailments supposed to hold, intuitively speaking?  Choose as F some way x could possibly have been but might also not have been, such as being six feet tall. Then add something like the S5 axiom with an existence qualification attached:  if x could have been F, then it is necessary that (if x exists at all) x could have been F.  That gives us the entailment from 1 to 2.[61]  The entailment from 2 to 3 holds in virtue of Lewis's analysis of 'could have been' statements:  x is possibly a certain way only if x has a counterpart that *is* that way.[62]  Now if a thing is actually six feet tall, the counterpart of it making it possibly six feet tall can be itself in the actual world.  But it cannot be that the same counterpart in the actual world makes a thing both possibly F and possibly not F.  Therefore, x must have a counterpart in some other possible world, giving us the entailment from 3 to 4.  As was said, a thing's counterparts in other worlds have no parts in common with it; therefore, the existence of x entails the existence of something mereologically disjoint from it.

But we should also consider whether the entailments hold under counterpart theory itself, since the translation rules of counterpart theory (1968, 30-31) tell us what it means for a statement to hold in a given world (perhaps in terms of what goes on in other worlds), but do not tell us anything about how to understand apparently modal claims spanning worlds.[63]  Let's cut to the chase and ask whether we get the alleged resultant of the entire chain of entailments, x exists => some counterpart of x in another world exists, or what I was taking to follow from that, x exists => something disjoint from x exists.  Consider just the latter.  The => expands to

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[61] Counterpart theory as set forth in Lewis 1968 does not validate the S5 principle, but I do not hesitate to use it as a premise myself.

[62] I assume here that analyses give rise to necessarily true biconditionals—something that (for better or worse) Lewis is under pressure to deny, according to Noonan 2014.

[63] I thank Andrew Bacon, Antonio Cleani, Noah Gordon, and Jeff Russell for helping me get clearer on these matters.

'necessarily, if x exists, then something disjoint from x exists'. The translation of that in counterpart theory would be

> Given any world w and any item y in w that is a counterpart of x, something disjoint from y also exists in w.

Note that the disjoint item is said to exist *in the same world* as the item from which it is disjoint. There is no reason to think Lewis is committed to that.

Indeed, it seems that there is nothing to prevent Lewis from affirming a contrary of that statement—the counterpart-theoretic formulation of Strong HD itself. Here is an equivalent of Strong HD as I formulated it above:

(x)◊(x exists & nothing disjoint from x exists)

The translation of this in counterpart theory would be

> Everything x is such that there is a world w in which there is a counterpart y of x that is unaccompanied in w by anything disjoint from y. For short: everything has a counterpart that is alone in its world.

By making that pronouncement, it might be said, Lewis can loyally remain in Hume's camp.

It seems to me, though, that the show of solidarity with Hume is spurious. It is profoundly unHumean if one earns the right to say that something could exist all alone by analyzing it in a way that implies something else *does* exist—namely, a counterpart of it in another world.

Matthew Davidson has pointed out to me a possible way of absolving Lewis of any violation of Hume. As we saw in section 2, it is permitted for x to necessitate the existence of y if y is a necessary being. Perhaps x's counterparts are necessary beings! They are not necessary existents in Lewis's official sense, since they do not have their own counterparts in every possible world. Yet in some hard-to-explicate sense, it seems as though the total content of

logical space for Lewis is necessarily and irrefragably what it is. The pluriverse of worlds and individuals existing in them, which is Lewis's domain of quantification, could not have contained more or fewer things than it does.

Or so it seems, but Anthony Cleani has advised me to proceed more cautiously on this point. That the pluriverse is necessarily what it is seems to be a modal thesis, but it is not a thesis for which counterpart theory gives any truth conditions. If we refrain from asserting theses like that, we cannot offer Lewis the Davidson escape. That does not mean Lewis is in trouble, though, for by the same token, we cannot make the original complaint against him, either. That one thing in one world requires the existence of another in another seems to be a modal thesis, but it, too, is a thesis for which counterpart theory gives no truth conditions. The supposed breach with Hume cannot be stated within counterpart theory itself.[64]

It seems to me that if that limitation really holds, it just shows that counterpart theory is not the last word on matters modal.

## 9. The necessity of origin

Probably the stiffest challenge to Hume's Dictum issuing from contemporary philosophy is the doctrine of the necessity or essentiality of origin, brought to prominence in Kripke 1980.[65] Kripke offers two examples of the essentiality of origin: nothing could be identical with this table unless it were made originally of the same wood this table was made from, and nothing could be identical with Queen Elizabeth unless it originated from the same sperm and egg cells

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[64] On the other hand, Noonan so interprets Lewis that modal claims quantifying over worlds *can* be extracted from counterpart theory itself—sometimes with unfortunate consequences (2014).

[65] See Adriaenssen and Alma, though, for references to antecedents as far back as the 16th century, including Pomponazzi's view that Socrates was necessarily generated from the blood of Phenarete.

Elizabeth originated from (1980, 110-114). The table and the Queen could have had histories differing from their actual histories in many ways, but they must have come into being from the very matter or the very gametes they actually originated from. Ordinary folk may never have articulated these principles, but they arguably find at least one of them intuitive. Undergraduates "get" the Grandfather Paradox—they readily accept that there is an impossibility in my traveling to the past and killing my own grandfather at a time before he sired my father or my mother.

The doctrine is clearly a threat to Hume's Dictum. I probably have no part in common with the sperm and egg from which I sprang, so by the Dictum, it is possible that I should exist even if they never had—but that is precisely what the necessity of origin says is not possible. The necessity of origin is also at odds with a related Humean principle that has been dubbed "Hume's Second Law:" no premise about the present can entail anything about the future or the past (Restall and Russell 2010).

What, if anything, can be done to save the Dictum? In what follows I consider some of the principal arguments for the necessity of origin thesis, and I maintain that none of them establishes the thesis in a form in which it is antithetical to Hume. The arguments are advanced or discussed in Salmon 1979, Forbes 1985, Cameron 2005, and Mackie 2006.

I present the arguments by indicating a sequence of possible worlds, starting with w1 as the actual world and proceeding to others. 'A → T' indicates that table T originated from hunk of matter A (or that a certain person came to be from certain gametes or a certain oak tree from a certain acorn). The first world in each sequence will be the actual world; the second world will be an alternative world that would be possible if the necessity of origin thesis is false; the third and any ensuing worlds will be worlds that must be possible if its predecessors are all possible.

Yet the final world in each sequence is *not* possible, or so it will be claimed, in which case we have a proof by contradiction of the necessity of origin thesis.

Here is the first argument:

W1: A → T.

This is the actual world; T came to be from A.

W2: B → T.

This is another world, which would be possible if the necessity of origin is false. T came to be from B, a hunk of wood different from A and sharing no matter with it.

W3: B → T; A → T'.

This is a world that arguably must be possible if W1 and W2 are possible. B is made into T, as in W2, and the matter A of W1 still exists, being made this time into the table labeled T'.

Why must W3 be possible if W1 and W2 are possible? Here one could appeal to Lewis's patchwork principle. If a world is possible in which B is made into T and another world is possible in which A is made into a table, then a world is possible in which B is made into T and A is made into a table.

At this point there are two ways to complete the argument. Salmon draws on a *sufficiency of origin* principle: anything made from hunk A by the right plan must be none other than T.[66] Hence T', the table made in W2 and W3 from A, must be identical with T, in which case W3 can also be portrayed as follows:

W3: B → T; A → T.

_____

[66] A famous use of a "sufficiency of origin" thesis occurs in Hobbes's discussion of the Ship of Theseus. Hobbes takes for granted that any ship reassembled from the same planks as the original ship of Theseus would *be* the original, trumping any claim of a ship that evolved from the original plank by plank. See Adriaenssen and Alma 2021 for references and discussion.

But W3 is *not* a possible world.  The same table cannot exist "beside itself" in any world with two distinct origins, having originated both from hunk B and not from hunk B but A instead, which would violate Leibniz's Law.  Conclusion:  W2 was not a possible world after all; T could not have been made from different matter.[67]

For those who find the sufficiency of origin thesis uncompelling, we may complete the argument in another way.  Forbes uses two other principles as premises.  (I follow the exposition in Mackie, p. 31).  One is the principle that the identity or difference of A and B across possible worlds must be grounded in something else—there cannot be "bare" identities or differences. The other is the principle that the identity or difference of A and B must be grounded in features intrinsic to them—it cannot depend on whether there is anything else on the scene with an equal claim to be identical with A.[68]

This time the sequence of worlds looks like this, with 'a1 in p1→ O1' meaning that an acorn planted in place pl grows up into oak O1:

W1:  a1 in p1 $\rightarrow$ O1

W2:  a2 in p1 $\rightarrow$ O1

W2 is a world that would be possible if (contrary to the necessity of origin) O1 might have sprung from a different acorn in the same place.

W3:  a1 in p2 $\rightarrow$ O1

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[67] I once used an argument like this to show why sets have their members essentially (Van Cleve 1985).  If set S with members a, b, and c could have existed with just members a and b, then it could have done so in a world in which c still existed; in that world, a, b, and c would yield a set that would *be* S, by a sufficiency principle; and now S would exist "beside itself" with two memberships.

[68] I forgo discussing whether the Forbes principles are plausible or whether Hume would allow them, since in the end I maintain that even if they are conceded, they do not imply the falsity of Hume's Dictum

Here we merely suppose that the oak that came from a1 in W1 could have come from a1 had it been planted across the quad.

W4:  a1 in p2 → O3; a2 in p1 → O2.

Here we combine elements of W3 and W2, but with no commitment yet on the identities of the oaks.  We have one oak, labeled O3, with the same origin as O1 in W3 and another oak, labeled O2. with the same origin as O1 in W2.  We now ask about the identities of O3 and O2.

Might O3 and O2 both be identical with O1?  No, for then they would be identical with each other, and the same oak cannot exist "beside itself" with two different origins.  At least one of O3 and O2 must fail to be identical with O1.  On what grounds could we say this?

We could say that O3 is different from O1 in W3 (or that O2 is different from O1 in W2) even if there is nothing further on which this difference supervenes.  But this would be countenancing a "bare difference," which is ruled out by the first of the Forbes principles.

Alternatively, we could say there is a relevant further difference between the O3 of W4 and the O1 of W3 after all:  O3 grows up beside another oak (moreover, an oak that has as much claim to be O1 as it does!) and O1 does not.  But to find this difference relevant would be to offend against Forbes's second principle.  Whether A is identical with B should depend only on intrinsic characteristics of A and B, not on what else goes on in their environments.

 Forbes concludes that if we are to avoid the absurdity of an oak tree existing beside itself without violating one of his principles, we must hold that W2 is not a possible world after all. O1 could not have sprung from a different acorn.[69]

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[69] Mackie points out that without further premises, Forbes's conclusion does not follow.  Unshareable essential properties other than origin might block the threat of a world with an oak tree beside itself (50).

I forgo evaluating the arguments of Salmon and Forbes because I think even if accepted, they do not establish a conclusion at odds with Hume. What they show is that objects of certain sorts *could not have had origins other than their actual origins*—the table from a different hunk of wood or the oak from a different acorn. That is not to say that they *must have had whatever origin they did have*. For all the arguments show, the table and the oak might have had no origin at all. By which I do not mean no first moment of existence, but no coming to be from any object distinct from themselves. Perhaps this table could not have originated from any other hunk of wood, but it might have sprung into being without being preceded by any hunk of wood or anything else distinct from the matter composing it during its first moment of existence. That would be totally in keeping with Hume's Dictum.[70]

But is there a way to adapt the arguments above so they *do* reach a conclusion at odds with Hume? We have Hume conceding that if W1 is actual, W2 cannot be possible:

W1: $A \rightarrow T$.

W2: $B \rightarrow T$.

At the same time, we have him contending that T might have sprung into being *ex nihilo*, which I indicate as follows:

W3: $\dashv T$

The suggestion now is that if W1 and W3 are both possible, so must be W4

W4: $A \rightarrow T; \dashv T$

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[70] Matt Davidson has pointed out to me that without damage to Hume, I could concede to proponents of the necessity of origin something even stronger than what I concede to their arguments—the stronger thing being the truth of the counterfactual 'if the acorn from which it sprang had not existed, the oak tree would not have existed'. This counterfactual does not imply the anti-Humean conclusion that necessarily, if the oak tree exists, so did the acorn. One is a claim about nearest possible worlds, the other about all possible worlds.

But W4 is actually impossible, since T cannot both originate in A and be originless.

In fact, however, there is no good reason whatever for saying that W4 must be possible if W1 and W3 are possible.  Hume need not say that if T came from A and might have come from nothing, then it might have done both of these things.

Earl Conee has suggested to me another argument against a Humean retreat to the possibility of originlessness.  Those who believe in the necessity of origin typically combine it with the contingency of development; a maple table that must have originated from a certain hunk of maple might have gained and lost various parts and eventually evolved into a table made entirely of teak.[71]  Suppose, then, that the actual world looks like this, the squiggly arrow meaning 'develops into':

W1: A → T1 (made of maple) ~~> T1 (made of teak).

The Hume we are envisioning admits that T1 could not have started out from anything different from its actual starting materials, but says the following world is possible:

W2: ⊣ T2, a table made of the same maple T1 originated from

⊣ T3, a table made of the same teak as T1 once it became entirely teak

Now which, if either, of T2 and T3 is identical with the table in W1?  (Do not ask "*which* table inW1?" since if we are mereological inessentialists and believe in the contingency of development, we say there is only one table in W1.)  We cannot say *both* are, since they would then be identical with each other and therefore made out of both maple and teak.  We could say that it is T3, the teak table, which in W2 never evolved from the maple table, but simply sprang into being.  This would violate the strong necessity of origin.  Or we could say that it is T2, the

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[71] In n. 57 of 1980, Kripke separates the questions "What must x originally have been made of?" and "What changes could x endure?"

maple table, which in W2 never evolved into a teak table; this answer would be allowed by the necessity of origin.  Conee's point is that with the strong necessity of origin, the thesis at odds with Hume's Dictum, we can rationalize one of the answers, but without it, we can't.

I note three things about this argument.  First, it does not try to get an impossibility out of the denial of necessary origins—only a question to which deniers of that doctrine have no good answer.  Second, the maple-to-teak world with which the argument begins is one that at least one proponent of Hume's Dictum, namely Hume himself, would not allow to be possible; recall that Hume is a mereological essentialist.  Third, there is a principle we can ascribe to Hume that would allow him to answer Conee's question without having to embrace necessary origins.  It is this:  necessarily, (if x is composed of y in the first moment of its existence, then necessarily, (if x exists, x is composed of y in the first moment of its existence)).  This implies that of the two tables existing in W2, only the maple table can be identical with the table of W1.  But it is fully compatible with retaining the Dictum and thus with denying that any table had to be preceded by anything distinct from it.

I conclude that leading arguments for the necessity of origin do not establish a version of that thesis at odds with Hume's Dictum.  They may show that a given thing could not have originated from cells or materials different from those from which it actually sprang, but not that a given thing could not have existed unless it was preceded in existence by a thing distinct from it.[72]

## 10. Concluding overview

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[72] I have omitted here one other line of argument for necessary origins, based on the principle that a thing could have been different in some way only if there is a point in its past at which its history might have diverged so as to include its being different in that way.  This would rule out the idea that a thing with a certain history might have sprung into existence without any history.  But it probably also proves more than anyone would want—for example, that Queen Elizabeth must have been conceived in a room that had just those pictures on the wall.  See Mackie, chapter 6, for discussion.

Hume's principle of *no necessary connections between distinct existences,* a.k.a. Hume's Dictum, tells us that it can never be a metaphysically necessary truth that if one individual exists, so does another—unless the second is a part or a constituent of the first (sections 1 and 2).

The principle does *not* tell us that there cannot be entailments or metaphysically necessary connections between distinct *properties*, such as being scarlet and being red or being the shortest line between two points and being the straightest (sections 2 and 5).

In Hume and some of his commentators, the principle is put forth as the consequence of two other principles—the Mental Separability principle, according to which distinct things are always conceivable apart, and the Conceivability Principle, according to which what is conceivable is possible (section 1). There are fallacies in the employment of these other two principles to secure Hume's Dictum (section 3), but the Dictum can be accepted as principle standing apart from them as intuitive in its own right. For why should anything ever depend, metaphysically speaking, on anything besides its own parts?

Hume uses the Dictum in support of some of his most distinctive doctrines—that no event necessitates either the existence of some event or other as its cause or the existence of some particular type of event as its effect; that no perception requires the existence of any mind in which it must be lodged; that no quality requires the existence of any substance in which it must inhere (section 1).

The Dictum can be extended or strengthened in various ways. It can be taken to say not just that a given thing cannot require the existence of a *specific* thing beyond itself, but that it cannot require that there be *something or other* beyond itself. It can be taken to rule out not just that one

thing should entail the existence of another, but that it should *exclude* the existence of another (section 4).

The range of applications Hume's Dictum in contemporary philosophy is even wider than its range in Hume. Some of these applications do not use the Dictum as Hume himself understood it; cases in point are its application against ethical nonnaturalism and for extended simples (sections 5 and 7). But many of its other applications are legitimately Humean, including the use of it against tropes, states of affairs, primitive haecceities, and mind-dependent sense data (section 5). Ironically, the Dictum may also be used against a central tenet, counterpart theory, of one of the Dictum's leading contemporary champions, David Lewis (section 8).

Hume's Dictum withstands two significant objections that might be raised against it—that it is incompatible with the best account of how we know certain necessary truths (section 6) and that it is incompatible with a compelling version of the thesis that each thing has its material origins essentially (section 9).[73]

APPENDIX 1: CONCEIVABILITY, POSSIBILITY, AND BURIDAN

In this appendix, I amplify my contention that Hume's use of the ability to conceive one thing without conceiving another as a test for possibility is fallacious. In so doing, I do not question the very idea of conceivability as a mark of possibility. I also reaffirm my contention that Hume commits the fallacy of inferring from 'all possibly' to 'possibly all'.

In earlier work, I have proposed that if conceivability is to have any hope as a mark of possibility, it should be understood as follows (Van Cleve 1983):

It is conceivable for S that P =df S sees that it is possible that P.

Three comments are called for. (i) The "seeing" here is not factive; it could be merely ostensible seeing. (ii) Since 'possible' occurs on the right, this is not meant to give any sort of conceptual reduction of what it is to be possible. (iii) The associated epistemic principle would be that if it is conceivable for S that P, S is justified (defeasibly, not absolutely) in believing that P. This principle would be a special case of the more general principle Michael Huemer calls "phenomenal conservatism" (Huemer 2001, 99-103):

If it seems to S as if P, then S thereby has at least prima facie justification for believing that P.

The "seeming" could be either perceptual, memorial, or intellectual.

In a parallel account of inconceivability as a mark of impossibility, we would say

It is inconceivable for S that P =df S sees that P is *im*possible.

Conceivability and inconceivability as so defined are contraries rather than contradictories.[74]

The conceivability Hume uses as a mark of possibility is not the same as mine. It is pictorial rather than propositional, and Hume's uses of it are often instances of the principle

If S can conceive of A without conceiving of B, then it is possible that A exists and B does not.

To this I raised in section 3 the counterexample that a child might conceive of 10 without conceiving of its cube, 1000, but it would not follow that the number 10 could exist without its

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[74] Lightner (1997, 122) and Millican (2017, 37-38) both protest against the principle "what is inconceivable is impossible" (and against attributing it to Hume) on the ground that things inconceivable because one simply lacks one of the required ideas, as a blind person lacks the idea of red, need not be impossible. I note that things inconceivable for that reason would not be inconceivable in my sense. A blind person who lacks the impression of red (and therefore according to Hume lacks the idea of red) would find it neither conceivable nor inconceivable that some red things are round. I believe that conceivability in my sense also avoids the objections in Berto and Schoonen 2016.

cube existing.  Taking a cue from what Descartes said in response to an objection from Arnauld, I said that a better principle would be

   If S can conceive that (A exists & B does not), then it is possible that A exists and B does not.

This emendation would take the principle at least one step closer to the principle I favor above.[75] But it invokes a distinction to which I said Hume was insensitive—that between conceiving of A without conceiving of B and conceiving of the combination A-without-B.

   Noah Gordon and an anonymous referee have each stepped up to defend Hume against my charge of careless conflation.  Gordon has proposed that in Hume's imagistic theory of conceiving, there is simply no distinction between conceiving or imagining A without conceiving B and conceiving of A-without-B (as there might be in a more linguistic theory).  The referee has said that having present to the mind an idea of A without having present to the mind an idea of B is precisely how, according to Hume, one thinks of A's existing without B's existing.

   Maybe they are right, but if so, too bad for Hume!  The resulting view has two major liabilities.  First, the view implies that if I conceive of A without conceiving of B, I *thereby* conceive of A without B or A & ~B.  Suppose, then, that I conceive of there being lions without conceiving of their being zebras.  I will under the supposition be conceiving of there being lions and there being no zebras.  From the plausible principle that if I conceive of a conjunction, I conceive of each conjunct, it will follow further that I am conceiving of there being no zebras. Yet I might not be conceiving of any such thing.[76]  In short, the absence of conceiving is not sufficient for the conceiving of an absence.  Second, under this construal of Humean conceiving,

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[75] Find the one or two places where Hume does say something closer to what I say—that if things appear to the mind as impossible, they are.

[76] Worse, suppose I am conceiving of lions and nothing else—I am not conceiving of zebras or hippos or elephants or . . . .  It will follow that I am conceiving of there being nothing but lions.

we are farther than ever from being able to propound a plausible principle taking us from conceivability to possibility. Suppose I am conceiving of there being lions without conceiving of four's being the double of two. I will thereby be conceiving of there being lions and four's not being the double of two—but no such thing is possible! (Thanks here to Gordon.)

In section 3, I also accused Hume of a modal fallacy—that of inferring from $(y)\Diamond{\sim}xRy$ to $\Diamond(y){\sim}xRy$, a move validated only by the suspect Converse Buridan Formula. One instance of this fallacy would be 'event e can occur without being caused by c1, it can occur without being caused by c2, and so on for anything else that might be its cause; therefore, an event can occur with no cause at all.' Another instance would be 'quality q can exist without inhering in s1, it can exist without inhering in s2, and so on for anything else that might be its substrate; therefore, a quality need not inhere in anything at all'. A referee has suggested that Hume needs the Converse Buridan Formula only if one attributes a quantificational account of generality to him rather than his own account in terms of abstract general ideas. To conceive of an event without a cause is to conceive of some particular event without conceiving of the general idea of a cause. In reply, I note two things. First, in my discussion of Hume in section 3, I have used quantifiers *over* the contents of conception, but I have not placed them *within* contents of conception. Second, somehow or other, Hume must give an account of the following thought contents: Fido is brown; some dogs are brown; all dogs are brown; no dogs are brown; for every dog, there is a cat that it chases; no dog chases any cat. Doing that just with the help of Hume's account of general ideas would be a tall order.

## APPENDIX 2: IS HUME'S DICTUM ABOUT INDIVIDUALS OR PROPERTIES?

Some readers of earlier versions of this paper have been surprised by my contention that Hume's

Dictum only prohibits necessary connections between the existence of one individual and the

existence of another, not between the instantiating of one property and that of another. A

principle along the latter lines is what many writers call Hume's Dictum. As a first gloss:

> If F and G are distinct properties, it cannot be true that a thing's being F necessitates its being G (Cf. Bricker 2017, 28, and Toppinen 2016, 447).[77]

How could Hume's Dictum as I construe it not also apply to properties? I consider here three

reasons for thinking it must so apply, and I find all three of them wanting.

*First reason: properties as values of the variables.* Here is how I formulated Weak HD:

(HD) (x)(y)(if x and y have no part in common, then $\Diamond$(x exists & y does not exist)).

How are we to construe the values of the variables? May we not take them to include properties

as well as individuals?

Even if the answer were yes, we would have further work to do to obtain the property version

of HD. We would have to elucidate the sense in which properties may or may not have common

parts, and we would have to close the gap between 'it is possible for F to exist without G' and 'it

is possible for F to be instantiated by something without G's being instantiated by that thing'.

But Hume's own answer would be no. He would not take the principle as ranging over

properties.

Or so I say, but does Hume not apply the principle to properties in the following quotation?[78]

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[77] Second gloss, for anyone who thinks the property version of Hume's Dictum might be true: if F and G are distinct properties and if G is a property that things possess only contingently (unlike, say, being self-identical), it cannot be true that a thing's being F necessitates its being G.

[78] Thanks here to Zoe Johnson King.

> Every quality being a distinct thing from another, may be conceiv'd to exist apart, and may exist apart, not only from every other quality, but from that unintelligible chimera of a substance.  (T 1.4.3.7 (222))

The answer is that although Hume frequently says things about "qualities," he does not mean by this what a Platonist would.  He means things like a patch of red or a whiff of vinegar, which in his philosophy are particulars.  Instructive in this connection is what he says about "distinctions of reason" in T 1.1.7:  the whiteness of a white billiard ball is nothing distinct from the ball itself.  When he talks of the whiteness of the ball, he is really talking about the ball.  (See Van Cleve 2018.)

   *Second reason:  existents generated by the exemplifications of properties*.  There are ontological schemes in which whenever some property is exemplified, some entity is thereby generated, as in Jaegwon Kim's theory of events (Kim 1993).  Kim embraces the following existence principle for events, symbolized by corner brackets:  necessarily, Fx iff <Fx> exists.  When Socrates sits, the event of his sitting exists.  Using this principle, we could show that any violation of Hume's Dictum for properties gives rise to a violation of Hume's Dictum for individuals, thereby showing by contraposition that the individuals version implies the properties version.  Here is the proof:

   Suppose, contrary to the properties version, that it is necessary that if Fx, then Gx (for two distinct properties).  Then by Kim's principle, it is necessary that <Fx> exists only if <Gx> exists.  But that would violate the individuals version, at least if the proviso is met that <Fx> and <Gx> are distinct (in the sense of having no common part).

   My response to this argument is a dilemma.  Case 1:  x is part of <Fx> and also of <Gx>.  Then the two events have a part in common; the proviso is not met, and there is no violation of

Hume's Dictum for individuals.  Case 2:  x is not part of <Fx> and <Gx>.  Now on Kim's theory, <Fx> cannot exist unless x exists.  In that regard, Kim's events are very like Armstrong's states of affairs; they have the same existence condition and the same ontological dependence on their subjects.  But that means Kim events would be objectionable to Hume for the same reason Armstrongian states of affairs are objectionable to Lewis (as discussed in section 5 of the text): they would depend for their existence on something other than their own parts.  They would therefore be excluded from Humean ontology and would not be available for use in the argument we are discussing!

   Noah Gordon has suggested to me that an argument like the one I just criticized should be run for tropes rather than Kim events.  The relevant existence principle this time would be the following:  necessarily, F*a* iff the trope *t* (= the Fness of *a*) exists.  I reply as follows.  First, the tropes we are talking about must be Campbell tropes, not Bennett tropes (see note 26 VERIFY NUMBER of the main text), since Bennett tropes are not different from the Kim events whose use against Hume we have already rejected.  Second, Campbell tropes are unstructured, as they must be to be usable in a bundle theory; they do not have individual and property constituents as the name 'the Fness of a' might suggest.  Our existence biconditional above must therefore be advanceable on its own without the parenthetical:  necessarily, F*a* iff *t* exists.  But then we may ask why the existence of *t* should make *a* rather than anything else—or nothing—be F.  The only true biconditional in the vicinity is this one:  necessarily, F*a* iff *t* exists *and t is an element of a*. An attempt to use this biconditional to show that violations of HD for properties begets violations of HD for individuals would look like this:

Suppose, contrary to HD for properties, that it is necessary that if Fx, then Gx (for two distinct properties). Then by trope theory, it is necessary that *t* exists and is an element of x only if *t'* exists and is an element of x (where *t* and *t'* are the distinct tropes involved in making a thing F and G).

That result does not go against the letter of HD for individuals, but it may seem to go against its spirit. Why should it be necessary that if my pocket contains a certain quarter, it must also contain a certain nickel, if the quarter and the nickel are distinct?

My reply to this argument is similar to my reply in the Kim case: there is no place for tropes in Humean ontology. Campbell tropes are *abstract particulars*—bits of redness, say, that are *just red*, not having any shape or weight or temperature (Campbell 1981, 126). Their only job is to make bundles containing them red; it falls to other tropes to make them round or heavy or hot. But in Hume's philosophy, nothing is abstract in that way—that is the main point of T 1.1.7, "Of Abstract Ideas." So although there may be schemes in which a connection can be forged between Hume's Dictum for individuals and Hume's Dictum for properties (taken to be tropes), Hume's scheme is not one of them.

*Third reason: the argument from conceivability works as well for properties as for individuals.*[79] The main argument I have attributed to Hume in support of Hume's Dictum runs thus:[80]


Argument 1

If x and y are distinct individuals, then it is conceivable that x exists and y does not.

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[79] I thank Noah Gordon for pressing me on this point.

[80] More accurately, this is the argument that a reformed Humean should give in light of my criticisms of Hume in section 3.

If it is conceivable that x exists and y does not, then it is possible that x exists and y does not.

Therefore, if x and y are distinct, it is possible that x exists and y does not.

Can't we just as well argue as follows?

Argument 2

If F and G are distinct properties, it is conceivable that something is F but not G.

If it is conceivable that something is F but not G, it is possible that something is F but not G.

Therefore, if F and G are distinct properties, it is possible that something is F but not G.

No, we cannot. Hume would accept the second premise of either argument (as an instance of an

improved Conceivability Principle), but not the first premise of Argument 2. In the main text I

have offered the following passage to make this clear:

> Mathematicians pretend they give an exact definition of a right line, when they say, it is the shortest way betwixt points. But . . . I observe, that this is more properly the discovery of one of the properties of a right line, than a just definition of it. . . . In common life 'tis establish'd as a maxim, that the streightest way is always the shortest; which wou'd be as absurd as to say, the shortest way is always the shortest, if our idea of a right line was not different from that of the shortest way betwixt two points. (T 1.2.4.26).

There you have it almost as explicitly as one could like. The properties of being straight and

being the shortest between any two points are distinct properties. It is a maxim, necessarily true,

that whatever has either of these properties has the other. The conceivability of a thing and the

inconceivability of something's opposite are our guides to possibility and necessity. Therefore,

neither the first premise nor the conclusion in Argument 2 is true.

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