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Hume's Dictum and the Asymmetry of Counterfactual Dependence

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13.1 Introduction

Hume's Dictum (HD) says, roughly and typically, that there are no metaphysically necessary connections between distinct, intrinsically typed, entities.¹ HD plays an influential role in contemporary debate, but why believe it?² Here I consider an IBE-based motivation along lines proposed by Schaffer (2005), who suggests that the best account of counterfactuals (CFs) requires the truth of HD (causal), according to which there are no metaphysically necessary causal (or other diachronically nomic) connections: [O]ne can formulate a direct argument for contingentism. For the best account of counterfactuals requires miracles (slight variations of the actual laws) in order to implement their antecedents. That is, to implement the antecedent that there are like charges at a given location (assuming this to be actually false), we need to imagine some miraculous swerving of say, two electrons, that brings them to said location. (216)

Talk of 'miracles' here is short for talk of goings-on at worlds with laws somewhat different from ours; on the usual (but not required) understanding, no laws are

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¹ The restriction to intrinsically typed, or characterized, entities reflects its typically being granted, even by proponents of HD, that extrinsically or relationally characterized entities might stand in necessary connections (e.g. the existence of a planet necessitates the existence of a sun, and so on). More precise formulations of HD also need to reflect, among other things, the distinction between *de re* and *de dicto* (broadly: particular vs. general) applications of HD, and the operative notion of 'distinctness', different strengths of which (as requiring, or not, 'whole distinctness') eventuate in different strengths of HD.

² Elsewhere I argue that HD is not justified as either analytic or synthetic *a priori*—justified by intuitions we have no good reason to question (see Wilson, 2010), or as required to provide a principled (combinatorial) generator of the space of metaphysical modality (see Wilson forthcoming).

violated at any world.³ More precisely, Schaffer suggests that counterfactual truth requires contingentism if the actual laws are deterministic:

Assuming that the actual laws are deterministic [...] such a miraculous swerving [of electrons] will require a slight violation of the actual laws. Hence the laws of the nearest possible world in which there are like charges here must be just slightly different from the actual laws. Thus to implement the counterfactual antecedent, one needs worlds with actual properties but alien laws. This is contingentism. (2005: 216)

The account of CFs Schaffer has in mind is along lines of Lewis (1973 and 1979), and is primarily motivated by the assumed temporal asymmetry of counterfactual dependence—*CF asymmetry*, for short—whereby future, but not past, states counterfactually depend on present states.⁴

My assessment of Schaffer's IBE proceeds as follows. I start (§2) by presenting the account of CFs at issue, and identifying three claims upon which Schaffer's argument depends: (1) the best account of CFs is a similarity-based account; (2) there are non-artificial contexts in which the similarity-based evaluation of an appropriate range of CFs involves appeal to a 'COSMic' account (a 'Miracle-based' account of Comparative Overall Similarity); and (3) a similarity-based account of CFs, filled in with a COSMic account, requires the truth of HD (causal).

My targets here are (2) and (3). The main motivations for (2) are, first, that some relevant non-artificial circumstances of CF evaluation presuppose CF asymmetry, and second, that accounts of CFs failing to preserve CF asymmetry are epistemologically problematic, since under conditions of determinism, the variations in initial micro-conditions needed to implement CF antecedents would result in so much divergence from the actual that evaluation of CFs would be impracticable. Against the first motivation, I argue (§3) that no relevant non-artificial contexts presuppose CF asymmetry; against the second, I observe (§4) that micro-variation in the counterfactual past is compatible, in principle, with significant similarity as regards macroscopic states of affairs—enough to allow CFs to be appropriately evaluated. I then argue (§5) that (3) may also be resisted, on grounds that 'miraculous' implementations of antecedents are best seen as grounded in metaphysically impossible rather than metaphysically possible worlds, compatible with a similarity-based account of CFs. I conclude that attention to which account of CFs is correct provides no independent motivation for accepting HD (causal), and may even support its rejection.

³ Talk of 'needing to imagine' the comparatively miraculous events is also rough speaking (though see the discussion in §5).

⁴ Note that this sort of motivation for contingentism, if successful, would undermine any of the three forms of necessitarianism that Schaffer identifies: modal necessitarianism, according to which the actual laws are the laws of all possible worlds; nomic necessitarianism, according to which properties are governed by the same laws in all worlds in which they are instantiated; and causal necessitarianism, according to which properties have the same causal roles in all worlds in which they are instantiated. Since HD (causal) is our ultimate concern, by 'necessitarianism' in what follows I will more specifically have in mind either nomic or causal necessitarianism. See A. Wilson (2013) for defence of specifically modal necessitarianism against a number of Schaffer's objections.

13.2 Schaffer's IBE

13.2.1 Lewis's 'COSMic' Account of Counterfactuals

CFs are subjunctive conditionals that may have false antecedents. Where P and Q express the occurrence of certain goings-on, the associated CFs are schematically along lines of:

If it were (had been) that P, it would be (would have been) that Q.

For short, I'll write 'P > Q' (read: 'P would Q').

The approach to CFs Schaffer favors is a similarity-based possible-worlds account (see Stalnaker, 1968; Lewis, 1973). Roughly (sufficient for present purposes), and granting truth in cases of vacuity, such an account runs as follows:

P > Q iff (i) there are no P-worlds, or (ii) some P & Q world is comparatively more similar overall ('closer') to the actual world than any P&~Q world.

What does comparative overall similarity (COS) come to? An adequate account of COS should allow for possible worlds to be ordered (perhaps allowing for ties), and presumably ensure that the actual world is more similar overall to itself than to any other possible world. But these constraints leave a lot open. The specific approach to COS that Schaffer has in mind is along lines discussed in Lewis (1973: 75–7) and developed in Lewis (1979).

Lewis's 1979 account is primarily motivated by CF asymmetry (according to which, recall, future but not past states counterfactually depend on present states):

The way the future is depends counterfactually on the way the present is. If the present were different, the future would be different; ... Not so in reverse. Seldom, if ever, can we find a clearly true counterfactual about how the past would be different if the present were somehow different. (455)

He offers the following four-fold weighting of respects of similarity as constituting an account of COS satisfying CF asymmetry (472):

- (1) It is of the first importance to avoid big, widespread, diverse violations of law.
- (2) It is of the second importance to maximize spatiotemporal region of perfect match of particular fact.
- (3) It is of the third importance to avoid even small, localized, simple violations of law.
- (4) It is of little or no importance to secure approximate similarity of particular fact.

To see how Lewis's four-fold account of COS is supposed to satisfy CF asymmetry, it is worth considering how the account accommodates, under the assumption (held fixed in what follows) that the actual laws are deterministic, the following CF:

If Nixon had pressed the button, there would have been a nuclear holocaust.

Call this *the Nixon CF*. Fine (1975) observed that the need to accommodate the intuitive truth of the Nixon CF poses a problem for any similarity-based account of CFs relying on a bare notion of 'overall similarity', since one might intuitively and reasonably think that worlds where Nixon presses the button and nothing happens would be more similar, overall, than worlds where a nuclear holocaust ensues:

The counterfactual 'If Nixon had pressed the button there would have been a nuclear holocaust' is true or can be imagined to be so. Now suppose that there never will be a nuclear holocaust. Then that counterfactual is, on Lewis's analysis, very likely false. For given any world in which antecedent and consequent are both true it will be easy to imagine a closer world in which the antecedent is true and the consequent false. For we need only imagine a change that prevents the holocaust but that does not require such a great divergence from reality. (452)

Lewis responded by identifying the aforementioned weighted respects of similarity, as capable of making sense of the intuitive truth of the Nixon CF, compatible with CF asymmetry. The story goes as follows.

First, what is the past like in the closest P-worlds (worlds where the antecedent is satisfied, so that Nixon presses the button)? If we hold fixed the actual, deterministic laws, then the closest P-worlds will be ones where the initial conditions differ from those of the actual world, such that the laws in combination with these initial conditions eventuate in Nixon's pushing the button; in such worlds, every state prior to the time of the antecedent differs from those of the actual world, making for considerable dissimilarity. If we don't hold fixed the laws, however, we can avoid all this dissimilarity, gaining exact spatiotemporal match of CF and actual past (prior to the transition period), at the cost of only a small violation of law (resulting, say, in a few neurons in Nixon's brain firing differently).

Second, what is the future like in the closest P-worlds? One might wonder whether the closest P-worlds would be ones where exact spatiotemporal match of CF and actual futures is preserved in virtue of one or more miracles 'undoing' the button-pushing. But no, according to Lewis; for undoing all the traces of the button-pushing takes a multitude of miracles, adding up to a big, widespread, violation of law. Worlds where the laws differ greatly from the actual laws are, Lewis plausibly maintains, less similar than worlds where there is a difference—even a large difference, as would be the case had a nuclear holocaust ensued upon Nixon's pushing the button—in spatiotemporal matters of fact. Since it's more important to avoid such large-scale violations than to gain exact spatiotemporal match, the closest P-worlds are holocaust worlds, after all.

Lewis's account of COS accommodates the truth of the Nixon CF while satisfying CF asymmetry (again, modulo the transition period needed to smoothly implement the antecedent). Generalizing, Lewis supposes that a similar line of reasoning will satisfy the latter constraint in all but a few 'non-standard' contexts. Call an account of COS that aims to preserve CF asymmetry along Lewisian lines a 'COSMic' account (a Miracle-based account of Comparative Overall Similarity).

13.2.2 Schaffer's IBE and its Operative Conditions

We are now in position to specify and assess Schaffer's suggestion that the best account of CFs (that is, Lewis's) supports HD (causal). Schaffer's IBE depends on three claims:

- (1) The best account of CFs is a similarity-based account.
- (2) For at least one relevant non-artificial context, the similarity-based evaluation of CFs best appeals to a COSMic account.
- (3) A similarity-based account of CFs, filled in with a COSMic account, requires the truth of HD (causal).

Though claim (1) might be questioned, here I propose to grant it—at least given that (1) is understood in appropriately general terms. So understood, similarity-based accounts of CFs are hegemonic; in particular, the main competitors to a possible-worlds similarity-based account are also similarity-based accounts, in taking the proper evaluation of CFs to require attention to goings-on in (some range of) relevantly similar (to the actual world) worlds satisfying the antecedent. This is true of accounts allowing that CFs with impossible antecedents may be non-vacuously true, such that the worlds at issue may be impossible as well as possible (Nolan, 1997; Kment, 2006; Brogaard and Salerno, forthcoming), and is also true of accounts which are variations on the 'strict conditional' approach (Lowe, 1995; von Fintel, 2001; Gillies, 2007).⁵ That said, prior to §5 I will follow Schaffer in assuming that the operative similarity-based account is one that, following Lewis, more specifically appeals to possible worlds.⁶

My primary targets will be (2) and (3). As precursor to the next two sections: why accept (2)? Schaffer takes the main advantage of a COSMic account to be that it allows implementation of the CF antecedent without complete backtracking:

The necessitarian ... may attempt to implement the counterfactual antecedent without miracles, by tinkering with the *initial conditions* instead, in such a way as that the actual laws will evolve into the antecedent. But this introduces complete 'backtracking,' yielding

⁵ Fine's (2012) 'exact semantics' account of CFs is motivated by certain concerns with possible worlds accounts, and more generally is presented as an alternative to any similarity-based account; however, there is reason to think that Fine's approach, if it is to be extensionally adequate, must rely on some notion of similarity (see Embry forthcoming).

⁶ One might wonder why I characterize (1) in general terms, rather than in terms of a *possible worlds* similarity-based account of the sort Schaffer more specifically endorses. My reasons are broadly dialectical. The coming objections to (2) attach to a possible-worlds similarity-based account, and aim to undermine reasons given for thinking that some relevant non-artificial contexts of CF evaluation presuppose 'miraculous' implementation of antecedents; the coming objection to (3) mainly proceeds by noting that, even if there are some such contexts, there are independently motivated similarity-based accounts, countenancing impossible as well as possible worlds, on which the inference from miraculous implementations to HD (causal) doesn't go through (I also provide reason for thinking that such implementations should not be interpreted realistically). I might have alternatively presented (1) as specifically adverting to possible worlds, then argued that the claim that such an account is best can be called into question (again, for reasons independent of the debate over HD), but this presentation highlights the key inference.

implausible counterfactual dependencies of the initial conditions on the present charges. (2005: 216)

Thus Schaffer follows Lewis in thinking that, at least standardly, the ground of truth of CFs presupposes CF asymmetry. The assessment of (2) thus hinges on whether the reasons for accepting CF asymmetry, which in turn are supposed to motivate a COSMIC account, are any good.

As terminological set-up, let a *forward-facing CF* be one where the consequent of the CF is in the future relative to the time of occurrence of the antecedent event (in the *antecedent future*, for short), and let a *backward-facing CF* be one where the consequent of the CF is in the past relative to the time of occurrence of the antecedent event (in the *antecedent past*, for short). A *backtracking CF* is a forward- or backward-facing CF whose truth requires that CF asymmetry be violated, either implicitly (as with the necessitarian's account of forward-facing CFs, under the assumption of determinism) or explicitly (as with any backward-facing CF).

Now, Lewis cites two primary motivations for thinking that an account of CFs should preserve CF asymmetry: first is that ordinary reasoning about CFs presupposes CF asymmetry, and second is that backtracking CFs are typically false or indeterminate. Lewis also cites certain indirect motivations for such preservation, associated with CF asymmetry's explaining the asymmetries of causation and of openness. I don't think these motivations are compelling,⁷ but in any case Schaffer doesn't mention them, and I won't focus on them here.

13.3 Reasoning and CF Asymmetry

13.3.1 Does Ordinary Reasoning Presuppose CF Asymmetry?

In support of the first motivation above, Lewis (1979) says:

[I]n reasoning from a counterfactual supposition about any time, we ordinarily assume that facts about earlier times are counterfactually independent of the supposition and so may freely be used as auxiliary premises. (456)

Often, indeed, we seem to reason in a way that takes it for granted that the past is counterfactually independent of the present ... (455)

Lewis cites, by way of example, a case in which we know that Jack, having fought with Jim yesterday, is presently angry with Jim. Under such circumstances, how would we reason about the following forward-facing CF?

If Jim were to ask Jack for help today, he would say no.

Call this *the Jim/Jack CF*. By default, Lewis plausibly observes, we would surely take the Jim/Jack CF to be true; for given that the fight occurred, Jack isn't presently

⁷ In particular, Lewis's analysis of the asymmetry of CF dependence in terms of the asymmetry of traces faces difficulties (see Elga, 2001).

inclined to help Jim. It would be strange, for example, to reason that the Jim/Jack CF is false, on grounds that if Jim were to ask Jack for help, then they wouldn't have had a fight, so Jack would be inclined to help Jim, after all. So, Lewis claims, ordinary reasoning about the Jim/Jack case presupposes CF asymmetry, and the same is true more generally.

But ordinary reasoning about forward-facing CFs doesn't presuppose CF asymmetry. To start, for all Lewis's attention to the Jim/Jack case shows, such reasoning assumes only that *some* aspects of the antecedent past are held fixed—e.g. the fight, in the Jim/Jack case. This leaves open that in ordinary reasoning about CFs, other aspects of the antecedent past are *not* held fixed. Indeed, this is very plausibly the case, for if you ask an ordinary reasoner how a CF antecedent would be implemented, they will, I claim, attempt to tell a story maximizing plausibility, probability, and/or comprehensibility. So, for example, such a person might reason as follows:

If Jim were to ask Jack for help today notwithstanding their having fought yesterday, Jim would have earlier gotten into some fairly serious trouble; he would have weighed his options, decided to swallow his pride and ask Jack for help, etc.

So, I claim, in the Jim/Jack case ordinary reasoning does not presuppose that 'facts about earlier times are counterfactually independent of the supposition and so may freely be used as auxiliary premises counterfactual independence of antecedent past', and the same is true more generally. Ordinary reasoning about CFs is more subtle than that. Of course, how exactly considerations about reasoning bear on what account of (the truth of) CFs is correct is itself a subtle matter, but in any case closer attention to such reasoning indicates that it does not presuppose CF asymmetry—more specifically, does not presuppose CF asymmetry in the strong sense that Lewis appears to have in mind.

Might ordinary reasoning presuppose CF asymmetry in a more moderate, but still principled, sense? As Ted Sider suggested, the presupposition of CF asymmetry need not require that *all* past events be held fixed; it would suffice that ordinary reasoning about CFs presuppose that *some* past events are held fixed while not presupposing that *any* future events are held fixed. But Sider's suggestion doesn't re-establish the needed asymmetry, for ordinary reasoning about CFs surely presupposes that *some* future events are held fixed. In the Jim/Jack case, for example, an ordinary reasoner will deny that, if Jim were to ask Jack for help today, Jim would instantly dry up and blow away, the government in China would fail, or whatever. Ordinary reasoning about CFs standardly presupposes both that *some* past and *some* future events are held fixed, leaving unmotivated even this comparatively moderate reading of CF asymmetry.

As a final gambit along these lines, one might suggest that ordinary reasoning about CFs at least manifests more of a tendency to hold past events than future events fixed (thanks to Alastair Wilson here). Whether this is so is an empirical question, but in any case it's unclear why such a weak tendency would provide principled reason to take accommodation of CF asymmetry to be a crucial constraint on an account of

CFs—as opposed, for example, to reflecting some broadly pragmatic fact about the CFs we tend to be interested in. That said, there remain concerns, to be addressed in the next section, that too much backtracking would render the evaluation of CFs practically (epistemically) impossible. At present, we are simply considering the claim that CF asymmetry is motivated as presupposed in ordinary reasoning about CFs, and I have been arguing that this claim is false: if the sense of CF asymmetry is strong or moderate, along lines of Lewis's or Sider's suggestions, then ordinary reasoning does not presuppose it; if the sense of CF asymmetry is weak, along lines of Wilson's suggestion, then even if ordinary reasoning does presuppose it, there's no clear reason to see satisfaction of such a weak distinction as marking a principled constraint.

Additional evidence that CF asymmetry (of the comparatively strong variety associated with a COSMic account) is not presupposed in ordinary reasoning about CFs is reflected in counterintuitive results associated with effectively any explicit implementation of a COSMic account. As Hiddleston (2001: 62) observes:

It is true that often enough when we say, 'If A had been, then C would have been' for actually false A, we do not much worry about how A would or could have come about. But it is never acceptable for serious purposes to say 'If A had been, then the actual necessitating causes of not-A would all still have occurred but there would have been a miracle, so ...'

What Hiddleston says is true, at least, of CFs with lawful antecedents. And reasoning about CFs with unlawful antecedents—'If I had miraculously disappeared, the car wouldn't have hit me'—is besides the point of independently motivating HD (causal). It can't be that easy to establish that there are no necessary (broadly nomological) connections between distinct existences!⁸

To be sure, there is a further question here of what alternative systematic account is to be given of (the truth of) CFs. One sort of account, that might be favored by (nomic or causal) necessitarians, would appeal to an account of COS taking it to be of the first importance, for purposes of determining which worlds are closest, to preserve exact match in the actual laws. (A necessitarian or other opponent of HD need not endorse such an account of COS, nor indeed any similarity-based account of CFs; but it is worth considering such a strategy.) In that case, and again assuming that the actual laws are deterministic, worlds implementing the antecedent of, for example, the Nixon or Jim/Jack CFs would have antecedent pasts that were, in point of detail, entirely different from the actual past. (The qualifier 'in point of detail' will be relevant later, in §4.1.) Sider claimed that a variation of Hiddleston's complaint might be leveled against such an account:

It is true that often enough when we say, 'If A had been, then C would have been' for actually false A, we do not much worry about how A would or could have come about. But it is never acceptable for serious purposes to say 'If A had been, then the entire past history of the world would have been different, so ...'

⁸ Supposing we do want to render such CFs true, then we are well on our way to acknowledging that the implementation of CF antecedents does not presuppose or require any realistic ground (i.e. one independent of broadly stipulative assumptions); see §5.

But the two complaints are not on a par. In an ordinary context in which the laws are explicitly taken to be deterministic, it surely *would* be acceptable for serious purposes to say ‘If A had been, then the entire past history of the world would have been different, so ...’. After all, that’s just what one would expect, if the actual laws are deterministic. By way of contrast, in such a context it again *would not* be acceptable for serious purposes to say ‘If A had been, then ... there would have been a small miracle’. Nor would it be any better to say ‘If A had been, then the laws would have been slightly different, so ...’. Or so it seems to me.⁹

But suppose a proponent of a COSMIC account simply insists that, under the assumption of determinism, the claim ‘if things had been different then this would have been due to a miracle rather than a different past history’ would be true. Is there anything to legislate between these competing judgments?

Perhaps the most relevant consideration reflects how scientific reasoning about CFs proceeds—most relevant, since after all scientists are in the business of identifying and working with the laws, and as such ordinary contexts in which the assumption of determinism is explicit are broadly scientific contexts.¹⁰ In such contexts, we can be confident that scientists will not understand implementation of a given antecedent as involving a miracle. But nor will they appeal to a difference in the laws as needed for such implementation. Rather, what is considered counterfactually possible for an entity or system is encoded in the relevant state space, which in turn is associated with a single set of laws, with a state’s being possible, relative to the specified laws, just in case there is some trajectory in the space, proceeding from some initial conditions, containing the state at issue. Conversely, in the absence of such a trajectory, the state will not be deemed possible—strong indication that in the scientific contexts where the assumption of determinism was operative, lawful implementation of CF antecedents is presupposed.

Another broadly scientific consideration (suggested by Alastair Wilson) also legislates against a COSMIC account. Our world is presumably a close CF alternative from the perspective of some nearby worlds. So, for example, from the point of view of some world *w* where Nixon pressed the button, our world tracks how things would have gone if Nixon hadn’t done so. Now, if our world’s status as a close CF alternative to *w* conforms to a COSMIC account, then this status reflects that our laws are just like the laws of *w*, with the exception of a few anomalies. The need for our laws to incorporate anomalies relative to the laws of *w* might be accommodated in two ways: first, if our world were somewhat anomalous; second, if our laws were equivalent to laws resulting from reconciling the laws of *w* with the supposition of certain anomalies. Conversely, and given that our world is likely a close CF alternative from the perspective of many worlds, evidence that our laws were compatible, directly or indirectly, with the many small ‘miracles’ needed to implement a variety of

⁹ See also A. Wilson (2013: 15), who registers a similar asymmetry as operative under the assumption of determinism.

¹⁰ As Alastair Wilson pointed out, the assumption of determinism is rarely, if ever, the default in ordinary non-scientific reasoning.

CF antecedents would be evidence for a COSMIC account. But we are lacking either sort of evidence: it seems safe to say that scientists do not claim that the laws of our world are subject to numerous small anomalies, nor do they claim that our laws are equivalent to those resulting from multiple other systems of laws when combined with the specific anomalies needed to implement a given CF antecedent. Absence of evidence is some evidence of absence; here, the evidence seems to suggest that the closest worlds relevant to CF evaluation are not, after all, 'miracle' worlds. This, in turn, gives us some principled reason to maintain that, unlike the salient alternative to a COSMIC account mentioned, ordinary 'in the know' reasoners (i.e. scientists) would find explicit implementations of a COSMIC account unacceptable.

The previous considerations indicate that Lewis's claim that ordinary reasoning presupposes CF asymmetry is incorrect, even for 'best case' scenarios involving forward-facing CFs. Moreover, much ordinary CF reasoning concerns backwards-facing CFs:

If the pilot were to have pressed the button, he would have previously been given different orders.

If I were hungry right now, I would not have eaten earlier today.

Pretty clearly, ordinary reasoning about backward-facing CFs does not presuppose CF asymmetry. I say 'pretty clearly' since one might find CFs of the sort just highlighted a bit forced, and perhaps to be more naturally expressed as follows:

If the pilot were to have pressed the button, it would have been because he was earlier given different orders.

If I were hungry right now, it would be because I hadn't eaten earlier today.

I agree that these expressions of the claims sound more natural, but I don't see that this undermines the general point. The claims are still CFs, and after rephrasing it remains that the consequent event is supposed to have happened prior to the antecedent event. That the natural expression of backwards-facing CFs might involve some shifts in tense or aspect is only to be expected; it remains that the claims are meaningful and might well be true. Again, in the next section I'll respond to the concern that backwards-facing CFs, and more generally CFs whose antecedent implementations fail to preserve CF asymmetry, typically cannot be properly evaluated. At present I maintain, *pace* Lewis (and Schaffer) that it is clear enough both that there is ordinary reasoning about backward-facing CFs, and that this reasoning does not presuppose CF asymmetry.

Summing up: the main purported virtue of a COSMIC account is that it is needed to accommodate the standard presupposition of CF asymmetry in ordinary reasoning about CFs. But CF asymmetry (in particular, of either the comparatively strong or moderate variety that would support its being imposed as a principled constraint on an account of CFs) isn't standardly presupposed in such reasoning, for either forward-facing or backwards-facing CFs. So ordinary reasoning doesn't support a COSMIC account.

13.3.2 *Does Non-Ordinary Reasoning Support CF Asymmetry?*

Though CF asymmetry is not presupposed in ordinary reasoning, still, one might think, Schaffer's IBE to the truth of HD (causal) doesn't require anything this strong: so long as there is at least one context where the (truth of) the CFs at issue is best explained by appeal to a COSMIC account, that would be enough to support the truth of HD (causal). Somewhat more judiciously, what might be thought sufficient to support HD (causal) is one such context that is both *relevant* (in involving causal or other nomological goings-on) and *non-artificial* (in not explicitly presupposing that a COSMIC account is operative).¹¹

Schaffer (personal communication) offers two such contexts (again under the assumption that the actual laws are deterministic) where CF asymmetry might be thought to be presupposed.

First, he suggests, are contexts in which 'we want to judge false claims like "had I raised my hand in Caspar Hare's talk, the initial conditions of the cosmos would have been different"' (call this *the Caspar CF*). My initial response is to observe that intuitions supporting the falsity of the Caspar CF might be explained away as reflecting a failure to properly taken on board the assumption of determinism (which again is rarely, if ever, at issue in ordinary CF reasoning). Once we properly take on board the assumption of deterministic laws, then a context in which we want to judge the Caspar CF false would seem to be one assuming either that such actions are transcendently (i.e. non-nomologically) free,¹² or else that a COSMIC account is correct.¹³ Neither source provides independent reason for thinking that CF reasoning about nomological goings-on is best seen as presupposing a COSMIC account.

Second, Schaffer suggests that we often take counterfactual dependencies to be at least indicative of (if not constitutive of) causal relations, and so we often want to deny claims like 'if the bottle had not shattered, then Suzy would not have thrown the rock' (call this *the Suzy CF*). But, I respond, since the denial of CF asymmetry is compatible with holding some aspects of the past fixed (e.g. Suzy's throwing), that there are contexts where the Suzy CF is false doesn't itself motivate a COSMIC account. Indeed, the falsity of the Suzy CF would plausibly advert either to past-changing facts (e.g. placement of bubble wrap), or goings-on occurring after Suzy's throw (e.g. moving of bottle). Certainly it is unclear that there is any nomologically relevant context where the falsity of the Suzy CF is understood to obtain in virtue of the fact that Suzy accurately throws a rock at the unprotected bottle, but a miracle prevents the shattering.

¹¹ I impose this condition in order to prevent my opponents from begging the question against me; there are subtleties here, concerning in particular whether rules of assessment may enter into presuppositional contexts, over which I am glossing.

¹² The sort of freedom at issue here would involve a kind of parallelism, whereby free actions occur outside of the nomological net. I offer the supposition of transcendental freedom as one possible explanation of the intuition of falsity of the Caspar CF; whether the supposition makes sense is up for grabs.

¹³ One could also accommodate the falsity of the CF by endorsing an anti-realist or stipulative account of the ground of implementation of counterfactual antecedents; see §5.

13.4 Are Backtracking CFs either False or Indeterminate?

Let's turn now to Lewis's second-stated motivation for supposing that the truth of CFs requires CF asymmetry, according to which, in the absence of this supposition, CFs turn out to be either false or indeterminate:

[A] counterfactual about how the past would be different if the present were somehow different ... unless clearly false, normally is not clear one way or the other. (1979: 455)

Today I am typing words on a page. Suppose today were different. Suppose I were typing different words. Then plainly tomorrow would be different also; for instance, different words would appear on the page. Would yesterday also be different? If so, how? ... I do not think there is anything you can say about how yesterday would be that will seem clearly and uncontroversially true. (1979: 455)

That backtracking CFs (recall: either forward- or backward-facing CFs whose truth requires that CF asymmetry be violated) typically seem false or indeterminate isn't obviously correct. Consider: 'If I were typing different words today, I would not have been in a fatal accident yesterday'. Why, then, have Lewis and others thought that backtracking CFs are bound to be, or bound to seem to be, either false or indeterminate? Two broadly epistemological concerns are salient.

13.4.1 *The Concern from Initial Conditions*

First, Lewis claims that too much backtracking 'would make counterfactuals useless; we know far too little to figure out which of them are true under a resolution of vagueness that validates very much backtracking' (1979: 469). Similarly, Bennett says:

We *must* excuse ourselves from unlimited backtracking if we are to have good grounds for believing any counterfactuals. [This holds] if our world is governed by fairly deterministic laws, for then almost any antecedent will imply an earlier difference which will imply a still earlier one which ... and so on back for a million years, say, and then forward along other branches of the downward-spreading causal tree. Of course we cannot *do* this, but that is my point: because we cannot do it, we adopt standards which don't require us to do it. (1974: 391)

One thing to notice about this line of thought is that it presupposes that if one rejects a COSMIC account, one is therefore obliged to accept an account of COS according to which exact similarity in respect of the laws is paramount in determining the similarity metric among worlds. Again, this presupposition can be rejected, since these are not the only options so far as accounts of CFs or COS is concerned. But since the alternatives here differ as regards HD (causal), let's consider whether epistemological considerations of the sort noted support a 'past-preserving' (hence law-breaking) over a 'law-preserving' (hence past-changing) account of COS.

On a law-preserving approach, the closest P-worlds are those with different initial conditions, which evolve forward to realize the non-actual antecedent event. Now,

if the laws are deterministic, then every state of the world entails every other; so to deterministically implement a CF antecedent, antecedent and actual pasts cannot share any world-states. But does the fact of such difference pose an epistemological problem? Lewis and Bennett suppose so: such differences, they imply, will be so great that someone reasoning about a given CF will be unable to evaluate what would happen in the antecedent future of such a world.

But Lewis and Bennett are wrong about this, for *even if different initial conditions induce completely different world-states in the antecedent past, this is compatible with antecedent and actual pasts being very (or at least relevantly) similar*. The suggestion here is that the variation from the actual past needed to implement the antecedent can be ‘contained’, such that corresponding world-states could be very similar—indeed, perhaps even exactly alike—in one or other of two important respects. Put another way: there are two important dimensions of similarity that might be retained between actual and antecedent world pasts, compatible with the strictures imposed by the deterministic assumption.

First, the changes needed to implement the antecedent might be spatiotemporally contained, such that, outside of the area containing the antecedent event, goings-on are similar or even exactly the same as those that actually occur. Consider, for example, the Nixon CF, given determinism and a law-preserving account of COS. Implementing the antecedent, as Lewis points out, requires only that a few of Nixon’s neurons fire differently than they actually do (did). Why couldn’t initial conditions at the closest P-worlds be such that the differences between the actual and antecedent pasts are comparatively minor, mainly showing up in the relatively local vicinity of Nixon’s head on the fateful day in question?¹⁴

Second, the changes needed to implement the antecedent might be largely contained to micro-phenomena. It is commonly assumed, after all, that macro-states are multiply realizable by microstates: macro-similarity can go with micro-difference. Hence even though implementing a given antecedent will require micro-level differences—differences which, on the assumption of determinism, stretch all the way back to initial conditions—the mere fact of such micro-level differences doesn’t itself entail that there are widespread *macro*-level differences, of the sort that would render CF evaluation impracticable.

In the background of my suggestion is the fact that macro-phenomena of the sort typically relevant to CF evaluation are compatible with a vast range of microstates—think of macro-statistical mechanical phenomena—that would preserve similarity at the macro-level. But it is *macro*-level goings-on that, at least typically, enter into

¹⁴ I say ‘relatively local’ since given propagation of influence propagates at c , under determinism it will be impossible to *completely* contain traces (e.g. facts about the particle constituents of the firing neurons) to a given spatiotemporal region; similarly (as a referee observed) under conditions of quantum nonlocality or deterministic chaos. Spatiotemporal containment can be broadly implemented if non-local microscopic differences are small, but whether this could happen depends on complex features of the dynamics; hence the present strategy is less of a safe bet than the strategy I will next consider.

ordinary reasoning about CFs.¹⁵ As such, no reason has yet been given to think that on a law-preserving account of COS, ordinary reasoners would be unable to evaluate CFs.

Again, consider the Nixon CF, given determinism and a law-preserving account of COS. Implementing the antecedent requires only (or in any case mainly) that a few of Nixon's neurons fire differently than they actually do (did). Why couldn't initial conditions be such that, notwithstanding that most or all macrostates were preserved throughout history, the differences in microstates eventuated in Nixon's neurons firing just so differently as to result in his pushing the button?

One might wonder whether it is really plausible that counterfactual antecedents can be deterministically implemented compatible with broad similarity of world-states. My expert, Adam Elga, says (personal communication):

I think the answer is: no one really knows, it's just too hard a dynamical question. But I also think by the standards that usually govern such things, you'd be within your rights to say that such solutions exist. People often assume that realistic deterministic dynamics would permit that sort of variation. Let someone else try to show why it couldn't happen!¹⁶

These considerations serve to respond to the concern that rejection of unlimited backtracking, hence endorsement of an account of COS to some extent preserving CF asymmetry, is required 'if we are to have good grounds for believing any counterfactuals'. For all that Lewis and Bennett have said, law-preserving accounts of COS are no worse off, epistemologically speaking, than past-preserving accounts, for CFs involving antecedent macroscopic states of affairs differing not too much from the actual. Indeed, since we typically are not in position to have detailed information about the micro-realizers, nothing we could have knowledge of differentiates miracle-containing alternatives from micro-difference-macro-similarity alternatives. So the COSmic account and the micro-difference-macro-similarity accounts are exactly on a par, epistemologically speaking.

Yet more can be said. Many intelligible and plausibly true CFs involve antecedent macroscopic states of affairs that differ greatly from the actual, as in the following:

If the brakes in every car had failed this morning, many people would have been injured.

Call this *the worldwide brake failure CF*. By assumption, there is a great deal of macro-difference in the antecedent state of affairs at issue in this CF. But here again, there is no special difficulty for the proponent of a law-preserving account of COS. To start, all parties need to be able to accommodate the intuitive truth of counterfactuals whose antecedents involve states of affairs that drastically differ from the actual—the epistemological challenge here is not generated by the law-preserver's account of COS. Moreover, the proponent of a law-preserving account of COS is *better* situated than the proponent of a past-preserving account, when it comes to counterfactual evaluation of such CFs, in two ways.

¹⁵ This is true for special scientists, as well as non-scientific ordinary reasoners.

¹⁶ Others of my experts (e.g. Torun Menon) concur.

First, the proponent of a COSMic or other past-preserving account cannot satisfy the demands of their own similarity weightings without undermining the supposed motivation for these weightings—namely, to accommodate the truth of CFs in line with CF asymmetry. For example, there is no way to implement the antecedent of the world-wide brake failure CF, while maintaining CF asymmetry, without invoking a massive, widespread violation of law. But avoiding such widespread violation of law is of the first importance on a COSMic account! As such, and given that preservation of exact match of spatiotemporal matters of fact is only of the second importance, it appears that the proponent of a COSMic account must allow that implementations of CFs with antecedents departing greatly from the actual do *not* conform to CF asymmetry, contrary to the supposed primary motivation for the account. (I suppose that it is not an option for the proponent of a COSMic account to deny that such CFs are among those deserving of appropriate treatment.)

Second, past-preservers (and more generally, those who suppose that the operative account of COS conforms to HD (causal)) will be hard-pressed—in particular, more hard-pressed than law-preservers—to evaluate CFs whose antecedents involve states of affairs differing greatly from the actual in a widespread, distributed way. There is no particular problem here for law-preservers, who may simply apply the actual laws to the conditions specified in the CF antecedent in order to determine whether the conditions specified in the CF consequent will ensue. For past-preservers, however, no such straightforward epistemology is available.

To see this, we may start by recalling how proponents of HD (causal) treat laws of nature, so as to make sense of their supposed contingency. Hume's strategy for doing this, of course, was to take laws to be constituted by spatiotemporal regularities—a strategy that faces well-known difficulties in handling one-off or probabilistic causal connections. Lewis's sophisticated update of Hume's strategy rather takes laws to be constituted by the best systematization—maximizing, in particular, strength and simplicity—of the spatiotemporal distribution of events. For Humeans old and new, however, what laws there are at a world heavily depends on the spatiotemporal facts at that world. Quite independent of considerations of CF asymmetry, then, it is no surprise—given that similarity of laws clearly plays *some* role in CF deliberation about nomological goings-on—that Lewis highly prioritizes exact match of spatiotemporal matters of fact in his account of COS.

Now, that laws, on Lewis's account, depend on the distribution of spatiotemporal matters of fact gives rise to a threat of circularity: in order to determine whether the consequent of a given CF holds in a given antecedent world, one needs to know which laws to apply to the antecedent situation. If these laws are the laws holding in the CF world, as one might naturally suppose, then one must—again, assuming the usual neo-Humean strategy underlying a COSMic account—first figure out how things stand as regards the distribution of spatiotemporal matters of fact at the CF world. But among these matters of fact is that pertaining to whether or not the consequent

states of affairs hold. The past-preserving evaluator is thus caught in a seemingly vicious epistemological circle.¹⁷

Lewis's response to the circularity concern involves maintaining that in CF evaluation one appeals to the actual laws rather than the counterfactual laws. Perhaps such a strategy is defensible on the assumption that the CF laws are relevantly similar to the actual laws. But in cases where a CF antecedent involves widespread differences in spatiotemporal matter of fact, and given the operative neo-Humean account of laws, such an assumption is unwarranted. For such cases, the threat of circularity remains, and more generally, it is unclear just how the proponent of a COSMIC account should proceed in evaluating the CF—again, in unfavorable contrast with the law-preserver, who *is* warranted in applying the actual laws to drastically differing antecedent situations.

What about ordinary scientific contexts—e.g. the physics lab—where CFs concerning micro-phenomena are at issue? Might the need to be able to evaluate such CFs in such contexts motivate a past-preserving over a law-preserving account of COS? No, for two reasons. First, in such contexts, epistemological difficulties (associated with variation in initial micro-conditions, in particular) are only to be expected. Second, so long as the evaluator of a given CF concerning micro-phenomena is in possession of the relevant laws, there is no reason to think that such CFs couldn't be evaluated, at least in principle; but as previously, it is only the law-preserver who is in position to warrantably assume that the relevant laws are the actual laws, even in cases (as there might well be) in which the antecedent micro-phenomenal states of affairs involve widespread distributed departure from the actual.

Summing up: Lewis and Bennett are incorrect to claim that those endorsing a law-preserving account of COS will, under conditions of determinism, be unable to evaluate any CFs. Since micro-variation is compatible with macro-similarity, the law-preserver can evaluate CFs whose antecedents involve macro-goings-on differing only slightly from the actual. Moreover, unlike neo-Humean past-preservers, whose commitment to HD (causal) is linked with accounts of laws determined by spatiotemporal matters of fact, law-preservers are also epistemically situated to evaluate CFs whose antecedents involve both macro- and micro-goings-on differing greatly from the actual. If anything, then, epistemological considerations support rejecting a COSMIC or other past-preserving account of COS in favor of one on which exact similarity of laws is of the first importance, compatible with the denial of HD (causal).

¹⁷ To be sure, something like this difficulty crops up for the Humean as regards knowledge of the actual laws, in that we don't presently have access to future spatiotemporal goings-on. But the situation is worse for the past-preserving evaluator, for since the relevant matters of fact are counterfactual, the evaluator can't just wait and see what happens, nor can they (given the live possibility of nomological difference) extrapolate from their experience of instances of the actual laws. Rather, they must rely on laws, and moreover on the counterfactual laws, in order to determine whether consequent states of affairs hold.

13.4.2 *The Concern from Underspecification*

Consider the following backwards-facing CF:

If the pilot were to have pressed the button, it would have been because he was earlier given different orders.

Call this *the pilot CF*. Couldn't any number of equally viable histories have led to the button's not being pushed—some involving different orders, some not? If so, then it would be natural to see the pilot CF as either indeterminate or false.

To start, note that there is no concern here that doesn't also attach, at least typically, to forward-facing CFs. Consider:

If I were to drop the sugar cube in water, it would dissolve.

One might also argue that this CF is false or indeterminate, for reasons similar to those supposed to be at issue in the pilot CF:

There are any number of circumstances in which I might drop the sugar cube in water. In some of these, the cube dissolves; but in others, it doesn't (e.g. because the disposition is masked somehow).

Indeed, Hájek (in progress) takes such considerations to indicate that most CFs are false:

'If I were to let go of the cup, it would fall. And if it were to fall and hit the floor, it would break.' Well, no, and no—it might not, and it might not. If I were to let go of the cup, a sudden gust of wind might lift it higher; and if it were to fall and hit the floor, another gust of wind might slow down its fall sufficiently to spare it a damaging impact. Quantum mechanics is just a handy, coverall way for me to secure the truth of a huge raft of undermining 'might' counterfactuals in one fell swoop. But other anomalous happenings could do the job just as well on a case by case basis. (10)

My own view is that Hájek is unduly pessimistic. It seems to me plausible, in particular, that strategies for accommodating the determinate truth of disposition ascriptions, by appeal to typical or context-relative background conditions, will also work for backwards-facing CFs: typically, or in certain contexts, pilots do what they're ordered to do.¹⁸

In any case, if there's no problem in evaluating forward-facing CFs against such background conditions, why is there any problem in evaluating backward-facing CFs against such conditions? And if there is a problem in both cases, then Schaffer's IBE from CFs to the truth of HD (causal) won't get off the ground.

Summing up the previous sections: relevant non-artificial contexts of CF deliberation do not presuppose CF asymmetry in either its strong or weak varieties, and epistemological considerations pose no insuperable problem for (e.g. law-preserving) accounts failing to preserve such asymmetry—indeed, accounts preserving CF

¹⁸ See Ichikawa (forthcoming) for discussion of some such strategies.

asymmetry à la COSMIC account appear to face serious difficulties as regards the evaluation of CFs whose antecedents involve macro- or micro-phenomena differing greatly from the actual. Hence Schaffer is wrong to say that

to implement the antecedent that there are like charges at a given location (assuming this to be actually false), we need to imagine some miraculous swerving of, say, two electrons, that brings them to said location. (2005: 216)

CF reasoning doesn't in fact presuppose a COSMIC account, it doesn't need to presuppose a COSMIC account, and moreover it shouldn't presuppose a COSMIC account. Claim (2), according to which (for some relevant non-artificial contexts) the similarity-based evaluation of CFs best appeals to a COSMIC account, is false.

13.5 Metaphysically Impossible Antecedents

Schaffer's suggestion that HD (causal) is presupposed by the best account of CFs also depends on claim (3), according to which a similarity-based account of CFs, filled in with a COSMIC account, requires the truth of HD (causal). Suppose that a similarity-based account of CFs is accepted (as per 1), and moreover (bracketing the results of the previous two sections) that the operative account of similarity is understood as per a COSMIC account, for at least some relevant non-artificial contexts (as per 2). Even so, I'll now argue, it does not follow that HD (causal) is true.

Schaffer's discussion presupposes that assumptions about how CF antecedents are implemented, on a similarity-based account of CFs, must or should be understood as tracking genuine metaphysical possibilities. Only if this supposition is true does acceptance of (1) and (2), and the associated supposition that implementations of CF antecedents are miraculously implemented, entail the truth of HD (causal). To be sure, the supposition makes sense, if a similarity-based account of CFs is understood as involving only possible worlds. The supposition is reasonably denied, however.

To start, conceptions of similarity-based accounts countenancing impossible as well as possible worlds have received increasing attention and motivation of late. So, for example, Nolan (1997) argues that impossible as well as possible worlds are needed in order, on a similarity-based approach, to make sense of reasoning about CFs with metaphysically impossible antecedents—as when, for example, we reason about what follows about rival theories of logic, mathematics, or metaphysics, where the rivals at issue are both incompatible and (it is typically assumed) either necessarily true or necessarily false. Kment (2006) argues that a similarity-based approach does better to appeal to worlds simpliciter as opposed to possible worlds, in order to make room for a reductive analysis of necessity.¹⁹ And Brogaard and Salerno (2013) argue that incorporation of impossible worlds into a similarity-based analysis

¹⁹ Lewis takes his appeal to possible worlds to be compatible with a reductive analysis of modality, when coupled with his modal realism; whether this is in fact the case is controversial (see Wilson, forthcoming) but in any case Kment's point seems correct as directed at alternative, and more commonly accepted, conceptions of possible worlds as collections of properties or propositions.

is needed to explain the invalidity of certain arguments embedding counterpossibles, among other advantages. Supposing that a similarity-based account of CFs may involve impossible as well as possible worlds, however, there is no direct route to the supposition that any world entering into a similarity-based evaluation of a given CF must be possible, rather than impossible. Hence even supposing that evaluation of a given CF presupposes that the antecedent is miraculously implemented, it doesn't immediately follow that the antecedent world is possible, as opposed to impossible.

Moreover, there is reason to suppose that in cases where the implementation of a given CF antecedent occurs by miraculous means, the implementation should not be given a realistic (possibilist as opposed to impossibilist) interpretation. This reason emerges not from considerations of HD (causal), but rather from independent consideration of Kripke's famous remark, directed at descriptivist or counterpart-theoretic conceptions of modal claims, that 'possible worlds are stipulated, not discovered using powerful telescopes':

[T]his depends on the wrong way of looking at what a possible world is. One thinks, in this picture, of a possible world as if it were like a foreign country. One looks upon it as an observer. Maybe Nixon has moved to the other country and maybe he hasn't, but one is given only qualities. One can observe all his qualities, but, of course, one doesn't observe that someone is Nixon. ... intuitively speaking, it seems to me not to be the right way of thinking about the possible worlds. A possible world isn't a distant country that we are coming across, or viewing through a telescope. Generally speaking, another possible world is too far away. Even if we travel faster than light, we won't get to it. A possible world is *given by the descriptive conditions we associate with it*. ... Why can't it be part of the *description* of a possible world that it contains *Nixon* and that in that world *Nixon* didn't win the election? It might be a question, of course, whether such a world is possible. (Here it would seem, *prima facie*, to be clearly possible.) But, once we see that such a situation is possible, then we are given that the man who might have lost the election or did lose the election in this possible world is *Nixon*, because that's part of the description of the world. 'Possible worlds' are *stipulated*, not *discovered* by powerful telescopes. There is no reason why we cannot *stipulate* that, in talking about what would have happened to Nixon in a certain counterfactual situation, we are talking about what would have happened to *him*. (1972: 43–4)

Here Kripke suggests that the topic of a given modal investigation (though not, presumably, the results of this investigation) is broadly stipulative, or up to us. So, for example, in reasoning about what would have been the case had Nixon lost, we do not need to first associate Nixon with some qualitative description, then concern ourselves with whether, at a given counterfactual world, any unlucky fellow meets that description. Rather, we can simply take the counterfactual fact of Nixon's existing and having lost the election for granted as a deliberative starting point. Having thus stipulated what we are talking about, investigation into the non-stipulated facts about the counterfactual facts or metaphysical possibilities for the topic of discussion can then proceed. Hence while in the above passage Kripke is concerned with 'counterfactual situations' as opposed to CFs *per se*, his suggestion is naturally extended to

the antecedents of CFs (cf. Kripke, 1972: 18), with the idea being that deliberation about a given CF proceeds by first stipulating the holding of the CF antecedent.

The more specific bearing of Kripke's suggestion on the status of (3) concerns just what sort of counterfactual situations or antecedents may be stipulated. To start, Kripke indicates that a prerequisite for successful stipulation is that the situation at issue be possible, saying, regarding the situation in which Nixon fails to win, that 'It might be a question, of course, whether such a world is possible'. This might seem to support (3), on the assumption that the stipulation of some CF antecedents presupposes, either tacitly or explicitly, that these are miraculously implemented. But what Kripke means by 'possible' here is nuanced in a way that ultimately undermines (3).

To start, note that, for Kripke, it would not be to the point of considering the possibility of a counterfactual situation where Nixon is defeated to insist that this is not possible on grounds that Nixon is 'world-bound', for one reason or another. Perhaps, if individuals are world-bound, the counterfactual situation at issue is in fact metaphysically impossible. But, on Kripke's suggestion, in counterfactual deliberation concerning Nixon, the means by which the counterfactual situation could or would be implemented doesn't matter. What does matter is that the situation be (in itself) coherent, in the sense of being compatible with the natures of the entities entering into the counterfactual situation. Bracketing that Nixon might well be stuck in the actual world, there is nonetheless a clear enough sense in which Nixon's losing is possible, in the sense that his losing isn't in any tension with (indeed, might even have been invited by) his nature. As such, on Kripke's suggestion a given modal investigation may take as its starting point the posit of a counterfactual situation that is coherent, notwithstanding that it might be metaphysically impossible to bring the counterfactual situation about.

Mutatis mutandis, a similar line of thought undermines (3). In considering whether a given CF antecedent is possible in the relevant sense, one might follow Kripke in reasonably bracketing the question of whether implementation of the CF antecedent would be metaphysically impossible, in that questions of such implementation are simply irrelevant to the modal deliberation: modulo coherence, CF antecedents are stipulated, not discovered. Consider again the case that Schaffer discusses:

Assuming that the actual laws are deterministic ... such a miraculous swerving [of electrons] will require a slight violation of the actual laws. Hence the laws of the nearest possible world in which there are like charges here must be just slightly different from the actual laws. Thus to implement the counterfactual antecedent, one needs worlds with actual properties but alien laws. This is contingentism. (2005: 216)

In considering what would happen were certain electrons to be differently located, one typically does not need to attend to details concerning how such a configuration might come to be implemented. (I'll address the qualification shortly.) As in the case of Nixon's losing, what is important is whether the counterfactual antecedent involves a situation that is (in itself) coherent, as it arguably is: there is nothing

in the natures of electrons—even token actual electrons—that would prevent them traveling in the sort of trajectory at issue in Schaffer’s case. Hence, to continue the analogy with the Nixon case, even if (on a similarity-based account of CFs) the closest world in which the CF antecedent were implemented were one where (due to a presupposition of CF asymmetry) electrons entered into laws different from the actual laws, this wouldn’t show that HD (causal) were true, since after all that implementation might be metaphysically impossible. Hence (3) is false, or at least insufficiently unmotivated.

One might object that in some cases, CF evaluation is sensitive to details about how the CF antecedent is implemented. This seems right, but the proponent of a COSMIC account isn’t in position to make sense of such sensitivity. Recall Hiddleston’s (2001: 62) remarks:

It is true that often enough when we say, ‘If A had been, then C would have been’ for actually false A, we do not much worry about how A would or could have come about. But it is never acceptable for serious purposes to say ‘If A had been, then the actual necessitating causes of not-A would all still have occurred but there would have been a miracle, so . . .’

It’s never acceptable for serious purposes to appeal to miraculous (or differently law-governed) implementations of CF antecedents in reasoning about the truth of a CF. Supposing that the implementation of a given CF antecedent does appropriately enter into reasoning about the CF, we have left the vicinity of any context in which miraculous implementations are appropriately posited. It would appear, then, that in cases where implementation of the antecedent of a CF pertaining to actual nomological goings-on requires a departure from the operative laws, there is good reason to deny that the implementation of the CFs in question should be realistically interpreted, as grounded in possible, as opposed to impossible, worlds.

13.6 Concluding Remarks

Schaffer suggested that HD, as applied to the case of causal or nomological connections, is motivated by an IBE to the truth of Lewis’s account of CFs—that is, to the truth of a similarity-based account of CFs filled in with a COSMIC account (a ‘miracle’-based account of comparative overall similarity). The primary motivation for a COSMIC account is the supposed need to accommodate CF asymmetry, as presupposed by or required for reasoning about CFs; but, I have argued, no relevant non-artificial contexts presuppose CF asymmetry, and indeed, explicit implementations of a COSMIC account would be rejected by ordinary (including scientific) reasoners. Law-preserving accounts of COS, of the sort that those denying HD (causal) might endorse, do not face the latter difficulty; nor do they face any insuperable epistemological difficulties, thanks partly to the fact that micro-variation is compatible with macro-similarity, and partly to the fact that law-preservers have resources past-preservers do not, for purposes of evaluating CFs whose antecedents express macro- or micro states of affairs differing in a large and distributive way

from the actual. Finally, similarity-based accounts of CFs appealing to impossible as well as possible worlds are independently motivated; and provide a basis (along with Kripke's and Hiddleston's observations) for denying that miraculous implementation of antecedents supports the truth of HD (causal). I conclude that no indirect justification for HD (causal), nor for HD more generally, attends to considerations of which account of CFs is best.

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