

Relevance Conditionals as Utterance Modifying Adverbials

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1 Introduction

Relevance conditionals (RCs) such as (1) have puzzled semanticists for decades. In contrast to the case of a regular conditional like (2), the *if*-clause in a relevance conditional does not state a condition under which the consequent is claimed to hold. Instead, the consequent seems to be put forward absolutely, and the *if*-clause appears to express a situation under which it may be relevant.

- (1) If you're hungry, there's pizza in the fridge.
- (2) If you're hungry, then I will get you a pizza.

The goal of this paper is to explain the syntactic and semantic properties of relevance conditionals (RCs) in the light of existing analyses of sentence adverbials. Adverbs like *unfortunately*, *bizarrely*, or *frankly* are sentence adjuncts that are used to make comments on the main assertion of the utterance.

- (3) Unfortunately, John lost the game.
- (4) Frankly, you're not the best Poker player.

I demonstrate that RCs share two core properties with a subclass of these adverbs: First, that they may not be semantically embedded, and second, that they are not integrated into the verb-second (V2) clause in German: the anteposed RC does not count for V2. I argue that relevance conditionals can be analysed as conventional implicature items, as has been shown before for evaluative and utterance modifying adverbs. I show that the fact that RCs and utterance modifying adverbs share the two core properties of semantic unembeddability and failure to count for V2 in the syntax follows from their common analysis as conventional implicature items.

The paper is structured as follows: Section 2 demonstrates semantic unembeddability of RCs and evaluative and utterance modifying adverbs. Section 3 shows that in German for RCs and sentence adverbials modifying the utterance relation are preposed to a complete V2-clause. In section 4 I propose a common analysis of relevance conditionals and utterance modifying adverbs as conventional implicature items. Some previous analyses of relevance conditionals are discussed in section 5. Finally, section 6 concludes.

*I would like to thank Maribel Romero and the CSSP reviewers for comments about this work. All remaining errors are my own.

2 Semantic Unembeddability

In this section, I show that, just as has been previously demonstrated for evaluative adverbs (Bonami and Godard, 2005) and utterance modifying adverbs (Potts, 2005, section 4.7), relevance conditionals are unembeddable under semantic operators.

2.1 Unembeddability of Sentence Adverbials

Potts (2005) has given an analysis of the semantics of a range of adverbials such as *unfortunately*, *thoughtfully*, and *frankly* as part of his research on conventional implicature (CI). He shows that these adverbs are conventional implicature items, and as such unembeddable under semantic operators.

2.1.1 Conventional Implicature

The class of meanings called Conventional Implicatures (CIs) originates in Grice (1975). He briefly discussed the sentence (5), and noted that it commits the speaker to the claim that being brave follows from being an Englishman.

- (5) He is an Englishman: He is, therefore, brave. (Grice, 1975, p. 44)

Although Grice does not elaborate the properties of this class of meanings, he notes that they are separate from ordinary assertions (“what is said”), as well as from conversational implicatures. A precise definition of CIs was developed by Potts (2005). Potts identifies the following distinctive properties for CIs: (i) CIs are meanings conventionally associated with words or phrases; (ii) CIs are commitments made by the speaker of the utterance; (iii) they are logically independent of the assertions. CIs can thus be usually thought of as side comments by the speaker on the main assertion of the utterance.

Potts (2005) then introduces a logic for conventional implicature items, according to which an utterance can trigger any number of independent entailments as CIs. Potts’ logic guarantees that CIs cannot be embedded under any other operators, since it doesn’t allow for operators that take CI-type meanings as their arguments. Conversely, conventional implicature items regularly take assertion-type meanings as their arguments.

Conventional implicature items can be either words, such as *unfortunately* (6), or certain constructions like nominal appositives (7).

- (6) Unfortunately, John lost the election.
 Assertion: John lost the election
 CI: Unfortunate (John lost the election)
- (7) Ames, the former spy, is now behind bars. (Potts, 2005, (2.13c))
 Assertion: Ames is now behind bars
 CI: Ames is a former spy

The utterance in (6) introduces two independent entailments. First, the assertion that John lost the election. And second, the conventional implicature that the speaker considers this fact unfortunate.

In (7), the nominal appositive *the former spy* is a CI-type meaning, which is ignored in the computation of the assertion. The assertion is therefore just that Ames is now behind bars. That he is a former spy is a side comment contributed by the speaker as a conventional implicature. No individual lexical item in the construction causes the meaning to be a conventional implicature. Instead, this is due to the construction of nominal appositives, and Potts uses a special COMMA operator (Potts, 2005, p. 98) to lift regular meanings (such as the meaning of the NP *the former spy*) into CI-type meanings (such as the nominal appositive in (7)). Since CI-type meanings can never be the argument of a function in Potts' logic, he achieves a "widest scope"-effect for CIs, predicting that they can never be semantically embedded under another operator.

2.1.2 Semantic Unembeddability of Utterance Modifying Adverbs

Semantic unembeddability is maybe the most striking property of conventional implicatures. Therefore, it has become the basis of a range of tests for CI-hood developed by Bonami and Godard (2005) for evaluative adverbs in French. They show that adverbs like *malheureusement* ('unfortunately') cannot be embedded in the antecedent of a conditional, in questions, under negation, and in the consequent of a counterfactual; and that they cannot be openly denied. Another type of adverbs for which semantic unembeddability has been shown are utterance modifying adverbs (Potts, 2005, p. 145ff). Since it is this class of adverbs which will become important in my analysis of relevance conditionals, I apply Bonami and Godard's embeddability tests to these adverbs in this section.

Antecedent of Conditionals Utterance modifying adverbs may not be embedded in the antecedent of a conditional.

- (8) # Si les otages sont, malheureusement, libérés, la France aura dû
 If the hostages are unfortunately freed, the France will have had to
 accepter des tractations avec les terroristes.
 accepted the dealings with the terrorists.
 'If the hostages are, unfortunately, freed, France will have had to accept trans-
 actions with the terrorists.' (Bonami and Godard, 2005, ex.
 (16b))
- (9) # If John is, frankly, an idiot, then I'm just being honest.

According to Bonami and Godard, (8) is not natural, because it would imply that liberating hostages is unfortunate. The sentence cannot have a reading that "If it is unfortunate that the hostages are freed, then France will have had to accept transactions with the terrorists", because the adverb doesn't embed under the *if*-clause. Similarly, sentence (9) cannot have the sensible reading "If I'm frankly saying that John is an idiot, then I'm just being honest", where *frankly* is embedded within the *if*-clause.

Questions In a question, evaluative adverbs are interpreted outside of the interrogative operator:

- (10) Qui est, bizarrement, arrivé à l'heure?
Who is, strangely, arrived on time?
'Who has, strangely, arrived on time?' (Bonami and Godard, 2005, ex. (11a))
- (11) Honestly, has Ed fled? (Potts, 2005, ex. (4.152b))

The authors claim that this question can only be interpreted as "Who was on time? And if there was someone who was on time, it's strange that that person was on time."

Utterance modifiers have an addressee-oriented meaning in questions, as demonstrated by Potts' example (11). Potts concludes that utterance modifying adverbs are ambiguous between a declarative and a question meaning. However, both of these readings are semantically unembeddable (since they are CIs).

Negation If a sentence contains negation as well as an evaluative adverb, only one word order is possible in French, leading to only one scopal reading.

- (12) * Paul n'est pas malheureusement / bizarrement venu.
Paul CI is not unfortunately / strangely come.
'Paul didn't unfortunately / strangely come.' (Bonami and Godard, 2005, ex. (22a))

Bonami and Godard observe that sentence (12) is impossible because it would commit the speaker to two contradictory propositions: that Paul didn't come, and that it is unfortunate / strange that Paul came.

For utterance modifying adverbs, it is clear that a sentence with negation allows only the scope adverb >> not.

- (13) John frankly isn't the best poker player.

Consequent of Counterfactuals Evaluative adverbs are also semantically unembeddable in the consequent of a counterfactual:

- (14) ?? Si Paul avait été là, il aurait bizarrement été gagnant.
If Paul had been there, he would strangely have won.
'If Paul had been there, he would have strangely won.'
- (15) If Paul had been there, he would have, honestly, won.

The same is true for utterance modifiers. (15) cannot mean that Paul would have won in an honest way, had he been there. The speaker may well be expressing that Paul would have won under any circumstances (maybe because he is such a good cheater).

Denial CIs like *unfortunately* or the utterance modifier *man to man* cannot be overtly contradicted in the same way as assertions:

- (16) A: Paul a malheureusement perdu l'élection.
Paul has unfortunately lost the election.
'Paul unfortunately lost the election.'
- B: # C'est faux, je trouve que c'est une très bonne nouvelle!
That's false, I find that this is a very good news!
'That's false, I think those are very good news!'

- (17) A: Democrat to democrat, I really thought that recent speech wasn't so good.
 B: # That's false, I'm an independent!

Attitude Verbs Bonami and Godard (2005, section 3.2) also discuss embedding of evaluative adverbs under attitude verbs. According to Potts' 2005 logic, CI items are generally unembeddable, including embedding under attitude verbs. This is what he finds for the CIs he studies, for example for expressive items like *damn* (Potts, 2005, p. 17). Potts notes that expressives that are syntactically embedded under attitude verbs nevertheless are understood as opinions of the matrix speaker. For example, in the following utterance, it is not implied that the clothes dryer company has a negative attitude towards its products:

- (18) We bought a new electric clothes dryer. [...] Nowhere did it say that the damn thing didn't come with an electric plug! (Potts, 2005, ex. (2.19))

However, Bonami and Godard (2005, ex. (26)) find that the French adverbs are in fact embeddable under certain attitude verbs, most notably saying verbs like *expliquer* ('explain'):

- (19) Marie expliquait que le prêtre, bizarrement, avait perdu la foi.
 Marie explained that the priest, strangely, had lost the faith.
 'Marie said that, strangely, the priest has lost his faith.'

Bonami and Godard (2005) claim that in (19), the speaker does not have to share the judgment that the priest's losing his faith is strange. It could be entirely Marie's opinion. This seems to suggest that at least two different kinds of CI items exist, of which one can embed under certain attitudes, and the other one cannot.

2.2 Unembeddability of Relevance Conditionals

For RCs, unembeddability under certain semantic operators has been noted in some of the previous literature (e.g., see Iatridou 1991 for denial and Bhatt and Pancheva 2006 for embedding under *believe*). However, this unembeddability has not been systematically documented yet. In the following, I show that RCs, unlike regular conditionals, categorically resist semantic embedding, with the exception of a few attitude verbs like *say*. Thus, they pattern exactly like the adverbs I discussed in the previous section.

Antecedent of Conditionals Embedding an RC syntactically in the antecedent of another conditional (20) also yields interesting results. The semantic embedding of the RC is impossible. Consider:

- (20) # If there's pizza in the fridge if you're hungry later, you should eat it.

In English, it is impossible to distinguish regular and relevance conditionals by their syntactic form.¹ Consequently, a given RC usually has a regular conditional reading. This reading is often very odd – most often only a 'magic' interpretation remains. For example, consider the RC embedded in (20):

¹In other languages, this is not necessarily the case: For example in German, RCs and regular conditionals are always unambiguously distinguished by their word order.

(21) If you're hungry, there's pizza in the fridge.

This sentence has a marginal reading according to which pizza will magically appear in the fridge if (and possibly only if) you're hungry. This is the regular conditional or 'magic' reading.

We can observe now that true embedding of the RC within another *if*-clause is impossible: the only possible interpretation of (20) is the one where the RC is interpreted in its 'magic' reading, that is as a regular conditional. The unembeddability of RCs makes the RC under another operator (the conditional) bad, so that only the regular conditional reading remains (which is normally only marginally available).

Questions Embedding an RC in a question does not necessarily lead to ungrammaticality. In (22), the RC is syntactically embedded under a spelled out version of the question morpheme. The only available interpretation is one where only the consequent of the conditional is actually part of the question. The RC is therefore outside of the question, with the same interpretation as (23). That is, the question in (22–23) is whether or not there is pizza in the fridge (now), the truth of which is understood as independent of the possibility of me being hungry later. Possible hungryness (later) may only be understood as the reason why the question is being asked (now).

(22) Tell me whether if I'm hungry later, there's pizza in the fridge.

(23) If I'm hungry later, is there pizza in the fridge?

This data contrasts with the behavior of regular conditionals in questions. Embedding of regular conditionals in a question is straightforward:

(24) Will the street be flooded if it rains?

This utterance asks for the validity of a certain conditional statement.

Negation Regular conditional utterances can be semantically embedded under negation:

(25) She won't help you if you really need her.

Here, there exists an interpretation where the conditional "She'll help you if you really need her" is being negated by the speaker, claiming that "she" is merely neglectful. Clearly, this is distinct from the other reading according to which "If you need her, then she won't help you" (where "she" is particularly spiteful in only helping people that don't need help).

In contrast, RCs cannot be embedded under negation in this way:

(26) There is no pizza in the fridge, if you're hungry.

(26) only has the narrow-scope reading for negation, uttered possibly by an unhelpful host.

Denial In order to show that the *if*-clause of RCs is outside of the assertion associated with the sentence, Iatridou (1991) observed that in contrast to regular conditionals, RCs cannot be straightforwardly denied.

- (27) A: If it rains, she'll be happy.
 B: That's not true. She'll be happy if it snows.
- (28) A: If I may be honest you're looking awful
 B: That's not true. # I look awful if you may be deceitful

(Iatridou, 1991, p. 53)

For regular conditionals, the causal link they express can be negated (27). This leads to infelicity in the case of relevance conditionals (28).

Attitude Verbs Bhatt and Pancheva (2006) note that RCs can not be embedded under *believe*:

- (29) # John believes that if you are thirsty there is beer in the fridge.
 (Bhatt and Pancheva, 2006, ex. (102b))

In addition, true factives such as *surprise* and *regret* (30) also are not able to embed RCs.

- (30) * The children were surprised that if they're hungry, there's pizza in the fridge.

Bhatt and Pancheva (2006) do observe that RCs can appear properly embedded under *say*. For example, in (31), the RC is actually embedded under *say*: the whole RC is what John uttered. The sentence differs from (32), where John only uttered the consequent, and the *if*-clause is added by the speaker.

- (31) John said that if you need him later he'll be in 418.
 (32) If you need your TA John later, he said he'll be in 418.

Further, Siegel (2006) notes that although RCs are prohibited as complements of most attitude verbs, they are possible under *remind*, *remember*, and *realize* (she doesn't mention *say*). See for example:

- (33) Dad called to remind us that if we're hungry there's pizza in the fridge.
 (Siegel, 2006, ex. (31a))

I conclude that RCs are unembeddable under most attitude verbs. Embedding is possible under two types of verbs: speech act verbs such as *say* or *ask* (34), and the cognitive factive verbs (Beaver, 2004) *realize*, *remind*, *remember*, and also *know* (35).

- (34) Peter asked me whether if he's hungry, there's pizza in the fridge.
 (35) The children already know that if they're hungry there's pizza in the fridge.

2.3 Unembeddability of RCs and Sentence Adverbials

To sum up, I have demonstrated here that relevance conditionals, in contrast to regular conditionals, are generally not semantically embeddable under other operators. This includes negation, questions, conditionals, as well as most attitude verbs. It appears that RCs can only be successfully embedded under speech act verbs and semi-factives.

The same properties have been claimed for a range of sentence adverbials, including evaluative and utterance-modifying adverbs. For these adverbs, the semantic unembeddability has been argued to follow from their status as conventional implicature

items. In section 4, I will make the same argument for relevance conditionals. First, however, I will consider additional evidence for the parallelism between a class of sentence adverbials and relevance conditionals, based on the lack of integration to the V2-clause in V2-languages like German with these phenomena.

3 Syntactic Disintegration

The verb-second word order (V2) in German main clauses is defined by the fact that in main clauses the finite verb occupies the second position, with an argument or an adjunct occupying the pre-verbal position.

In German, regular hypothetical conditionals count for V2: if they are preposed, the verb immediately follows the *if*-clause. Propositional adverbs also count for V2. In this section, I show that relevance conditionals and a class of sentence adverbials do not count for V2 in German. Instead, these adjuncts appear non-integrated into the main clause.

3.1 Syntactic Disintegration and Relevance Conditionals

In English, conditional sentences are structurally ambiguous between a hypothetical conditional and a relevance conditional, and they are usually disambiguated by context. Truly ambiguous utterances are also possible, for example:

(36) If you need me later, I'll stay at home all day.

Here, the speaker could be trying to convey that they will stay at home just in case the hearer might need them later (the hypothetical reading). Or the speaker could be staying at home in any case, and they might be informing the hearer because the hearer might need them later (the relevance reading).

In some languages like German and Dutch there is no ambiguity, because hypothetical and relevance conditionals are distinguished by the syntax. In German, the *if*-clauses in hypothetical conditionals are integrated into the main clause in that they occupy the first position in the main clause with verb-second order (37). In other words, they count as occupying the pre-verbal position before the verb in second position, just like other adjuncts do. Relevance conditionals, on the other hand, do not count for V2 (38) (König and van der Auwera, 1988; Köpcke and Panther, 1989; Günthner, 1999). They are not integrated into the main clause syntax, and the finite verb doesn't immediately follow.² The ambiguous English example above (36) is disambiguated by the German syntax as follows (Handke, 1984):

(37) Wenn du mich brauchst, bleibe ich den ganzen Tag zuhause.
 If you me need, stay I the whole day at home.
 'If you need me, I'll stay at home all day.' (hypothetical conditional only)

²This clear-cut distinction of integrated hypothetical conditionals and non-integrated relevance conditionals only holds for regular, non-counterfactual *if*-clauses. Counterfactual *if*-clauses can also optionally appear non-integrated in German. For more detailed discussion of subjunctive/counterfactual conditionals and RCs, see (Scheffler, in preparation).

- (38) Wenn du mich brauchst, ich bleibe den ganzen Tag zuhause.
 If you me need, I stay the whole day at home.
 ‘If you need me, I’ll stay at home all day.’ (relevance conditional only)

3.2 Syntactic Disintegration and Sentence Adverbials

German sentence adverbials are syntactically and semantically rich and interesting. In this section, I want to show that there are three types of sentence adverbials in German: (i) the *probably*-type of adverbs, which can be semantically embedded and are syntactically integrated into the V2-clause; (ii) the *unfortunately*-type, which cannot be semantically embedded but still are part of the V2-clause, and (iii) the *frankly*-type, which can neither be semantically embedded nor integrated into the V2-clause. I will argue that relevance conditionals behave like this third type of adverbials in German, and should receive a parallel analysis (which I propose in the following section).

3.2.1 The *probably* Type

The first type of adverbials are propositional adverbs like *wahrscheinlich* (‘probably’). This class of adverbs is obligatorily integrated into the V2-clause in German, they have to be followed by the finite verb:

- (39) Wahrscheinlich hat er es nicht ernst gemeint.
 Probably has he it not seriously meant.
 ‘He probably didn’t mean it seriously.’
- (40) *Wahrscheinlich er hat es nicht ernst gemeint.
 Probably he has it not seriously meant.
 ‘He probably didn’t mean it seriously.’

These are regular assertion-level adverbs that are semantically embeddable. Example (41) shows *wahrscheinlich* (‘probably’) embedded in the antecedent of a conditional.

- (41) Wenn Peter wahrscheinlich morgen kommt, müssen wir heute einkaufen.
 If Peter probably tomorrow comes, must we today go shopping.
 ‘If it is probable that Peter will come tomorrow, we have to go shopping today.’

Regular conditionals behave in parallel to this type of adverbials: they are part of the V2-clause, and they are semantically embeddable.

3.2.2 The *unfortunately* Type

The second class of adverbials includes speaker-oriented evaluative adverbs like *leider* (‘unfortunately’). These adverbials also form part of the V2-clause in German:

- (42) Leider hat er es nicht ernst gemeint.
 Unfortunately has he it not seriously meant.
 ‘Unfortunately he didn’t mean it.’

- (43) * Leider er hat es nicht ernst gemeint.
 Unfortunately he has it not seriously meant.
 ‘Unfortunately he didn’t mean it.’

These adverbials cannot be semantically embedded, as noted by Lang (1979), and documented above in section 3 for the French adverbs. The same can be demonstrated for German by comparing for example the evaluative (unembeddable) adverb *leider* (‘unfortunately’) with the semantically related (embeddable) phrase *es ist schade* (‘it is unfortunate’). Consider these two mini-dialogues:

- (44) Schade, dass du schon morgen kommen willst. — Wenn es
 Unfortunate, that you already tomorrow come want. — If it
 schade ist, dass ich morgen kommen will, dann komme ich eben
 unfortunate is, that I tomorrow come want, then come I (part.)
 später.
 later.
 ‘It’s unfortunate that you already want to come tomorrow. — If it’s unfortu-
 nate that I want to come tomorrow, then I’ll come later.’
- (45) # Leider willst du schon morgen kommen. — Wenn ich
 Unfortunately want you already tomorrow come. — If I
 leider schon morgen kommen will, dann komme ich eben
 unfortunately already tomorrow come want, then come I (part.)
 später.
 later.
 ‘Unfortunately you want to come already tomorrow. — If I unfortunately
 want to come tomorrow, then I will come later.’

While the first interaction is fine and coherent, the second using *leider* (‘unfortunately’) fails for several reasons. It implies that the speaker considers their own plans unfortunate (since the evaluative adverb ‘unfortunately’ is attributed back to the speaker), and it states that if the speaker wants to come tomorrow, then they will come later, which is incoherent. Both effects are due to the fact that *leider* (‘unfortunately’) is semantically unembeddable.

3.2.3 The *frankly* Type

Finally, the third class of sentence adverbials are utterance modifiers like *mal ehrlich* (‘frankly, honestly’) and *von Frau zu Frau* (‘from woman to woman’). These adverbials are preposed to a full V2 clause in German: they cannot be followed by the finite verb in a declarative main clause.

- (46) * Mal ehrlich / Von Frau zu Frau ist er wirklich nicht so schlau.
 Honestly / From woman to woman, is he really not so smart.
 ‘Honestly / From woman to woman, he really isn’t that smart.’
- (47) Mal ehrlich / Von Frau zu Frau, er ist wirklich nicht so schlau.
 Honestly / From woman to woman, he is really not so smart.
 ‘Honestly / From woman to woman, he really isn’t that smart.’

Just like the evaluative adverbs, and as has been documented in detail above, this type of adverbials may not be embedded under semantic operators. In fact, Potts (2005, p. 146) argues for English utterance modifiers that they are not even syntactically embeddable. He gives the following as evidence:

- (48) # Bill said to Al that, man to man, his wife was having an affair.
(Potts, 2005, ex. (4.140d))

According to Potts, the only available interpretation for this sentence is that *man to man* is a propositional modifier on *Al's wife is having an affair*.

It is true that the utterance adverbials cannot be semantically embedded. Syntactic embedding is however sometimes possible, if the speaker is the embedded subject:

- (49) I have to go now, because I'm frankly tired of this discussion.
(50) Ich gehe jetzt, weil ich hiervon ganz ehrlich die Nase voll habe.
I leave now, because I of this really honestly the nose full have.
'I'm leaving now, because I'm frankly done with this.'

In these examples, *frankly/ganz ehrlich* seems syntactically embedded in a *because*-clause. It is not semantically embedded however, since the honesty is not the reason for why the speaker has to leave. Rather, the fact that the speaker is being frank in giving their reason is contributed as a side comment.

So if these adverbials can be syntactically under other operators, why is an utterance modifier reading impossible for (48), as Potts claims? Potts argues (p. 149) that the reading obtained is odd because the speaker is attributing the utterance "His wife was having an affair" to Bill, and the speaker is not actually uttering it himself, so that it cannot be modified by *man to man*. This is because the utterance modifier *man to man* is not semantically embedded under *say*, and contributes its own side comment. Further, as I will discuss below, the utterance modifier is in fact not part of the syntactic structure of its host clause, so it is not even syntactically embedded in these cases.

In the *frankly*-type of adverbials, the utterance modifiers, we have therefore found a class of adverbials that is not syntactically integrated into the V2-clause, and cannot be semantically embedded.³ This class shares exactly the properties of relevance con-

³There is a group of adverbials in German with similar meaning as *frankly* that does optionally allow syntactic integration into the V2-clause. The adverbials in this group all contain an overt participle of a saying verb, such as *ehrlich gesagt* ('honestly speaking') and *offen gestanden* ('openly admitted').

- i. Ehrlich gesagt habe ich keine Lust auf Eis.
Honestly said have I no mood for icecream.
'Honestly, I'm not in the mood for icecream.'
- ii. Ehrlich gesagt, ich habe keine Lust auf Eis.
Honestly said, I have no mood for icecream.
'Honestly, I'm not in the mood for icecream.'

It is not entirely clear to me why this group of adverbials is an exception with regard to syntactic integration into the V2-structure. I think two things may be happening here: First, these phrases may have gotten frozen into a general sentence modifier and lost their special syntax. And second, the 'speaking' part may be important here. The crucial difference between (*mal/ganz*) *ehrlich* ('(once/very) honestly') and *ehrlich gesagt* ('honestly speaking') is the presence of 'speaking' in the second case. This may lead to the adverbial being not a true utterance modifier, but instead taking a propositional argument just like the evaluative adverbs of the 'probably'-type. An argument for this is the fact that these adverbials

ditionals. So much so, that discussions of the syntactic properties of utterance modifying adverbials in German often includes the German relevance conditionals (Pittner, 1999). In the following section, I will give a semantic analysis of relevance conditionals based on their parallelism with utterance modifying adverbials.

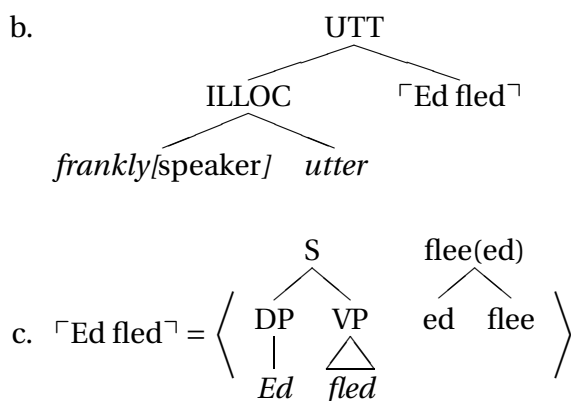
4 Relevance Conditionals and Utterance Modifying Adverbials

4.1 Utterance Modifying Adverbials

It is well known that certain adverbials modify not the proposition to which they are adjoined, but the utterance (or speech act) expressed in their host sentence (for German, see e.g., Mittwoch 1977; Thim-Mabrey 1988; Pittner 1999). This includes speech act adverbs like *frankly*, as well as certain sentential adverbials. As discussed above, it has also been noted in some of the previous discussions that these adverbials are semantically unembeddable.

These two observations are put together by Potts' (2005) analysis of utterance modifying adverbs. He analyses them as conventional implicature items. Potts argues that adverbs like *frankly* modify the relation between a speaker and an utterance. He introduces trees like the following (adapted from Potts 2005, ex. (4.148)⁴):

(51) a. Frankly, Ed fled.



d. Assertion: Ed fled

Conventional Implicature: I frankly utter 'Ed fled'

This kind of structure takes the intuition that *frankly* is a modifier of an utterance relation seriously. Note that according to Potts, the assertion of the sentence in (51a) is the one that is obtained by interpreting the parse tree (51b–c) up to the highest S node.

can be embedded under *say* even with a third-person subject:

- (iii) Paul meinte zu Peter, dass er ehrlich gesagt keine Lust mehr hat.
 Paul said to Peter, that he honestly said no interest anymore hat.
 'Paul said to Peter that he honestly wasn't interested anymore.'

⁴I have stripped off the semantics to make the underlying syntactic structure clearer.

The adverb *frankly* modifies the relation between the speaker and the utterance, but this is located in the conventional implicature dimension.

Furthermore, it is important to note that *frankly* is, according to Potts, not part of the sentence it appears in, neither in the syntactic nor semantic sense. It modifies the relation between the speaker and the utterance of “Ed fled”, but it is not part of this utterance.

Contributing its meaning in the CI dimension makes the utterance available as an argument for *frankly*. An assertion-level predicate (such as the adverb *probably*) must attach below the highest S node, because this is where the assertion of the sentence is computed. Only a CI predicate can attach higher and thus modify the utterance relation.

Finally, Potts’ analysis of *frankly* explains why it is semantically unembeddable. First, CI items are never semantically embeddable, since there are no operators that can take CI type arguments. But more importantly, Potts (2005, p. 149) argues that utterance modifiers must be CI types and cannot be semantically embeddable, because they modify the relation between the speaker and an utterance. However, in a sentence such as (48), the speaker is not in an utterance relation with the embedded clause “Al’s wife is having an affair”, so *frankly* or *man to man* cannot modify it. Potts cites possible embedding examples with first-person subjects (49–50) as further evidence, since in these cases the utterance relation holds between the speaker and the embedded clause, so that this utterance relation may sometimes be modified by an adverbial.

4.2 A New Analysis of Relevance Conditionals

In light of the two major properties that relevance conditionals share with utterance modifying adverbials, I propose here a new analysis of the semantics of relevance conditionals. In regular conditional sentences, the conditional meaning is contributed as an assertion. In contrast, I argue that the conditional meaning (the *if*-clause) is contributed as a conventional implicature in the case of relevance conditionals. I propose the following schema for the two-dimensional meaning of relevance conditionals:

- (52) Semantics of a Relevance Conditional “If_{RC} p, q”:
- a. Assertion: q
 - b. Conventional Implicature: If(p, I utter(q))

According to this analysis, the assertion of “If_{RC} p, q” is taken to be exactly the same as just uttering “q”. In addition, the conditional relation between the contents of p and q is contributed as a CI. The crucial innovation in my proposal is the split of the RC meaning into two dimensions. This step yields a semantics that correctly captures our intuitions about the meaning of RCs, as follows.

First, the truth or execution of the speech act of q does not depend on the *if*-clause. This is exactly the relevance conditional feeling: in a relevance conditional, the truth of the consequent does not depend on the antecedent, as is well known from previous studies of RCs (Iatridou, 1991; DeRose and Grandy, 1999, p. 406). For example, Iatridou (1991, p. 51) explains that (53) cannot be paraphrased as (54).

(53) If you want to know, 4 isn’t a prime number.

(54) In any circumstance in which you want to know, 4 isn’t a prime number.

In my proposal, the consequent of a relevance conditional is straightforwardly asserted (52a). Thus, it is independent of the *if*-clause, just as required by our intuition.

Second, as we have seen above, the *if*-clause contributes an unembeddable side-comment. This is reflected in my analysis, since the *if*-clause is contributed on the conventional implicature dimension (52b). Thus, if a relevance conditional appears syntactically under another operator, only the consequent of the RC (52a) is semantically embedded under that operator, and the CI part of the meaning is always contributed at the top level.

Furthermore, note that the conditional in the CI (52b) is necessarily true given the assertion (52a). I claim that, assuming an epistemic modal base for ‘if’, we obtain a third result: the net effect of the *if*-clause in RCs is the contribution that *p* is epistemically possible. In other words, what distinguishes the plain utterance of “*q*” from the RC utterance “if *p* then *q*” is that the latter has the additional presupposition that *p* is epistemically possible.⁵

We can see this epistemic net effect at work in (55). The sentence is odd if the speaker knows that Peter wasn’t hungry in the past. The reason for the oddness is that the RC “If *p*, *q*” introduces a presupposition that the speaker considers *p* possible.

(55) If Peter was hungry, there was pizza in the fridge.

In some previous work it has been claimed that, intuitively, the antecedent of an RC provides a condition for the relevance of the consequent to the discussion at hand (DeRose and Grandy, 1999; Franke, 2007), without clear formal discussion of this point. Relevance does not directly come into play in my analysis proposed above. However, there is good evidence for one notion of relevance: RCs are only felicitous if the antecedent is relevant to the consequent, as demonstrated in (56).

(56) # If you’re hungry later, 2 plus 2 is 4.

I take this fact to follow from the general application of the Maxim of Relevance (Grice, 1989). Clearly, if I choose to utter (56) instead of just “2 plus 2 is 4”, the additional *if*-clause should be relevant to the conversation at hand. No special mechanism is needed to rule out (56). The example is odd just as (57) is odd, where two unrelated assertions are provided together.

(57) # You may be hungry later and 2 plus 2 is 4.

For an illustration of the proposed analysis, (58–60) show example RCs with their meaning, for a declarative (58), question (59), and a wish (60) in the consequent.

(58) α : “[If you need me later]_{RC}, I’ll stay at home all day.”
 Assertion: α will stay at home all day.
 CI: If (Addressee needs α later, α utters (α will stay home all day))
 \Rightarrow According to α ’s knowledge, it may be that Addressee needs α later.

⁵Scheffler in preparation provides a detailed exposition of how to obtain this net effect. In addition, it is shown there that the impossibility of subjunctive relevance conditionals such as (i) also follows from this proposal for the semantics of RCs.

i. # If you had been hungry, there would have been pizza in the fridge. (‘magic’ reading only)

- (59) α : “If you’re so smart, when was the constitution signed?”
 Assertion: When was the constitution signed?
 CI: If (Addressee is so smart, α asks (when was the constitution signed?))
 $\Rightarrow \alpha$ considers it possible that Addressee is so smart.
- (60) α : “If I don’t see you anymore, have a great vacation!”
 Assertion: Have a great vacation!
 CI: If (α doesn’t see Addressee later, α wishes (Addressee to have a great vacation))
 \Rightarrow According to α ’s knowledge, it may be that α doesn’t see Addressee anymore.

4.3 Conventional Implicature and Syntactic Disintegration

Given this new analysis of relevance conditionals proposed here, the connection between the special semantics of relevance conditionals and their special syntax in German becomes clear, as well. I showed that relevance conditionals are utterance modifiers just like the adverbs such as *frankly* discussed in (Potts, 2005). The structure of a relevance conditional is therefore the following:

- (61) a. Wenn du Hunger hast, es ist noch Pizza im Kühlschrank.
 If you hunger have, it is still pizza in fridge.
 ‘If you’re hungry, there’s pizza in the fridge.’
- b.
- c.

CP
 Es C'
 C IP
 | △
 ist ...

in-fridge(pizza)
 pizza in fridge

}
- d. Assertion: There’s pizza in the fridge
 CI: If you’re hungry, I utter ‘There’s pizza in the fridge’

According to the structure in (61), the relevance conditional *if*-clause is neither part of the semantics, nor the syntax of the main clause. It merely modifies the utterance relation. Since the *if*-clause is outside of the syntax of the main clause, it cannot fill the syntactic position before the finite verb in second position. Thus, just like the utterance modifying adverbials, relevance conditionals are non-integrated in German.

The cause for non-integrated syntax cannot be just the fact that relevance conditionals contribute their meaning on the conventional implicature dimension, since CI adverbs such as *leider* (‘unfortunately’) appear integrated in German (see section 3.2).

But contributing its meaning on the CI dimension makes the utterance relation available as an argument for relevance conditionals (as well as adverbs). Assertion-level predicates cannot target the utterance relation because the assertion of a sentence is computed at its highest S-node. The utterance relation comes in higher than that. However, if a predicate is located on the CI dimension, it is outside of the assertion and can thus target the utterance which is located outside of the assertion as well. Targeting the utterance relation as an argument, then, leads to unintegrated syntax, as Potts (2005, p. 149) has shown. An utterance modifier cannot be part of the syntax or semantics of the clause it appears in.

5 Relevance Conditionals in Previous Analyses

In the over 40 years that relevance conditionals (RCs) have been studied in linguistics, many accounts have been proposed for their syntactic and semantic properties. Often, these proposals differ only slightly from one another, if viewed from the neutral ground of several decades after the fact. In this section, I review some approaches to RCs. I show that the earlier accounts fail to characterize the semantics of RCs accurately.

5.1 Conditional Assertion Accounts

A range of proposed analyses of RCs have employed a variant of a “Conditional Assertion” account (see for example (van der Auwera, 1986; DeRose and Grandy, 1999)). Roughly, these analyses predict a meaning as in (62) for RCs.

(62) If you’re hungry, ASSERT (there’s pizza in the fridge).

This approach claims that what is dependent on the antecedent is the performance of the speech act in the consequent (Franke, 2007). The speech act is only performed if the antecedent is true. Thus, the truth of the consequent does not depend on the antecedent in RCs, as it does in regular conditionals.

It is relatively easy to see that this “conditional assertion” cannot be the correct semantics for RCs. Clearly, in (63), the waiter’s name has been successfully stated even if the guests won’t need anything later.

(63) If you need anything else later, my name is James. (Siegel, 2006, ex. (4))

(64) If I don’t see you anymore, have a great vacation!

Similarly, the wish expressed in the consequent of (64) has been felicitously carried out, even if the speaker runs into the addressee a week later. The conditional assertion approach predicts the wrong semantics for these and other cases. For a closer discussion of the inadequacy of conditional assertion accounts, see also (Siegel, 2006).

5.2 Quantification over Potential Literal Acts

In a recent paper, Siegel (2006) analyses RCs as existential quantification over potential literal acts (potential assertions, potential questions, etc.). According to her account, the RC in (65) is paraphrased as in (66).

(65) If you're hungry, there's pizza in the fridge.

(66) If you're hungry, there is a (relevant/salient) assertion that there's pizza in the fridge.

(66) claims that in case you're hungry, a certain assertion exists. This assertion is, according to Siegel, not necessarily an actual (carried-out) speech act, but merely a potential literal act. It is my understanding that any potential assertion must exist in this sense, even false assertions or assertions that never happen. Therefore, the meaning of (65) under Siegel's account reduces to the following:

(67) If you're hungry, there exists a potential assertion 'There's pizza in the fridge' and this assertion is relevant/salient.

It is obvious from this paraphrase, that since the potential assertion always exists, the second claim (relevance/salience of this assertion) is the main contribution of the RC.

To sum up, Siegel's analysis has two main ingredients. First, the *if*-clause is a regular *if*-clause, and part of the assertion made by the RC. Second, for the consequent, Siegel motivates the introduction of existential quantification over potential speech acts. She justifies this move with her claim that the consequent of an RC is not straightforwardly asserted.

In fact, the consequent of an RC must be taken to be uttered straightforwardly. This is especially clear in cases where the speech act involved is not merely an assertion, such as for the wish in (64). By uttering (64), the wish in the consequent has been offered no matter what. This yields the move to potential assertions introduced by Siegel unnecessary. In fact, it is unclear to me how Siegel (2006) would guarantee that the speech act in the consequent of an RC is actually carried out. Another good example of this is found in RCs with question complements (68): these RCs compell the hearer to answer in just the way that unembedded questions do.

(68) If you're so smart, when was the constitution signed?

More importantly, Siegel's proposal cannot account for the striking property of RCs demonstrated in section 2.2: RCs cannot be embedded under semantic operators (including negation, questions, conditionals, and most attitude verbs). If RCs are simply regular conditional sentences that involve quantification over potential assertions, unembeddability is completely unexpected. For Siegel, the meaning of an RC is simply the assertion that under some condition, a potential speech act is relevant (see (67)). We can therefore check the predicted meaning of a RC (syntactically) embedded under negation, such as (69).

(69) It's not the case that, if you're hungry, there's pizza in the fridge.

Keeping the meaning for the RC constant, one would predict approximately the meaning in (70).

(70) The following is not the case: If you're hungry, there is a potential assertion 'There's pizza in the fridge' and this assertion is relevant/salient.

As we have seen, a potential assertion "There's pizza in the fridge" definitely exists. Still, the interpretation in (70) is neither trivial or meaningless. The fact that there is

pizza in the fridge could be irrelevant if it has gone bad or you don't like pizza anyway, so asserting the irrelevance of such an utterance is informative. However, no such meaning can actually be conveyed with (69), since the RC is impossible embedded under negation. As Siegel's account predicts a non-existent meaning for (69), it cannot derive the unembeddability of RCs.

The same point can be made with regard to RCs that appear syntactically embedded within another conditional. The example discussed earlier is repeated here, along with its predicted meaning according to Siegel (2006).

- (71) If there's pizza in the fridge if you're hungry later, you should eat it.
 (72) If there is a potential assertion 'There's pizza in the fridge' and this assertion is relevant if you're hungry later, then you should eat the pizza.

The paraphrase (72) could be reasonably used to express that if there being pizza in the fridge would be relevant to you if you're hungry later (e.g., because you like pizza), then you should eat it. However, since the RC cannot in fact be semantically embedded within another *if*-clause, this meaning is not conveyed by (71).

Finally, Siegel's semantics would also predict a non-existent reading for RCs properly embedded under questions, such as (22), repeated here with its predicted meaning.

- (73) Tell me whether if I'm hungry later, there's pizza in the fridge.
 (74) Tell me whether if I'm hungry later, there is a potential assertion 'There's pizza in the fridge' and this assertion is relevant.

However, the only available reading for (73) is the one where the RC is not actually embedded under the question, and the *if*-clause is taken to be outside of the question operator.

In general, we can observe that Siegel's proposal for the meaning of RCs makes them regular assertions (of some conditional circumstance). Accordingly, RCs should then behave exactly like other conditionals when embedded. We have seen that this is not the case. While regular conditionals are readily embedded, RCs cannot be semantically embedded.

To sum up, I have pointed out two shortcomings in the most promising recent account of relevance conditionals: First, I have argued that the move to potential literal acts is unnecessary, because the consequent of an RC can, contra Siegel (2006), be taken as a straightforwardly executed – not just potential – speech act. Second and more importantly, I have shown that the analysis does not account for the semantic unembeddability of RCs. My proposal for the semantics of RCs, which analyses them as conventional implicature items in parallel with the utterance modifying adverbials they resemble, accounts for both of these properties straightforwardly.

6 Conclusion

In this paper, I have shown a syntactic and semantic parallelism between utterance modifying adverbials and relevance conditionals. I have shown that both share two major properties: unembeddability under semantic operators, and the failure to count

for V2 in German. A formal analysis of utterance modifying adverbials exists as part of Potts 2005: they are conventional implicature items. Consequently, I have proposed here a new analysis of relevance conditionals, arguing that they contribute the conditional meaning on the conventional implicature dimension. This explains their semantic unembeddability, since conventional implicatures resist embedding. Further, I have argued that contributing their meaning on the conventional implicature dimension allows items such as relevance conditional clauses and certain adverbs to attach to higher constituents, such as the utterance. This higher attachment is reflected in the syntax by disintegration, that is, the lack of V2 with these elements. Finally, since the *if*-clause meaning is located on the conventional implicature dimension, the consequent is asserted straightforwardly in relevance conditionals, which is why the consequent is not felt to depend on the truth of the antecedent.

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