Sobel Sequences – Relevancy or Imprecision?*

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Abstract

Sobel sequences were recently split into two independent phenomena by Klecha [5, 6]: Reversible True Sobel sequences and irreversible Lewis sequences. In this paper we show that Klecha's prediction of unidirectionality for Lewis sequences is too strong. To this effect, we propose an alternate analysis, using Lewis' [13, 14] contextualist relevancy-based framework for conditionals, from which a weaker version of Klecha's analysis follows naturally, if we accept Bennett [2] and Arregui's [1] view on how causality affects world similarity. In doing so, we automatically provide an explanation for infelicitous reverse True Sobel sequences, which is, as we also show, a problem for Klecha's current account. Finally, we reunify the analysis of both sequence types under a single overarching linguistic phenomenon by treating the individual sequence types as proper subsets of Sobel sequences.

1 Introduction

For fifty years, starting with the work of Stalnaker [16] and Lewis [11], *Sobel sequences* have played an important role in the debate between strict and variable-strict conditional semantics. A Sobel sequences is a sequence of conditionals which adheres to the following pattern:

(1) *Sobel sequence schematic*
$\phi \Box\!\!\rightarrow \chi$, but $(\phi \wedge \psi) \Box\!\!\rightarrow \neg\chi$

(2) If the USA threw its weapons into the sea tomorrow, there would be war; but if all the nuclear powers threw their weapons into the sea tomorrow, there would be peace. [11]

At first, they were put forth as an argument in favor of variably-strict conditional semantics [16, p. 106], since contemporary strict analyses assumed that the ϕ-conditionals would range over all worlds, including the contradicting $\phi \wedge \psi$-worlds. The situation reversed itself when Heim [4] noted that a reversal of Sobel sequences, called Heim sequences, leads to infelicity:

(3) *Reverse Sobel sequence / Heim sequence schematic*
$(\phi \wedge \psi) \Box\!\!\rightarrow \neg\chi$, but $\phi \Box\!\!\rightarrow \chi$

(4) ??If all the nuclear powers threw their weapons into the sea tomorrow, there would be peace; but if the USA threw its weapons into the sea tomorrow, there would be war. [4]

The infelicity of such sequences is highly unexpected by variably-strict models, as the world selection process is completely autonomous for each conditional, is entirely unaffected by outside influences, and only selects the closest antecedent-worlds. Therefore, building upon this initial observation, von Fintel [17] and Gillies [3] developed dynamic strict approaches that render Sobel sequences felicitous and all Heim sequences infelicitous. Thereafter, Heim sequences

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were considered a major argument against variably-strict semantics up until the examination of felicitous Heim sequences by Moss [15]. See below for some such sequences:

(5) If kangaroos had no tails and they used crutches, they would not topple over. But if kangaroos had no tails, they would topple over.(adapted from [11, p. 1,9] by [14, p. 7])

(6) *(Holding up a dry match, with no water around)* If I had struck this match and it had been soaked, it would not have lit. But if I had struck this match, it would have lit. (adapted from [16, p. 106] by [14, p. 7])

(7) *(Said to someone who had just been completely alone by a frozen lake)* If you had walked on the thin ice while being supported by someone on the shore, the ice wouldn't have broken. But, of course, if you had walked on the thin ice, the ice would have broken. (adapted from [2, p. 166] by [14, p. 8])

As the dynamic strict approaches were specifically designed to enforce the infelicity of Heim sequences, such models naturally had problems accounting for their felicitous counterexamples. To respond to such findings, more and more researchers returned to variably-strict analyses of conditionals [15, 6, 14], as they initially predict all Heim sequences to be felicitous. Then, in order to account for the well-known infelicitous cases, they introduce extramodular semantic and pragmatic tools that attempt to systematically disqualify these sequences. Some such possible tools are Moss' epistemic irresponsibility [15], Klecha's modal subordination [6], need for contrastive stress [6], imprecision and precisification [6], and Karen Lewis' reordering of the world ordering according to the perceived relevance of the respective worlds [13, 14].

Another crucial observation was made by Klecha [5, 6], who argues that Sobel sequences are too vaguely defined: There are two distinct subtypes of Sobel sequences, True Sobel sequences and Lewis sequences, which may share surface similarities, but constitute two entirely independent phenomena. Their conglomeration muddled the analysis of Sobel and Heim sequences and is largely responsible for the controversially debated status of Heim sequences: True Sobel sequences are generally reversible, whereas Lewis sequences are not.

The goal of this paper is threefold. Firstly, it aims to show that neither modal subordination nor the need for contrastive stress is enough to correctly predict the infelicity of some reverse (True) Sobel sequences. Secondly, it aims to show that Klecha's imprecision-based prediction that all Lewis sequences are irreversible is too strong in light of newly acquired data that points to the contrary. Thirdly, it aims to show that Lewis' relevancy-based framework for conditionals (i) is able to naturally derive the distinction between True Sobel sequences and Lewis sequences, if we accept Bennett [2] and Arregui's [1] view on world similarity, (ii) provides a desirably weaker prediction concerning the irreversibility of Lewis sequences, and (iii) reunifies True Sobel sequences and Lewis sequences under a single semantic-pragmatic analysis.

2 True Sobel sequences, Lewis sequences, and Imprecision

Klecha [6] argues that the label *Sobel sequence* is too vague and that two similar but distinct phenomena are thereby falsely grouped together. He argues that Sobel sequences should be separated into two distinct classes: *True Sobel sequences* and *Lewis sequences*. The derivation of (in-)felicity for (reverse) True Sobel sequences is entirely independent and different from the derivation of (in-)felicity for (reverse) Lewis sequences. The difference between the two sequence types lies in the causal relation between the antecedental propositions.

(8) *True Sobel sequences*
True Sobel sequences are sequences that adhere to the following pattern: $\phi \Box\!\!\rightarrow \chi$, but $(\phi \wedge \psi) \Box\!\!\rightarrow \neg\chi$, where ϕ, ψ are causally unrelated propositions.

(9) *Lewis sequences*
Lewis sequences are sequences that adhere to the following pattern: $\phi \Box\!\!\rightarrow \chi$, but $(\phi \wedge \psi) \Box\!\!\rightarrow \neg\chi$, where ϕ, ψ are related such that ϕ precedes ψ in a causal chain of events.

Klecha [6] argues that all further differences arise from this single difference in causality relation, so long as we accept Bennett and Arregui's [2, 1] view on how causality affects world similarity: In a simplified version, they posit that the closeness of two worlds to one another is their similarity in all matters except those which pertain to the antecedent and except what follows causally from the antecedent. As such, ψ-worlds would only be counted as distant to ϕ-worlds, if ψ was not part of some causal chain that had been started by ϕ [2]. Therefore, the $\phi \wedge \psi$-worlds would count as just as close to the evaluation world w_0 as the ϕ-worlds, if ψ occurred due to a causal chain begun by ϕ [5]. The most important consequence that follows from this is Klecha's prediction that only Lewis sequences are truly irreversible (see § 2.2)

2.1 (In-)Felicity of (Reverse) True Sobel Sequences

Let us look at the True Sobel sequences, their reversals, and their respective semantics. The adoption of Bennett's [2] view on world similarity had no impact whatsoever on the way True Sobel sequences' semantics functions, when compared to the original class of Sobel sequences: In fact, Klecha posits that True Sobel sequences simply follow the conservative variably-strict models that were put forth by Stalnaker [16], Lewis [11], or Kratzer [8]. Therefore, from a strictly semantic point of view, the order of conditionals should be irrelevant, as the world selection operates on a conditional-to-conditional basis with no room for outside influences:

(10) For all contexts c, $\phi \Box\!\!\rightarrow \psi$ is true at w in c iff all the closest ϕ-worlds to w are ψ-worlds, where closeness is determined by similarity.

As such, the verse sequences (5)-(7) are correctly predicted to be felicitous. Still, this analysis presents a problem for infelicitous sequences such as (4). Here, some further mechanism is required to selectively exclude some but not all reverse True Sobel sequences [6]. Klecha argues in favor of two such possibilities: modal subordination and the need for contrastive stress.

If the second conditional of a sequence is modally subordinate to the first conditional, then the ϕ-conditional in (4) would be interpreted as *if the USA and all the nuclear powers threw their weapons into the sea, there would be war.* This interpretation would be a direct contradiction to the prior $\phi \wedge \psi$-conditional, explaining a general feeling of infelicity. However, there is no obvious reason for as to why only some conditionals are subject to modal subordination (e.g. (4)), but others are not (e.g. (5)-(7)). Another problem is the issue raised by Lewis: The felicity judgments for the same Heim sequence vary from person to person [13, 14]. To the best of our knowledge, current research does not show why modal subordination should be subject to such heavy fluctuation. As such, before these issues are addressed, this avenue is not sufficient to adequately explain the distribution of felicity for reverse True Sobel sequences.

The second possible excluding factor, the need for contrastive stress, would predict that any sequence of conditionals is infelicitous where the second antecedent has no element that is contrastively stressable against the previous antecedent. Unreversed sequences automatically have some element that can be stressed in their second conditional, since they introduce the possibility of ψ in its antecedent. This is not necessarily the case for reversed sequences:

(11) Ida: If you had stood there wearing a helmet, you wouldn't have been killed.
Aaron: # But if you had stood there, you would have been killed. [6, p.5]

Here, the antecedent of the ϕ-conditional is a syntactic subset of the $\phi \wedge \psi$-conditional's antecedent. Therefore, there is no item that could possibly be contrastively stressed in the ϕ-conditional, leading to a prediction that the reverse sequence should be infelicitous. This prediction is borne out [6]. More generalized, this approach makes two predictions: (i) Contrastively stressable sequences are felicitous barring other factors, and (ii) contrastively unstressable sequences are generally infelicitous. However, further down the line, these predictions break down rather quickly, if more data is considered: Not only are the ϕ-antecedents in (5) and (6) syntactic subsets to their respectively preceding $\phi \wedge \psi$-antecedents, without rendering the reverse sequences infelicitous, but the sequence in (4) even has an element that can be contrastively stressed (*the USA* is stressable against *all nuclear powers*), yet that sequence is considered infelicitous. As such, counterexamples to either prediction exist: (i) There are contrastively stressable sequences that are infelicitous, and (ii) there are contrastively unstressable sequences that are felicitous. We therefore rule out this approach as a viable candidate.

This would leave us, as of yet, with the correct prediction that some True Sobel sequences are reversible, but without any mechanism to correctly rule out their infelicitous counterparts.

2.2 (In-)Felicity of (Reverse) Lewis Sequences

The semantics and pragmatics of Lewis sequences, on the other hand, are quite different from the semantics of classic Sobel sequences: Since ϕ- and $\phi \wedge \psi$-conditionals would range over the same set of worlds [2], the ϕ-conditional would always be considered false, if the $\phi \wedge \psi$-conditional was considered true, regardless of the sequence order. As such, some tool needs to be introduced to allow us to ignore the $\phi \wedge \psi$-worlds for the ϕ-conditional of a non-reversed Lewis sequence (yet disallow us to ignore them for reversed ones). The tool advocated by Klecha [5, 6] is *imprecision* and *precisification*. Imprecision refers to the fact that a strictly false statement can be felicitously uttered [11], so long as the statement in question is considered "true enough" for present purposes [9]. See the example context and utterance below.

(12) *Mary arrived at work at 15:03*
Ida: Mary arrived at three o'clock. (original due Lasersohn [9])

Precisifaction refers to the act of raising the previously introduced lower standard of precision of an utterance. Once a higher standard of precision has been introduced, the lower level of precision is no longer easily accessible: Therefore, the reutterance of an imprecise statement is considered infelicitous, if precisification occurred, since precisification is generally unidirectional [12, 9, 7]. See below for an extended example of (12) that undergoes precisification.

(13) *Mary arrived at work at 15:03. This is known to all discourse participants.*
John: Mary arrived at three o'clock.
Jane: No, she arrived at 15:03.
John: # She arrived at three o'clock.

Klecha argues that Lewis sequences are handled analogously to the cases in (12) and (13). Imprecision makes their ϕ-conditionals felicitous by rendering them "true enough" via omitting the $\phi \wedge \psi$-worlds from the evaluation of the conditional. The $\phi \wedge \psi$-conditionals, on the other hand, introduce a higher standard of precision concerning the domain of worlds that is quantified over. Reverse Lewis sequences are thereby rendered infelicitous, as their ϕ-conditional is uttered after a higher level of precision has already been introduced: Since precisification is unidirectional, the ϕ-conditional can no longer ignore the presence of the $\phi \wedge \psi$-worlds in its domain, rendering it contradictory to the preceding $\phi \wedge \psi$-conditional:

(14) *Construction workers Daryl, Aaron, and Ida, stand around a construction site. Daryl is not wearing a helmet. A large beam falls from above them and lands where no one was standing, but near to Daryl.*

a. Aaron: Daryl, if you had been standing there, you would have been killed.
b. Ida: But if he had been standing there and he saw the shadow of the falling beam and managed to jump out of the way in time, he would not have.
c. Aaron: # Exactly. But what I said is still right: If you had been standing there, you would have been killed. [6, p. 7]

It would therefore appear that Klecha's prediction concerning the irreversibility of Lewis sequences is accurate for the most part: At the very least, there are far fewer felicitous reverse Lewis sequences than there are felicitous reverse True Sobel sequences. Still, the new data in (15) suggests that some Lewis sequences are reversible, contrary to Klecha's prediction.

(15) *Construction workers Daryl, Aaron, and Ida, stand around a construction site. Daryl is not wearing a helmet. A large beam falls from above them and lands where no one was standing, but near to Daryl. Daryl is also known to possess exceptionally bad reflexes: Generally, 9/10 attempts to evade anything as fast as the falling beam result in failure.*

a. Aaron: Daryl, if you had been standing there, you would have been killed.
b. Ida: But if he had been standing there and he saw the shadow of the falling beam and managed to jump out of the way in time, he would not have.
c. Aaron: True, but what are the chances of THAT happening? My point stands: If he had stood there, he would have died. (adapted and modified from [6, p. 7])

There are two ways how the consistency of (15) could be reconciled with the imprecision-based framework: The first way would be to say that the interjectory probability-questioning sentence in (15-c) is effectively reversing the previous precisification. This seems like an unlikely option: Precisification is well-known to be very difficult to undo [12, 9, 10, 7]. Also, contrary to (15-c), our previous example (13) appears unable to lower the standards of precision as easily:

(16) *Mary arrived at work at 15:03. This is known to all discourse participants.*

John: Mary arrived at three o'clock.
Jane: No, she arrived at 15:03.
John: Well, okay, that's true. But who cares about those three minutes?
She arrived at three o'clock.

We therefore tentatively exclude the reversal of precisification as an explanatory candidate. The second way of how the consistency of (15) could be explained would be the conversion of the Lewis sequence into a True Sobel sequence. To do this, we would need to break the causal chain that links the two antecedental propositions together (i.e. deny that Daryl standing there could ever lead to him jumping out of the way in time). However, (15-c) does not negate the inherent possibility of Daryl's hypothetical evasive maneuver; it only questions its probability. In fact, the (improbable) possibility can be felicitously acknowledged even quite explicitly:

(17) a. Aaron: Daryl, if you had been standing there, you would have been killed.
b. Ida: But if he had been standing there and he saw the shadow of the falling beam and managed to jump out of the way in time, he would not have.
c. Aaron: Granted, but the chances of that happening are like really, really low. So my point stands: If he had stood there, he would have died.
(adapted and modified from [6, p. 7])

Therefore, we also exclude this reconciliatory possibility from being a viable candidate. In order to explain the possibility of reverse Lewis sequences such as (15) and (17), we therefore turn to a different model for conditionals: Lewis' [13, 14] relevancy-based variably-strict semantics.

3 Relevancy

Karen Lewis argues that von Fintel [17], Gillies [3], and Moss [15] were all partially right in their analysis of Sobel sequences and Heim sequences: She agrees with Moss that the effect of the first conditional on the context is pragmatic in nature, whereas she agrees with von Fintel and Gillies that this pragmatic effect has a semantic influence on the interpretation of the second conditional. That is to say, Lewis argues that infelicitous Heim sequences are not merely infelicitous, but also inconsistent. She furthermore agrees with Moss that the variably-strict Stalnaker-Lewisian framework more accurately models conditional semantics. In fact, she carries over the majority of its basic framework: The only change that is made to the traditional model is that she no longer assumes that world closeness is equated with world similarity, but rather determined by a function that incorporates both similarity and relevance. It should be noted, however, that the similarity ordering Lewis employs is Lewisian rather than Bennettian.[1] Compare the original definition in (10) with Lewis' new definition in (18):

(18) For all contexts c, $\phi \Box\!\!\rightarrow \psi$ is true at w in c iff all the closest ϕ-worlds to w are ψ-worlds, where closeness is a function of both similarity and relevance. [14, p. 20]

The essential idea behind how relevancy affects the closeness of worlds is that similarity provides the basic layout of worlds, which is then manipulated by relevancy: Low relevancy pulls worlds further away from the evaluation world, whereas high relevancy pushes less similar worlds closer to it, so that these less similar worlds are — if they are similar enough to the others — amongst the closest worlds. The relevancy of worlds, in turn, is largely manipulated by conversational context and discourse. That means that the world ordering is actively, but limitedly, determined by discourse participants: "They can indirectly affect what is (ir)relevant by changing the conversational purposes, by, for example, raising the standards of precision, making something salient, raising a new question under discussion, or refusing to accommodate a shift in conversational purpose." [14, p. 20] Of these possibilities, the raising to salience is of special import to Heim sequences. Since discourse participants must take the antecedent of a conditional seriously, in order to evaluate the counterfactual, the possibility of the antecedent is thereby automatically raised to salience [14]. This saliency can, given the right conditions, raise the relevance of the antecedent worlds. In terms of infelicitous Heim sequences, such as the one in (14), this equates to the $\phi \wedge \psi$-worlds being pushed towards the evaluation world such that the $\phi \wedge \psi$-worlds are counted amongst the closest ϕ-worlds. This general pattern for infelicitous Heim sequences is visually represented in figure 1. Since the $\phi \wedge \psi$-worlds are now

[1] Her world ordering is actually closer, by way of description, to Bennett's than it is to Lewis'. However, she herself admitted that she ignored their differences, which were not relevant to her present purposes [14, p. 8].

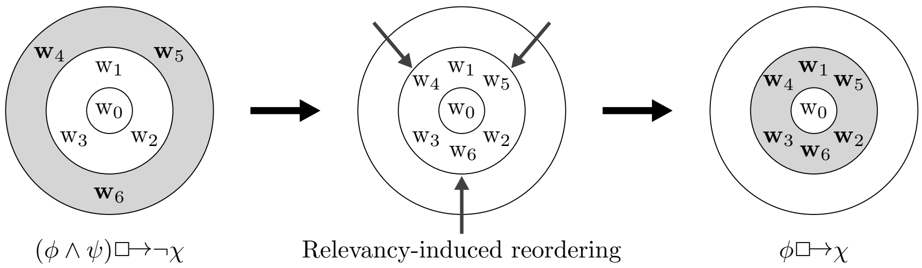

Figure 1: World ordering and selection of inconsistent Heim sequences according to Lewis [14]

just as close to the evaluation world as the ϕ-worlds, the $\phi \Box\!\!\rightarrow \chi$ conditional would also quantify over these worlds, which leads to a contradictory statement.

Not every salient world is a relevant world, however [14]: Worlds that are too dissimilar to the actual world, for example, are not raised to enough relevance, regardless of salience. In (7), for example, it was specified that the person in question was very much alone by the frozen lake. When talking about whether or not that person would have broken through the ice, had they walked upon it, the possibility of a person spontaneously appearing as if out of thin air is simply not relevant. Whilst the corresponding $\phi \wedge \psi$-worlds are certainly raised to salience, they are not relevant enough to justify pushing them to the closest ϕ-worlds. As such, no relevancy-induced restructuring of the world ordering takes place in (7), or in any of the other felicitous Heim sequences. Therefore, the ϕ-conditional does not quantify over $\phi \wedge \psi$-worlds, leading to a consistent sequence of conditionals. This is visually represented in figure 2.

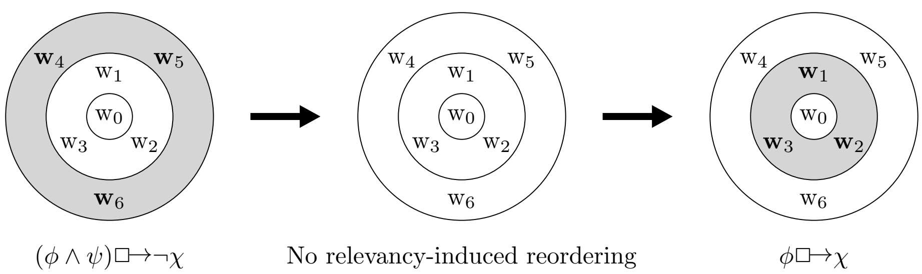

Figure 2: World orderings and selections of consistent Heim sequences according to Lewis [14]

The instability concerning the felicity judgments of Heim sequences is also predicted by this account, as its sensitivity to discourse relevancy grants the discourse participants some leeway in their semantic evaluation of the conditionals: “Hearing things at one moment as felicitous (consistent) and the next as infelicitous (inconsistent), or vice versa, is an expected feature of a phenomenon involving context sensitivity.” [14, p. 22]

3.1 Klecha-Lewisian Framework

In general, we agree with Lewis [13, 14] on the nature of conditionals and the validity of her framework. However, we strongly object to the absence of a distinction between True Sobel sequences and Lewis sequences within her framework: Whilst Klecha's [5, 6] predictions were arguably too strong, as seen in § 2.2, his observation that reverse Lewis sequences are far more likely to be infelicitous holds true. We therefore need some way to incorporate parts of

Klecha's analysis into Lewis' contextualist framework. To do this, we start with the same basic assumption that was required by Klecha's analysis: Bennett's [2] and Arregui's [1] view on world ordering. The incorporation of their work into Lewis' framework has only one currently relevant impact: The similarity ordering of Lewis sequences is such that ϕ-worlds and $\phi \wedge \psi$-worlds are equally similar to the evaluation world. Contrary to Klecha's model, this poses no immediate issue, since similarity is no longer the sole determining factor for world closeness. Assuming that low relevancy pulls these $\phi \wedge \psi$ worlds further away from the evaluation world, these worlds would no longer be counted amongst the closest ϕ-worlds for the evaluation of the ϕ-conditional in a Lewis sequence. This assumption of low relevance appears very intuitive: Moss [15], Klecha [6, 5], and Lewis [14] all make the same assumption in one way or another (implicitly or explicitly). Klecha, in particular, requires the implicit assumption that $\phi \wedge \psi$-worlds are contextually less relevant than the ϕ-worlds to motivate the low level of precision a Lewis sequence starts out with.[2] Lewis, on the other hand, explicitly states that certain possibilities can be considered contextually irrelevant for discourse purposes (i.e. the speaker trying to make a point) until some discourse participants brings them into play [14, p. 21]. Whilst she was talking about Sobel sequences in general, it certainly fits the description of what appears to be happening to Lewis sequences. Once these worlds are pulled further away from the evaluation world by their contextual irrelevancy, the remaining evaluation of the sequence is true to the standard variably-strict analysis, as is seen in figure 3. In this, Lewis sequences differ

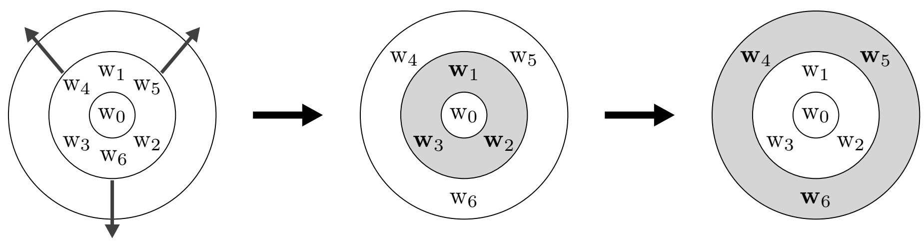

Figure 3: Proposed world closeness orderings and world selections of Lewis sequences

from the analysis of True Sobel sequences: In order to make the ϕ-conditional a true statement, Lewis sequences require low relevancy to interfere with the similarity ordering, whereas True Sobel sequences require nothing of the sort.

Having demonstrated that Lewis sequences pose no immediate problem, we turn to their reverse counterparts. There are two ways a reverse Lewis sequence can be judged as infelicitous: A pure reverse Lewis sequence requires no special steps. The initial discourse context acknowledges the relevancy of the $\phi \wedge \psi$-worlds and thereby does not pull them further away from the evaluation world. The ϕ-conditional also ranges over the $\phi \wedge \psi$-worlds, leading to a contradictory statement. A more interesting case is the reverse Lewis sequence in (14), where the reverse Lewis sequence is embedded within a standard Lewis sequence. Since the $\phi \wedge \psi$-worlds were originally moved further away from the evaluation world, they need to be pulled back in, in order to make the reverse Lewis sequence inconsistent. Whether or not the $\phi \wedge \psi$-worlds are counted amongst the closest ϕ-worlds is then dependent on the same criteria that Lewis [14] originally posited: (i) Their possibility needs to be salient, (ii) they must be similar enough to the other closest ϕ-worlds, and (iii) they must be counted as relevant for the purposes of the discourse. The first criteria is automatically fulfilled, as the possibility of an antecedent is

[2] Lewis actually states that low precision is comparable to lower relevancy in her framework [14, p. 20].

always raised to salience. The second criteria is also automatically fulfilled, since $\phi \wedge \psi$ worlds and ϕ-worlds are equally similar in Lewis sequences. Therefore, the sole deciding factor for Lewis sequences is the relevancy to the current discourse. This criteria is also, in most cases, automatically fulfilled: We would argue that any question under discussion that considers it relevant whether or not χ would follow from ϕ would also be sensitive to any possibility ψ that is directly or indirectly caused by ϕ and that could possibly prevent χ. Positing all of Lewis' criteria would also predict, however, that the worlds in question must not be intrinsically irrelevant: They must be considered at least realistic, even if highly improbable, by the discourse participants. We would therefore predict that some reverse Lewis sequences are consistent, even if no explicit questioning of the relevance of $\phi \wedge \psi$ worlds takes place (as was indirectly done in (17-c)). This prediction appears to be borne out, considering the reverse Lewis sequence below:

(19) a. A: If I had dropped that vase, it would have broken.
b. B: But if you had dropped that vase and that drop caused it to quantum-tunnel to a cushy pillow, it would not have.
c. A: Okay, but what I said is still true: If I had dropped it, it would have broken.

Which leads us to our other original examples in (15) and (17). The explanation of their felicity itself is simplistically straightforward within this framework. Both sequences either question the probability of the $\phi \wedge \psi$-worlds or explicitly asserted their improbable nature. In most cases, probability and relevance are almost intrinsically tied together. By questioning their probability, the speaker also questioned their relevancy to the discourse. In doing so, the discourse participant pushes the $\phi \wedge \psi$-worlds further away from the evaluation world, again, which leaves them free to reassert their original conditional without inconsistency. See below:

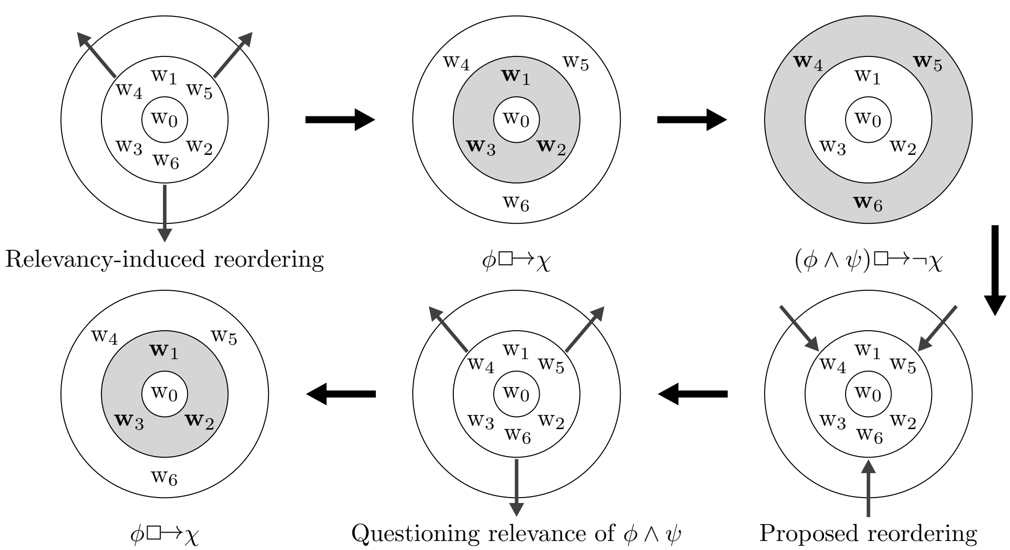

Figure 4: Proposed world closeness orderings and world selections of (15) and (17)

4 Conclusion

In summary, we have shown that Klecha's [5, 6] predictions concerning the unidirectionality of Lewis sequences is too strong, that Lewis sequences are reversible if the probability or relevance of their $\phi \wedge \psi$-worlds is questioned, and that Lewis sequences are reversible if their $\phi \wedge \psi$-worlds are intrinisically irrelevant. We have also argued that Klecha's account for the analysis of infelicitous reverse True Sobel sequences is unsatisfactory, due to its lack of (correct) predictive power. On the other hand, we have argued that Lewis' [13, 14] framework handles Sobel sequences well, but lacks the necessary distinction between True Sobel sequences and Lewis sequences. In adopting Bennett's [2] and Arregui's [1] view on the impact of causality on world similarity, we have shown that a Klechaesque analysis of Lewis sequences follows naturally, albeit with the desired weaker prediction of unidirectionality. The fact that reverse Lewis sequences are usually infelicitous is explained by their automatic fulfillment of two thirds of the necessary criteria, plus the near-guaranteed fulfillment of the only remaining third criteria (the relevance of $\phi \wedge \psi$ to the current question under discussion). Not only that, but our framework treats Lewis sequences and True Sobel sequences as proper subsets of a single phenomenon (Sobel sequences), rather than as two entirely separate phenomena with coincidental surface similarities which require two entirely different explanations [5, 6].

For future research, we believe it absolutely necessary and vital to finally experimentally verify or falsify the predictions that the different models have made about the felicity and consistency of reverse True Sobel sequences and reverse Lewis sequences over the years.

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