Something about Conditionals

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Introduction

There is a long tradition of treating ‘if’ (or perhaps ‘if…then…’) as a binary connective, expressing a function from ordered pairs of propositions to propositions. The proposition expressed by a particular ‘if’ sentence on a given occasion is the result of applying the function contributed by ‘if’ to two other propositions, the antecedent and the consequent, which are expressed on that occasion by the subordinate clause and the main clause respectively. For example, the proposition expressed by

1. If Jack is in the park now, Jill is in the park now

on an occasion of utterance is the result of applying the function contributed on that occasion by ‘if’ to the propositions contributed on that occasion by ‘Jack is in the park now’ and ‘Jill is in the park now’. The antecedent and consequent needn’t be sentences that would serve as standalone declarative utterances. For example, in

1. If I resigned tomorrow, I would be hired by Google the day after tomorrow

the antecedent, ‘I resigned tomorrow’ would not make sense to assert on its own: nevertheless, it is natural to think of it as contributing a proposition, namely the same one that would be expressed by a standalone utterance of ‘I will resign tomorrow’.[[1]](#footnote-1)

This model is prima facie plausible for many ‘if’-sentences. But there are some ‘if’ sentences for which it is completely hopeless. Consider

1. If a farmer owns llamas, the farmer is rich

What two propositions would be the inputs to the function putatively contributed by ‘if’ on this occasion? Certainly ‘the farmer is rich’ does not contribute the proposition that the one and only farmer is rich, or the proposition that the one and only farmer with such-and-such feature is rich, or a proposition concerning the richness of any particular farmer. If we were determined to force this sentence into the two-proposition model, the best option would be to take the consequent to be the proposition that all the llama-owning farmers are rich, and the antecedent the proposition that there is a llama-owning farmer. But this seems a bit of a stretch; and it is far from obvious what linguistic mechanisms would be responsible for associating those two propositions with the subordinate and main clauses of (1).

The dominant strand in the philosophical literature deals with sentences like (1) by silently ignoring them. But there are other cases which are arguably like (1) but which sometimes have been shoehorned into the two-proposition model, such as (2):

1. If Jack sees Jill next week, he will wave

Here there is a natural candidate to be the antecedent, namely the proposition that Jack will see Jill next week. But what would be the consequent? The proposition that Jack will wave sometime in the future? The proposition that Jack will wave sometime next week? More plausible candidates are the proposition that every time Jack sees Jill next week he will wave at Jill, or the proposition that on at least one occasion next week Jack will see and wave at Jill. But these *ad hoc* reconstructions are not much use to systematic theorising; and it would be a mistake to take it for granted that a systematic theory will conform to the two-proposition model at all.

Another kind of case where the application of the two-proposition model is questionable is where certain kinds of modals occur in the consequent of an ‘if’ sentence.

1. If you steal from your employer, you should only steal a little
2. If he is in the pub, he can’t be at home
3. If he is in the pub, he might be at home

These sentences could perhaps be assimilated within the two-proposition model, although there is pressure to think that the consequent-proposition is something quite different from the proposition that would be naturally be taken to be expressed by a standalone occurrence of the consequent. There is also a tradition in which certain sentences like these are reconstructed in such a way that there is a mismatch between the real and apparent scopes of the modals which on the surface occur in the consequent, so that the content of (4), for example, would be more perspicuously represented by ‘It can’t be that (if he is in the pub, he is at home)’. And some (e.g. Kratzer \*\*\*) reject the application of the two-proposition model to these sentences in more radical ways.[[2]](#footnote-2)

One other kind of problem case for the two-proposition model is exemplified by

1. If Fred had eaten any kind of shellfish, he would have been sick

Some will be comfortable assimilating (8) within the two-proposition model, claiming that its antecedent is the existential proposition that Fred eats some kind of shellfish. But we are not sure this is right: thinking about the difference between the natural reading of (8) and the natural reading of (9),

1. If Fred had eaten any kind of shellfish, he would have eaten lobster

one feels that the subordinate clause in (9) is much more apt than the one in (8) for a mundane existential treatment. (The ‘any’ in (8) strikes us as somewhat reminiscent of the indefinite article in (3), ‘If a farmer owns llamas, he is rich’.) Moreover, the reasons for being cautious in the case of (8) arguably carry over to (10), whose contrast with (11) is similar to that between (8) and (9):

1. If Fred had eaten either lobster, crab, or prawns, he would have been sick.
2. If Fred had eaten either lobster, crab, or prawns, he would have eaten lobster.

We think it is important for an adequate theory of conditionals to account for all these sentences. Nevertheless, in the first three chapters of this book, we will focus entirely on ‘if’ sentences like (1) and (2), where it is especially plausible that the meaning somehow involves two propositions and where there is likely to be little dispute about which propositions they are. We will defend a view on which these sentences express propositions that are evaluable for truth and falsity, and we will attempt to say something systematic about the kind of relation that needs to hold between the antecedent and the consequent for the proposition expressed by the whole conditional to be true. Note that in developing a theory of this sort, we will not need to make any particular assumptions about the syntactic structure of the relevant ‘if’ sentences, or about the semantic contribution of the word ‘if’. It is compatible with our view, for example, that ‘if’ doesn’t have a semantic value at all, so that the semantic value of ‘if Jack is in the park now’ is the same as the semantic value of ‘Jack is in the park now’ (just as, e.g., ‘snow is white’ and ‘that snow is white’ arguably have the same semantic value in ‘I believe that snow is white’), so that the determination of the semantic value of the whole sentence is governed entirely by compositional rules and/or the semantic values of unpronounced constituents.[[3]](#footnote-3) Still less are we making any assumption about the semantic value of ‘then’ in ‘If p, then q’, or committing ourselves to the unlikely hypothesis that ‘if’ and ‘then’ comprise a single scattered semantic unit. All that matters for our positive view is that the contributions of the subordinate and main clauses in (1) and (2) are propositions (or things that in some natural way determine propositions), and the very propositions that the philosophical tradition takes them to be.[[4]](#footnote-4)

Having narrowed our field in this way, we are in a position to state the theory we will be defending in a schematic way, as follows:

1. A conditional with antecedent p and consequent q is true iff either there is no accessible world at which p is true, or the closest accessible world at which p is true is a world at which q is true.

The schema is not original to us: it has been around since the classic works of Stalnaker and Lewis. Our contribution will be in what we have to say by way of fleshing out the key technical terms of art: ‘accessible’, ‘closest’, and ‘world’. Quite obviously, different ways of cashing out this ideology will yield wildly different theories. Suppose for example that we interpret ‘accessible’ in such a way that at any given possible world, that world is the only accessible world. Then the schema will yield the same truth conditions as the material conditional: when the antecedent is false, it is false in all accessible worlds, and so the conditional is vacuously true; when the antecedent is true, the actualised world must be the closest accessible world where the antecedent is true (since it is the only accessible world), and so in that case the conditional is true if and only if the consequent is true. Our preferred take on the relevant ideology, which works very differently from this, will emerge over the course of the next three chapters, which consider ‘accessible’, ‘closest’, and ‘world’ respectively.

Chapter 1: Accessibility

1. The context-sensitivity of conditionals

Even holding fixed which propositions are the antecedent and consequent, there are different propositions that could be expressed by uttering a conditional on different occasions. For one thing, it is well known that the difference between ‘indicative morphology’ and ‘counterfactual morphology’ is semantically significant, as exemplified by Ernest Adams’s famous minimal pair:

1. If Oswald didn’t kill Kennedy, someone else did
2. If Oswald hadn’t killed Kennedy, someone else would have

This difference seems to be driven by something about the pattern of tense markings that appear on the surface within the main and subordinate clauses; however, the way in which these morphological differences actually contribute to meaning is quite controversial. For the moment, we will take a capacity to sort “indicative” from “counterfactual” conditionals for granted, and we will try only to use examples whose classification is uncontroversial.

For another thing, the proposition expressed by a conditional can vary even when the wording remains exactly the same. In the case of counterfactuals (i.e. sentences syntactically like (2)), this variability can be illustrated by an example of Quine’s:

1. If Caesar had fought in Korea, he would have used nuclear weapons
2. If Caesar had fought in Korea, he would have used catapults

Given an appropriate conversational background, it seems that one could speak the truth by uttering each of these sentences, though in no normal background could one speak the truth by uttering their conjunction. Similarly, each of (5) and (6) seems like something one could use to assert a truth, although their conjunction seems absurd:

1. If I had jumped out the window right now, I would have been killed
2. If I had jumped out the window right now, I would have done so only because there was a soft landing laid out for me

In the case of indicatives (i.e. sentences syntactically like (1)), the case for context-sensitivity is more controversial, but still strong. The main observations here are due to Gibbard (\*\*\*\*), although the following case is due to Bennett. The setting is one where there are two channels by which water can flow from an upper reservoir to a lower reservoir; each is closed off by a gate. Speaker A discovers that the east gate is closed and asserts

1. If the water got to the bottom, it got there via the west channel and not the east channel

Speaker B discovers that the west gate is closed and asserts

1. If the water got to the bottom, it got there via the east channel and not the west channel

Intuitively, both speeches seem true; but the conjunction is extremely odd. It is thus very natural to explain the acceptability of (7) and (8) by appeal to context-dependence.

Our view is that all of the differences we have just been talking about are to be explained by differences in what it takes for a world to be “accessible” in the sense relevant to the context. For example, in the context where (3) seems true, accessibility requires match with respect to what kinds of military technology is in use at a given historical period, whereas the context where (4) seems true, accessibility requires match with respect to what kinds of military technology were actually available to particular people.[[5]](#footnote-5) Similarly, in the context where (5) seems true, accessibility requires match with respect to the laws of nature and the (approximate) course of history up until very shortly before the time of utterance, whereas in the context where (6) seems true, the constraints on matching history are much weaker.[[6]](#footnote-6) In the contexts where (7) and (8) seem true, meanwhile, accessibility typically involves something like compatibility with the knowledge of the speaker at the time of utterance, and the contextual variability is primarily due to variation in who is speaking and when.

Notice that according to these suggestions about what plays the role of accessibility in the natural interpretations of (3–8), there is in each case at least one “accessible” world at which the antecedent of the conditional is true, and moreover the fact that there is such a world is something that the speaker is in a position to know. As we are thinking about things, this is characteristic of conditional utterances (both indicative and counterfactual): the intended interpretation almost always sets accessibility in such a way that it can be taken for granted that the conditional is not vacuously true: i.e. it is not the case that both it and the conditional with the same antecedent and the negated consequent are true. Label this phenomenon ‘the presupposition of non-vacuity’. We will defend and explore the claim that this presupposition exists in section \*\*\*, but throughout the discussion we shall be helping ourselves to the idea that this is one of the guiding constraints on the interpretation of conditionals.[[7]](#footnote-7)

— be more explicit that ‘accessibility’ is a property of worlds not a set of worlds

1. The difference between indicatives and counterfactuals

Given our framework, it is clear that the grammatical difference between indicative and counterfactual conditionals goes along with some systematic difference in the resolution of the context-sensitivity of ‘accessibility’. We propose that the key difference lies in a general constraint on indicatives which does not apply to counterfactuals, namely, that for an indicative conditional, *accessibility must entail epistemic possibility*. Roughly, to say that a world is epistemically possible is to say that it is a live candidate for being how things actually are, from the perspective of some contextually relevant individual or group. This explains why we are forced to use counterfactual morphology to get across the plausible thought we naturally would try to get across by uttering (3). Given the presupposition of non-vacuity, this thought involves some accessibility property that is possessed by some worlds where Caesar fought in Korea. It is very hard to get oneself into a mindset where such worlds are treated as “live”. (And it is harder still to get oneself into a mindset where there are “live” worlds in which Caesar was present in Korea and where there is no special sort of deception involved in the transmission of information about his activities.) Similarly, conditionals beginning with ‘If I didn’t exist right now…’ are generally much more intelligible than those beginning with ‘If I don’t exist right now…’: processing the latter requires entering into a most unusual sense of openness to nihilistic metaphysics.[[8]](#footnote-8)

This characterisation of how accessibility works for indicative conditionals is, for us, intimately related to a certain natural account of epistemic modals: ‘It must be that φ’; ‘It might be that Φ’; ‘It is possible that Φ’, etc. In orthodox fashion, we take ‘It must be that Φ’ to be true iff Φ is true at all accessible worlds, and ‘It might be that Φ’/‘It is possible that Φ’ to be true iff Φ is true in some accessible world. What it takes for a world to be accessible is a context sensitive matter: but the “epistemic” character of these modals consists in the fact that accessibility always has to entail epistemic liveness (from the standpoint of the contextually relevant individual or group—in simple cases, typically the speaker or a group containing the speaker). When one uses both epistemic modals and indicative conditionals, the default is for both to be interpreted using the same notion of accessibility. Thus, when this parameter of interpretation is held fixed, the proposition expressed by ‘It must be that Φ or Ψ’ entails the one expressed by the indicative conditional ‘If not Φ, then Ψ’. Also, the propositions expressed by ‘It might be that Φ’ and ‘If Φ, then Ψ’ jointly entail the proposition expressed by ‘It might be that Ψ’.

Given the presupposition of non-vacuity, an utterer of (1) (‘If Oswald didn’t kill Kennedy, someone else did’) is taking for granted that there are accessible worlds in which Oswald didn’t kill Kennedy, which on the liveness-theoretic gloss requires that its is a live epistemic possibility that he did not do so. One might think this a problematic feature of the view: after all, most of us know perfectly well that Oswald did kill Kennedy and yet are happy to utter (1). There are a few different routes one might follow in responding to this objection. On a radical view, the proposition expressed by utterances of (1) by us knowledgeable folk is in fact vacuously true, but when we utter it we take for granted something we know to be false, either out of a kind of pretended epistemic modesty, or else a false belief that we don’t really know who shot Kennedy. Similarly, the radical view will say that while the sentence ‘I might be dreaming’ is natural, utterances of it will express a false proposition that is treated as acceptable either because we are pretending that it is true, or because we falsely believe that it is true (since at the time of utterance we are taken in by the thought that we don’t know whether we are dreaming). On a less error-theoretic view, the presupposition of nonvacuity introduced by (1) is indeed satisfied: in the relevant sense of accessibility, there is an accessible world in which Oswald didn’t kill Kennedy. This could be reconciled with the thesis that accessibility for indicative conditionals requires liveness in a few different ways. One option is to appeal to a contextualism about the verb ‘know’: in the context invoked by (1), ‘We don’t know whether Oswald killed Kennedy’ expresses a truth, although it expresses a falsehood in many other contexts. Another option is to allow our notion of liveness to have a kind of context-sensitivity that does not always march in lock-step with ‘know’: for example, liveness could in some cases be a matter of consistency with some more attenuated body of knowledge, or liveness might be a matter of consistency with a body of propositions of which one has an especially secure kind of knowledge.

**Note to selves: why it’s so much easier to say ‘If P then Q’ than ‘It might be that P’ (for obviously false P). Diagnosis: presupposition -> quiet accommodation.**

Epistemic modals need not always be anchored to the facts about what is live at the time of speech. In a sentence like ‘It was possible that it had rained, since the ground seemed a bit damp’, the operative epistemic perspective is in the past: what we are saying, roughly, is that what the relevant people knew at the relevant past time was consistent with the proposition that it had rained earlier than that time. There is no suggestion that the speaker is ignorant or in any way open at the time of speech to the possibility that it had rained: what matters is just the epistemic standpoint of the salient person or group (or more abstract ‘perspective’) as of the target time.[[9]](#footnote-9) ‘It was possible that it was raining’ and ‘It was possible that it was going to rain’ are similar. ‘Might have’ and ‘could have’ claims also have a reading that works like this: ‘It might have been raining’ can mean ‘It was possible that it was raining’, although it can also mean ‘It is possible that it has been raining’.[[10]](#footnote-10)

Given the intimate relation we posit between epistemic modals and indicative conditionals, we would thus expect that in some cases, the accessibility parameter of an indicative conditional is tied to an earlier epistemic perspective. This does indeed seem to be going on in examples like the following:

1. If Oswald hadn’t killed Kennedy, someone else had
2. If Oswald hadn’t killed Kennedy, someone else would
3. If Oswald didn’t kill Kennedy, someone else was going to succeed in doing so
4. If it wasn’t Oswald killing Kennedy, it was someone else

Just like ‘It was raining’ and ‘Einstein was going to win a Nobel Prize’, these are sentences that could not be felicitously asserted out of the blue: some particular past time has to be salient, and the proposition asserted involves that time somehow or other. (The required salience could be achieved either by earlier discourse or by some nonlinguistic clues.) In the case of (9–12), the most natural reading is one on which one of the roles of this salient past time is that of providing the relevant epistemic perspective. None of these sentences commits the speaker to accepting ‘It *is* possible that Oswald didn’t kill Kennedy’, or to treating this as a live possibility: but they do seem to commit us to a claim about what *was* epistemically possible at the time in question. Note that one natural use for sentences like (9–12) is in indirect speech reports of present-tense speeches made at the relevant time, namely

1. (9′) If Oswald hasn’t killed Kennedy, someone else has
2. (10′) If Oswald hasn’t killed Kennedy, someone else will
3. (11′) If Oswald doesn’t kill Kennedy, someone else is going to succeed in doing so
4. (12′) If it isn’t Oswald killing Kennedy, it is someone else

On our account, the very proposition that would be asserted by (9′–12′) can in fact later be asserted or reported by uttering (9–12).

Although there are some syntactic similarities between the likes of (9–12) and (2) (‘If Oswald hadn’t killed Kennedy, someone else would have’), our view is that there is a significant semantic gulf between them. On its natural interpretation, (2) does not commit us to its being a live possibility that Oswald didn’t kill Kennedy, either from our own perspective or from any other perspective—intuitively, its meaning feels altogether more “worldly” by comparison with the “perspectival” feel of (9–12). This is what we have been getting at in our use of the labels ‘indicative’ and ‘counterfactual’, roughly in line with the philosophical tradition. Note however that examples like (9–12) are rather different from the paradigmatic examples of indicative conditional sentences, and would provide counterexamples to many generalisations that philosophers have been wont to make about indicative conditionals (e.g. generalisations about how the probability or “assertability” of an indicative conditional relates to the corresponding conditional probability), or about the superficial linguistic form distinctive of indicatives and/or counterfactuals (for example, (10) shows that a ‘would’ in the main clause does not suffice for counterfactuality).

Indeed, as we see it, there is no failsafe way to distinguish counterfactuals from indicatives on the basis of superficial syntax, since many conditional sentences admit of both kinds of interpretation. For example even though the dominant reading of (2) is counterfactual, it does have a “past-perspective” indicative meaning, which comes to the fore when we imagine using (2) in reporting a past utterance of the following somewhat unusual but perfectly intelligible sentence:

1. (2′) If Oswald hasn’t killed Kennedy, someone else will have

And once this epistemic interpretation has been noticed, one can imagine contexts in which it is the intended interpretation even outside indirect speech reports.

There are, however, some conditionals for which a counterfactual meaning is grammatically required. The most prominent examples are ones in which the main verb in the subordinate clause takes a subjunctive form:

1. If Gore were president, he would deal with this problem
2. If I were to resign tomorrow, I would be hired by Google the day after tomorrow.

Putting certain present-tense verbs in the main clause also seems to close off the possibility of indicative readings:

1. If I resigned tomorrow, I reckon I would be hired by Google the day after tomorrow.
2. If I got a tattoo, it is unlikely that anyone would notice.

We won’t try to give a theory of what’s going on in these sentences yet, but it is plausible that the unavailability of indicative readings can be traced to the same source as the unacceptability of sentences like ‘It was possible that I am happy’. There are also cases where a counterfactual reading seems to be required on semantic grounds:

1. If I had married someone other than the person I did marry, I would not be happy.
2. If giraffes were any taller than they actually are, they wouldn’t be able to pump blood up to their brains

In these cases, it is plausible that what forces the counterfactual reading is the fact that the antecedent isn’t live from any reasonable perspective.[[11]](#footnote-11)

An idea we like is that counterfactual uses of conditionals are marked by the occurrence of what Iatridou (\*\*\*) calls ‘fake past tense’: an extra layer of past tense morphology is used in a way that does not carry the usual significance of temporal pastness. This apparently non-temporal use of the past is not confined to conditionals: it also occurs with certain modals and attitude verbs, as in the following examples.

1. I wish they were here right now
2. Oh, that they had been here right now!
3. They might have been here right now.
4. They couldn’t have been here right now.

Note that in general, ‘might have been’ also has uses where the past tense is genuinely tied to the temporal past—as noted earlier, ’It might have been raining’ can mean ‘It is possible that it has been raining’ and ‘It was possible (then) that it was raining (then)’. But the use of ‘right now’ in (21) seems to preclude these readings: plausibly for reasons similar to those that make for the badness of ‘It is possible that they have been here right now’ and ‘It was possible that they are here right now’.

**\*\*\* Find some cross-linguistic examples, and discuss Iatridou’s cross-linguistic evidence.**

In many paradigmatically counterfactual conditionals, the subordinate clause involves pluperfect morphology, which can be thought of as involving two “layers” of past tense. In an ordinary use of the pluperfect both layers play a temporal role: ‘I had eaten breakfast’ takes us to a past “reference time” and then places an eating event earlier than that time. However, as Iatridou notices, there is no similar sense of double pastness in the natural counterfactual use of ‘If I had eaten breakfast this morning, I would have skipped lunch’. Her view of these cases—which we like—is that at least one layer of past tense is fake past, while at most one is the usual temporal past. (In ‘If it had been raining right now, the ground would have been wet’, both layers seem to be fake.)

Why should the past tense be ambiguous in this way? An intriguing but elusive idea of Iatridou’s is that the past tense has a more skeletal core meaning of “distance”, which can be cashed out either temporally or modally—in our framework, the relevant thought in the modal case would presumably be one to the effect that non-live possibilities are “distant”, so that invoking a notion of accessibility that extends to the non-live requires reaching out to the distant. Obviously this picture raises many questions—for example, why do actual future events not count as “distant” in the more abstract sense and thus apt to be described by verbs in the past tense? But we won’t try to address such questions here: as with many other facts about linguistic structure, recognising that the phenomenon of fake past tense exists does not require having an explanation of why language is so configured.

We have posited a interpretative link between indicative conditionals and epistemic modals: barring context-shift, they force the same interpretation of accessibility. Given that fake past tense can occur with modals, as in (21) and (22), it is quite plausible to posit that such modals bear an analogous relation to counterfactual conditionals. If so, the non-epistemic reading of ‘It couldn’t have been that P and Q’ will (holding context fixed) entail ‘If it had been that P, it would have been that Q’. Also, ‘It could have been that P’ and ‘If it had been that P, it would have been be that Q’ jointly entail ‘It could have been that Q’. Also, the presupposition of non-vacuity will mean that ‘If it had been that P, it would have been that Q’ will be presuppositionally bad unless ‘It could have been that P’ is true. These claims seem no less plausible than the corresponding claims about indicatives.

There is a competing picture of the role of the past-tense morphology in counterfactual conditionals which rejects the idea of ‘fake past’, and instead regards the relevant uses of the past tense as introducing reference to genuine past times in much the same way that we see in past-perspective indicative conditionals like (9–12). As developed, e.g., by Condoravdi (\*\*\*\*) and Khoo (\*\*\*\*), the idea is that just we can talk about a possibility being epistemically live or not at a given time, we can talk about a possibility being “metaphysically live” or not at a given time, where the metaphysically live possibilities at a time are (roughly) those which share their history up to that time. The picture is that when we utter a counterfactual, there is a particular time earlier than the time of utterance such that the accessible worlds are all and only those that are live as of that time, and at least one of the past-tense morphemes in the conditional refers to that past time.

There are several problems with this view. First, it will have trouble explaining why standard counterfactuals can be acceptable even when no particular past time has been raised to salience as a target to be referred to by the relevant morphemes—by contrast, ‘It was raining’ clearly does require such salience to be in place, and so do past-perspective indicatives like (9–12). Second, consider counterfactuals about the future like ‘If I resigned next week I would be hired by Google the week after’. Even granting that the set of accessible worlds consists in all those whose history matches that of the actual world up to some given time, there is little reason to think that the time in question is in the past: it is much more plausible that the time of divergence is identical to or after the time of utterance, given that in evaluating such counterfactuals we freely draw on known truths about the history of the actual world right up to the time of utterance. Third, it is just not plausible the notion of accessibility relevant to the evaluation of counterfactuals always requires matching any part of the history of the actual world: consider ‘If gravity had obeyed an inverse cube law, stars would have been unstable’, ‘If there had always been infinitely many stars, then there would always have been infinitely many planets’, etc. Fourth, it is very hard to see what reference to a past time could be going on in ‘I wish he were here right now’; but once we admit that the past tense is fake here, what reason is there to think it is genuinely temporal in ‘If he were here right now, then he would be happy’, especially considering that the word ‘were’ can do double duty in ‘If, as I wish, he were here right now, he would be happy’.[[12]](#footnote-12)

* Present tense perspective-shifted uses
* Note somewhere or other: you can quantify into the accessibility parameter

1. Quasi-validity and the or-to-if inference

Considering ‘arguments’ as sequences of sentences, let’s say that an argument is valid iff the propositions expressed by the premises jointly entail the proposition expressed by the conclusion, on any uniform resolution of context-sensitivity. And let’s say that an argument is ‘quasi-valid’ iff the argument that results from it when ‘It must be that…’ is affixed to each of the premises is valid. Many arguments that are quasi-valid but not valid feel intuitively like excellent deductive arguments. For example:

1. Either this is a horse or it’s a donkey
2. It’s not a horse.
3. So it must be a donkey.

Even someone with an excellent logical training might naturally and unreflectively answer ‘yes’ when asked whether this is valid. Nevertheless on reflection it is clearly not valid in our sense, or on any of the standard ways of defining validity. **\*\*\*(taking it for granted it expresses a proposition. It’s still a great argument though, and any full account of ‘must’ needs to explain (i) why this is so, and (ii) why this kind of awesomeness is so readily mistaken for validity (contrast? the result of replacing ‘must’ with ‘we ought to believe that’)\*\*\***

One prominent argument for the ‘materialist’ view of indicative conditionals, according to which ‘If P, Q’ has the same truth-conditions as ‘Either not P or Q’, appeals to the seeming excellence of ‘or-to-if’ arguments: i.e. arguments of the form ‘P or Q; therefore if not P, Q’. If we took this excellence as a sign of validity proper, it would be a short step to materialism.[[13]](#footnote-13) However, given that quasi-valid arguments as well as valid ones can be expected to strike us as excellent, our view provides a ready rejoinder to this argument. For recall that, given the connection we posit between epistemic modals and indicative conditionals, ‘It must be that (P or Q), therefore if not P, Q’ is valid on our view. Hence arguments of the form ‘P or Q, therefore if not P, Q’ are quasi-valid, and just as excellent as the intuitively excellent argument (23) above. We don’t see any pre-theoretic pressure to think that the or-to-if argument is even better than the likes of (23).

Note that this feature of our view depends on our decision to let the conditional be true when there is no accessible world in which the antecedent is true. If we had instead gone for a view on which conditionals are false in this case, we would need to say something more complicated, and perhaps less satisfying, about the or-to-if inference.[[14]](#footnote-14)

(A related argument for materialism appeals not to intuitions about the validity of arguments, but to intuitions about the logical truth of single sentences of the form ‘If P or Q, then if not-P, Q’. The notion of quasi-validity does not provide a response to this form of argument, since there is no corresponding notion of ‘quasi-logical-truth’: if we are willing to speak of arguments with zero premises, then quasi-validity will coincide with validity for such arguments. We think there is a good answer to this objection too, but we will not have the resources to explain it until we get to consider conditionals which embed other conditionals in chapter \*\*\*. But for the present, note that it would be difficult to endorse this as an argument for materialism unless one also endorsed the apparent tautologousness of ‘If this is either a horse or a donkey and it’s not a horse, then it must be a donkey’ as an argument for the vacuity of ‘must’.)

It is worth comparing our response to the ‘or-to-if’ argument for materialism with a somewhat similar response offered by Robert Stalnaker. On Stalnaker’s view, the distinctive role of epistemic possibility in the semantics for indicative conditionals consists not in the exclusion of epistemically impossible worlds from the domain of accessibility (as on our view), but in the fact that indicative conditionals impose a distinctive kind of closeness ordering, in which any epistemically possible world must count as closer than every epistemically impossible world. On his view, asserting an indicative conditional also carries the presupposition that its antecedent is epistemically possible. These commitments lead Stalnaker to somewhat different diagnoses of the status of the argument-forms we have been discussing. For him, the or-to-if inference is not quasi-valid in our sense, since ‘Must (P or Q); therefore if not P, Q’ is not valid. If it is epistemically necessary that P and the closest not-P-world is a not-Q world, then ‘Must (P or Q)’ will be true even though ‘If not-P, Q’ is false. But this argument-form does have another status for Stalnaker: if the premise is true and the presupposition of the conclusion is satisfied, the conclusion is true. Stalnaker thinks that the fact that his view secures this good status is enough to undermine the case for materialism based on the seeming validity of the or-to-if argument. But notice that the status in question is also possessed by some arguments which don’t intuitively seem that great, for example

1. No-one will be smoking in the year 2050; therefore Fred will have stopped smoking by 2050
2. John regrets everything he has ever done; therefore John regrets killing his mother
3. Every creature in the room is purring; therefore, the elephant in the room is purring

So *prima facie*, our view does a better job than Stalnaker’s at explaining what is good about the or-to-if inference. It is worth comparing our response to the ‘or-to-if’ argument for materialism with a somewhat similar response offered by Robert Stalnaker. On Stalnaker’s view, the distinctive role of epistemic possibility in the semantics for indicative conditionals consists not in the exclusion of epistemically impossible worlds from the domain of accessibility (as on our view), but in the fact that indicative conditionals impose a distinctive kind of closeness ordering, in which any epistemically possible world must count as closer than every epistemically impossible world. On his view, asserting an indicative conditional also carries the presupposition that its antecedent is epistemically possible. These commitments lead Stalnaker to somewhat different diagnoses of the status of the argument-forms we have been discussing. For him, the or-to-if inference is not quasi-valid in our sense, since ‘Must (P or Q); therefore if not P, Q’ is not valid. If it is epistemically necessary that P and the closest not-P-world is a not-Q world, then ‘Must (P or Q)’ will be true even though ‘If not-P, Q’ is false. For the same reason, the inference ‘Must Q; therefore if P, P and Q’ is not valid for Stalnaker. These argument-forms do however have another status for Stalnaker: whenever the premise is true *and the presupposition of the conclusion is satisfied*, the conclusion is true. Stalnaker thinks that the fact that his view secures this good status is enough to undermine the case for materialism based on the seeming validity of the argument forms in question. But notice that the presupposition-theoretic status is also possessed by some arguments which don’t intuitively seem that great, for example

1. No-one will be smoking in the year 2050; therefore Fred will have stopped smoking by 2050
2. John regrets everything he has ever done; therefore John regrets killing his mother
3. Every creature in the room is purring; therefore, the elephant in the room is purring

So *prima facie*, our view does a better job than Stalnaker’s at explaining what is good about the or-to-if inference.[[15]](#footnote-15)

**\*\*\*Note: check on Stalnaker’s paper, also Moritz Shultz & Robbie.**

One might worry that in going as far as we are going to accommodate the validity-judgments that motivate materialism, we will also be saddling ourselves with some of the problems of materialism—specifically, the so-called “paradoxes of material implication”, arguments that are valid if materialism is true but don’t seem intuitively good at all. One of these “paradoxes” is the inference form ‘Q; therefore if P, Q’. On our view, this is quasi-valid.[[16]](#footnote-16) We admit that it would be odd and suspicious if someone actually produced such an argument in the course of reasoning. But we don’t think this is a good reason to deny that such arguments are quasi-valid: for ‘This is a horse; therefore this must be a horse’ is uncontroversially quasi-valid but also seems quite strange. If someone were to utter something like this, we would feel pragmatic pressure to interpret the ‘must’ in some way that would give the conclusion some conversational point, and this will require some interpretation that doesn’t tie the ‘must’ in a flat-footed way to what has been established at that point in the conversation. In general, when we are dealing with super-simple arguments, intuitions of excellence will be tempered by the fact that such arguments have so little conversational point that they send us looking for non-obvious interpretations under which they are more tendentious or informative. Notice once we turn to slightly more complex arguments in the same family as ‘Q; therefore if P, Q’, the intuitions of excellence start to fall into place: for example, ‘P; therefore if Q, P and Q’ sounds great— cf. ‘John is in the room; so if Jill is in the room, two people are in the room’—and is quasi-valid on our account.

The second “paradox of material implication” is the argument form ‘not-P; therefore if P, Q’. This is also valid on the materialist view and quasi-valid on our view, and it sounds like a truly awful template for argumentation. But note that given the presupposition of non-vacuity, the argument ‘It must be that not-P, therefore if P, Q’ has the bad-making feature that if the premise is true, the presupposition of the conclusion is violated. In this respect it is similar to arguments like ‘She hasn’t stolen from anyone; therefore she doesn’t regret stealing from her employer’, or ‘Everyone is having a good time; therefore everyone who isn’t having a good time is a terrorist’. The latter is especially pertinent. If the domain was constant throughout the argument, then the truth of the premise would mean that the presupposition of the conclusion was violated. If someone actually produced such an argument, it would be natural to take the domain of the conclusion to be different from that of the premise, precisely so as to avoid convicting them of presupposition-failure. That is how presupposition typically operates as a way of allowing an audience to recognise lack of uniformity across time in the interpretation of context-sensitive elements. But insofar as there is such a shift, the argument is terrible.

The idea that sometimes excellent arguments are quasi-valid rather than valid can also be used to undercut a certain case for the ‘strict conditional’ theory, according to which ‘If P, Q’ has the same truth conditions as ‘It must be that (either not-P or Q)’. Someone might argue for “strictism” on the grounds that the excellent-seeming argument ‘If P, Q; therefore it can’t be that P and not-Q’ should be regarded as valid, in which case the argument ‘If P, Q; therefore it must be that (not-P or Q)’ is surely also valid. On our view, these arguments are merely quasi-valid: since ‘If P, Q’ logically entails ‘Not-P or Q’, ‘It must be that (if P, Q)’ logically entails ‘It must be that (not-P or Q)’.

Some other controversial argument-forms that are valid according to materialists and strictists, but not valid on our account include contraposition (‘if P, Q; therefore if not-Q, not-P’), transitivity (‘If P, Q; if Q, R; therefore if P, R’), and antecedent strengthening (‘If P, R; therefore if P and Q, R’).

[[17]](#footnote-17)

1. The presupposition of non-vacuity

Up to now we have been helping ourselves to the idea that conditionals carry a presupposition of non-vacuity; it is time we said something in defence of this claim. The most obvious thing to be said in favour of the thesis is that it explains what is wrong with certain kinds of sentences that seem to almost always unacceptable. For example, conjunctions of the form ‘If P, Q and if P, not Q’ are almost always unacceptable, unless P is something truly bizarre like “All contradictions are true”. This is true whether the conditionals are indicative or counterfactual, and seems like the kind of phenomenon that deserves a unified explanation. Given our decision to count ‘If P, Q’ as true when there are no accessible P-worlds—a decision we motivated in the previous section—we can’t explain this infelicity as semantic falsehood in all contexts: ’If P, Q and if P, not Q’ will be true in any context where under which no P-worlds count as accessible. So we need something pragmatic to say about these sentences, and the presupposition of non-vacuity fits the bill quite nicely.

The presupposition of nonvacuity also helps us explain why certain inferences which one might expect to be good given just the semantic part of our story in fact seem problematic. We already considered one such example in the previous section, namely the inference from ‘It can’t be that P’ (or just ‘not P’) to the indicative ‘If P, Q’. Similarly in the counterfactual case, ‘It couldn’t have been that P’ will entail ‘If P it would be that Q’ for any Q, but such inferences are intuitively highly problematic: we explain this by saying that if accessibility relation for the conditional is interpreted as the same one that matters for the modal, the premise entails that the presupposition of the conditional is violated; so the discourse puts pressure on us to invoke two different accessibility relations, in which case the inference will be simply invalid.

However, there is a competing explanation which might be given for the phenomena just described. The competing explanation invokes a weaker presupposition, namely that the conditional being asserted is not *known* to be vacuously true. The weaker presupposition is, for example, enough to explain why ‘If P, Q and if P, not Q’ should sound bad: after all, in uttering this conjunction one represents oneself as knowing it; but since it could be true if both conjuncts are vacuously true, such knowledge will easily yield knowledge of vacuity. (One could try to make trouble for this explanation by appealing to the fact that ordinary people may not make the relevant inference and hence may not speaking speaking have any view at all about whether vacuity holds; but we don’t think this gets to the heart of the matters, since in semantics it is often to helpful to use somewhat technical vocabulary in one’s representation of what language users tacitly know.) Similarly, if one knows that it couldn't be that P, one will be in a position to know that ‘if P it would be that Q’ is vacuous (holding fixed the accessibility relation), and hence unacceptable even given the weaker presupposition.

We noted earlier that our schematic analysis of ‘If P, Q’ can yield the truth conditions of a material conditional in the limiting case where accessibility is understood in such a way that each world is accessible only at itself, or more broadly when the accessible worlds all have match actuality with respect to the truth value of the antecedent. This kind of interpretation of an unembedded conditional will always violate the presupposition of non-vacuity, but need not violate the weaker presupposition of lack of known vacuity. So if one thought that many conditionals are truth-conditionally tantamount to material conditionals that would be evidence against the stronger presupposition, while the view that such truth conditions are rare would support it.

While adopting this alternative presupposition wouldn’t be damning for our overall purposes, we do think there are reasons to favour the stronger presupposition over its weaker rival. For example, (24) is clearly a terrible thing to assert unless one believes that the number of full-time people in the department is even:

1. If there had been exactly half as many full-time people in the department as there actually are, then we would have had to hire at least three adjuncts.

This is readily explained by the presupposition of nonvacuity, since the antecedent is metaphysically impossible to satisfy if the relevant number is odd. But so long as you don’t know whether the number is odd or even, you don’t know whether the conditional is vacuous, so the weaker epistemic presupposition does not account for the infelicity of (24). Along similar lines: suppose that I know one of Jack and Jill had three jacks and a queen and the other had a worthless hand with no queens. Both fold before the final draw; I look at the top of the deck and see that each would have been dealt a queen. If the only relevant barrier were the epistemic presupposition, it’s hard to see why the following wouldn’t be a reasonable thought to think:

1. If Jill had kept playing with those four cards and had ended up with two queens, she would have won.

But in fact (25) is bizarre. The presupposition of non-vacuity explains this: an interpretation on which you knew that there was an accessible world where the antecedent was true would require not holding fixed such facts as that a poker hand only contains five cards, and once we let in worlds where the rules of poker allow six-card hands, we don’t know that (25) is true. (If she in fact had the worthless hand, then the closest six-card poker world where she has two queens as well is probably a losing world.)

\*\*\* two more examples: (Setting: I’m not sure whether today or yesterday is the first day of the semester. I know Ted was in town until yesterday.) I say ‘If Ted had left on the first day of the semester, he would have been in the airport this morning’. ‘If he had won for the first time yesterday, he would barely have noticed the increase in his wealth’.

The foregoing examples all involved counterfactual conditionals. With indicative conditionals, it is much more delicate to tease the effects of the two presuppositions apart. If we know which worlds are and are not epistemically possible, then whenever it is consistent with our knowledge that there is an epistemically possible world where the antecedent of a given conditional is true, we will know that there is such a world, so we will know what we need to know to satisfy the stronger presupposition. Thus to distinguish the proposals one must consider either cases where accessibility requires the application of some further, epistemically non-transparent constraint, or else cases where what’s epistemically possible is not transparent. We will be considering the former phenemenon in chapter 2; the most straightforward examples of the latter phenomenon involve conditionals like (9–12) from section \*\*\*, where the relevant epistemic perspective is in the past. Consider for example

(9) If Oswald hadn’t killed Kennedy, someone else had

Consider a scenario where we aren’t sure which of two scenarios obtain. In scenario A, the relevant past people had evidence that someone or other had killed Kennedy, and were unsure whether or not it was Oswald. In scenario B, they knew Oswald had killed Kennedy, and this was their entire basis for thinking that anyone had. (9) is not intuitively felicitous if this is all we now know. But if the only relevant presuppositional requirement were one of lack of *known* vacuity, we would presumably be able to interpret (9) in such a way that the accessible worlds were just those consistent with what was known at the past time, so that (9) is non-vacuously true in scenario A and vacuously true in scenario B, and hence known to be true either way. By contrast, the stronger presupposition predicts infelicity in this case, since we do not know the presupposition to obtain—given our ignorance about what was *known* at the past time, the presupposition would send us looking for a wider interpretation of accessibility on which we now know that some worlds where Oswald didn’t kill Kennedy are accessible.[[18]](#footnote-18) [[19]](#footnote-19)

So far we have been talking about the presuppositions of standalone utterances of conditionals. When conditionals are embedded inside more complex sentences, there is a standard lore about “presupposition projection” which can be used to generate predictions for what those more complex sentences will presuppose. For example, the standard lore says that when φ presupposes that P, ‘x thinks that φ’ will typically presuppose that x thinks that P, and not presuppose that P: for example, in uttering ‘He thinks that the ghost haunting his house is benevolent’ we do not normally take it for granted that there is a ghost, but we do seem to be taking it for granted that he thinks that there is a ghost haunting his house. For conjunctive sentences, the lore says that when relative a certain context φ asserts P and presupposes P′ and ψ asserts Q and presupposes Q′, then relative to that context, ’φ and ψ’ presupposes that P′ and if P and P′, Q′.[[20]](#footnote-20) The presupposition of nonvacuity can be slotted comfortably into this framework. For example, when we say ‘He thinks that if Clark Kent lived far away from Superman he would be happier’ we are not committed to the antecedent in fact being metaphysically possible, but we do seem to be taking it for granted that the subject thinks it is.[[21]](#footnote-21) Likewise, when we say ‘It might be raining, and if it is the ground is slippery’ we are clearly not representing ourselves as *taking it for granted* that it might be raining. The standard lore for conjunctions just described explains this, since it predicts that the second conjunct’s presupposition gets conditionalised into the trivial ‘If it might be raining, it might be raining’.

The label ‘presupposition’ is used to cover a rather disparate array of phemomena. The common thread is that in uttering a certain sentence, one presents oneself as taking certain things for granted, as opposed to presenting them as answers to the main questions at hand. But there are significant differences in how tight the association is between uttering a self-standing sentence and presenting oneself as taking the relevant propositions for granted. At one extreme lie parentheticals, where the connection is very tight indeed: one can scarcely imagine a context where one utters ‘The president (who is a Democrat) comes from Chicago’ unembedded without presenting oneself as taking for granted that the president is a Democrat. (Similarly for when it’s the first conjunct of a conjunction.) By contrast, while uttering ‘He doesn’t know that it’s raining’ normally suggests that one takes it for granted that it is raining, there are exceptional cases where this suggestion is absent—for example in ‘He doesn’t *know* it’s raining! Remember that he’s relying on those notoriously unreliable instruments’.

With presuppositional sentences that lie towards the weaker end of this spectrum, there is a broad and only partially explored array of pragmatic factors that help to determine whether a suggestion that the speaker takes a certain thing for granted will be heard in a given case. One such factor that is especially interesting to us is that when sentences would standardly have contradictory or obviously false presuppositions, in some cases this leads the presupposition to be suspended. For example

1. He doesn’t know she is guilty, and he doesn’t know she is innocent

would be standardly predicted to presuppose something bizarre such as ‘She is guilty, and if she’s guilty and he doesn’t know it, she is innocent’; but in fact it carries no strong suggestion that anything in particular is being taken for granted. Similarly

1. I won’t salute the king and I won’t salute the regent

would be standardly predicted to presuppose that there is a king; but if it’s taken for granted that if there’s a king there isn’t a regent and vice versa, an utterer of (27) will probably not be taken to be committed to the presupposition predicted by standard lore.

We think we can see cases where the presupposition of nonvacuity behaves in similar ways. Let’s look at another poker example. Suppose I know that Sally’s four cards are either the 10, Jack, Queen, and King of Spades, or two nines and two eights. I have two kings and three aces. Sally folds; I look at the top card and see that it is the 9 of Spades. I say

1. If she had drawn that card and had a straight she would have won, but if she had drawn that card and had a full house she would have lost.

This seems acceptable given the facts. But to make it acceptable it seems that we need to be holding fixed the actual makeup of Sally’s first four cards and my five—after all, if we allow accessible worlds where the four cards in her hand are different, then the first conjunct is quite dubious since not every straight beats a full house. However, if all accessible worlds match actuality in these respects, then inevitably one of the two counterfactuals will be vacuously true.

Other examples that are prima facie problematic for our presupposition but where we think that a proper delicacy about the strength of the thing is all you need:

\*? (He knows where the keys are and is going to get them.) ‘Wherever he goes he’ll open a drawer, because he knows that if it’s in the kitchen it’s in the kitchen drawer and if it’s in the living room it’s in the living room drawer’.

Problematic anti-materialist arguments: truth-value judgments; validity judgments (paradoxes of material implication).

Confidence-theoretic arguments against the commonness of material conditional readings.

Tell about the McDermott cases — suggest that here at least the presupposition is weakened. (Speculate about why?)

\* mention monkey’s uncle conditionals. [Puzzle - why don’t we get them with counterfactuals? How do they relate to crazy conditional promises like ‘If … I’ll eat my hat’ / ‘If I’m wrong about this just shoot me’.

Status of the presupposition - is it derivable by general (Gricean?) pragmatic considerations? We are not optimistic about this, though it wouldn’t be a disaster. (It’s easier to see how it would work if it were not-known-vacuity.)

Hard to cancel.

\*\*\* Maybe come back later to other common presuppositions/implicatures: inhomogeneity, falsity of antecedent for counterfactuals.

1. Accessibility for counterfactuals

As many authors have observed, our standard for evaluating a counterfactual whose antecedent concerns a particular period of time involves helping ourselves to all kinds of facts about earlier times. For example, if John has had breakfast every day for the last year, we will unhesitatingly endorse

1. If John had forgotten to have breakfast on Tuesday morning, that would have been the first time this year.

The phenomenon is pervasive: even when the consequent of a counterfactual isn’t about the past, in deciding what to make of it we will typically be tacitly holding the past fixed. For example, in thinking about

1. If I had run a four minute mile this morning, I would have been extremely surprised.

we seem to be holding fixed the speaker’s previous track record.

Our favoured account of this phenomenon appeals to fine-grained context-sensitivity in the accessibility parameter. When considering a counterfactual whose antecedent is about a certain period, it is natural to resolve its context-sensitivity in such a way that the accessible worlds are all required to match with respect to earlier times.[[22]](#footnote-22) Notice that the closeness relation plays no role in this account of why the relevant counterfactuals are true. So for example, while our account suggests that (29\*) is true in the context *it* naturally evokes for the same reason as (29), it provides no reason to expect (29\*) to be true relative to context naturally evoked by (29):

(29\*) If John had forgotten to have breakfast on Wednesday morning, that would have been the first time this year.

After all, the context evoked by (29) is one where the accessible worlds are merely required to match with respect to history up to Tuesday; since some of them involve forgetting to have breakfast on Tuesday and on Wednesday, the accessibility facts provide no guarantee for the truth of (29\*) in this context. And indeed, the account of closeness that we will develop in chapter 2 will provide no grounds for confidence that the closest worlds where John forgets breakfast on Wednesday are not worlds where he forgets breakfast on Tuesday as well. Meanwhile, while (29\*\*) is non-vacuously true in the context it naturally evokes, it is vacuously true in the context evoked by (29).

(29\*\*) If John had forgotten to have breakfast on Monday morning, that would have been the first time this year.

By contrast, Lewis’s influential treatment of counterfactuals tells a rather different story about why holding the past fixed is a reliable way of evaluating counterfactuals. For Lewis, what does the work is closeness, not accessibility—indeed, his account would work even on the assumption that all metaphysically possible worlds are accessible in all contexts.[[23]](#footnote-23) Moreover, Lewis’s account of the phenomenon does not rely in any essential way on context-sensitivity. For example, he thinks that there is a single context on which we can knowledgeably utter (29), (29\*), and (29\*\*): given that we know that John in fact had breakfast every day this year, we know that worlds where John skips breakfast for the first time on Wednesday are closer than worlds where he skips breakfast for the first time on Tuesday, which are in turn closer than worlds where he skipped breakfast on Monday. More generally, the closeness relation that Lewis thinks is standard is one on which worlds whose history diverges from that of the actual world at later times are ipso facto closer than worlds where history diverges earlier (Lewis 1979).

This feature of Lewis’s view leads to some well-known oddities that our view avoids. Pollock (\*\*\*) noticed that Lewis’s view seems to underwrite counterfactuals such as the following:

1. If my coat had been stolen last year it would have been stolen on December 31st.

Given that my coat was not in fact stolen, on Lewis’s view worlds where it is stolen are closer to the extent that they diverge later from the actual world.[[24]](#footnote-24) But intuitively, unless I have some special reason to think that my coat was unusually vulnerable to theft on December 31st, I have no right to assert (44).

It would really be quite bizarre if we had to start computing counterfactuals in the way seemingly recommended by Lewis. Just to take one more example: suppose that, sadly, someone fell from a ship and drowned while people stood and watched without anyone diving in to help. On Lewis’s approach, there seems to be a quite strong reason to accept

1. If someone had dived in to try to help her, she would still have drowned.

After all, if the later the divergence the closer, then the closest worlds will be ones where someone dives in too late, even if there are plenty of worlds where a more timely rescue attempt would have saved her.

The examples cry out for a treatment on which the only period of history that is completely held fixed is one that predates the period in question—last year in the case of (44), the period during which the drowning victim was in the water in the case of (45). A contextualist approach like ours can readily accommodate this. Given the antecedent of (44), it would be completely unmotivated to select some time after the beginning of last year as the basis for resolving accessibility: the natural constraint on accessibility will allow more or less indiscriminate importation of facts about the actual world only for times prior to last year.

One possible response to the problems for Lewis’s account would be to somehow appeal to the idea that for some reason (44) is computed as equivalent to

(44′) On any day last year, if my coat had been stolen on that day it would have been stolen on December 31st.

It’s not obvious what would motivate this seemingly *ad hoc* mechanism beyond a desire to avoid the counterexamples. But in any case, the proposal is clearly inadequate. Suppose that halfway through the year I moved from a dangerous neighbourhood to a much safer one; then I could naturally assert

1. Probably if my coat had been stolen last year, it would have been stolen during the first half of the year.

By contrast, (46′) is obviously unassertable:

(46′) Probably on any day last year, if my coat had been stolen on that year it would have been stolen during the first half of the year.

The problems raised by the coat and drowning examples are not peculiar to the details of Lewis’s approach, or even to the possible worlds framework. Given certain minimal logical assumptions, problems of this sort will arise for any view that attempts to secure the reliability of ‘holding the past fixed’ for antecedents about different times without appealing to context-shift. Suppose that there was a thunderstorm all weekend in the area that destroyed many trees, but my tree luckily survived. Now consider

1. If this tree had been in pieces on Sunday morning, Sunday would have been an especially sad day for me.

This is a typical example of the kind of sentence that is evaluated by holding the past fixed; so it’s plausible that in the context naturally evoked by (), () is true:

1. If the tree had been dead on Sunday, it would have been alive on Saturday afternoon.

But surely () and () are true as well (in the relevant context):

1. If the tree had been dead on Sunday, it would have died during the weekend.
2. If the tree had died during the weekend, it would have been dead on Sunday.

After all, Sunday is part of the weekend, so denying () looks completely unpromising; meanwhile given that trees don’t reform once they have split into pieces, () seems safe too. But given (), (), and (), we are in a position to apply the inference-schema sometimes called ‘CSO’, according to which arguments of the following form are valid:

CSO If A then B; If B then A; If A then C ⊦ If B then C

Plugging in (), (), and () for A, B, and C, we can derive

1. If the tree had died during the weekend, it would have been alive on Saturday afternoon.

But () seems very problematic in the same way as the coat and drowning examples considered earlier.

CSO is valid according the best-known logics for counterfactual conditionals, namely those of Stalnaker and Lewis. And to our my minds its popularity is well-deserved. While it may not be immediately compelling when first encountered, it follows from two other principles whose appeal is more immediate, namely:

Cumulative Transitivity (CT): If A then B; if A and B then C ⊦ If A then C

Very Limited Antecedent Strengthening (VLAS):

If A then B; If A then C ⊦ If A and B then C

For suppose the premises of CSO hold: if A, B; if B, A; and if A, C. Given the first and third, by VLAS it follows that if A and B then C; and from this and the second premise (If B, A) CT yields that if B, C.[[25]](#footnote-25)

Reliance on CT seems to pervade a great deal of our ordinary counterfactual reasoning. Consider for example just how good the following piece of reasoning looks: ‘If they attacks they will use their cavalry; if they attacks using their cavalry, they will win; so if they attack, they will win’. Clearly there is some general principle underlying such reasoning, and it is hard to see what it could be if CT is invalid. Regarding VLAS, similar remarks apply to the following excellent argument (which involves a contraposed application of VLAS): ‘If they attack they will use their mercenaries; but it’s not the case that if they attack using their mercenaries they will win; so it’s not the case that if they attack they will win’.

Given the general considerations for thinking that context-sensitivity is pervasive and the costs of giving up CSO, it seems to us much more appealing to explain the relevant data by appeal to context sensitivity rather than jettisoning CSO. On the picture we favour, () is indeed straightforwardly true in the context naturally evoked by (), but would be a very risky assertion in the context it naturally evokes. Those who endorse CSO but think that there is no relevant context-sensitivity in play will, like Lewis, be forced to accept the problematic ().

The diagnosis of context-sensitivity enjoys substantial independent support, since there are many cases where counterfactuals with the same antecedent suggest different ways of holding the past fixed. For example, each of () and () seems to be true in the natural context they suggest:

1. If I had been in the Carribean this morning I would have been feeling refreshed
2. If I had been in the Carribean this morning I would have been exhausted from travelling

In these cases it is the consequent rather than the antecedent that provides the linguistic cues as regards which portions of the past to hold fixed.[[26]](#footnote-26) (Of course there may be non-linguistic cues as well.) On a view where () and () are both true in the same context, one would have to either live with bizarre counterfactuals like ()

1. If I had been in the Caribbean this morning I would have been feeling refreshed and exhausted from travelling

or else postulate widespread violations of an even more obviously compelling inference rule, namely Conjunction:

Conjunction: If A, B; If A, C ⊦ If A, B and C

The appeal to context-sensitivity is thus pretty much inevitable when it comes to sentences like () and (). We see no reason to deny that the phenomenon manifested by the previously examples is any different: in both cases, contextual triggers determine how much of the past is held fixed in all accessible worlds.

Lewis, for his part, is willing to play the context-sensitivity card in a much more limited way. His picture is that there is a “standard” resolution of context-sensitivity under which worlds that diverge later are closer, and a separate category of “backtracking” resolutions of context-sensitivity where a different standard of closeness is in play. Lewis gives various examples where he thinks a backtracking resolution of context-sensitivity is natural, such as ‘If Jim were to ask Jack for help today, there would have to have been no quarrel yesterday’ (Lewis 1979, p. 33). He might say that one or both of our sentences () and () fall into this category as well.[[27]](#footnote-27) Lewis never develops a theory about what plays the role of the closeness relation in backtracking contexts. But we think there is very little prospect for a theory that posits a *single* closeness relation for backtracking contexts. Typically even evaluating a counterfactual in a “backtracking” way we still draw freely on quite a lot of facts about the past—for example, in evaluating () we probably draw on the fact that in the not-so-distant past the speaker was not feeling refreshed. There is no prospect of a general rule saying how much of the past to hold fixed for evaluating backtrackers. Given that fine-grained context-sensitivity is thus hard to avoid when dealing with the counterfactuals Lewis categorises as backtrackers, it would not at all surprising if, as we contend, it also extends to those he categorises as non-backtrackers.

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As well as requiring some bullet-biting about cases like Pollock’s coat, Lewis’s approach also requires him to give up a prima facie compelling principle about the logic of counterfactuals. If time extends infinitely into the future, and worlds are closer the later they diverge from actuality, then for every non-actual world, there is a closer one. The closeness relation thus fails to obey the ‘Limit Assumption’, which says that every set of worlds contains some worlds that are as close to actuality as any world in the set. Lewis is well aware of this structural feature, and crafts his truth conditions accordingly: a counterfactual is true iff either there is no (accessible) world where the antecedent is true, or at least one world where antecedent is true is such that every world where the antecedent is true that is at least as close as it is one where the consequent is true. However, the upshot of this semantics is that counterfactuals do not generally obey the following principle:

AGGLOMERATION: if some propositions each would have been true if a certain condition had obtained, then if that condition had obtained, all of them would have been true

On Lewis’s account AGGLOMERATION is not true in general, although it is true for finite collections of propositions. To see why it can fail in the infinite case, consider the collection of propositions which contains, for each time *t*, the proposition that history proceeds just as it actually does until *t*. Each conditional of the form

1. If history had diverged from actuality at some point, then history would have proceeded just as it actually does until *t*

will be true, since for any *t* worlds which diverge after *t* are closer than worlds which diverge earlier. But clearly the following is false:

1. If history had diverged from actuality at some point, then each *t* is such that history would have proceed just as it actually does until *t.*

As many authors have noted—starting with Pollock \*\*\*—the intuitive force of AGGLOMERATION carries over very smoothly from the finite to the infinite case. It is thus a uncomfortable feature of Lewis’s view that it requires driving a wedge between the two kinds of cases.

This feature is very hard to avoid on any account that attempts to accommodate the phenomena without making essential appeal to context-sensitivity. For on such an account, all sentences of the form

1. If things had gone differently on day *n* or later, things would have been the same up to day *n*

will be true in a single context. Moreover, given the abundance of causal influence in the futurewards direction, there is strong pressure to accept all conditionals of the form

1. If things had gone differently on some day, things would have gone differently on some day later than day *n*.

After all, a scenario where the only differences occur before day *n* and then history then re-converges to that of the actual world seems quite far-fetched. But obviously (3) is also true irrespective of context:

1. If things had gone differently on day *n* or later, things would have gone differently on some day.

So by CSO, we can conclude that all the conditionals of the following form are true in the same context:

1. If things had either gone differently on some day, things would have been the same up to day *n*.

This is obviously inconsistent with AGGLOMERATION. The case for (2) is perhaps not quite watertight: one might think that for all we know, if there had been any divergence at all it would have been a very slight and temporary divergence confined to some initial finite period. But we can forestall this response by substituting the property of being a day such that things go differently from how they actually go on it and all subsequent days for the property of being a day on which things go differently from how the actually go throughout the argument: then (2) and (3) both become trivial, while the case for (1) is in no way weakened.

Our view preserves AGGLOMERATION: if each of a certain class of propositions is true at the closest accessible world where P is true, then at that world, all of those propositions are true. We think that the above argument against AGGLOMERATION fails because there is no single context in which all sentences of the form (1) are true. Each, nevertheless, is true in some contexts, and indeed has some tendency to evoke the kind of context in which it is true.[[28]](#footnote-28)

Given the centrality of CSO to the arguments we have been considering, it is worth addressing a particular kind of putative counterexample to CSO that has been presented in some recent work by Kit Fine. Fine is concerned in the first instance not with CSO but with the principle that logically equivalent sentences can be substituted salva veritate in conditionals. On Fine’s view, for example, () is true whereas () is false, despite the fact that its antecedent is logically equivalent to that of ():

1. If the tree had been dead on Sunday, it would have been alive on Saturday afternoon.
2. If the tree had been either dead on Sunday and not alive on Saturday afternoon, or dead on Sunday and alive on Saturday afternoon, it would have been alive on Saturday afternoon.

These sentences also generate counterexample to CSO, since Fine accepts that the logically equivalent antecedents of () and () are also “counterfactually equivalent” in the sense that () and () are both true:

1. If the tree had been dead on Sunday, it would have been either dead on Sunday and not alive on Saturday afternoon or dead on Sunday and alive on Saturday afternoon
2. If the tree had been either dead on Sunday and not alive on Saturday afternoon or dead on Sunday and alive on Saturday afternoon, it would have been dead on Sunday.

Fine develops a new kind of model-theoretic semantics for counterfactuals which is capable of validating these judgments. While we don’t propose to work through the details of this semantics here, we do wish to draw attention to two of its key features. The first feature is that ‘If A or B, C’ turn out to be logically equivalent to the conjunction of ‘If A, C’ and ‘If B, C’. Thus according to Fine, () entails the obviously false (), whereas () does not:

1. If the tree had been dead on Sunday and not alive on Saturday afternoon, it would have been alive on Saturday afternoon.

Now, as we mentioned in the introduction (\*PAGEREF\*), we are in agreement with Fine to this extent: sentences of the form ‘If A or B, C’ really do admit quite natural readings on which they are equivalent to ‘If A, C and if B, C’. (We be returning to this phenomenon in chapter \*\*\*: our treatment of it will involve giving up the idea that the relevant conditionals can be characterised as predicating a relation of two propositions, and will appeal to context-sensitivity in a way that leaves CSO intact.)

The second feature of Fine’s view that we want to note is the fact that the semantics allows us to classify each sentence (relative to a context) as either disjunctive or non-disjunctive. Disjunctions are always disjunctive; atomic sentences may or may not be disjunctive. (Fine is amenable to a dose of context-dependence here.) Given that he has this ideology at his disposal, it would thus be natural for Fine to accommodate the seeming goodness of the inferences whose validity we wanted to explain by appeal to CSO (or by appeal to CT and/or VLAS) by maintaining that these inference-rules are valid when restricted to conditionals with non-disjunctive antecedents and consequents. In any case, Fine does not present any cases that make trouble for this fallback position. Insofar as Fine’s new machinery provides a diagnosis of what goes wrong with the CSO-based arguments we have been considering, the diagnosis will thus have to turn that some of the relevant sentences are disjunctive (in the relevant contexts). For example, it would be natural for Fine to say that the antecedent of () is disjunctive:

() If the tree had died during the weekend, it would have been alive on Saturday afternoon

Disjunctive sentences behave in the semantics like explicit disjunctions. Thus if, for example, Fine said that the antecedent of () was tantamount to the disjunction ‘Either the tree died on Saturday or the tree died on Sunday’, () would turn out to be equivalent to ():

1. If the tree had died on Saturday, it would have been alive on Saturday afternoon, and if the tree had died on Sunday, it would have been alive on Saturday afternoon.

which sounds straightforwardly false.

On big problem we see with this account of () is that, in the context it naturally evokes, () doesn’t seem to be straightforwardly true or straightforwardly false. In that context, it would be natural to say

() If the tree had been in pieces at some point during the weekend, it might or might not have been intact all day Saturday

Moreover, there are other contexts where a sentence such as () seems more or less straightforwardly true, even though Fine seems to predict that it’s false. For example if there was no storm on Saturday but there was one on Sunday it would be quite natural to assert ():

() If the tree had died during the weekend, it would have died on Sunday.

The problem is not essentially due to the postulated semantic equivalence of ‘The tree died during the weekend’ to ‘The tree died on Saturday or Sunday’, since the same problematic issues arise even when we substitute that explicit disjunction into () and ().

Fine does have one other resource that he invokes in somewhat related contexts. He notices that sentences like

1. If I had moved to the West coast or the East coast, I would have moved to the West coast.

can be uttered felicitously even though his semantics predicts that it entails the absurd-sounding

1. If I had moved to the East coast, I would have moved to the West coast.

What he says is this: while (68) is indeed an absurd thing to utter because of the presupposition of non vacuity, relative to the context in which (67) is uttered felicitously, (68) is in fact not absurd but instead vacuously true. Fine could say something similar about the problem sentence (),

1. If it had died on Saturday or on Sunday, it would have died on Sunday.

But this does not look like a promising suggestion in settings where we are inclined to make remarks like

1. If it had died on Saturday or on Sunday, it might or might not have died on Saturday

Since the truth of () turns on whether (64) is vacuously true, the kind of ignorance we are avowing in uttering () would have, for Fine, to turn on on ignorance as regards whether () is vacuously true. We have trouble seeing how a plausible theory of vacuous truth could fit the bill.

It is time to turn briefly to an objection that we anticipate being directed against our view. Consider the sequence of conditionals

1. If I had skipped breakfast on Monday, that would have been the first time I did so all year

…

1. If I had skipped breakfast on Sunday, that would have been the first time I did so all year

On our account, each is true in the context it naturally suggests, but there is no context where we can be confident that all of them are nonvacuously true. But note that there appears to be a reading of the quantified sentence () on which it is true:

1. Each day last week is such that if I had skipped breakfast on that day, it would have been the first time I did so all year.

It is hard to deny that this quantified claim is true. Relevantly similar claims occur in many other settings.

1. If any member of my family had voted Republican she would have been the only one to do so
2. I bought lottery tickets on several occasions last year. On each of those occasions, if I had won I would have more than quadrupled my wealth.

It is easy for someone like Lewis to explain how such sentences could get be true in a single context: a single closeness relation along the lines he suggests can vindicate each witness to the quantified claim. But such sentences pose a challenge to our account, on which the relevant explanatory work is done by accessibility rather than closeness. For example, if for each day last week the set of accessible worlds contains a world where I skip breakfast on that day, it is hard to see what would stop there from being an accessible world where I skip breakfast on two days last week. And unless we impose special Lewis-style constraints on the closeness relation (something which we want to resist) there is no obvious ground for confidence that the closest world where I skip on a certain day isn’t one where I have already skipped on some earlier day.

Our response to this objection draws on some quite pervasive facts about the interaction of quantification with context-dependence. The paradigm on which we think most context-sensitive words should be modelled is ‘local’. Sometimes, the semantic contribution of ‘local’ is a particular property, say the property of being in Brooklyn, or perhaps the property of being within a certain distance of Barack Obama. But on other occasions, ‘local’ behaves semantically as if it contained a variable bound by some higher quantifier. For example

1. Each of my brothers went to a local tattoo parlour

can mean that each of my brothers went to a tattoo parlour *in the neighbourhood he lives in*. Readings with a similar structure seem to be available for just about any context-sensitive expression (with the exception of ‘I’ and possibly a few others). For example ‘Each of my brothers is angry that we don’t spend enough time together’ can mean ‘Each of my brothers is angry that *he and I* don’t spend enough time together’. ‘Everyone in my family is tall’ can mean ‘Everyone in my family is tall *for his or her age*’. ‘Everyone is scared because there might be a spider in the closet’ can mean, roughly, ‘Everyone is scared because it is *an epistemic possibility for them* that there is a spider in the closet’. And so forth. We intend ‘accessible’ to fit this pattern. So () could, for example, mean something like

1. Each day last week is such that either there is no world that matches the history of the actualised world up to that day where I skip breakfast on that day, or the closest such world is one where that day is the first day on which I skip breakfast all year.

This provides, in effect, a different accessibility relation for each day.

Circumstantial modals which stand to counterfactuals as epistemics stand to indicatives: ‘It couldn’t have happened that…’

It would be nice to say something about why holding history fixed is the canonical way of doing things. Connection to deliberation? (Look at Luke Glynn recent paper?)

— mention Morgenbesser’s coin too. ‘If I had bet on heads I would have won’. Return to (46) once we have said this.

Play up the unity of our account.

1. talk about Khoo

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* Notice that we didn’t say that it always just is epistemic possibility (for some relevant person/group/etc…) We think it can be stronger.
* Examples of modals where it is stronger: constrained uses.
* Examples of constrained conditionals — maybe just announce some without giving the probability-theoretic argument…

Chapter 2

<Talk about Matt Bird’s example>

1. We use ‘antecedent’ and ‘consequent’ for propositions. Others use these words for linguistic items, either what we call the ‘subordinate clause’ and ‘main clause’ of the ‘if’-sentence (e.g. ‘I resigned tomorrow’ and ‘I would be hired by Google the day after tomorrow’ in the case of (2)), or certain standalone declarative sentences derived by applying certain transformations to these clauses (e.g. ‘I will resign tomorrow’ and ‘I will be hired by Google the day after tomorrow’ in the case of (2)). [↑](#footnote-ref-1)
2. Note that linguistically ‘will’ and ‘would’ are also modals… [↑](#footnote-ref-2)
3. Examples like ‘If he came to the party and if he behaved himself, he was invited back’ are especially problematic for the idea that the semantic value of ‘if’ is a relation between propositions. [↑](#footnote-ref-3)
4. Examples of what we mean by ‘things that naturally determine propositions’: sets of possible worlds, properties of possible worlds, context-change potentials that map each set of worlds to the result of intersecting it with some given set, … For now we will not need to make any assumptions about how fine-grained propositions are, although we will have more to say about this in chapter 3. [↑](#footnote-ref-4)
5. Note that if, unbeknownst to us, there are no such things as nuclear weapons and catapults are still in wide use even now, the true-seeming utterances of (3) are in fact false; similarly, if unbeknownst to us, Martians actually provided Caesar with nuclear weapons which he only didn’t use because he had no need to resort to them, the true-seeming utterances of (4) are in fact false. **Perhaps put this later and in the main text.**  [↑](#footnote-ref-5)
6. Explain and reference CD’s paper. [↑](#footnote-ref-6)
7. \*\*\* Some use ‘presupposition’ in such a way that the claim that a sentence presupposes a certain proposition entails that that sentence has no truth-value at all if the proposition in question is false. As our ideology of “vacuous truth” shows, we are emphatically not using ‘presupposition’ in that way. [↑](#footnote-ref-7)
8. Cite and discuss von Fintel, ‘The presuppositions of subjunctive conditionals’; be neutral as regards which is the ‘default’. Flag that you could get it for one and then derive it for the other via ‘maximise presupposition’. [↑](#footnote-ref-8)
9. In some cases one needs to work with such notions as ‘the evidence that was available at the time’ even when there is no relevant person around to gather it: [↑](#footnote-ref-9)
10. In some other natural languages where the analogues of ‘might’ are normal tensed verbs, this ambiguity is lexically resolved. In English ‘have to’ works like this: we distinguish ‘It has to have been raining’ from ‘It had to be raining’. [↑](#footnote-ref-10)
11. When (15) and (16) are embedded they need not always be counterfactuals: for example, ‘He said that if I had married someone other than the person I did marry, I would not be happy’ could be a felicitous report of a past utterance of the ‘If he has married someone other than Jessica, he will not be happy’. [↑](#footnote-ref-11)
12. \*\*\*Condoravdi and Khoo argue for their view on the grounds that it explains why a present-present conditional like ‘If it’s raining the ground is wet’ can only have epistemic readings. Why we are not impressed by this.

    \*\*\* Note that in (10) and the past-perspective indicative reading of (2), the time of the epistemic perspective has to be to a time AFTER the (actual-world) killing of Kennedy. This makes it implausible that the counterfactual reading of (2) is just the same thing with “metaphysical” rather than epistemic accessibility. You might think that the view was getting you some kind of economy by letting you treat ‘had been’ as functioning in the same way in conditionals as elsewhere, but it’s not at all. [↑](#footnote-ref-12)
13. \*\*\*Fill this in from notes. ‘The only further resources needed to derive the logical equivalence of ‘If P, Q’ and ‘Not-P or Q’ are the validity of double-negation elimination, the law of excluded middle, modus ponens and proof by cases.’ To get from ‘If P, Q’ to ‘not-P or Q’, use LEM to get ‘not-P or P’, and then proof by cases + MP to get not-P or Q’. [↑](#footnote-ref-13)
14. This variant of our view is also unappealing in other ways: most importantly, it entails that sentences of the form ‘If P, P’ are false in many contexts. [↑](#footnote-ref-14)
15. Another possible resource for Stalnaker is to appeal to the idea that utterances of ‘P or Q’ or ‘Must (P or Q)’ carry the implicature that both P and Q hold in live possibilities. (Such an implicature can plausibly be predicted on Gricean grounds.) Given this, any case where both the content and the implicature of ‘Must (P or Q)’ are true will be one where ‘If P, Q’ is true. However this point does not carry over to ‘Q; therefore if P, P and Q’ and the like. [↑](#footnote-ref-15)
16. Similarly, Stalnaker’s view assigns this argument has the same presupposition-theoretic status as the or-to-if inference. [↑](#footnote-ref-16)
17. Make sure not to forget to talk about Stalnaker’s distinctive claims about ‘actually’. [↑](#footnote-ref-17)
18. \*\*\* A view where we are somehow allowed to substitute lack of known vacuity at the past time for lack of vacuity known now would be even worse, allowing lots of material-conditional-like interpretations. [↑](#footnote-ref-18)
19. ??? Saying ‘we are playing a game where you are only allowed to say something if it was known at the time’ is no good, obviously. [↑](#footnote-ref-19)
20. The lore is rather unspecific as regards how that conditional should be interpreted—perhaps it is just a material conditional. [↑](#footnote-ref-20)
21. \*\*\* The lore also says that presuppositions carry over to questions, which also fits. [↑](#footnote-ref-21)
22. The match may not be perfect (cite), and it may need to be restricted to allow for a smooth transition into the kind of event described by the antecedent. Indeed for certain antecedents — consider ‘If a giant comet had struck Washington DC yesterday afternoon….’ — we may need quite a long stretch of preceding time where there is nothing like exact match in order to achieve the smooth transition. [↑](#footnote-ref-22)
23. Check if Lewis says this. Mention others who do. [↑](#footnote-ref-23)
24. This is a slight oversimplification: if there are certain days on which it would have taken a large miracle for my coat to be stolen they will count as further away from actuality on Lewis’s account. But this doesn’t make the problem go away. Let’s just make the plausible assumption that on any day last year, a small miracle (perhaps taking place in the brain of some errant youth) on that day would have been enough to take the world onto a trajectory where my coat gets stolen on that day. [↑](#footnote-ref-24)
25. Also note how CSO entails CT and VLAS. [↑](#footnote-ref-25)
26. Counterfactuals with stative antecedents especially prone to this. [↑](#footnote-ref-26)
27. While the examples Lewis focuses on are sentences where the consequent directly concerns times earlier than those mentioned in the antecedent, he is careful to leave open the possibility that the non-standard resolutions of context-sensitivity required to handle those are also natural for a range of other counterfactual utterances that don’t have this structure. [↑](#footnote-ref-27)
28. \*\*\*Note that the relevant tendency seems considerably stronger for counterfactuals with eventive antecedents. [Is this a good place to show an awareness of the H? paper about ‘event’ conditionals?] [↑](#footnote-ref-28)