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THOMASON (UN)CONDITIONALS

abstract

Thomason conditionals are sentences of the form if p, ~Kp. Given plausible assumptions, these sentences cause trouble for epistemic theories of indicative conditionals. Our aim is to show that Thomason examples are not indicative conditionals, but alternative unconditionals, in the sense put forward by Rawlins (2013). This hypothesis solves the difficulty and explains certain features that set Thomason examples apart from run-of-the-mill indicative conditionals.

keywords

indicative conditionals, unconditionals, epistemic modality, semantics

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Two weeks into your new office job and things are starting to look a bit eerie. You are happy with the job, but there is something unsettling about your coworkers: they are extraordinarily reserved. You greet them as you arrive, bid them good evening as you leave, yet nothing but a nod comes out of them. You walk to the coffee machine and no one raises their gaze from their cubicles. On the few occasions that you have had lunch with them, the conversation was brief and noncommittal. In these circumstances, you may be justified in thinking:

(1) If my coworkers hate me, I have absolutely no idea.

The present paper is about the right semantics for sentences like (1). Van Fraassen (1980, p. 503) attributes examples like these to Richmond Thomason, so – following Bennett (2003) – we will dub sentences like (1) *Thomason conditionals* or *examples*. In particular, (1) is very similar to an example by Stalnaker (1984, p. 105). Constructions like these cause trouble for broadly epistemic theories of indicative conditionals. These theories maintain, roughly, that the role of antecedents is to temporarily update a knowledge state with the information that the antecedent is true, and then check whether the consequent holds with respect to the updated knowledge state. But the consequent denies knowledge of the antecedent, so it cannot hold true with respect to a knowledge state updated with the antecedent.

What I propose is to treat Thomason examples not as *bona fide* indicatives, but rather as *alternative unconditionals* (Rawlins, 2013). These are sentences whose syntax is superficially very similar to that of an indicative conditional, but where the consequent holds *unconditionally*, that is, regardless of whether the antecedent is true or false.

The paper is structured as follows: in section 1, I present the simplest version of the epistemic theory of indicative conditionals – namely Ramsey's test – and show how Thomason conditionals cause trouble for it. I then present the problem for more contemporary versions of the theory, representing states of information *via* epistemic modal bases. Section

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2 considers three relatively obvious ways of avoiding the problem posed by Thomason conditionals, but finds them lacking. In section 3, the hypothesis that Thomason conditionals are unconditionals is put forward. This hypothesis receives support from the uncommon behavior of Thomason examples under paraphrase with *only if* and contraposition. Truth-conditions for claims like (1) are provided. Section 4 concludes.

1. The Ramsey Test and Thomason Conditionals

Epistemic theories of indicative conditionals go back at least to Ramsey, who held the following view: "If two people are arguing 'If *p*, will *q*?' and are both in doubt as to *p*, they are adding *p* hypothetically to their stock of knowledge and arguing on that basis about *q*..." (Ramsey 1931/2001, p. 247, n. 1). Ramsey's test, as this proposal has come to be known, appears to be applicable to many indicative conditionals, insofar as these sentences convey their utterer's ignorance with respect to the claim in their antecedent. Ignorance about the antecedent is most often taken to be a presupposition triggered by the presence of indicative morphology in both antecedent and consequent, in contrast to the subjunctive morphology of counterfactuals (see Stalnaker, 1975 for an early statement of this view). It is easy to see why Thomason conditionals make trouble for this view. These constructions are of the form *if p, ~Kp*, and they are in the indicative mood, so the Ramsey test should be applicable to them. But herein lies the difficulty: if the role of the antecedent is to update our stock of knowledge, then the update guarantees *Kp*, which is what the consequent denies (see Chalmers and Hájek, 2007 for a clear and brief state of the problem). Note too that the trouble caused by Thomason conditionals appears only when the conditionals are about participants in the conversation. Compare (1) and (2) with (3):

(2) If your coworkers hate you, you have absolutely no idea.
(3) If Alice's coworkers hate her, she has absolutely no idea.

In (2) we have the same problem as in (1): once we (temporarily) add the information that your coworkers hate you to *our* knowledge, it follows that you know it. By contrast, the trouble disappears in (3), assuming that Alice is not taking part in our conversation: adding the information that her coworkers hate her to our knowledge will certainly not guarantee that she is in the loop.

The trouble remains when we turn to more contemporary versions of the epistemic theory (among many others, Gillies, 2010; Kratzer, 1986; Stalnaker, 1975, 2014). Broadly speaking, these theories represent indicative conditionals as first intersecting a contextually determined epistemic modal base with the proposition in the antecedent and then evaluating its consequent with respect to the modal base thus updated. Let us define epistemic modal bases as follows (I take this and the *(Definedness)* condition below from Gillies, 2010):

(*Epistemic modal base*): given a context *c* and a world *w*, *C* is a modal base (for *c,w*) only if $C^{c,w} = \{w' : w'$ is compatible with the *c*-relevant information at $w\}$

Truth-conditions for indicative conditionals are given thus:

(*Indicatives*): $[[\text{if } p, q]]^{c,w} = 1$ iff $C^{c,w} \cap [[p]]^{c} \subseteq [[q]]^{c}$

To see how Thomason conditionals make trouble for this view, we need to make three assumptions: first, assume that an indicative conditional is defined at a context *c* only if its antecedent is an open possibility relative to a modal base *C* (for *c,w*):

(*Definedness*): $[[\text{if } p, q]]^{c,w}$ is defined only if *p* is compatible with $C^{c,w}$

Next, assume a simple, text-book semantics for *knows* such as the one to be found in Heim & Kratzer (1998, p. 306). Where $K^{x,w}$ is the set of worlds that are epistemically accessible for knower *x* at *w*,

(*Know*): $[[\text{know}]]^{c,w} = \lambda p \lambda x. \forall w' \in K^{x,w} : [[p]]^{c,w'} = 1$.

Finally, assume that the modal base $C^{c,w}$ is a superset of any interlocutor *m* at *c*'s set $K^{m,w}$ of epistemic alternatives. In other words, any participant in a conversation knows at least as much as what is known with respect to $C^{c,w}$:

($K \subseteq C$): for any interlocutor *m* in *c,w*, $K^{m,w} \subseteq C^{c,w}$.

With these assumption in place, consider a felicitous utterance of (1) at context *c* and world *w*: by (*Definedness*), we will restrict $C^{c,w}$ with the information in the antecedent *that my coworkers hate me*; then, by our second and third assumption that information either restricts the speaker's knowledge $K^{speaker,w}$ or is already true across it. Either way, the proposition in the consequent, *that I have absolutely no idea*, is false, since $K^{speaker,w}$ has been updated with the information in the antecedent. So, if the epistemic theory is right, sentences like (1) should be invariably false. However, they *can* be true, and therefore the epistemic theory is in trouble.

2. Three Obvious Escapes

Before we move to our preferred solution to this problem, let us revise three relatively obvious escape routes. The first is to treat the antecedents of Thomason conditionals as satisfying a presupposition in their consequent. The second is to drop the requirement that indicatives quantify over *epistemic* possibilities. The third solution is to allow the epistemic operator in the consequent of a Thomason conditional (or any indicative conditional, for that matter) to access worlds outside the updated modal base.

Dynamic semantics treatments of conditionals and presupposition (stemming from Heim, 1983/2002; see Schlenker, 2011 for an overview) suggest a way of interpreting sentences like (1) that would explain at least some of these cases away: Thomason conditionals may be sentences whose antecedents satisfy a presupposition of their consequents. Take a sentence like (1), whose consequent is a negative knowledge claim, *~Kp*. *Kp* presupposes *p*, and since presuppositions project under negation, *~Kp* also presupposes *p*. The idea is that in a sentence of the form *if p, ~Kp*, the antecedent is there just to satisfy the presupposition of the consequent clause *~Kp*, the bare utterance of which would be infelicitous otherwise.

This solution is suggestive, and it would place Thomason conditionals along constructions such as '*If Jane used to smoke, she has stopped*'. However, Thomason conditionals are also of the form:

(4) If my coworkers hate me, it's not obvious that they do.
(5) If my coworkers hate me, I can't be sure about it.
(6) If my coworkers hate me, I can't tell.

Sentences like (1) and the different sentences (4)-(6) display the same structure (that is, the structure of a conditional with indicative morphology, with a certain clause in the antecedent and an epistemic verb embedding that same clause in the consequent) and they seem to have roughly the same meaning – they all express essentially *ignorance* about the coworkers' feelings towards the speaker. But the different consequent clauses in (4)-(6) do not presuppose the truth of the clause embedded under the attitude verbs in (4)-(6). Thus, the proposed explanation could not be extended to Thomason conditionals like (4)-(6). Insofar as one aims at offering a general account of these constructions, this one will not do.

The second solution consists on giving up the distinction between indicative and subjective conditionals in terms of the idea that indicatives quantify over *epistemic* possibilities. This solution may seem *prima facie* attractive, insofar as the root of the problem caused by Thomason conditionals appears to lie in the assumption that their antecedent intersects a knowledge state. If we drop this assumption, the problem vanishes: the relevant updates need no more carry over to our knowledge. This can be seen by noting that Thomason *subjective* conditionals are not problematic:

(7) If my coworkers hated me, I would have absolutely no idea.

Since it is not assumed that the antecedent of a subjunctive conditional restricts anyone's knowledge, it does not follow from (7) that anyone *knows* that my coworkers hate me. Furthermore, this seems to be the intuitively right way of interpreting a sentence like (1): entertaining the possibility that my coworkers hate me is not thereby entertaining the additional possibility that I am aware of it, since different things follow from each possibility: if they hate me, then life will probably go on as it has for the past two weeks; but if I *learn* that they hate me, I may quit my job. Nonetheless, if we hold with the epistemic theory that such a (momentary) update is an update on our knowledge, then whatever follows from adding *that we possess* that information should follow already from simply *adding* the information to our knowledge. We may therefore give up the idea that the antecedent of an indicative restricts a knowledge state.[2]

However, dropping the characterization of indicatives as operating on epistemic possibilities has a price, since this theory has both theoretical appeal and philosophical pedigree: among other virtues, it straightforwardly accounts for the epistemic *feel* of indicatives, that is, the idea that indicatives are concerned with how things might turn out to be (rather than with how things would or might *have* been). The epistemic theory also captures the observation that speakers possessing different pieces of evidence may be justified in uttering indicative conditionals with contradictory consequents – Gibbard's (1981) Sly Pete and Bennett's (2003) Top Gate example are two well-known cases. Finally, in dynamic semantics, this theory of the meaning of indicatives provides a good explanation of the projection behavior of presuppositions embedded in conditionals (Schlenker, 2011). In sum, abandoning a semantics for indicatives in terms of operations over epistemic possibilities seems too rash a move to make in light of Thomason conditionals. We aim to show that it is also unnecessary.

The third way of avoiding the problem caused by Thomason conditionals is to note that there could be accessible non-antecedent worlds even after the relevant modal base has been updated with the antecedent. This way, we would allow the ignorance claim in the consequent to come out true even when the antecedent is true throughout the modal base.

This is the most natural way out. We presented the problem as originating, in part, in our assumption ($K \subseteq C$) that any update on $C^{c,w}$ ought to carry over to $K^{m,w}$ (for any interlocutor *m* in *c,w*). But in fact, the ignorance claim embedded in the consequent of (1) is not to be evaluated at the context of utterance *w*, but at each world in the updated modal base:

(*Truth-conditions for* (1)): $[[\text{if } p, \sim Kp]]^{c,w} = 1 \text{ iff } C^{c,w} \cap [[p]]^{c} \subseteq [[\sim Kp]]^{c}$

2 Not everyone who works with this kind of theory of indicatives makes this assumption. Yalcin (2007), for example, is careful to state his observations about epistemic contradictions embedded under *if* and *suppose* without assuming that those operators range over epistemic possibilities. He just takes them to operate on an information parameter in the circumstances of evaluation.

So even though an update on $C^{c,w}$ would effect the corresponding update on $K^{m,w}$, an update on $C^{c,w}$ need not effect a similar update on $K^{m,w'}$, where w' is any world in the updated modal base. Where p is the proposition *that my coworkers hate me*, what the previous truth-conditions state is that the intersection of the modal base $C^{c,w}$ and p is a subset of the set of worlds at which I am ignorant of p. For it to be true that each world w' in the update is a world at which I do not know that they hate me, there ought to be at least one non-hate world in $K^{m,w'}$. If nothing prevents us from accessing such non-hate worlds, then we are not in trouble. The reply to the purported counterexample would be straightforward: *no*, epistemic theories do not predict sentences like (1) to have false consequents; the illusion that they do so is due to a confusion caused by evaluating the knowledge claim in the consequent at the world of utterance, instead of evaluating it at each world in the updated modal base.

This is a fine solution as far as it goes. But something *does* prevent us from accessing non-hate worlds from the updated modal base. This third solution is in tension with a principle that Gillies claims characterizes modal bases generally, namely that they are *well-behaved*:

(*Well-behavedness*): For any world w and context c, a modal base $C^{c,w}$ is well-behaved iff
a. $w \in C^{c,w}$
b. if $w' \in C^{c,w}$, then $C^{c,w} \subseteq C^{c,w'}$

The first condition is simply that modal bases are *reflexive*; the second is that they are *euclidean*. Taken together, these conditions entail that if a modal base is well-behaved, then it is also *closed*:

(*Closedness*): for any $w' \in C^{c,w}$, $C^{c,w} = C^{c,w'}$.

This just means that no world inside a modal base $C^{c,w}$ opens (or closes) more possibilities than are open at w.[3]

For Thomason conditionals, *(Well-behavedness)* forecloses the possibility that, after we update the modal base with the antecedent, non-antecedent worlds are still accessible: trivially, $C^{c,w} \cap [[p]]^c \subseteq [[p]]^c$. Now, take any w' in $C^{c,w} \cap [[p]]^c$. For $\sim Kp$ to be true at w' for an interlocutor m, $K^{m,w'}$ has to be compatible with $\sim p$; that is, $K^{m,w'} \not\subseteq [[p]]^c$. By our second assumption ($K \subseteq C$), ignorance gets transmitted upwards to the modal base at w', so that $C^{c,w'} \not\subseteq [[p]]^c$. But if $C^{c,w} \cap [[p]]^c$ entails p whereas $C^{c,w'}$ does not, then $C^{c,w} \cap [[p]]^c \neq C^{c,w'}$. In other words, $C^{c,w} \cap [[p]]^c$ is not *closed*.

In sum: pointing out that the embedded knowledge claim in a Thomason conditional is to be evaluated at worlds in the updated modal base – from which non-antecedent worlds might be accessible – is of little help, since the well-behavedness of modal bases impedes that non-antecedent worlds are accessible from the updated modal base.

In reply to this, perhaps we could drop (*Well-behavedness*), or at least the euclidean condition – reflexivity is clearly out of question. But the euclidean condition is intuitive too, as it forbids that modal bases at worlds within a modal base C be more informative than C itself. The intuitive idea is that to consider it epistemically possible that one possesses more information than one actually possesses *just is* to possess more information. But that prevents us from accessing the non-antecedent possibilities that would make the consequent of a Thomason conditional true.

3 *Proof* (again, taken literally – except for change of notation – from Gillies, 2010, p. 6): at any context c and world w, "suppose $w' \in C^{c,w}$. Consider any $w'' \in C^{c,w'}$. Since C is euclidean and $w' \in C^{c,w}$, $C^{c,w} \subseteq C^{c,w'}$. Since C is reflexive, $w \in C^{c,w}$ and thus $w \in C^{c,w'}$. Appeal to euclideanness again: since $w'' \in C^{c,w'}$, $C^{c,w'} \subseteq C^{c,w''}$; but $w \in C^{c,w'}$ and so $w \in C^{c,w''}$. And once more: since $w \in C^{c,w''}$, $C^{c,w''} \subseteq C^{c,w}$. And now reflexiveness: $w'' \in C^{c,w''}$ and so $w'' \in C^{c,w}$. (The inclusion in the other direction just is euclideanness.)".

So once we take on board (*Closedness*), epistemic theories of indicatives are still in trouble in the face of Thomason conditionals. Here however, the plot takes an interesting turn. By incorporating (*Closedness*), we can show that Thomason conditionals entail that the relevant modal base is ignorant with respect to their antecedents. Truth-conditions for indicatives were given in terms of restricted epistemic necessity. We can represent this with an epistemic necessity operator $\Box_c$ (a box operator appropriately restricted by the relevant modal base *C*) and material implication (→). That is, [[if *p*, *q*]] is equivalent to $\Box_c(p \to q)$. (*Closedness*) can be recast as the principle that $\Box_c p \to \Box_c\Box_c p$ (assuming reflexivity, which we are doing all along, this addition makes this system S4). Now take a Thomason example, whose structure is *if p*, *~Kp*. By our third assumption ($K \subseteq C$), *if p*, *~Kp* entails *if p*, $\sim\Box_c p$. By the epistemic theory as we have just stated it, [[if *p*, $\sim\Box_c p$]] is equivalent to $\Box_c(p \to \sim\Box_c p)$, which is equivalent to $\Box_c p \to \Box_c\sim\Box_c p$. Now suppose for *reductio* that $\Box_c p$. By $\Box_c p \to \Box_c\sim\Box_c p$ and *modus ponens*, $\Box_c\sim\Box_c p$; and by (*Closedness*) and *modus ponens*, $\Box_c\Box_c p$. By reflexivity from $\Box_c\sim\Box_c p$, we get $\sim\Box_c p$; and by reflexivity from $\Box_c\Box_c p$, we get $\Box_c p$ (i.e. if *p* is necessary at a world *i*, then *p* is true in all worlds accessible from *i*. By reflexivity, *i* is accessible from *i*, so *p* is true at *i*). But this is a contradiction, so by *reductio* we obtain $\sim\Box_c p$. In other words, Thomason conditionals entail that the relevant modal base is ignorant with respect to the antecedent.

In a one-person context (where the relevant modal base is just the speaker's knowledge) (1) entails that I do not know that my coworkers hate me. This is puzzling, since utterances of conditionals that entail their consequents are usually infelicitous (obvious examples are conditionals with a tautology in their consequent: *if I get home early, either I will eat or I will not*). Thomason conditionals do not fit this bill – their consequents are not tautologous and they do not sound infelicitous.

In sum, we have made a surprising set of observations: we have considered three ways of escaping the problem caused by Thomason conditionals, and all of them are unsatisfying. The first one was to treat the antecedents of Thomason conditionals as satisfying a presupposition in their consequent. But we saw that this solution could not be extended to Thomason conditionals whose consequents lack such a presupposition. The second solution was to give up the connection between indicatives and epistemic possibilities. But given the theoretical virtues of that view, that seemed a high price for a small payoff. The final escape route was to allow modal bases indexed to worlds in the intersection of the initial modal base with the antecedent to access non-antecedent worlds. This, however, clashed with the principle that modal bases are *closed*. Furthermore, by taking (*Closedness*) on board it was shown that Thomason conditionals entail something very much like the ignorance claim in their consequents, which is unexpected. I want to argue that these observations make sense if we cease treating constructions like (1) as conditionals, and we start treating them as *un*-conditionals.

3. Thomason Conditionals are Unconditionals

We have observed that, assuming (*Closedness*) and ($K \subseteq C$), Thomason conditionals entail their consequents, which is not a normal thing for an indicative conditional to do. But who said that Thomason conditionals are *normal*? For one, sentences like (1) do not seem to welcome the kind of paraphrase that indicative conditionals are normally subjected to. Consider paraphrasing (1) with *only if*:

(8) My coworkers hate me only if I have absolutely no idea.

This paraphrase sounds very different from the original. Here's an attempt at saying why: conditionals express some sort of connection, causal, probabilistic or other, between their antecedent and consequent. That is what the attempted paraphrase (8) seems to convey: that there is some sort of dependency between my coworkers' hate and my ignorance. But on its most natural interpretations, (1) conveys no such dependency. Rather, an utterance of (1) is appropriate in just the kind of context described at the start, where the speaker just cannot read her coworkers. But no relevant connection between her ignorance and the truth of that possibility is conveyed by uttering (1).

Things get worse when we try paraphrase by contraposition:

(9) If I have any idea (i.e. *if I know*) that my coworkers hate me, then my coworkers do not hate me.

The antecedent in (9) entails that my coworkers hate me, but then the consequent denies it. This is a no-go.

The strange behavior of Thomason examples with respect to *only if* paraphrase and contraposition suggests that these constructions may not be indicatives at all. This possibility is also supported by the observation that the particle *if* can be interrogative instead of conditional. In such cases, it is interchangeable for *whether*:

(10) I am not sure if they fought.
(11) I am not sure whether they fought.

Note that one can place these *if/whether* clauses at the start of the sentence, thereby constructing what looks very much like a Thomason conditional:

(12) Whether they fought, I am not sure.
(13) If they fought, I am not sure.

We submit that this is what Thomason examples are: constructions whose structure resembles that of an indicative conditional, but whose antecedent clause is an interrogative clause. This means that those *if*-clauses have the same denotation as questions (Heim, 2000; Karttunen, 1977/2002), more specifically *yes-or-no* or *alternative* questions. Thus, a prominent option opens up, namely that constructions like (1) are *alternative unconditionals*, in the sense of Rawlins (2013).

Unconditionals are constructions like the following:

(14) Whoever bakes the cake, it will be delicious.
(15) Whatever he said, you should not feel bad.
(16) Whether or not Silvio comes, it will be fun.

Informally, unconditionals differ from indicative conditionals in the following sense: whereas indicative conditionals restrict the circumstances in which we evaluate the consequent, unconditionals force us to consider all the range of alternatives that the antecedent presents us with. That is, (14) can be paraphrased by saying that, if Philip bakes the cake, it will be delicious; if Yining bakes it, it will be delicious; if Paloma bakes it, it will be delicious... and so on for all the salient alternatives. It is thus natural to give a standard interrogative semantics (in terms of sets of possible answers) to unconditional adjuncts, and that is just what Rawlins defends. In the case of alternative unconditionals like (16), just like in the case of whether-questions, the alternatives are a proposition and its negation.

An interrogative clause effects a partition on the domain of possible worlds *W*, rearranging it in cells whose worlds agree on each answer to the question. For instance, the denotation of ‘Who framed Roger Rabbit’ is a partition of the domain of propositions, where the worlds in each cell of the partition agree on each possible answer to that question: in cell #1, every *w* is such that the proposition that Valiant framed him is true in *w*; in cell #2, every *w’* is such that the proposition that Judge Doom framed him is true in *w’*, etc. Alternative interrogative clauses, on the other hand, partition *W* in cells according to whether worlds provide a negative or positive answer to a yes-or-no question: so the denotation of ‘whether or not my coworkers hate me’ partitions *W* in two cells, one wherein every *w* is such that the proposition that my coworkers hate me is true in *w*, and another cell in which every *w’* is such that the proposition that my coworkers hate me is false in *w’*.[4]

Hence, the proposal is that the antecedent clause of a Thomason conditional has the semantic value of an alternative question, that is, a set of propositions whose members are a proposition and its negation. In a somewhat simplified manner (see Rawlins, 2013 for more details, especially for much compositional detail over which I’m skipping), truth-conditions for alternative unconditionals may be given as follows:

(*Alternative unconditionals*): $[[\text{if/whether or not } p, q]]^{c,w} = 1$ iff $C^{c,w} \cap [[\text{whether or not } p]]^{c} \subseteq [[q]]^{c}$

All we’re doing is swapping the denotation of the antecedent clause in the truth-conditions for indicative conditionals given at the outset for the denotation of an alternative question, whose content is the antecedent clause and its negation. Admittedly, this requires some formal violence, since a set of propositions is not the right type of object to be intersected with a set of worlds. However, recall that denotations of alternative questions are partitions of logical space. It is thus suggestive to interpret that what ought to be intersected with the modal base is just the set of worlds on which the partition is performed, that is, *W* (*minus* worlds that fail to satisfy any presuppositions that the alternative question may have, see n. 4).

The antecedent clause of an unconditional like (1) is no longer a proposition, but the set {my coworkers hate me, my coworkers don’t hate me}. Substituting this denotation type for the antecedent, the truth conditions for (1) look like this:

$[[(1)]]^{c,w} = 1$ iff $C^{c,w} \cap$ {my coworkers hate me, my coworkers don’t hate me}$\subseteq$ [[I have absolutely no idea]]^{c} .

The alternative question {my coworkers hate me, my coworkers don’t hate me} denotes a partition of *W*, and since $C^{c,w}$ is a subset of *W* (assuming that $C^{c,w}$ also satisfies the presuppositions of the antecedent clause), the intersection with respect to which we must evaluate the consequent is just $C^{c,w}$ itself. (1) comes out true just in case the modal base is a subset of or equal to worlds in which I’ve no idea of whether my coworkers hate me or not. Given our third assumption ($K \subseteq C$), every world in which I’ve no idea of whether my coworkers hate me is a world whose modal base is also ignorant as to whether my coworkers hate me.[5] Thus, what the truth conditions for (1) demand is that $C^{c,w}$ is a subset of or equal to

4 A further question is whether such partition is exhaustive, that is, whether every $w \in W$ is in one or other cell of the partition. Intuitively, the answer will be negative if the interrogative clause carries a presupposition. In our case, for example, worlds in *W* where I am unemployed should not be in either cell of the partition corresponding to *whether my coworkers hate me*.

5 *Proof*: at a context *c*, take any *w* such that I don’t know whether my coworkers hate me at $\langle c,w \rangle$. Given our semantics for ‘knows’, this is true just in case some world *w’* in my knowledge state $K^{c,w}$ is such that my coworkers don’t hate me in *w’*. But by ($K \subseteq C$), if $w' \in K^{c,w}$ then $w' \in C^{c,w}$. Thus, $C^{c,w}$ is ignorant as to whether my coworkers hate me.

the set of *w'* such that $C^{c,w'}$ is ignorant as to whether my coworkers hate me. In other words, that for every $w' \in C^{c,w}$, some $w'' \in C^{c,w'}$ is such that my coworkers don't hate me in *w''*. Given (*Closedness*), this will be the case if and only if some $w''' \in C^{c,w}$ is such that my coworkers don't hate me in *w'''*, as one would expect if Thomason examples express ignorance about their antecedent.

Assuming that Thomason examples are unconditionals explains the awkwardness of the paraphrases with *only if* and contraposition: as we mentioned, such paraphrases appeared to bring out a dependency between the antecedent and the consequent that is characteristic of conditionals. But such connection seemed to be absent from sentences like (1) on their most natural interpretation. If sentences like (1) are unconditionals however, that makes sense, since unconditionals are characterized precisely by the lack of such a connection: given that the consequent is true under any of the set of circumstances considered in the antecedent, an unconditional expresses the independence of the consequent with respect to the antecedent. Rawlins (2013, p. 112) calls this feature of unconditionals *relational indifference*. If Thomason examples are really unconditionals, then given relational indifference, it is to be expected that those paraphrases are odd.

Finally, unconditionals entail their consequents, so it is no wonder that Thomason examples do so as well. In this view, what a sentence like (1) turns out to express can be more fully paraphrased by saying that *if my coworkers hate me, I have absolutely no idea; if they do not, I have absolutely no idea either*; alternatively, that *whether or not my coworkers hate me, I have absolutely no idea.*

4. Conclusion

In the last section of this paper, we have defended the view that Thomason examples are not after all indicative conditionals, but *alternative unconditionals*. This view respects all the assumptions that we have made and requires no substantial changes in the epistemic theory of indicatives. It also accounts for a number of observations about these sentences, namely, the strangeness of *only if* paraphrase and contraposition, as well as the fact that, given our assumptions, Thomason examples entail their consequents. Finally, this view also respects the intuition that Thomason unconditionals are appropriate as a way of conveying ignorance about their antecedents.

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