

History vs laws, ability and dispositions

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1 Another problem for Lewis's theory

Morgenbesser's coin:

- (1) I ask if you want to bet on a coin flip: heads, you win. You decline the bet. I flip and the coin lands heads. I say:
 - a. If you had bet, you would have won.

This has a prominent true reading. So it looks like *we hold fixed some propositions after the antecedent time*; in general, those that are *causally independent* of the antecedent.

This looks like a decisive problem for a reductive analysis of causation via counterfactuals, undermining a big part of Lewis's program.

Of course, you could still think that the small-miracle picture is right, with a suitable addendum. But it gets harder to see the motivation.

2 History changes

Dorr (2016) sets up the puzzle this way:

- *Past*: Necessarily, there is a true history-proposition p such that p would still have been true if x had blinked at t .
- *Laws*: Necessarily, whenever p is a true law of nature, p would still have been true if x had blinked at t .
- *Closure*: Necessarily, whenever p is metaphysically necessitated by a set of propositions each of which would have been true if x had blinked at t , p would have been true if x had blinked at t .

Assuming x is lacking godlike powers etc.

This lead to the unfortunate conclusion that:

- *Triviality*: Necessarily, if determinism is true, each true proposition would still have been true if x had blinked at t .

Closure and the negation of *Triviality* seem beyond doubt.

Dorr argues against *Past*. He notes that *Past* is based on a genuine insight; it explains why sentences like these sound true:

- (2) If John had forgotten to have breakfast this morning, that would have been the first time that he did so in months.
- (3) If I had been honest during the interview, my colleagues would know that I was fired by my previous employer.
- (4) If we convinced a million more people to download this video, we would set a new record.

This could be accommodated by maintaining only that we hold fixed past *macro-facts*. But can we, consistent with holding fixed our laws?

there is no guarantee whatever that [a world where the actual laws are true and where Nixon presses the button] can be chosen so that the differences diminish and eventually become negligible in the more and more remote past. Indeed, it is hard to imagine how two deterministic worlds anything like ours could possibly remain just a little bit different for very long. There are altogether too many opportunities for little differences to give rise to bigger differences. Lewis

Our best deterministic physical theories have continuous dynamics, which means that so long as the past is not infinite, we can always find a nomically possible world which stays arbitrarily close to the actual world throughout any finite initial segment of history, just by choosing an initial state that is close enough to that of the actual world. . . . Could getting t into the particular region of the state space it needs to occupy for Nixon to press the button require a trajectory that diverges substantially from actuality long before t , so that many ordinary sentences about history before t get different truth values? In principle the answer could be yes, but it is extremely unlikely. The key to seeing why is the fact emphasised by Lewis, that little differences characteristically blow up quickly into much bigger differences. . . . the macropresent screens off the macrofuture from the macropast. . . . in the probability distribution that we get by restricting the natural volume measure to a particular macrostate, facts about future macrostates are, approximately, probabilistically independent of facts about past macrostates. Dorr

Worries:

- (5) If a big comet had hit Washington, D.C. yesterday afternoon, the U.S.A. would have been left without a President.
- (6) If we had aimed the electron microscope a tenth of a degree further to the left, the image of that gold atom would have appeared in the centre of the screen.

And what about backwards causation? We simply have to deny that counterfactual dependence = causation.

2.1 Against denying *Laws*

Frank is a physicist devoted to discovering a mistake.

- (7) If we had given Frank a glass of water, his whole career would have been devoted to a mistake.

Actually I'm not sure I see the force of this; there is a false *de dicto* reading of this, even on the laws view.

Suppose that Frank greatly values not having devoted his career to a mistake. If regret is constrained by beliefs about counterfactuals. . . then

Important caveat: 'we might regard the question whether the laws or the initial conditions are counterfactually robust as contingent, holding that the laws are robust at possible worlds where the initial conditions are much more complex than the laws, while the initial conditions are robust at worlds where the laws are much more complex than the initial conditions. This is in fact the option I would favour, assuming that there are any possible worlds of the latter sort.'

if Frank comes to believe that his career would have been devoted to a mistake if he had not acted in a certain way, he will be unable to rationally, unequivocally regret acting in that way (assuming nothing else of comparable importance is at stake). In that case, coming to believe [\neg Laws] will give Frank a sovereign remedy against regret! Whenever he does anything, no matter how foolish, he can immediately afterwards look back and think, 'If I hadn't done that thing, my whole career would have been devoted to a mistake!'. If he really believes this, and no other comparably weighty values are in play, he should be, all things considered, glad that he did the foolish thing. ... [Likewise] the action with the highest counterfactual expected utility for Frank will simply be whichever action he is most confident he will in fact perform.

Same response available here?

2.2 The corollary to ability

Dorr observes that essentially the same situation arises in other parts of the literature, in particular about freedom:

- *Past*: Necessarily, there is a true history-proposition p such that p would still have been true if x had done any of the things x can do at t .
- *Laws*: Necessarily, if p is a true law of nature, p would still have been true if x had done any of the things x can do at t .
- *Closure*: Necessarily, if p is metaphysically necessitated by a set of propositions each of which would still have been true if x had done any of the things x can do at t , p would still have been true if x had done any of the things x can do at t .

This together entail:

- *Triviality*: Necessarily, if determinism is true, every true proposition p is such that p would still have been true if x had done any of the things x can do at t .

Dorr notes that it's a weird situation if you accept the conclusion of this argument while denying the conclusion of the corresponding argument about counterfactuals. This seems true *whatever you say about ability*, since the reasons to reject premises in the first argument seem to apply here as well; especially if we reject *Past*.

2.3 It depends on context

Holguín and Teitel: deny the existence of a standard context.

One natural way to understand the question of whether q would have been the case had p been the case is as a question about what sort of possible pasts would have made p most plausible, give or take our knowledge of the actual facts. This way of understanding the question tends to induce backtracking readings. But there are other, less past-centric ways to understand the question of whether q would have been the case had p been the case. A neglected fact is that this can sometimes be understood as a question about what sorts of laws would have made p most plausible, give or take our knowledge of the actual facts.

- (8) a. Had Jesus performed most of the feats attributed to him in the Bible, he would have had to have had magical powers.
 b. Had Jesus performed most of the feats attributed to him in the Bible, it would have been because of a series of extremely improbable but nonetheless nomically possible fluke events.
- (9) a. Were Michelson and Morley to have measured a significant difference in the speed of light traveling in the direction of the presumed luminiferous aether versus light traveling orthogonal to that direction, it would have been because there really was a luminiferous aether.
 b. Were Michelson and Morley to have measured a significant difference in the speed of light traveling in the direction of the presumed luminiferous aether versus light traveling orthogonal to that direction, it would have been because they made an experimental error somewhere.
- (10) If a pitcher were to throw a baseball at $0.9c$, it would cause a massive nuclear explosion.
- (11) If upon entering this room Nancy had pointed a wand at Frank and proclaimed 'Now is the perfect time to reveal to you that I'm a witch with magical powers—*abracadabra!*', at which point Frank had gone flying about the room in accordance with the motion of Nancy's wand, then Frank's whole career would have been devoted to a mistake.

'even when we're interested in offering physically realistic answers to what-if questions, we treat possibilities in which small, isolated violations of the laws of physics (that is, miracles) get the ball going to $0.9c$ as more relevant to the assessment of the counterfactual than possibilities in which the ball accelerates to $0.9c$ by nomically respectable means'

3 Masks, dispositions, and abilities

Are abilities some kind of disposition? There are two ways to view this claim, vis-à-vis the conditional analysis:

- as a competitor, motivated by the counterexamples to the CA
- as a theory of *general*, as opposed to specific, ability

Some background (following Vihvelin 2004): a simple conditional analysis of *dispositions* was once viewed as tenable:

- *Simple conditional analysis of dispositions*: O has the disposition at time t to X iff, if conditions C obtained at time t, O would X.

Masks:

1. if acted upon in any way, a wizard would prevent this brittle glass vase from breaking; still, the vase is fragile
2. if dropped, a wizard would change this steel vase to brittle glass so that it would shatter; still, the vase is not fragile

FWIW, these examples don't work as well for me if we replace 'fragile' with 'disposed to break if dropped'

These look familiar from counterexamples to the CA like Lehrer's.

A sorcerer has a peculiar interest in J, who has the ability to speak French. He resolves to make sure that J never succeeds in speaking French. He does nothing at all to change any of J's intrinsic properties. He only watches and waits, resolved that if ever J chooses or tries to speak French he will quickly cast a spell that changes J, removing his ability to speak French before J succeeds in uttering a word of French.

Vihvelin

Claim: J is still able to speak French. Is this judgment clear? Are you able to break the vase in (1) and (2)?

Vihvelin: fix up the CA along the lines of Lewis's fix to the simple analysis of dispositions:

- *O has the disposition at time t to X iff, for some intrinsic property B that O has at t, for some time t' after t, if condition C were to obtain at time t and O retained property B until t', C and O's having of B would jointly be an O-complete cause of O's X'ing.*
- *S has the ability at time t to do X iff, for some intrinsic property or set of properties that S has at t, for some time t' after t, if S chose (decided, intended, or tried) at t to do X, and S were to retain B until t', S's choosing (deciding, intending, or trying) to do X and S's having of B would jointly be an S-complete cause of S's doing X.*

This seems a bit liberal. Do I have the ability or disposition to live to a thousand? No; but if I have all my current intrinsic properties in a thousand years, I will, presumably still be alive.

What does time have to do with it? What if the wizard is immortal?

Finally, I think crossed-wire abilities are still fatal for this analysis.

Still, you might think that *whatever* we say about masked dispositions, we can say something similar about masked abilities. Hardly anyone thinks the existence of masks refutes *some kind* of modal analysis of dispositions, and the point is that similar moves will be available for the theorist of ability to defend a modal analysis of ability.

Fara (2008)'s point

Likewise, no one thinks determinism is inconsistent with having non-trivial dispositions, and hence no one should think it is inconsistent with having non-trivial abilities.

4 Vetter against dispositionalism

Vetter argues against two kinds of dispositionalism about ability, though I think her arguments are perhaps just about any conditional analysis of ability, not necessarily about dispositional ones in particular.

4.1 Dispositions to do what one intends to do

A dispositional version of the CA:

abilities are those dispositions that are under our control in a certain sense: they are dispositions whose exercise is a matter of our choice.

An agent has the ability to A in circumstances C if and only if she has the disposition to A when, in circumstances C, she tries to A.

Vetter's objections:

- *abilities can be exercised without tryings*:
 - sub-intentional actions: shufflings, scratchings, etc.
 - components of complex actions
- *some abilities are never exercised with tryings*: the ability to absent-mindedly fiddle with jewelry, to breath normally, to do this particular complex motion in the course of navigating my bike across the street; creative inspiration, to move with effortless grace

These seem like objections to any form of conditional analysis.

What about thin kinds of tryings/intendings, on which 'every action of A'ing is guaranteed to come with an attempt or intention', either an intention to A, or a related intention?

None of these views will help with the [second class of problems]. For while the authors that I have cited claim that whenever an agent acts, she is also trying or intending, none of them would claim the converse: that there can be no trying or intending without the action in question. Such a claim would be obviously false: any view of intention or trying must leave room for failure. But it is such failure that characterizes [those] cases.

I.e., someone may have the ability to sing effortlessly, but, the thought goes, if they try to do so, they fail. But I think this response has to say that the *only* tryings that matter are the thin kind, not the intentional kind that leads to failure. But then, Vetter says,

we have weakened the notion of trying so much as to make it useless in a dispositional account of abilities... An entirely deaf person lacks the ability to hear, but there is something that he can do to place himself in circumstances conducive to hearing: namely, undergoing an operation. Likewise, someone who lacks the ability to swim can place herself

in circumstances conducive to her swimming: she can take swimming lessons; and so forth. I do not have an ability to jump 3 m high, but there is something I can do that is conducive to my jumping 3 m high: I just need to get on a trampoline. In general, being disposed to do something upon trying to do it, in Fara's weakened sense of 'try', is not sufficient for having an ability. At best, it is sufficient for possibly having an ability.

Aren't there true readings of all these? (cf. Lewis's Finnish speaker)

Nor is it clear that Fara even provides necessary conditions for having an ability. Is our romantic poet disposed to write a poem when she tries? No: Fara has identified one way of trying that might trigger her writing a poem, but there are still plenty of other, more direct, ways of trying that would fail to trigger her writing a poem.

What about existential quantification of the kind we suggest?

4.2 Dispositions to succeed in doing what one does

My first reaction was that there was a typo. Doesn't doing A entail that you succeeded in doing A? I think the thought is that that is only true of some 'success terms' (raise your arm, hit the bullseye, etc.), but not of, e.g., singing an aria.

If you sing an aria badly, we may say it's *not a success*, or not successful in some sense. I think that's what the proponents have in mind here.

Vetter: whatever we say about that, there are some action types that *are* success terms, like raising your arm; we don't want to say that everything trivially has the ability to raise its arm.

Relatedly: even, say, singing an aria is such that, if you're generally able to do it *badly*, you're able to sing arias. You don't have to be a successful opera singer to be an opera singer. . .

Though I would still want to say that you succeeded in singing an aria, but this may be terminological.

4.3 Two-way powers

There are alternative proposals in the literature, with different modal structures for abilities and different ways of filling in the content. Some say that abilities differ from (other) dispositions by being particularly multi-track: if you have an ability to do A, then you will also have abilities to do A in various ways, and to do a number of things similar to A. Some say that abilities differ from (all) dispositions by being two-way: if you have an ability to do A, then you also have an ability not to do it, or at least to do it differently. . . according to Maier (2015), to have an ability to A is to have the option of A'ing in a sufficient proportion of possible worlds. . . [These views] promise a less limiting view of abilities, in that they do not require a modal tie between the ability's exercise and something else, where that something else, as we have seen above, may well be lacking in some abilities or trivially present in others.

References

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