

Counterfactuals

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Aerial view

- Background: some counterfactuals, some pre-history
- Stalnaker's analysis of counterfactuals
- Lewis's analysis of counterfactuals
- Objections
- Several other accounts, and objections

Counterfactuals: a little history and background

Counterfactuals are typically sentences with the subjunctive form 'if it were the case that A , then it would be the case that B ', or 'if it had been the case that A , then it would have been the case that B ', or equivalents. We'll symbolise this: $A \Box \rightarrow B$. A is called the *antecedent*, and B the *consequent*.

The rise in interest in counterfactuals has been comparatively recent in the history of philosophy.

How not to analyse counterfactuals (?)

- Counterfactuals are not material conditionals. Almost all would come out true!
- Counterfactuals are not strict conditionals (supposedly!). Almost all would come out false!

Possible worlds

Ways the world could be... We don't need to take on board Lewis's modal realism.

Stalnaker's analysis of counterfactuals

Stalnaker (1968) assumes that worlds are linearly ordered by nearness to a given world. His account is (roughly):

'if it were the case that A , it would be the case that C ' is true (at w)
iff

C is true at the nearest A -world (to w).

The "the" in his analysis indicates that he is assuming that for any A , there is a *unique* nearest A -world. Lewis (1973) has two main objections:

i) There may be *multiple* nearest A -worlds. 'If Bizet and Verdi were compatriots, then ...' Would they both be Italian, or both be French?

More generally, Stalnaker's analysis appears to founder on cases in which there are ties for *the* nearest A -worlds.

ii) There may be *no* nearest A -worlds.

'If I were taller than 7 ft, then ...' How tall would I be? 7 ft 1 inch? 7 ft ½ inch? 7 ft ¼ inch? ...' We apparently have an infinite sequence of ever-closer 'taller than 7 ft' worlds, with none closest. More generally, Stalnaker's analysis appears to founder on cases in which there are no nearest A -worlds.

At play here is what Lewis calls the *Limit Assumption*: for any A , there is a set of *nearest* A -worlds (to a given base world)—not necessarily with just one member, but certainly with at least one. Lewis rejects the Limit Assumption.

Stalnaker later (1981) offers a semantics in which the selection of the closest A -world is made arbitrarily; it then supervaluates over all such arbitrary selections, so that counterfactuals such as these will come out indeterminate. This brings his account closer to Lewis's, although 'indeterminate' is still not the same verdict as Lewis's 'false' in such cases.

Lewis's analysis of counterfactuals

First distinctive move: 'would' is interdefinable with 'might':

$$\phi \Diamond \rightarrow \psi \text{ iff } \sim(\phi \Box \rightarrow \sim\psi)$$

(Compare possibility and necessity.)

The counterfactual is not the strict conditional (again)

The strict conditional: $\Box(A \supset C)$. All the (accessible) A -worlds are C -worlds.

Main argument: counterfactuals can support *Sobel sequences*. See *Counterfactuals*, p. 10.

But strict conditionals cannot support Sobel sequences. If all the A -worlds are C -worlds, then *a fortiori* all the A & B -worlds are C -worlds, etc.

The counterfactual is a variably strict conditional

$A \Box \rightarrow C$ is true at w iff some A & C world is closer to w than any A & $\sim C$ world, if there are any A -worlds.

Impossible antecedents

For both Stalnaker and Lewis, the counterfactual is vacuously true if the antecedent is impossible—that is, there are no A -worlds.

Lewis has three arguments in support of this:

- “... If that were so, anything you like would be true!”
- “Further, it seems that a counterfactual in which the antecedent logically implies the consequent ought always to be true; and one sort of impossible antecedent, a self-contradictory one, logically implies any consequent.”
- “Moreover, one sometimes asserts counterfactuals by way of *reductio* in philosophy, mathematics, and even logic. These counterfactuals are asserted in argument, and must therefore be thought true; but their antecedents deny what are thought to be philosophical, mathematical, or even logical truths, and must therefore be thought not only false but impossible.” (24)

This yields results that some find unintuitive—for example, ‘if 323 were prime, it would be divisible by 2, 4, and 16’ seems to be *false* (Nolan 2012). Or consider impossible statements about the worlds themselves—for example, ‘if there were exactly 17 possible worlds, then Lewis’s view in *On the Plurality of Worlds* would be entirely correct’ is surely *false*.

There is also an unwelcome result for the relationship between ‘would’ and ‘might’ counterfactuals. Intuitively, ‘would’ implies ‘might’. But as Lewis himself notes, without any sign of discomfort, “when ϕ is not entertainable and $\phi \Box \rightarrow \psi$ is therefore vacuously true, $\phi \Diamond \rightarrow \psi$ is again false” (21 – 22).

Nolan (1997) extends the Stalnaker/Lewis analysis to ‘counterpossible’ conditionals, appealing to *impossible* worlds that may be closer or further from a given world.

True antecedents

Lewis assumes *strong centering*: each world w is more similar to itself than any other world is to it. See *Counterfactuals* pp. 14-15 for an argument for this.

As a result, both ‘would’ counterfactuals and ‘might’ counterfactuals with true antecedents reduce to material conditionals. In particular, when they have a true antecedent and true consequent, they are automatically true; when they have a true antecedent and false consequent, they are automatically false.

This seems a bit odd for the ‘might’ counterfactual. Suppose that the coin was tossed and it landed heads. Then ‘if the coin were tossed, it might have landed tails’ is *false*; but you might think that it’s true. To be sure, there are replies (e.g. the ‘would be possible’ reading of ‘might’).

And what about the ‘would’? Lewis considers one sort of problem case: it would seem extremely odd to pick two completely unrelated truths ϕ and ψ and, on the strength of their truth to assert $\phi \Box \rightarrow \psi$. Lewis replies that cases like this may be odd, but “oddity is not falsity; not everything true is a good thing to say” (28).

Perhaps even worse are cases where there is a relation of *countersupport* between ϕ and ψ . “If Geelong had completely outplayed Hawthorn in the final quarter of the 1989 grand final, they would have won.” I expect you will want to read ‘they’ as referring to Geelong in order to render this counterfactual true. But according to centering, it is true iff we read ‘they’ as referring to Hawthorn... Again, Lewis would presumably say that this is a matter of unassertability rather than of falsehood.

There is also a problem of *implausible unspecificity*. “If you were in the Northern Hemisphere, you would be at 71 degrees 3 minutes west.” #

Counterfactual fallacies

Lewis accounts for why the following are “counterfactual fallacies”:

Fallacy of strengthening the antecedent

$$\phi \square \rightarrow \psi$$

$$\therefore (\phi \& \chi) \square \rightarrow \psi$$

If I were to drop the glass, it would break; therefore, if I were to drop the glass and have it land on a soft bed of feathers, it would break. (?)

Picture: p. 18. (Philosophical heuristic: draw a picture if you can!)

(Obviously, some instances of this pattern are valid—e.g. when $\chi = \phi$.)

This brings us back to Sobel sequences, which involved successive antecedent strengthenings.

Fallacy of transitivity

$$\phi \square \rightarrow \psi$$

$$\psi \square \rightarrow \chi$$

$$\therefore \phi \square \rightarrow \chi$$

If J. Edgar Hoover had been born a Russian, then he would have been a communist.

If J. Edgar Hoover had been a communist, then he would have been a traitor.

Therefore, if J. Edgar Hoover had been born a Russian, then he would have been a traitor. (?)

Picture: p. 34.

Contraposition

$$\phi \square \rightarrow \psi$$

$$\therefore \neg \psi \square \rightarrow \neg \phi$$

If Boris had gone to the party, Olga would (still) have gone.

Therefore, if Olga had not gone to the party, Boris would (still) not have gone.

Picture: p. 34.

These all provide more arguments that the counterfactual is not the strict conditional, for all of these patterns are valid for the strict conditional. And they are arguments in favour of Lewis’s similarity account, which apparently delivers the correct verdicts on these argument forms.

Here’s a couple of *valid* argument forms—and Lewis’s similarity account adjudicates them as such:

Agglomeration

$$\phi \square \rightarrow \psi$$

$$\phi \square \rightarrow \chi$$

$$\therefore \phi \square \rightarrow (\psi \& \chi)$$

If I were to release this glass, it would fall.

If I were to release this glass, it would break.

Therefore, if I were to drop this glass it would fall and break.

Modus ponens

$$\phi \square \rightarrow \psi$$

$$\phi$$

$$\therefore \psi$$

If I were to release this glass, it would fall.

I release the glass. (Whoops!)

Therefore, it falls.

In praise of similarity accounts: they are elegant and simple, and they deliver our intuitive responses to which arguments are valid and which invalid.

Objections

Worlds

Go back to Stalnaker's account. I did not scratch my finger yesterday; but there is the nearest world at which did; call it w_{17} . Then by Stalnaker's lights, it is true that

if I had scratched my finger yesterday, w_{17} would have been the case.

Wow, the mighty power of my scratching! Worlds are too big, too detailed, and resolve too many chancy processes, and too many indeterminacies.

Lewis is in better shape here. When there are ties for the closest antecedent world, and they don't all agree on the consequent, the counterfactual is false. But there will still be versions of this worry, as we will see.

Similarity

Now we need to look more at the details of the similarity relation. What is similarity? Let's start with an intuitive understanding of it.

Intuitive similarity

Fine's example:

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' 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 but 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. (Fine 1975, 452)

Lewis on similarity

Lewis replies that the similarity relation that is appropriate for counterfactuals is not quite the intuitive one. We can figure out what it is like by reverse engineering from the counterfactuals that we regard as true—e.g. the Nixon one. It's not intuitively obvious. He assumes that the world is deterministic, and he lays down a system of priorities of what matters to similarity that he believes answers Fine's objection. (As far as I'm aware, nothing in Fine's original argument suggests that the world is deterministic, so this assumption of Lewis's may seem odd.) Bottom line: the counterfactual is true on Lewis's analysis.

Lewis has us start with a base world w_0 , "a world that may or may not be ours", but in which the relevant facts regarding Nixon are much as they are in our world. (Actually, it probably isn't ours, since our world is probably indeterministic.) Lewis then considers four worlds that are candidates for being the most similar ones in which Nixon presses the button. In each world, there is at least one thing that notably contributes to similarity, which I'll mark with a '+', and at least one thing that notably detracts from similarity, which I'll mark with a '-'.
 w_1 : the *expected* world. Things unfold much as one would expect, given Nixon's pressing the button. In particular, there is a holocaust.
 w_2 : the *backtracking* world. Its entire history is different, but no laws are violated.
 w_3 : the *intuitively similar* world. The mechanism that triggers the bomb fails.
 w_4 : the *reconvergence* world. All traces of Nixon pressing the button are erased.

	Avoid big miracles	Perfect match of partic. facts	Avoid small miracles	Approx. match of partic. facts
w_1	+	+-	-	+-
w_2	+	--	+	--
w_3	+	+-	--	++
w_4	-	++	--	++

Lewis contends that these worlds are ordered as follows, where ' $_ < _$ ' means ' $_$ is more similar to w_0 than $_$ is'.

$$w_1 < w_2, w_1 < w_3, w_1 < w_4$$

These judgments guide Lewis's ordering of what matters in judgments of similarity of worlds:

“(1) It is of the first importance to avoid big, widespread, diverse violations of law.

(2) It is of the second importance to maximize the spatiotemporal region throughout which perfect match of particular fact prevails.

(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, even in matters that concern us greatly.” (1986, 47-48).

It's curious that Lewis's sole argument for his system of priorities is that it gets the Nixon counterfactual right. You'd expect him to add a further paragraph, along the lines: "... and the lesson of the Nixon counterfactual generalizes, so this is the right priority system in general.”

The trouble is that it is *not*—it gets various other counterfactuals wrong, I believe. The key problem is (2):

- Driving to a party, I miss our exit. “If I had taken the exit, I would have swerved violently at the last nanosecond.”
- "If I had scratched my finger yesterday, I would have done so at midnight."

The trouble in these cases is priority 2, with its extremely strong condition of *maximizing* perfect match. Funnily enough, not even the Nixon counterfactual motivates that. Lewis himself said: “The lesson we learn from comparing w_1 and w_2 is that under the similarity relation we seek, *a lot* of perfect match of particular fact is worth a little miracle.” The “scratch” example casts doubt on the importance of even a lot of perfect match.

There are other uncomfortable results for Lewis. Leuenberger: “If there had been a huge miracle yesterday, things would be exactly the same today as they actually are.”

So much for deterministic cases. What about indeterministic ones?

Indeterminism undermines the truth of counterfactuals, while similarity can ensure it

A chancy coin is hooked up to a Doomsday machine. If the coin is tossed and it lands heads, nothing interesting happens: it's business as usual, status quo. If the coin is tossed and it lands tails, something very interesting happens: the Doomsday machine obliterates the world and surrounding districts, resulting in vast, widespread changes to the status quo. In fact the coin is never tossed. But what would happen if it *were* tossed? Bad answer: it *would* land heads. Bad answer, because the chanciness of the coin should preclude us from giving this verdict. The chanciness of the coin to be incompatible with the truth of ‘Toss $\square \rightarrow$ Heads’, I contend. Nevertheless, if approximate match of history counts for anything, then this comes out true. After all, intuitively the nearest ‘Toss’ worlds are ‘Heads’ worlds—business as usual is more similar to the actual world than Doomsday.

Lewis needs to say that approximate similarity of particular fact had better count for *nothing*. Yet in other ‘Morgenbesser cases’, it counts for something. A coin is about to be tossed, and I bet that it will land heads. It lands tails. I say: “If I had bet on tails, I would have won the bet”. That sounds right. But then approximate similarity of particular fact had better count for *something*. What is it to be?

Indeterminacy undermines the truth of counterfactuals, while similarity can ensure it

Consider the counterfactual ‘if I were at least 7 feet tall, I would be *precisely* 7 feet tall (precise to infinitely many decimal places)’. I hope you agree that this is *false*: it seems absurd to affirm a counterfactual with such an imprecisely specified antecedent, and yet such a precisely specified consequent. Or perhaps you think that it is *indeterminate*, but you still agree with me that it is *not true*.

But Lewis is apparently committed to it being *true*. Recall his argument against Stalnaker. ‘If I were over 7 feet tall, then ...’ Any discrepancy with my actual height is minimized.

Dilemma: Harry Potter's wand, or counterexamples (implausible specificity).

Counterfactual skepticism

Here I will take the liberty of briefly giving my own view, which we may call *counterfactual skepticism*: most counterfactuals are false. Doing so will provide a natural segue to several further views about counterfactuals; indeed some of them are specifically intended to answer counterfactual skepticism.

I have several arguments for this, but here are two of the main ones:

○ *Chancy consequents*

- Stare in the face of chance ... ‘If the chancy coin were tossed, it would land *heads*.’
FALSE
- Now, let the coin be highly biased to heads, but still with some chance of landing tails.
STILL FALSE!
- Science tells us that we live in a chancy world. Lotteries, in a broad sense, abound—even macroscopic ones that we take to be deterministic. There’s a tiny chance that the cup would be lifted by a sudden updraft, or vaporise, or quantum tunnel to China.
- A counterfactual cannot second-guess the resolution of a chance process. In a slogan, *chanciness undermines wouldiness*:

$$A \Box \rightarrow ch(-C) > 0 \quad \vdash \quad \neg(A \Box \rightarrow C)$$

○ *Unspecific antecedents*

- Even if our world is deterministic, it is still false that
if the cup were released it would fall.
- The antecedent is unspecific: the cup is released *somehow or other*. It does not specify the exact initial conditions of the cup’s release. This macrostate is compatible with many microstates that deterministically evolve to anomalous microstates—for example, ones that correspond to the cup vaporising instead of falling. Think of Maxwell’s demon in statistical mechanics. The devil is in the details!
- We don’t need high-powered physics to make the point. Counterfactuals that have unspecific antecedents and comparatively specific consequents are false. Consider:
 - If Bizet and Verdi were compatriots, they would have both been *French*. FALSE—unspecific antecedent, specific consequent.
 - If I had a son, he would have an *even* number of hairs on his head at his birth. FALSE—unspecific antecedent, specific consequent.
- I think that most counterfactuals are like these, just less obviously so:
- A counterfactual cannot second-guess the resolution of an unspecific antecedent. In a slogan: *unspecificity undermines wouldiness*.

I turn to various accounts that are thought to answer counterfactual scepticism. A recurring objection of mine is that in ‘lowering the bar’ for truth (according to me!), they violate agglomeration. We can have a sequence of counterfactuals, each of which precariously clears the lowered bar—and so is judged *true* by the account—but the agglomerated counterfactual does not. In particular, we will have cases in which the agglomerated consequent has very low chance, given the antecedent, and so the counterfactual should *not* be judged true.

Quasi-miracles

The view

Lewis: “a quasi-miracle... though it is entirely lawful, nevertheless detracts from similarity... The quasi-miracle would be such a remarkable coincidence that it would be quite unlike the goings-on we take to be typical of our world... the chance outcomes seem to conspire to produce a pattern”.

Problems

- I find the notion of a quasi-miracle problematically unclear, given how much theoretical weight Lewis wants to place on it. He doesn't actually give a definition of 'quasi-miracle' (just a special case, involving the Nixon example).
- "Seems to conspire" is obviously metaphorical. (Soon we'll try to finesse it.)
- It's unclear that appealing to quasi-miracles gets the desired truth values:
 - The cup flying upwards is not a "coincidence", nor does it "seem to conspire to produce a pattern".
- "Remarkable" is not a scientific notion (to the extent that it goes beyond "low chance").
- Penalising 'remarkable' outcomes for similarity may even be anti-scientific ...
- "Remarkable" sounds anthropocentric.
- The problem for agglomeration: 'If I were to release the cup, there would be no remarkable coincidences—*anywhere* in the universe' comes out to be an analytic truth (agglomerating many local counterfactuals). How remarkable!
- Consider a principle somewhat like Cournot's Principle:

Quasicournot's Principle: Any quasi-miraculous event *will not happen*.

Quasicournot's Principle licenses the gambler's fallacy.
The Principle is no better when we make it counterfactual:

Any quasi-miracle *would not happen*.

The reasoning behind the gambler's fallacy is no less fallacious when we go counterfactual.
But the quasi-miracle approach is committed to both.

• **Williams: Typicality**

The view

- Robbie Williams replaces the notion of quasi-miracles with that of *atypicality*. Each possible sequence of fair coin tosses is equally probable, but most sequences are *typical*, while a sufficiently long sequence of heads (say) is *atypical*.
- "Seems to conspire to produce a pattern" sounds like *non-random*.
- "[W]e can identify the required notion of typicality (relative to an assignment of chances) with the mathematical property of a set of outcomes being random."
- Randomness can be given a rigorous and objective characterisation. My concerns about unclarity and anthropocentrism are dispelled—the notion has good scientific credentials.
- *Atypical* (non-random) patterns detract from similarity.

Problems

- Randomness is a property of a *set* of outcomes (indeed, infinite in Williams' discussion), but counterfactuals often involve *single* outcomes.
- The problem for agglomeration: 'If I were to release the cup, there would be no atypical outcomes—*anywhere* in the universe' comes out to be an analytic truth (agglomerating many local counterfactuals, each of which gets resolved in a typical way). Yet it's surely false.
- It violates modus ponens. By typicality, 'If I were to toss the coin 20 times, it would *not* land heads every time'. But suppose I toss the coin 20 times, and in fact it lands heads every time.
- Gambler's fallacy, again.

• **Hawthorne/Stefánsson: Counterfactuals**

The view

1. *Modern Molinism* (Molinism without the commitment to God's knowledge): for any antecedent and consequent, there is a *fact of the matter* regarding how things *would* turn out regarding the consequent, if the antecedent were true.
 2. *Primitivism*: Such facts are modal primitives, not supervening on non-modal facts (at least typically).
- There are a number of *modern Molinists*: early Stalnaker, Hawthorne, Moss, Schulz, and Stefánsson.
- Their view is largely motivated by conditional excluded middle:

Problems

- No support from science?
 - Ontological profligacy: the world is populated with *lots* of primitive facts.
 - Facts about counterfactuals seem to be the *wrong kind* of facts to be ontological primitives. They are not like the instantiation of primitive properties, such as positions or charges of particles. They are not good ontological primitives.
 - They are also not good epistemological primitives. Counterfactuals are mysterious.
 - Counterfactuals and contextualism about counterfactuals are in tension. How do we square contextualism with counterfactuals being part of the *fundamental structure of reality*?...
 - Counterfactuals violate Humean supervenience.
 - The appeal to counterfactuals seems to open the door to another kind of skepticism: we don't know the truth values of most of the counterfactuals that we utter; in particular, we don't know when they're true. I find it more disturbing than mine.
 - (Stefánsson has replies ...)
 - So much for my objections to counterfactuals. But there is a twist. Don't mock counterfactuals! For I bet that you, like nearly everybody, believe that various ordinary counterfactuals are true. But I think that they are just like the implausibly specific counterfactuals—they are just as bad, in the relevant sense.
- **Schulz: 'Arbitrary selection' semantics**
 - Remember that in Lewis's standard semantics, we consider *all* the closest antecedent-worlds.

The view

Schulz: "The basic idea will be to substitute in the standard account the epsilon operator for the universal quantifier. Intuitively, the epsilon-operator arbitrarily selects a world out of the set of relevant antecedent-worlds. A counterfactual will then be true if the consequent is true at the arbitrarily selected antecedent-world."

Problems

- He explains the notion of arbitrary selection, using the epsilon operator, at some length. But I must say I still don't understand how it works.
- Failure of agglomeration. According to this account, I can truly utter
 - 1) 'if I were to release the cup twice, it would fall the first time'
 - 2) 'if I were to release the cup twice, it would fall the second time'; without this utterance being true:
 - C) 'if I were to release the cup twice, it would fall both times'.
 I might get 'lucky', with the arbitrary selection of the antecedent worlds for 1) and 2), but 'unlucky' with the (further) arbitrary selection of the antecedent world for C)!
 - Different utterances of the same counterfactual. Now suppose that you utter the same counterfactual.
 - Or consider a lottery with a million tickets that is never played...
 - Problem of *knowing* counterfactuals.

● **Bennett: 'Near miss' proposal**The view

$A \square \rightarrow C$ is true iff a high enough proportion of the closest A -worlds are C -worlds.

Problems

- Violations of modus ponens. Bennett adds a clause to take care of that problem.
- A worry about the proportion if there are infinitely many closest A -worlds.
- My remaining objections also beset a different proposal, so I'll treat them together:

● **Leitgeb: high conditional chance**The view

$A \square \rightarrow C$ is true iff $ch(C | A)$ is very high.

Problems

- Modus ponens failure again, unless something is added.
- Arbitrariness of the threshold, and discontinuity there.
- Failure of agglomeration ... (There are subtleties here.)
- Would/might not don't conflict...
- Cournot's Principle is clearly false: sometimes extremely unlikely events happen. I don't like a counterfactual version of it any better!

- For all these reasons, the bar for ‘very high’ has to be set at 1. But then, far from answering my skepticism, this is music to my ears! Most counterfactuals will not clear the bar.
- So we have a dilemma:
 - If we set the bar less than 1, we have failures of various logical principles that are sacrosanct, or at least highly intuitive.
 - If we set the bar at 1, we don’t get an answer to my skepticism; quite the contrary!

- **Karen Lewis (“Elusive Counterfactuals”) Contextualism: similarity and relevance**

The view

“For all contexts c , $P \Box \rightarrow Q$ is true in c iff all the closest P -worlds are Q -worlds, where closeness is a function of both similarity and relevance.”

Problems

- What is ‘similarity’?
 - Not commonsensical.
 - Not David Lewis’s semi-technical ordering.
 - Dilemma: Harry Potter’s wand, or counterexamples (implausible specificity).
- What is ‘relevance’?
 - Karen: “the relevant possibilities are the ones that fulfill the current conversational purpose.”
 - This presupposes that there is a current conversation, that it has a unique purpose, and that there is a unique set of possibilities that fulfill it. We may question these presuppositions.
 - When she offers her explanation of how ‘might’ counterfactuals can induce context shifts, she says “in uttering a might-counterfactual (that involves previously ignored possibilities), the speaker raises the conversational stakes — *she takes* lower probability events to be relevant” (my emphasis). That sounds too subjective to me.
 - It sounds like the more ignorant or unimaginative you are, the easier it is for your counterfactuals to come out true.
 - The lower the standards of your current conversational purpose, the easier it is for your counterfactuals to come out true.
 - Retraction cases are problematic for Karen’s view.
 - You have a feeling of enlightenment—you can’t easily backslide. (‘Tall’ is not like that.)
 - Whether an event has positive chance or not is context-*independent*. I think that low-chance events are always relevant to the truth of counterfactuals. I think that this is always a valid inference:

$$A \Box \rightarrow ch(C) > 0 \quad \vdash \quad A \Diamond \rightarrow C$$
 It is valid whether or not the conversationalists attend to the chanciness of C . *The world* attends to it—objectively!
- What is the ‘function of both similarity and relevance’?
 - She doesn’t tell us, and it would be hard to do so. The Harry Potter horn is better than the counterexamples horn.
 - Hence, it’s harder to provide counterexamples to this account than to the other accounts.