

Dissertation Proposal: Levels of Meaning

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1 Introduction

This dissertation studies the different levels of meaning at which an operator can contribute its different semantic parts.

1.1 The Big Picture

The central topic of linguistic semantics is what words or phrases *denote*, and how to determine the meaning of sentences based on these individual meanings and their method of combination. Thus, the denotation of clauses is assumed to be computed compositionally. The first deeper question underlying this inquiry is what types of meaning can get lexicalized in human languages. Put differently, what semantic pieces are in principle possible, but never associated with a word (or specific syntactic pattern) in any known language? That is, what are the semantic universals?

To mention just one well-known example of a semantic universal: It turns out that out of all imaginable quantifier functions, only the conservative ones are ever lexicalized in human languages as determiners.

A second development in formal semantics has led to the discovery that the semantic pieces that are contributed by words or constructions can be associated with different levels of meaning. The clearest example of the necessity for more than one semantic tier is the case of presuppositions. One example of a presuppositional expression is the verb *to stop* in English:

- (1) Peter stopped drinking.

It is quite clear that there are two components to the meaning of *to stop*: the first contributes the fact that Peter now doesn't drink; whereas the second states that Peter used to drink at some point prior to now. When *stop* is embedded under negation, only the former is negated, while the latter part remains.

- (2) Peter didn't stop drinking.

This indicates that the two components of *stop* are contributed on distinct levels of meaning: the first is a straightforward assertion, and the second is known as a presupposition.

Tiers that meaning units can be associated with are the level of assertion (or ordinary meaning), the level of presuppositions, and the expressive tier (or level of conventional implicatures)¹.

Finally, a third question regards how the different semantic tiers interact or merge at some points. This question has been relatively well-studied for the interaction of assertion and presupposition, which is known as presupposition projection. That is, we now know how presuppositions behave if they are embedded under certain operators or predicates that belong to the assertion tier.

¹Conversational implicatures are another well-known type of meaning outside of the truth conditions, but they are not part of the grammar itself. Instead, they are computed as part of the inferencing system. For this reason, they will not be part of the present discussion.

However, outside of (Potts, 2005), the projection behavior of expressive meanings has not been studied thoroughly. In particular, the interactions of presuppositions and expressive meanings have not been looked at: what happens if an CI expression contains a presupposition trigger?

The main goal of this dissertation is to shed some light on the three questions introduced above. To that end, I will investigate certain constructions that pose serious challenges for current semantic theory in that they call for a more articulated view of meaning and meaning composition. The constructions at issue are: (i) epistemic and speech-act uses of *because*-clauses, (ii) relevance conditionals, and (iii) German attitude verbs that allow verb-second clausal complements.

1.2 Issues under Discussion

In this dissertation, I analyze clauses whose central meaning, as I claim, can be contributed in some cases as an assertion, and in other cases on another level of meaning. First, in the area of adjunct clauses, I discuss ‘because’-clauses and relevance conditionals. In both cases, I argue that the operator in question can either apply on the level of assertions (to yield a regular causal adjunct or a regular conditional), or it can apply on the level of conventional implicature, which produces an epistemic or speech-act *because*-clause and a relevance conditional, respectively. This analysis explains the peculiar semantic properties of the second (conventional implicature) type of clauses.² Furthermore, it is shown here that the semantic difference between the two levels of meaning goes hand in hand with syntactic differences in German. German is a language where syntactic subordination is clearly marked. It turns out that conventional implicature readings are only possible when the embedded adjunct clause is syntactically disintegrated from the main clause.

Second, I turn to complement clauses, looking at the complements of attitude verbs in German. In German, some verbs unexpectedly allow their complements to be syntactically disintegrated (Truckenbrodt, 2006). I argue that the class of verbs that allows this is characterized by providing certain additional semantic components, not on the level of assertion. It still needs to be determined which level of meaning this contribution belongs to, and how it relates to the levels of presupposition and conventional implicature. Furthermore, it is a syntactically interesting question how two different types of complement clauses are possible, one of which is syntactically integrated, whereas the other one is unintegrated. Despite the subtle differences, there is a core meaning that the two cases share.

This leads to another kind of question, about the interaction of different possible levels of linguistic meaning. Previously, authors have concentrated on one level of meaning. When different levels have been compared, this has been done mostly in order to help distinguish between them. This dissertation will

²Although my examples are mostly taken from German, the constructions in question are available in all the languages I have encountered. My semantic analysis is language-independent, and therefore holds for any language with relevance conditionals or epistemic and speech-act ‘because’-clauses.

determine how different levels of meaning interact or mix. Once clausal meaning is contributed as a conventional implicature, one could encounter presuppositions embedded in it, and vice versa. Thus, complex projection patterns can be studied.

1.3 Structure of the Proposal

In section 2, I present my analysis of *denn* ('because') in German (Scheffler, 2005). I show that the differences in use between *denn* and *weil* (also 'because') follow from my finding that *denn* contributes its meaning on the level of conventional implicature. The following section 3 develops a parallel analysis for relevance conditionals, which have strikingly similar behavior.

In section 4, I turn to attitude verbs in German. I discuss how subtle semantic differences between verbs like *wünschen* ('wish') and *hoffen* ('hope') lead to the verbs' (in)ability to embed root clause complements.

Finally, in section 5, I address the more general question of how the known semantic tiers of assertion, presupposition, and conventional implicature interact with each other. I present some novel data that set the stage for further inquiry in this direction.

Section 6 draws a summary of the completed work, and points to the questions that are left for further research.

2 Adjunct Clauses 1: *Because* in German

This chapter presents a new analysis of 'because' in German. I show that whereas *weil*-clauses contribute their meaning as straightforward assertions, *denn*-clauses provide the same meaning (basically, a causal adjunct clause) on the level of conventional implicatures. At the same time, *denn* is shown to be a coordinating conjunction of CPs, whereas *weil* is a subordinating conjunction. These facts explain two things. On the one hand, it becomes clear why *denn* can be used to express a wider range of causal relations than the related *weil*: *denn* can target the coerced variables over assertions as an argument, while these variables are too high for *weil*. On the other hand, certain special restrictions on the use of *denn* also follow from *denn*'s status as a coordinating conjunction and conventional implicature.

Weil and *denn* are two causal discourse connectives in German.³ However, they are by no means interchangeable. It has been observed in the previous

³There has been a lot of discussion about the question whether these and similar connectives are actually *causal* (see for example Ballweg (2004)). Not all sentences containing *weil* in German actually talk about causes of events or situations (i). I am leaving this interesting question aside. Here, I will be concerned exclusively with the differences in meaning and syntax between *weil* and *denn*, just paying attention to the causal sentences.

- (i) Ich stehe dann morgens immer um sechs Uhr auf, weil ich dann Durchzug mache, gell.
'And then I always get up at 6 in the morning, because I air the room at that time.'
(LDC: HUB)

literature (see e.g., Pasch et al. (2003)) that German *denn* can be used in a different set of sentences from *weil*.

Bringing together data from several decades of literature, I show that *denn* is used in a superset of the situations where *weil* can be used. However, there are three exceptions that make *denn* impossible, which complicate the picture. My analysis explains both the superset-subset semantic relation of *denn* vs. *weil*, as well as the idiosyncratic exceptions to this.

Structure of the Chapter In section 2.1, I present data that shows the differences in usage between *denn* and *weil*. In section 2.2 I develop a semantic analysis that shows that *denn* is a conventional implicature item. Section 2.3 discusses the syntax of *denn* in German, demonstrating that *denn* is a coordinating conjunction of CPs. In the following section 2.4, I present how the semantic and syntactic analyses of *denn* explain the distribution facts outlined in section 2.1. Section 2.5 concludes.

2.1 Data

Denn and *weil* are two connectives in German with a large overlap in meaning. Both mean roughly ‘because’, and they can be used interchangeably in a large range of sentences.⁴ Example (3) shows one such case.

- (3) a. *Die Straße ist überschwemmt, weil es geregnet hat.*
b. *Die Straße ist überschwemmt, denn es hat geregnet.*
The street is flooded because it rained.

Note that in (3), *weil* introduces a verb-final (VF) subordinated clause, whereas *denn* introduces a verb-second (V2) clause. More discussion on the syntactic differences follows in subsection 2.3. It is important to note that *weil* can also be used with V2-clauses (4). Since the properties of these uses of *weil* seem identical to the properties of *denn*, I take *weil*-V2 to be synonymous with *denn*.⁵ Furthermore, Pasch (1997) showed that even *weil*-VF can be used interchangeably with *weil*-V2 or *denn*, if it is disintegrated by intonation (falling pitch on the preceding main clause) (5). I take this use to be another synonym of *denn* with an equivalent analysis.⁶

⁴There is a third causal connective in German: *da*. It shares many of the properties of *weil* and/or *denn*. See (Thim-Mabrey, 1982; Pasch, 1983a) for more details. In this paper, *da* will not be considered further.

⁵(Pasch, 1997, p. 259) argues that *weil*-V2 clauses can be used to answer questions, while *denn*-clauses cannot be so used. Although she quotes corpus examples, I find these unacceptable. Pasch notes that *weil*-V2 can only be an answer if the main clause is not uttered – this seems to point to the conclusion that in the cases where a *weil*-V2-clause is uttered as a direct answer, it is really just the clause following *weil* that is taken as the answer (just like any main clause would be): “Why didn’t you call me earlier?” – “(Because:) I wasn’t here.”

⁶In the following, when I discuss *denn*, I am looking at the particular causal relation, which can be expressed in three ways: lexically (*denn*), syntactically (*weil*-V2), or phonologically (falling pitch).

- (4) *Peter ist zuhause, weil sein Licht ist an.*
Peter is at home, because his light is on.
- (5) *Peter ist zuhause, weil sein Licht an ist.*
Peter is at home, because his light is on.

However, *weil* and *denn* are not completely synonymous. It has been observed in the previous literature (Pasch, 1983b; Pasch et al., 2003) that *denn* can be used in certain sentences where subordinating *weil* is impossible, and conversely, that *denn* can not appear everywhere that *weil* can (Pasch, 1997). This subsection presents the abundant available data in a new way. In contrast to previous authors, I claim that *denn*'s possible uses subsume the possibilities for *weil* (see for example Pasch, 1997, p. 257, for the claim that *weil* is the causal connective with the broadest meaning).

Unlike *weil*, *denn* has a usage that has been called “epistemic” (6).⁷ In these sentences, the *denn*-clause does not provide a reason or cause for the main clause directly. Rather, it gives the reason or cause for the conclusion of the speaker that the main clause must be the case:

- (6) a. * *Es hat geregnet, weil die Straße ganz naß ist.*
b. *Es hat geregnet, denn die Straße ist ganz naß.*
It was raining, because the street is wet.

Thus, (6b) means ‘It must have rained, because the street is wet.’

Furthermore, the causal relation expressed by *denn* can apply to the speech act of the main clause (Küper, 1984):

- (7) a. ?? *Ist vom Mittag noch etwas übrig? Weil ich schon wieder Hunger habe.*
b. *Ist vom Mittag noch etwas übrig? Denn ich habe schon wieder Hunger.*
Is there anything left over from lunch? – Because I’m already hungry again.
- (8) *Die Antwort ist auf Seite 242, denn von alleine findest du es wohl nie.*
The answer is on page 242, since you will never find it by yourself.
(Eng. example after Sweetser, 1982)

Many previous researchers have argued that the epistemic and speech-act uses of *denn* are the same thing. For example, (Keller, 1995) holds that the epistemic uses are the ones pertaining to assertions, whereas other illocutionary acts yield the “speech-act” readings. However, (Sweetser, 1982, 1990) clearly shows that these two cases need to be kept separate.

Thus, the possible meanings for *denn* and *weil* are in a superset relation:

⁷These kinds of examples have also been reported for *weil* in verb-second clauses (Keller, 1995; Pasch, 1997). Furthermore, epistemic sentences are possible for *weil* in verb-final clauses, if the pronunciation is disintegrated (e.g., there is a falling pitch and pause before the *weil*-clause). I conjecture that these uses of *weil* are syntactically and semantically identical to *denn*, as presented in this paper. In the following, I will only consider fully integrated (subordinating) *weil* in verb-final clauses.

- (9) **Superset Relation:** “p weil / denn q” expresses

$$\text{weil} \left\{ \begin{array}{l} \text{p CAUSE q} \\ \text{p CAUSE MUST q} \\ \text{p CAUSE UTTERANCE OF q} \end{array} \right\} \text{denn}$$

This simple relationship between the two sets of meaning is complicated by three exceptions (see, e.g., Pasch, 1983b, for *denn*'s usage conditions): First, *denn* cannot be used if the because-clause precedes the main clause (10):

- (10) a. *Weil es geregnet hat, ist die Straße naß.*
 b. **Denn es hat geregnet, ist die Straße naß.*
 Because it rained, the street is wet.

Second, *denn*-clauses cannot be used as direct answers to a why-question (see e.g., Thim-Mabrey, 1982):

- (11) a. *Warum ist die Katze gesprungen?* — *Weil sie eine Maus sah.*
 b. *Warum ist die Katze gesprungen?* — **Denn sie sah eine Maus.*
 Why did the cat jump? — Because it saw a mouse.

Third, *denn* is impossible if the content of the because-clause is evident or has been previously mentioned (12).

- (12) a. *Es hat heute sehr geregnet.* — *Ja, die ganze Straße steht unter Wasser, weil es geregnet hat.*
 b. *Es hat heute sehr geregnet.* — # *Ja, die ganze Straße steht unter Wasser, denn es hat geregnet.*
 It rained a lot today. — Yes, the whole street is submerged under water because of the rain.

Below, I develop an analysis of the additional epistemic and speech-act meanings for *denn*, capitalizing on CIs. As a consequence of the proposed semantic and syntactic analysis, the account also provides straightforward explanations for the three exceptions to *denn*'s usage. This points to the fact that this new classification of the data is the correct one.

2.2 Semantics of *denn*

Semantically, *denn* connects two events or propositions causally. Thus, “X, denn Y” means “Y CAUSED X”. Furthermore, it has been noted in the literature that a sentence of the schema “X, denn Y” can also mean either “Y CAUSED (MUST X)” (this is often called the *epistemic* reading), or “Y CAUSED (UTTERANCE OF X)” (the *speech-act* reading). This has often been explained by assuming two or three different kinds of *denn*, which apply on different levels (see Keller, 1995, for *weil*-V2). However, as will be shown in this section, a conventional implicature analysis of *denn* explains this behavior directly.

2.2.1 Usage Differences between *denn* and *weil*

Previous Work Several existing studies point to differences in the usage of the German conjunctions *denn* and *weil*. Some previous work has compared *denn* and *weil* not only syntactically, but also semantically (Pasch, 1983a,b; Küper, 1984; Sohmiya, 1975, among others). Pasch (1983a) points out that *denn* (and also *da*, another causal connective) can not be embedded under a “judgment” (assertion) operator or question operator (Pasch, 1983a, p. 334).

Similarly, (Pasch et al., 2003, p. 176) note that *denn* is unable to appear in the scope of other functors. They claim that this is the case because *denn* takes an illocutionary act as its argument, not a proposition.

Sohmiya (1975) also states that *denn* must be semantically outside of embedding functors (for him, illocutionary and epistemic functors). However, he claims that *denn* cannot overtly embed these operators either, they must be elided in order for *denn* to be possible. According to him, the following sentence is ungrammatical:

- (13) Ich nehme an, daß Otto zu Hause ist, denn es regnet.
 ‘I assume that Otto is at home, because it is raining.’

I do not agree with this judgment. Sentence (13) is perfectly acceptable. In fact, similar examples can be found in naturally occurring text:

- (14) Assad nimmt an, dass nun die Amerikaner beide Seiten überzeugen wollen, zu den Verhandlungen zurückzukehren; denn es steht auch Präsident Clintons Ruf als Außenpolitiker auf dem Spiel.
 ‘Assad assumes that the Americans now want to convince both sides to return to negotiations, because President Clinton’s reputation is also on the line.’

All previous authors champion a variant of a performative analysis. That is, they concluded from their observations that *denn* targets an illocutionary operator which is always present in the utterance, and that the *denn*-clause gives a reason or cause for the result of applying that operator to the matrix clause. Schematically, the difference between *denn* and *weil* can be depicted as in the two trees in figure 1.

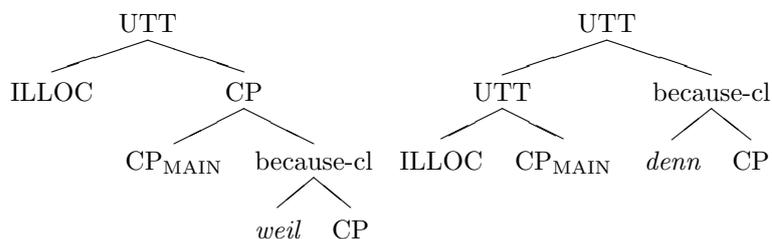


Figure 1: *weil* vs. *denn* according to the Performative analysis

Contra the alternative analysis The performative analysis aims to explain why *denn* can be used to express causal links that the authors call “reductive” (instead of deductive) reasoning. However, the structural difference cannot explain why *denn* must have an additional, covert, illocutionary or epistemic operator in its scope, and why *weil* cannot do this. It is also worth noting that *weil* can apply to these kinds of operators when they are overt (15), or when the *weil*-clause is syntactically or prosodically disintegrated (see (4–5)).

- (15) Peter muß zuhause sein, weil sein Licht an ist.
 ‘Peter must be home, because his light is on.’

Furthermore, the fact that *denn* cannot be embedded under further semantic operators does not naturally follow from this analysis. In my analysis, the unembeddability of *denn*-clauses is a necessity which needs no further explanations.

Most importantly, the performative analysis has problems explaining the very common uses of *denn* where it is virtually synonymous with *weil*. Most work on *denn* concentrates on its speech-act and epistemic uses (Pasch et al., 2003). However, three uses must be distinguished, as shown in section 2.1. That is, *denn* can be used to express ordinary object-level causal links as well. Another example is given in sentence (16). For these kinds of sentences, the illocutionary analysis does not apply. This sentence seems completely synonymous with the parallel *weil*-sentence. These two examples, however, behave very differently when it comes to embeddability: still, (16) cannot be embedded, although (17) does not have such a constraint, as shown in (18) vs. (19). This shows that we are still dealing with the same *denn* as in the epistemic and speech-act cases.

- (16) Peter geht nach Hause, denn er hat Kopfschmerzen.
 ‘Peter is going home because he has a headache.’
- (17) Peter geht nach Hause, weil er Kopfschmerzen hat.
 ‘Peter is going home because he has a headache.’
- (18) # Ich glaube nicht, daß Peter nach Hause geht, denn er hat Kopfschmerzen.
 ‘I don’t believe that Peter is going home because he has a headache.’
- (19) Ich glaube nicht, daß Peter nach Hause geht, weil er Kopfschmerzen hat.
 ‘I don’t believe that Peter is going home because he has a headache.’

Finally, it has not been noted in the literature (to my knowledge) that the unembeddability of *denn*-clauses is not absolute. These clauses *can* be embedded in non-restrictive relative clauses:

- (20) Lance Armstrong, der sehr bekannt ist, denn er hat siebenmal die Tour de France gewonnen, engagiert sich heute für Krebskranke.
 ‘Lance Armstrong, who is very well known because he won the Tour de France seven times, is now involved in the fight against cancer.’

This peculiarity is predicted under my analysis proposed below, but would be completely unexpected from the current point of view. I conclude that the performative analysis fares badly when considering all available data, and must therefore be abandoned.

2.2.2 Conventional Implicature

(Grice, 1975) first introduced the class of meanings called Conventional Implicatures (CIs). He briefly discussed the sentence (21), and noted that it commits the speaker to the claim that being brave follows from being an Englishman.

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

Grice does not dwell on this class of meaning for very long, but he does note that they are separate from ordinary assertions (“what is said”), and he intends them to be distinct from conversational implicatures in that they are conventionally bound to a word or phrase, and independent of context.

A precise definition of CIs was developed by Potts (2005). He identifies the following distinctive properties for CIs:

- CIs are meanings conventionally associated with words or phrases.
- CIs are commitments made by the speaker of the utterance.
- They are logically independent of the assertions.

Potts further introduces a logic for conventional implicatures, which I am adopting below. According to this analysis, an utterance can trigger any number of CIs, which are provided as entailments independent of the main assertion. The type system of the logic does not allow for operators that take CI-type meanings as their argument – thus it follows that CIs can not be embedded under any other operators. Conversely, CIs can take assertion-type meanings as their arguments.

This unembeddability of CIs seems to be their most striking property, and has become the basis of a range of tests developed by (Bonami and Godard, 2005) for evaluative adverbs in French. They argue, and demonstrate on the example of adverbs like *malheureusement* (‘unfortunately’), that CIs can not be embedded in the antecedent of a conditional, in questions, and under negation, and can not be openly denied. In subsection 2.2.4, I am employing these tests to show that the meaning contributed by *denn* is in fact a CI meaning.

2.2.3 *Denn* as a Conventional Implicature Item

I argue that the causal meaning of *denn* is located in its conventional implicature (see Grice (1989); Potts (2005)):

(22) In a sentence “A, *denn* B”, with $\llbracket A \rrbracket = \phi$ and $\llbracket B \rrbracket = \psi$, *denn* has the following semantics:

Assertion: ϕ

Conventional Implicature: CAUSE(ψ, ϕ)

In other words, *denn* conventionally implicates that the proposition denoted by one clausal argument is caused by the proposition denoted by the other clausal argument. For *weil*, on the other hand, the causal relationship is part of the assertion.

2.2.4 “Widest Scope” of *denn*

Maybe the most prominent property of conventional implicatures is the fact that they cannot be embedded under other semantic operators. This contributes a feeling of “widest scope” for them (Potts, 2005, page x): the conventional implicature seems to be provided at the highest level in the utterance, no matter how deeply embedded it is. Usually this does not cause the sentence to crash, although in certain contexts that try to force embedding, the utterance may become infelicitous.

Bonami and Godard (2005) show tests to detect conventional implicatures, looking at evaluative adverbs in French. Their tests, applied to German *denn*, clearly show that its causal meaning cannot be embedded under operators. This section also shows that *denn* contrasts sharply with *weil* in this regard: *weil* is freely embeddable under conditionals, questions, negation, attitude verbs, etc.

Conditionals Conventional implicatures cannot be embedded in the antecedent of a conditional. The following examples show that while *weil* can be embedded under conditionals, sentences with *denn*-clauses in the same position are only grammatical when the *denn*-clause is understood as a parenthetical, standing outside of the conditional itself.

- (23) a. *Wenn Peter zu spät kam, weil er den Bus verpaßt hat, war es seine eigene Schuld und er sollte bestraft werden.*
b. # *Wenn Peter zu spät kam, denn er hat den Bus verpaßt, war es seine eigene Schuld und er sollte bestraft werden.*
‘If Peter was late because he missed the bus, it was his own fault and he should be punished.’
- (24) a. *Wenn Peter zu spät kam, weil er den Bus verpaßt hat, hat er den Anfang des Films nicht gesehen.*
b. *Wenn Peter zu spät kam, denn er hat den Bus verpaßt, hat er den Anfang des Films nicht gesehen.*
‘If Peter was late — he missed the bus (by the way) — he won’t have seen the beginning of the movie.’

In examples (23–24), the consequent clauses are chosen in order to support an integrated (23) and a parenthetical (24) reading of the causal clauses, respectively. It is obvious that *denn* cannot be understood to be in the scope of the conditional. The intended meaning in example (23b) is that someone should only be punished if they were late because of their own fault (not, for example, if they were late because their car broke on the way). The sentence simply does not support this meaning.

However, *denn* is possible in the antecedent of conditionals if it is understood as a parenthetical that contributes its meaning outside of the scope of the conditional, as in (24b). Here, it is unclear whether Peter was late for the movie, but he unquestionably missed the bus (he might have taken a cab to the theater and made it in time). The *denn*-clause has the flavor of additional information that could be explicitly marked with *by the way* in English.

Questions If a conventional implicature is triggered within a question, the content that is implicated cannot be understood as being in the scope of the question’s illocutionary act.

- (25) a. *Wer kam zu spät, weil er den Bus verpaßt hat?*
 b. ?? *Wer kam zu spät, denn er hat den Bus verpaßt?*
 ‘Who was late because he missed the bus?’

Example (25a) can be asked in a situation when several people were late, for different reasons. The question is asked to clarify who of these people was the one that was late because they missed the bus. Example (25b) cannot be used in such a situation. In fact, it is quite hard to imagine a situation that would render this sentence entirely felicitous. It seems to be possible only as an echo question, when it has already been established that someone was late, and that this happened because they missed the bus.

Negation Similarly, conventional implicatures cannot be embedded under negation:

- (26) a. *Paul ist nicht zu spät gekommen, weil er den Bus verpaßt hat.*
 [*Sondern er hatte noch zu tun.*]
 b. # *Paul ist nicht zu spät gekommen, denn er hat den Bus verpaßt.*
 [*Sondern er hatte noch zu tun.*]
 ‘Paul wasn’t late because he missed the bus. [But rather, because he still had work to do.]’

Sentence (26a) is felicitous with the intended semantics. The same sentence with *denn*, however (26b), means something different: It says that the reason for Paul’s *not* being late was that he missed the bus. This meaning, in addition to being odd by itself, clashes with the clause that follows in brackets.

In a sentence of the form “ $\neg A$, because B”, two scopings are in principle possible: CAUSE(B, $\neg A$) and \neg CAUSE (B, A). Both interpretations are possible if the causal relation is asserted, as with *weil*. With *denn* however, when the causal relation is only implicated, only the wide scope for CAUSE is available: CAUSE(B, $\neg A$). Even if one tries to force wide-scope negation, as in the following example, the sentence retains only the narrow-scope reading:

- (27) # *Es ist nicht so, daß Paul zu spät gekommen ist, denn er hat den Bus verpaßt.*
 int.: ‘It is not the case that Paul’s missing the bus is the reason for his lateness.’

Counterfactuals Conventional implicatures cannot appear in the consequent of a counterfactual. Again, we have to be careful to construct our sentences right. In a sentence “If A, then B, because C”, two scopings are possible (corresponding to two distinct syntactic structures).

Of course, the reading ((if A then B) because C) is always available for *denn*, since the causal connective is not embedded there. An example of such a case with *denn* is the following:

- (28) *Wenn Paul zur Party gekommen wäre, dann hätte er sich gefreut, denn Maria war auch da.*
 ‘If Paul had come to the party, he would have been happy, because Maria was there as well.’

Thus, we’re aiming here for a clear reading of (if A then (B because C)). This can be facilitated for example if A = B: A sentence ((if A then A) because C) does not make much sense conversationally. However, for a counterfactual, (if A then (A because C)) makes sense (see (29a)). This reading is clearly unavailable with *denn* (29b).

- (29) a. *Wenn Peter zur Party gekommen wäre, dann (wäre er gekommen), weil du da bist.*
 b. *# Wenn Peter zur Party gekommen wäre, dann wäre er gekommen, denn du bist da.*
 ‘If Peter had come to the party, he would have come because you’re here.’

Attributions Bonami and Godard (2005) state that in some traditional views of Grice (1975), conventional implicatures are seen as being necessarily attributed to the speaker, and no other agent of an attitude. They find, however, that evaluative adverbs in French can be attributed to other agents, if those agents are mentioned in the discourse. What is the case for *denn*?

- (30) *Julia glaubt, daß Peter zu spät kam, weil er den Bus verpaßt hat.*
 ‘Julia believes that Peter was late because he missed the bus.’
- (31) *Julia glaubt, daß Peter zu spät kam, denn er hat den Bus verpaßt.*
 [*# Aber ich weiß er hätte es trotzdem geschafft, wenn er nicht noch Zigaretten kaufen gegangen wäre.*]
 ‘Julia believes that Peter was late because he missed the bus. [*# But I know he would have made it on time anyway, if he hadn’t gone to buy cigarettes as well.*]
- (32) *Julia sagt, daß Peter später kommt, denn er hat noch zu tun. [?? Ich glaube aber, er hat nur keine Lust.]*
 ‘Julia says that Peter will come later, because he is still working. [?? But I believe that he just doesn’t feel like coming.]’

Embedding *weil* under attributions is of course fine (30). In contrast, it is impossible to embed *denn* under verbs of attribution. This is especially noticeable

with a verb like *believe*. In example (31), adding a sentence that explicitly denies the speaker’s belief in the causal link between missing the bus and being late.

(32) is better than (31), because verbs like *say* have a less close embedding relation (we can interpret the things that were said unembedded, as quoted quasi-verbatim). However, this version is still much worse than the perfect (30).

Embedding under Non-Restrictive Relative Clauses Finally, an explanation is in order. Why is it that *denn*-clauses can be embedded under non-restrictive relative clauses as shown above in example (20)? The reason is that non-restrictive relative clauses themselves operate on the level of conventional implicatures. In reality, all the conventional implicatures and the plain assertion of an utterance are independent of each other. However, since *denn* can make reference to the relative clause instead of the main clause, it *seems* embedded. Technically, though, the relative clause is not properly embedded in the main clause, and the relationship of the *denn*-clause to the relative clause is thus the same as its relationship to the main clause it modifies in the ordinary case.

2.3 Syntactic Properties of *denn*

Denn’s syntactic classification has been the subject of some discussion. While most studies mention it as a coordinating conjunction (e.g., Pasch (1997)), the most recent and comprehensive study of German connectives has a different opinion. Pasch et al. (2003) treat *denn* as a special case: according to their criteria, *denn* does not subordinate (i.e., require verb-final word order in the second argument) nor embed (i.e., together with its second argument, build a constituent of the first argument). Nor, however, do they think it is coordinating.

Denn’s special properties can be explained even under a coordinative conjunction analysis. Unlike the other coordinative conjunctions (*und*, *oder*, etc.), *denn* can only conjoin main clauses, i.e., CPs. This explains the requirement that the conjuncts be verb-initial or verb-second. Further peculiarities of *denn* are of semantic, not syntactic, nature – I will get back to them in the following two sections. For example, *denn*-clauses can’t be embedded under other functors, and both clauses that *denn* combines have to be thematic.

2.3.1 Classification of *denn*

Example (34) shows that in contrast to *weil* (33), *denn* does not embed its internal argument. It cannot occupy the Vorfeld or a Mittelfeld position together with its internal argument.⁸

(33) Weil ich noch zu tun habe, komme ich nicht.

⁸See (Pasch et al., 2003) for further discussion about why embedding and subordination must be distinguished from each other in German.

‘Because I still have work to do, I won’t come.’

- (34) * Denn ich habe noch zu tun, komme ich nicht.
‘Because I still have work to do, I won’t come.’

Denn does not subordinate its argument either, since the internal argument is not marked with verb-final word order. In fact, as will be discussed below in section 2.3.2, *denn* prohibits its argument from having verb-final word order.

- (35) * Ich kann nicht kommen, denn ich noch zu tun habe.
‘I can’t come, because I still have work to do.’

Coordination. A conjunction which neither embeds nor subordinates its internal argument is a coordinative conjunction. To be sure, we should check that *denn* is actually a conjunction, and not an adverbial connective or particle. Sentence (37) shows that *denn* can not occupy the Vorfeld in its internal argument, it has to be located outside the internal arguments’ structure (compare *jedoch* (‘but’), which is an adverbial connective (36)). *Denn* cannot appear in a Mittelfeld position, either, (see 38) — just like ‘and’, the prototypical coordinative conjunction.

- (36) ✓ Ich möchte gern heute schon kommen, jedoch habe ich noch zu tun.
‘I’d like to come today, but I still have work to do.’
- (37) Ich möchte erst morgen kommen, denn *habe ich / ✓ich habe noch zu tun.
‘I’d like to come tomorrow, because I still have work to do.’
- (38) Ich möchte erst morgen kommen, ich habe *denn noch zu tun.
‘I’d like to come tomorrow, because I still have work to do.’

2.3.2 Word Order in the *denn*-Clause

There is a difference, however, between the syntactic distribution of *denn* and other coordinative conjunctions like *und* (‘and’), *sondern* (‘but’), etc. *Denn*’s internal argument can show V1 and V2 word order only. Other coordinative conjunctions, like *und*, can take arguments with all possible word orders.

- (39) Tina schwimmt und Peter tanzt. (V2)
‘Tina swims and Peter dances.’
- (40) Nimm das Buch und bring es zurück zur Bibliothek. (V1)
‘Take the book and return it to the library.’
- (41) Anna sagt, daß ihre Tochter nicht kann und ihr Sohn keine Lust hat.(VF)
‘Anna says that her daughter can’t (come) and her son doesn’t want to.’

Note also that coordination typically involves two arguments with the same clause structure. Coordination of unlikes is rarely well-formed.

- (42) ?? Hier ist das Buch und bring es zurück zur Bibliothek.
 ‘Here’s the book and return it to the library.’
- (43) ? Nimm das Buch und du kannst es solange behalten, wie du willst.
 ‘Take the book and you can keep it as long as you want.’

In contrast, *denn*-clauses don’t have to match the form of the main clause. Instead, the because-clauses are always root clauses that have verb-second word order (normally) or verb-first word order (for orders and questions). An example of verb-first order is given in (44).

- (44) Du kannst nicht erwarten, daß ich dir so viel Geld leihe, denn bin ich
 Krösus? (Pasch et al., 2003, p. 585; V1)
 ‘You can’t expect that I’ll lend you so much money, because am I
 Croesus?’

Verb-final clauses are impossible as complements for *denn*:

- (45) * Anna sagt, daß ihre Tochter nicht kann, denn sie krank ist. (VF)
 Anna says that her daughter can’t (come), because she is sick.

2.3.3 Coordination of CPs

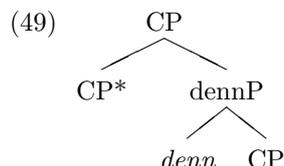
German *und* (‘and’) coordinates not only full clauses, but all kinds of other phrases as well, as long as both conjuncts have the same structure:

- (46) Nina [*IP/VP* schwimmt und tanzt].
 ‘Nina swims and dances.’
- (47) [*DP* Max und Moritz] gehen ins Kino.
 ‘Max and Moritz are going to the cinema.’

However, *denn* can only coordinate full sentences. In fact, we can now state that *denn* only coordinates full CPs. It is a fact about German that in full CPs, the verb has to raise to C, and another element has to move to Spec(CP), leading to verb-second word order. Verb-first order comes about when features keep elements from raising to Spec(CP). Verb-final word order, on the other hand, is the basic word order for German. It only shows up when a complementizer fills the C (complementizer) position and keeps the verb from moving there, i.e. in subordinate clauses. Thus, in order for a coordinate conjunction to connect verb-final clauses, it must be embedded under a complementizer, and thus coordinating two clauses that are smaller than CP (e.g., IPs). For example, in the following sentence, *und* coordinates two IPs that are embedded under *daß* (‘that’).

- (48) Anna sagt, [*CP* daß [*IP* ihre Tochter nicht kann und ihr Sohn keine Lust hat.]]

There are no root (unembedded) clauses in German with verb-final word order, disregarding ellipsis. Thus, the fact that *denn* can only take CP arguments explains why it would tolerate V1-, but not VF-clauses. *Denn*'s syntactic structure is shown in (49).



This means, *denn* modifies a CP (marked by a *) with another CP.

It is at the moment still unclear why *denn* would only tolerate CP arguments. This is a question that is open for further research, specifically, whether this is a cause or consequence of *denn*'s semantic properties.

2.3.4 Position of *denn*-Clauses

One final peculiarity of *denn* must be mentioned: the external argument for *denn* does not need to be a (main) clause. Instead, *denn* can also apply to individual words or non-clausal phrases (50). Only the internal argument of *denn* must always be a clause.

(50) Dieser Betrüger, denn das ist er nunmal, hat schon wieder versucht zu schummeln!

‘This crook, because that’s what he is, has tried cheating again!’

It seems that *denn*-clauses can appear in many of the same places as appositions. Further discussion of this fact and its significance for the syntax of *denn* is left for future work.

In this paper, I am only considering *denn* when it connects two complete clauses. In these cases, we can conclude, it has the basic properties of a coordinating conjunction, with the added constraint that the second (internal) argument must be a full CP.

2.4 Proposal: Conventional Implicature and the Distribution of *denn* vs. *weil*

This section shows how the two facts about *denn*'s semantics and syntax explain the differences between the uses of *denn* and *weil*. First, I discuss how *denn*'s semantics allows it to be used not only as a plain causal connective such as *weil*, but also in epistemic and speech-act sentences. Then, I turn to the three situations where *denn*-clauses are not admitted.

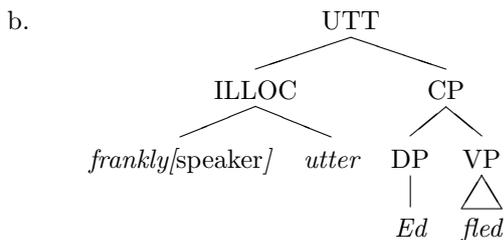
2.4.1 *Denn* in Epistemic and Speech-Act Causal Sentences

The main claim of my analysis is that while *weil* contributes the causal meaning as an assertion, for *denn* it is contributed in the CI. In order to see how this

explains why *denn* can express speech-act causations and *weil* cannot, I will cast my analysis into Potts' (2005) general account for CIs, which involves syntactic representations of the utterance level. Nevertheless, note that this step is not necessary for my account here, as the main point could be restated using anaphoric references (see also the footnotes in this section).

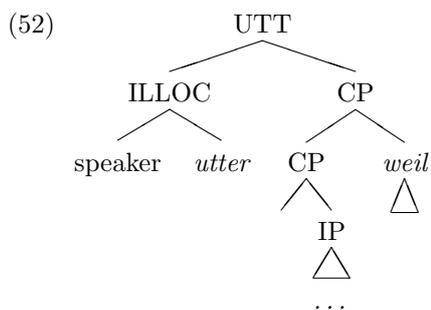
Potts argues that adverbs like *frankly* modify the relation between a speaker and an utterance. He introduces trees like the following (adapted from (Potts, 2005, (4.148))⁹):

(51) a. Frankly, 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 parsetree (51b) up to the CP node. The adverb *frankly* modifies the relation between the speaker and the utterance, but this is located in the conventional implicatures.

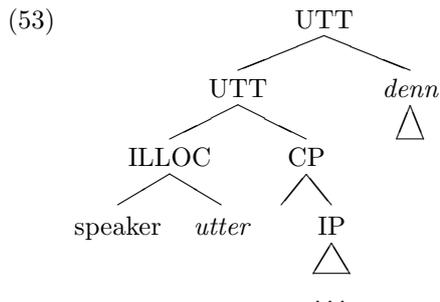
Let's assume a similar structure for the speech-act causal sentences. *Weil's* meaning is contributed completely on the level of assertion. Since under this view, the argument of *weil* should be found in its sister, it must attach *below* the utterance level. Its highest possible adjunction target is the highest CP in the sentence ((52)). Thus, the *weil*-clause cannot modify the utterance of the main clause, just the plain content of it.¹⁰



⁹I have stripped off the semantics to make the underlying syntactic structure clearer. Furthermore, Potts assumes a type conversion on the CP before it can be an argument to *utter*; I ignore this complication here because I think it is not crucial to the argument.

¹⁰As mentioned above, Potts' syntactic approach is not crucial to the analysis proposed here. As an alternative, one could hold that *weil's* second argument is retrieved anaphorically. Nevertheless, this anaphor within the *weil*-clause could not refer to the meaning derived at the utterance level, because then it would contain the *weil*-clause and so ultimately itself in its denotation. This is a basic violation of referential principles.

In the case of *denn*, the *assertion* of a sentence “p, denn q” just has the content ‘p’¹¹. The causal link is located on the CI level. Since the interpretation of the entire *denn*-clause itself is therefore outside of the assertion, the clause can attach at the utterance level (53). Of course, this is optional, and *denn* can just as well attach at the CP level or below to yield the regular causal reading. However, since even when *denn* attaches low, it contributes a CI, the causal link can never be embedded under any (assertion-level) operators, as shown in section 2.2.¹²



Since intuitively, the sentences with epistemic readings like (6) behave exactly parallel to the speech-act ones, it is desirable that the analysis should also proceed similarly. Adopting Potts’ analysis for the speech-act clauses, I have to assume another intermediate syntactic projection to host the covert epistemic modals, introduced by the context. Where do these epistemic modals come from? Covert modals are nothing new. Furthermore, the basic mode in which a discourse proceeds is an epistemic one: one is talking about knowledge and beliefs. Extending Potts’ idea above, we have to observe that a typical utterance allows (at least) two inferences in addition to its actual asserted content: First, the fact that the speaker uttered this particular sentence; and second, the fact that the speaker believes the proposition in question. This is the epistemic level.¹³ An example is shown in (54). The same argumentation as above explains why *denn*, but not *weil*, can target the implicit modal operators.

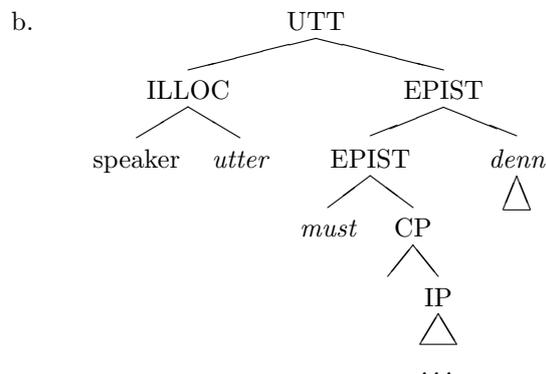
(54) a. (MUST it rained) *denn* (the street is wet)

¹¹‘Because’ is normally factive, that is, it triggers a presupposition that its complement is the case. It remains an interesting question, orthogonal to the present argument, whether *denn* in German also triggers such a presupposition.

¹²Assuming an anaphoric solution instead of the syntactic one adopted here, *denn*’s second argument would be a covert anaphor referring to the utterance level meaning. This is possible because the meaning of the *denn*-clause is completely on the CI level and thus not part of the assertion. Consequently, it does not trigger a violation if this anaphor refers to the entire utterance. Such anaphoric references to implicit utterances are possible at least for overt anaphors. In (i), ‘that’ in B’s exclamation refers back to A’s utterance.

- (i) A: This guy is a lazy bum!
 B: That’s unfair! He couldn’t help us because he was sick.

¹³One might argue that it is maybe not the perfect solution to put all three contributions directly into the same semantic tree, as it seems more like they are on parallel levels, not hierarchically on top of each other. This question has to remain open at this point.



The syntactic structure shows why these implicit epistemic modals always have wide scope over the assertion itself. This also solves the puzzle why explicit MUST sometimes can appear in sentences with *weil* (55). Clearly, explicit modals attach in the syntactic structure below the highest CP, because their semantics is part of the assertion of the utterance.

- (55) ? *Weil sein Licht an ist, muß Peter zuhause sein.*
 Because his light is on, Peter must be home.

Given this general analysis, it appears that the relations expressed by *weil* are a proper subset of the relations that *denn* expresses. Recall however, that there are three exceptions to the use of *denn*. The next section shows how these exceptions are in fact expected under the current analysis.

2.4.2 Three Exceptions to the Use of *denn*

The first peculiarity of *denn*-clauses in contrast to *weil*-clauses was that they cannot precede the main clause.

- (10) a. *Weil es geregnet hat, ist die Straße naß.*
 b. **Denn es hat geregnet, ist die Straße naß.*
 Because it rained, the street is wet.

This fact follows straightforwardly from our elaborations about *denn*'s syntax in section 2.3. All coordinating conjunctions must follow their first argument.

The second exception concerns direct answers to *why*-questions, which cannot be expressed with a *denn*-clause:

- (11) a. *Warum ist die Katze gesprungen?* — *Weil sie eine Maus sah.*
 b. *Warum ist die Katze gesprungen?* — **Denn sie sah eine Maus.*
 Why did the cat jump? — Because it saw a mouse.

Note that the causal relation between the proposition in the *denn*-clause and the other proposition (expressed in the question) is presented as a conventional implicature, and not asserted. Conventional implicatures can never function

as the direct answer to a question. This is to be expected because the CI functions as a side comment (Potts, 2005), so it cannot be the central point of the utterance it appears in.

For example, *even x, y* in English conventionally implicates that there are alternatives to *x* that also do *y*, and that *x* is the most unlikely of the alternatives to do *y*. However, a direct question cannot be answered by these conventional implicatures (56a). Similarly, *but* implicates that there is a contrast between the two coordinated properties (56b).

- (56) a. Who is most unlikely to play the lottery? — # Even Bill plays the lottery.
 b. What does being small contrast with? — # Ants are small but strong.

Sohmiya (1975) notes this property of *denn*:

- (57) A: Warum ist Otto zu Hause? B: Weil [* denn] es regnet.
 (Sohmiya, 1975, (21))

However, he claims that *weil* is used *instead* of *denn* in this case. This is not technically true, since the *weil*-answer can only have its usual (plainly asserted) meaning. That is, it can only give the reason for Otto's being at home. It cannot give a reason for my knowledge/suspicion regarding his location (the epistemic usage). Even though the answer is ambiguous between a verb-final (assertive *weil*) and verb-second (epistemic *weil*) structure, it cannot be understood to express the epistemic reading. This shows that the CI reading is indeed ruled out by the context of being a direct answer to a question.

The third exclusion for *denn*-clauses is when the proposition in the *denn*-clause has been previously mentioned. One should take into account that truth-conditionally, *denn* means the same as *and*. Sentences where an entire conjunct of *und* (*and*) is previously mentioned are infelicitous (58).

- (58) *Es wird heute regnen.* —
 a. * *Ja, ich muß zuhause bleiben, denn es wird heute regnen.*
 b. ?? *Ja, ich muß zuhause bleiben, und es wird heute regnen.*
 It's going to rain today. — Yes, I'll have to stay home, because/and it's going to rain today.

Further, new-ness is one of the central properties of CIs identified in (Potts, 2005). Potts (to appear) shows for nominal appositions that CIs are generally infelicitous when their content is backgrounded (example from op.cit.):

- (59) Lance Armstrong survived cancer.
 a. # When reporters interview Lance, a cancer survivor, he often talks about the disease.
 b. And most riders know that Lance Armstrong is a cancer survivor.

2.5 Summary

This chapter shows that German *denn* is a conventional implicature item, and a coordinating conjunction of CPs. Together, these facts explain why *denn* can

be used to express a wider range of causal relations than the related *weil*, and why at the same time there are some restrictions on the use of *denn*.

3 Adjunct Clauses 2: Relevance Conditionals

Conditionals and causal clauses are very similar in meaning. It is therefore not surprising that conditionals also exhibit speech act uses:

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

Such cases have been widely discussed in the literature (Sweetser, 1990; Iatridou, 1991; Siegel, 2006, and others), under the names Relevance Conditionals (RCs), Conditional Speech Acts, Biscuit Conditionals, and others.

Since they are so similar to the because-clauses discussed above, it is highly desirable to give them a parallel analysis. This chapter develops such an analysis.

3.1 Relevance Conditionals

RCs are a well-known type of conditionals, exemplified in (60). Intuitively, an RC 'if ϕ , ψ ' expresses ψ , and further mentions the possibility of ϕ , (in which case ψ may be relevant). According to this intuitive approach, (60) states that there is pizza in the fridge, and that you may be hungry later (this is why the pizza information is important).

Some previous analyses with this intuition exist (e.g., Grice, 1975; Sweetser, 1990; Bach, 1999, among others), mostly based on letting the if-clause scope over an explicit illocutionary operator. Sweetser (1990), for example, describes RCs as conditional speech acts, that is, the speech act in the main clause is only understood to be performed when the if-clause is fulfilled. She interprets the RC (61a) to have the interpretation (61b). Since the illocutionary predicate *offer* is present in the main clause, the if-clause itself retains its regular conditional meaning.

(61) a. There are biscuits on the sideboard if you want them.
b. I hereby *offer* you some biscuits on the sideboard, *if* you want them.

It has been pointed out repeatedly in the literature that such a simple implementation of the intuitive approach cannot yield the correct results for RC (see Siegel, 2006, and references therein). Most importantly, it is clear that the fact that the sentence has been uttered (asserted, etc.), or the speech act itself, is not dependent on the condition specified in the if-clause. For example, in (61), the offer has been made regardless of whether the addressee wants biscuits or not. My implementation developed below avoids this problem while capturing the intuitive semantics of RCs in an elegant way.

3.2 Two Apparent Problems with the Intuitive Approach

Siegel (2006) points out two basic problems for the intuitive approach in general.

First, Siegel considers the Japanese expressive adverbial *yoku*. Citing (McCready, 2004), she shows that it requires factivity of its complement (62).

- (62) a. *Kinguzu-wa yoku uruhuzu-ni katta-mono-da.*
 the Kings-TOP surprise the Wolves-DAT won-NOMIN-COP
 ‘The Kings, amazingly to me, defeated the Wolves.’ (Siegel, 2006:(15))
- b. *(Mosi) sensyu-ga kega-kara*
 (If) player-NOM injury-from
*kaihuku-sita-mono-na-ra, kinguzu-wa yoku**
 recover-did-NOMIN-COP-COND the Kings-TOP surprise
uruhuzu-ni katta-mono-da.
 the Wolves-DAT won-NOMIN-COP
 ‘If their players recovered from their injuries, the Kings, [amazingly to me*], defeated the Wolves.’ (Siegel, 2006:(16))

Siegel noticed that *yoku* is unexpectedly not possible in the consequent of RCs (63). This is unexpected under the intuitive analysis of an RC ‘[if ϕ]_{RC}, ψ ’, since ψ is supposed to be asserted. Thus, Siegel concludes that RCs need not assert their consequent, contrary to the intuitive approach.

- (63) *(Mosi) (kimi-ga) pr yoi sirase-o*
 (If) you-NOM good news-ACC
*kiki-tai-mono-na-ra, kinguzu-wa yoku**
 hear-want-COP-NOMIN-COND the Kings-TOP surprise
uruhuzu-ni katta-mono-da-(nee).
 the Wolves-DAT won-NOMIN-COP-(PRT)
 ‘If you want to hear some good news, the Kings, [amazingly to me*] defeated the Wolves.’ (Siegel, 2006, ex. (17))

However, (63) is ruled out for reasons independent of the if-clause: as McCready (2004) points out, *yoku* presupposes that its complement be already in the common ground. He shows this by attempting to use *yoku* in the answer to a question, which is impossible:

- (64) A: Who did Austin marry?
 B: **Yoku Dallas to kekkon sita na!*
 YOKU Dallas with marry did PT
 ‘He did a really good and surprising thing by marrying Dallas!’
 (McCready, 2004, ex. (6))

Note that *yoku*’s complement must be backgrounded regardless of any conditionals; but in Siegel’s original example, the clause containing *yoku* was labelled as “news”. We can try to control for this. Once backgroundedness of *yoku*’s

complement is guaranteed (65), RCs allow *yoku* just like expected under the intuitive analysis:¹⁴

- (65) A: Our team defeated the Wolves yesterday! What do you say to that?!
- B: (*Mosi*) *watasi-no iken-o sir-itai-no-na-ra,*
 (If) I-GEN opinion-ACC know-want.to-NM-COP-if,
kinguzu-wa yoku uruhuzu-ni
 the Kings-TOP surprise the Wolves-DAT
katta-mono-da-to omou.
 Won-NOMIN-COP-COMP think.
 If you want to know my opinion, I'm amazed that the Kings
 defeated the Wolves.

Second, Siegel considers examples of RCs in which the consequent is false, such as (66).

- (66) [In front of the bar:] If they ask you how old you are, you're 21!

She again concludes that '[if ϕ]_{RC}, ψ ' does not necessarily assert, and thus does not necessarily entail, ψ . But note that the consequent here has the same meaning (and force) as it would have in matrix use (67). It is already known that RCs allow for complex illocutionary acts, such as rhetorical questions (68), so the behavior in (66) is expected and should not be related to RCs.

- (67) [In front of the bar:] (Remember,) you're 21!

- (68) If you think about it, why didn't he help her when she needed him?
 [Look, he's not such a great guy.]

In summary: According to our semantic intuitions, the if-clause in RCs does not apply directly as a condition on the content of the consequent. However, simple implementations of this approach fail because they claim that the if-clause states a condition on the assertion, or the speech act, of the main clause, contrary to fact. In this section, I have refuted two apparent counterexamples to the intuitive approach in general, paving the way for a new implementation of it that tackles the semantic properties. On the way there, I would like to take a break to consider some novel data showing the unembeddability of RCs.

3.3 RCs are Unembeddable

For regular conditionals, the causal link they express can be negated (69).

- (69) A: If it rains, she'll be happy.
 B: That's not true. She'll be happy if it snows.

By way of showing that the if-clause of RCs is outside their assertion, Iatridou (1991) noted that RCs cannot be openly denied in this way:

¹⁴Thanks to Kimiko Nakanishi for Japanese judgments for this and similar examples.

- (70) 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)

Further, Bhatt and Pancheva (2006) showed that RCs can only be embedded under *say*, and not under other attitude verbs:

- (71) a. John said that if you are thirsty there is beer in the fridge.
 b. *John believes that if you are thirsty there is beer in the fridge.

Yet, it has not, to my knowledge, been reported that RCs are impossible under any other semantic operators. In fact, all the tests carried out for *denn* in the previous section can be repeated for RCs with the same results. RCs cannot be embedded under negation, in questions (see 72), in the antecedent of (regular) conditionals (see 73), or in the consequent of counterfactuals.

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

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

In example (72), the if-clause is not understood to be part of the question. Rather, it could be a condition why asking the question could become relevant.

Similarly, the only reading obtained for sentence (73) is a regular conditional reading. The sentence is marginal at best, because the unembeddability of RCs forces both if-clauses to be understood as content conditionals.

3.4 The Proposal: Conventional Implicature

I propose a new formalization of the intuitive approach to RCs; claiming that they contribute both an assertion and a CI (Potts, 2005):

- (74) Meaning of $[\text{If } \phi]_{\text{RC}}, \psi$:
 (i) Assertion: ψ
 (ii) CI: $\diamond\phi$

This semantics captures the intuitions nicely, since the effect of an RC 'If ϕ , ψ ' is taken to be exactly the same as just uttering ' ψ ', while the if-clause contributes the epistemic possibility of ' ϕ '¹⁵ as a CI (75).

- (75) If Peter was hungry, there was pizza in the fridge. ((75) is odd if the speaker knows that Peter wasn't hungry)

Interestingly, if_{RC} does not introduce a relation ' $\phi \Rightarrow \psi$ ' in the CI level. Contrary to *denn*, the net effect is that if_{RC} introduces simply ' \diamond '. A promising line to derive this final result is to look at the semantics of 'if' in general. First, it is well-known that *if* does not correspond to the logical operator \Rightarrow ; instead, it is most commonly analysed as introducing a restrictor for an implicit modal

¹⁵This is compatible with the speaker knowing ϕ , as well.

(Kratzer, 1991). Second, it has also been shown that the restrictor of a quantifier should not be empty. This has been used in the analysis of *whatever* (see von Stechow, 2000) to make sure that the belief-worlds of the speaker are not all the same¹⁶. Thus, by flagging that its complement (here, ϕ), is the restrictor of an epistemic modal, *if* requires that ϕ should not be considered impossible by the speaker (since the intersection of the worlds that the speaker holds possible and the worlds belonging to ϕ should not be empty). This is the epistemic possibility introduced by *if*.

Note that this analysis avoids the problems of previous Assertion Theories as criticized by Siegel, since the if-clause is not taken to state a condition on the assertion (e.g., in (76) the wish in the consequent has been asserted no matter whether the participants meet again) – rather, as a CI, the if-clause is completely independent from the matrix clause:

(76) If I don't see you again before then, Happy New Year!

I take the intuition that ϕ should be relevant to ψ to follow from the Maxim of Relevance in general – even side comments such as CIs are taken to be relevant to the discourse, otherwise they wouldn't be uttered (see Potts, 2005, on nominal appositives).

To sum up, see (77) for an example RC with its meaning:

(77) α : [If you need me later]_{RC}, I'll stay at home all day.

Assertion: α will stay at home all day.

CI: According to α 's knowledge, it may be that Addressee needs α later.

3.5 Further Consequences

The proposed analysis has one further positive consequence: It explains why in German, RCs and regular conditionals exhibit distinct word orders. Whereas regular if-clauses are constituents in the matrix clause in German, RC if-clauses are disintegrated, like a parenthetical. In that case, the matrix clause is an independent CP without an embedded clause:

(78) a. *Wenn du mich brauchst, bleibe ich den ganzen Tag*
 If you me need, stay I the whole day
zuhause. (regular conditional only)
 at-home.

Paraphrase: If (and only if) you think you need me, then I'll stay at home all day.

b. *Wenn du mich brauchst, ich bleibe den ganzen Tag*
 If you me need, I stay the whole day
zuhause. (RC only)
 at-home.

¹⁶In the ignorance reading, a sentence like *There's a lot of garlic in whatever Arlo is cooking* presupposes that the thing that Arlo is cooking is not the same in all the worlds the speaker considers possible (it might be pasta, it might be a stew).

Paraphrase: I'll stay at home all day today. I'm letting you know in case you need me.

This syntactic behavior is the same as the contrast of *weil*-clauses (subordinated clauses) and *denn*-clauses (disintegrated, like a parenthetical). Since the analysis for RCs mirrors the analysis for *denn*, as intended, this additional parallel between the two cases is rather expected.

A logical next question is what the *if*-counterpart for the epistemic *denn*-clauses is. Conditionals talking about knowledge or beliefs are very common and seem to behave exactly like regular conditionals:

(79) If the light is on, John is at home.

Sweetser (1990) classifies sentences like (80) as “epistemic conditionals”, but again, these examples seem to be perfectly tractable with an analysis for ordinary conditionals.

(80) If John went to that party, (then) he was trying to infuriate Miriam.
(Sweetser, 1990, p. 116)

There are many different types of conditionals, and many classifications. At this point, it remains a question for further research whether a counterpart of the epistemic *denn*-clauses can be found in the domain of conditionals, and which kind of conditionals this would be. One candidate are the “factual conditionals” discussed by Iatridou (1991):

(81) If he is so unhappy he should leave. (Iatridou, 1991, p. 58)

Although not all properties of factual conditionals seem to mirror epistemic *denn*-clauses exactly, they do have an epistemic flavor. Plus, it is also obvious that the *if*-clause in (81) does not just state a condition on the consequent – in fact, it seems like the actual *assertion* of the sentence could be achieved by just uttering the consequent without the *if*-clause.

3.6 Summary

This chapter developed a new analysis of relevance conditionals according to which an RC ‘if ϕ , ψ ’ asserts simply ψ and contributes $\diamond\phi$ as a CI. This CI meaning explains the unembeddability of RCs, and why the consequent is not understood to be dependent on the truth of the antecedent. It also explains the special syntax of RCs in German, a language where embedding is clearly marked.

4 Complements of Attitude Verbs

Sentence-embedding verbs can select their dependent clause type. This selection includes not only the major syntactic type like declarative vs. interrogative, but also indicative vs. subjunctive mood, and other criteria. In German, attitude

verbs select their complement based on the word order: While all verbs embed that-clause complements (82), it has been noted that some but not all verbs, in addition, allow V2 clause complements, as in (83) (Reis, 1997; Truckenbrodt, 2006, and references therein).

- (82) a. *Maria glaubt, dass Peter nach Hause geht.*
 Maria believes that Peter to home goes.
 Maria believes that Peter is going home. (Truckenbrodt, 2006)
- b. *Maria möchte, dass Peter nach Hause geht.*
 Maria wants that Peter to home goes.
 Maria wants that Peter is going home.
- (83) a. *Maria glaubt, Peter geht nach Hause.*
 Maria believes Peter goes to home.
 Maria believes that Peter is going home. (Truckenbrodt, 2006)
- b. **Maria möchte, Peter geht nach Hause.*
 Maria wants Peter goes to home.
 Maria wants that Peter is going home.

Thus, subtle semantic differences between attitude verbs have consequences in the syntax in German. We can therefore use the syntactic properties of the complement clauses as a window for looking at the specific components of meaning for attitude verbs, and for determining which semantic tiers these components belong to. The questions relevant to this dissertation to be answered here are first, what semantic pieces differ between the verbs that allow V2 complements and those that prohibit them, and second, which level do these pieces belong to. In the following discussion, I still concentrate mostly on the first part. Once the components in question have been determined sufficiently clearly, that will enable me to tackle the second part.

4.1 Data & Previous Work

A study by Truckenbrodt (2006) attempts to explain, within a larger theory of the meaning of embedded clauses, why certain verbs allow V2-complements, while others disallow this option.

In general, it seems that verbs with an *epistemic* component of their meaning usually allow V2-complements. The stereotypical example is ‘believe’, but this is also meant to include verbs of saying.

- (84) *Maria glaubt, Peter geht nach Hause.*
 Maria believes Peter is going home.

On the other hand, verbs of obligation, e.g. *befehlen* (‘order’) don’t embed V2-clauses, because they do not contain an epistemic component (Truckenbrodt, 2006, (48a)):

- (85) **Maria befiehlt Peter, er geht nach Hause.*
 Maria orders Peter, he is going home.

4.1.1 Verbs of Preference

Truckenbrodt (2006) centrally discusses different verbs of preference, because they don't behave uniformly. He notes the following contrast (his (56) and (57)):

(86) *Es ist besser/Es ist ihr lieber/Maria hofft, sie ist in diesem Fall in Berlin.*

It is better/She prefers/Maria hopes she is in Berlin in that case.

(87) *Maria *will/*wünscht sich, sie ist in diesem Fall in Berlin.*

Maria *wants/*wishes, she is in Berlin in that case.

This shows that 'it is better' and 'hope' allow V2-complements, whereas 'want' and 'wish' disallow them.

Comparing 'want' and 'hope', Truckenbrodt argues that the crucial contrast is that 'want' is compatible with our knowledge of the embedded proposition, while 'hope' is not (his (58)):

(88) *Es regnet und ich #hoffe/✓ will, dass es regnet.*

It is raining and I #hope/✓ want that it is raining.

This contrast is captured in table 1. Given the syntactic contrast between *want*, which does not allow V2 complements, and *hope*, which does, Truckenbrodt concludes that the relevant semantic distinction is whether the verb is compatible with knowledge of *p* (the proposition expressed in the complement).

✓ know <i>p</i>	* know <i>p</i>
want	hope
* V2	✓ V2

Table 1: Truckenbrodt's characterization of V2 and non-V2 complement verbs

4.2 Shortcomings & Additional Data

Although Truckenbrodt is right about the facts of 'want' vs. 'hope', the other preference predicates do not line up with his generalization. In fact, 'wish', which like 'want' does not allow V2-complements, behaves like 'hope' in the epistemic compatibility test as above in (88). And 'it is better', which does allow V2-complements, patterns with 'want' in the test:

(89) *Es regnet und #ich wünsche mir/✓ es ist besser, dass es regnet.*

It is raining and #I wish/✓ it is better that it is raining.

This shows that the line that is drawn by the test, whether the matrix verb is compatible with our knowledge of the embedded proposition (as predicted by Truckenbrodt), and the line that is drawn by the compatibility of the matrix predicate with a V2-complement do not match up.

However, compatibility with the knowledge of the embedded proposition is not the only semantic difference between the preference predicates. In addition, these predicates differ with respect to whether they allow a *counterfactual* use, i.e., whether they are compatible with our knowledge of the negated embedded proposition.

Here, ‘want’ and ‘wish’ are both compatible with counterfactual situations.¹⁷ On the other hand, ‘it is better’ and ‘hope’ can not be used if the embedded proposition is not considered possible by the speaker. Thus, the possibility of their embedded proposition is an important part of their meaning.

(90) [Scenario: Uwe has to teach two days per week every semester. He is asking his wife for her preferences about when he should teach next semester. She says:]

a. *Ich will, daß du überhaupt nicht arbeiten mußt.*

b. *Ich wünsche mir, daß du überhaupt nicht arbeiten mußt.*

c. # *Ich hoffe, daß du überhaupt nicht arbeiten mußt.*

d. # *Es ist besser, daß du überhaupt nicht arbeiten mußt.*

I want / wish / * hope / * It is better that you don’t have to work at all.

Further evidence for this epistemic part of the meaning of ‘hope’ comes from an example due to Truckenbrodt:

(91) A: *Kommt Peter heute?*

B: *Ich hoffe, dass er heute kommt. / # Ich will, dass er heute kommt.*

A: Is Peter coming today?

B: I hope he’s coming today. / # I want him to come today.

Questions about facts of the world (whether Peter is coming or not) can be answered using the verb ‘hope’. This makes sense if ‘hope’ indeed has a component that guarantees that the speaker holds its complement possible. Then, although B’s answer is not complete, it is at least a partial answer to A’s question: “I think it’s possible that he will come today.” That is, “It is not the case that I think that he will not come today.” On the other hand, ‘want’ cannot be so used because what B wants is at best irrelevant to the question. Therefore, the answer “I want him to come today” sounds odd in this situation.

Given this additional data, I conclude that the preference predicates really split up into a four-way partition, as shown in table 2.

¹⁷Since both predicates are normally used to talk about the future, we can only test counterfactuality in as far as it applies to the future. Of course, in some sense, we can never exactly know about future events. But in practice, we can sometimes be pretty sure, for example what concerns our own plans.

	\checkmark know $\neg p$	$*$ know $\neg p$	
\checkmark know $\neg p$	want	wish	} $*$ V2-complements
$*$ know $\neg p$	it is better	hope	} \checkmark V2-complements

Table 2: Preference predicates and epistemic compatibility.

In fact, taking the additional data into account, verbs that allow V2-complements are characterized by the fact that they do not allow a counterfactual use ($*$ know $\neg p$). That is, they require possibility of their complement; whereas verbs that could be counterfactual do not allow V2-complements.

4.3 Questions for Further Research

The crucial semantic piece distinguishing between verbs that allow V2-complements and verbs that don't seems to be the epistemic component that prevents counterfactual uses. Once we know what exactly this semantic component is, the next step is to determine which semantic tier it belongs to.¹⁸ The fact that it can be used to answer a question in the case of 'hope' (recall example (91)) indicates that this piece of meaning is not a conventional implicature.

Another open question is how this piece of meaning can license this type of syntactic disintegration, enabling a verb to have a complement without a *daß*-complementizer, and with V2 word order.

Finally, the exact formalization of this piece of meaning also must guarantee that in the end, clauses with *daß*-complements and clauses with V2-complements have the same meaning. After all, there is no detectable semantic difference between these two sentences:

- (92) a. *Maria hofft, daß Peter noch heute nach Hause kommt.*
b. *Maria hofft, Peter kommt noch heute nach Hause.*
Maria hopes Peter will come home today.

5 Expressive Meanings and Presuppositions

Previously, different types of lexical meaning levels other than assertion have been identified, notably Presupposition and Expressive Meanings (CIs). However, authors concentrate on one or the other but not both. In this chapter, I want to discuss presuppositions and expressive meanings together.

¹⁸See (von Stechow, 1999) for a discussion about how to divide the meaning of 'want' into an assertion and a presupposition. Von Stechow notes that there are many ways to characterize the meaning of 'want', but he chooses one to derive some NPI licensing facts.

5.1 Expressive Meanings or Presuppositions

There has been some confusion in the literature about the distinction between presuppositions and conventional implicatures. This goes so far that a widely-cited paper called “Conventional Implicature” actually discusses cases of presupposition (Karttunen and Peters, 1978). Thus, the first question for the current discussion is a clear distinction between presuppositions and conventional implicatures.

(Potts, 2005) discusses the main differences between CIs and presuppositions in his attempt to define CIs. First, he argues that CIs are independent of the truth values associated with the sentence, whereas presuppositions aren’t. Presuppositions are well known to express conditions under which the sentence in question is assumed to be felicitous. In the most common approaches to presupposition, they are not independent of the truth values, because the truth value of a sentence clearly depends on its presuppositions. Thus, (93) does not have a truth value if France is not a monarchy, but it does have a truth value just in case France has a king.

(93) The king of France is bald.

In contrast, CIs are independent of the truth values of the sentence. If I utter (94), but John is in fact 6 years old, this does not influence the truth value of the whole sentence. The truth value only depends on whether John won or not.

(94) John, a 5-year-old, won the competition.

Second, Potts shows that CIs cannot be backgrounded, whereas presuppositions normally contain backgrounded information. Recall example (95) from (Potts, 2005), which shows that CIs such as nominal appositives cannot be discourse-old.

- (95) a. Lance Armstrong survived cancer.
When reporters interview Lance, a cancer survivor, he often talks about the disease.
b. ... And most riders know that Lance Armstrong is a cancer survivor.

A typical presupposition, like the one discussed in the introduction triggered by the verb *to stop*, is perfectly fine in a discourse-old situation:

(96) John used to drink like a horse. But last month, he suddenly stopped drinking and he hasn’t touched a bottle since.

Third, although presuppositions are not normally negated together with the assertion (as we saw in the introduction) (97), they can be cancelled under negation, if it has a “metalinguistic” flavor (98).

(97) John didn’t stop drinking.

(98) John didn't *stop* drinking, because he never drank in the first place!

This is not possible for CIs. Even metalinguistic negation cannot be applied to CIs.

(99) * *Maria ist nicht nach Hause gegangen, denn sie hat die Grippe — sie ist gar nicht krank!*

Maria didn't go home because she has the flu — she isn't sick at all.

Finally, Potts also claims that classical presupposition plugs don't plug CIs. Presuppositions are plugged by operators like *say*. (100a) does not presuppose that John used to drink. It can be continued as in (100b).

(100) a. Mary said that John stopped drinking.

b. Later we found out that that's not true, John actually never used to drink.

For CIs, Potts argues that they cannot be plugged by verbs like *say*. He cites examples such as (101), where the as-parenthetical provides a CI.

(101) Ed says that, as Sue predicted, it is raining. # But in fact Sue didn't predict rain.

Note though, that other expressive items do allow these kinds of embedding (see Kratzer, 1999, for a discussion of the German discourse particle *ja*). In section 3 we saw that relevance conditionals can be embedded under *say*, as well. The content of the RC in (102) can be attributed to the agent of saying, not the speaker of the entire utterance. Recall that the RC contributes the CI that you may be thirsty in the future.

(102) John said that if you are thirsty there is beer in the fridge.

To sum up, (Potts, 2005) lists some properties of presuppositions and CIs in their relation to regular assertions that distinguish them from each other. He shows that CIs, in contrast to presuppositions, are independent of the sentence's truth value, cannot be backgrounded, and cannot be cancelled under metalinguistic negation. His claim that presupposition plugs like *say* do not apply to CIs warrants some further investigation. It seems like this is a place where different kinds of CIs can differ from each other.

5.2 Mixing CIs & Presuppositions

While there has been some previous work with regard to how CIs interact with assertions, a topic that has not been studied in the literature so far is how CIs and presuppositions mix. That is, what happens if a presupposition trigger or plug is not asserted but located in the CI.

For example, English *too* in (103) triggers the presupposition that there is another person (other than Mary) that is going to the cinema.

(103) Mary is going to the cinema, too.

This presupposition can be satisfied by previous context. In the following example, the sentence as a whole does not have a presupposition. That is, we do not conclude that somebody other than ‘you’ and Mary will go to the cinema.

(104) If you’re going to the cinema, Mary will go, too.

However, if we change the if-clause to a relevance conditional reading, the presupposition triggered by *too* cannot be satisfied by it. (105) still projects the presupposition that somebody other than Mary (and ‘you’) is going to the cinema.

(105) If you’re thinking of going to the cinema, Mary is going, too.

Similar tests have to be conducted with other presupposition triggers. For example, it is well known that definite noun phrases trigger an existential presupposition (106), which can be satisfied by a preceding if-clause (107).

(106) The King of France is bald.

(107) If France is a monarchy, the King of France is bald.

In order to test the projection behavior with this type of presupposition and CIs, a rather elaborate scenario is necessary. It seems, though, that the facts confirm the previous data for *too*, since the existential presupposition remains:

(108) [Scenario: John and Bill are trying to flee from Spain. John will try to get across the border to France. However, all monarchies of Europe are allied with the Spanish government. And because of John and Bill’s isolation in Spain, they do not know which countries in Europe are monarchies. So Bill reminds John of their backup plan:]

Denk dran, wenn Frankreich sich als Monarchie herausstellt, es gibt immer noch Schiffe nach Marokko, von denen der König von Frankreich nichts weiß.

Remember, if France turns out to be a monarchy, there are still ships to Morocco which the King of France doesn’t know about yet.

These preliminary data need to be confirmed with clearer judgments. For further work, I also intend to test the projection behavior of presupposition triggers that are embedded in CIs, and cases where both the presupposition trigger and its saturating item are CIs.

5.3 Stacking Expressive Items

Finally, one of the central claim in Potts’ 2005 logic for CIs is that CIs cannot be embedded in each other. However, other expressive items, like the German discourse particle *ja*, appear commonly in *denn*-clauses. This poses the question how these two items contribute their semantics if they are used together.

In the case of stacking of presuppositions, some of these questions have been answered. For example, we know that presuppositions that are embedded into each other still project. Sentence (109) has both an existential presupposition for the King of France, as well as a presupposition that John used to beat him.

(109) John stopped beating the King of France.

These issues are completely open in the realm of expressive meanings.

(110) *Laß uns jetzt reden, denn du hast ja sonst nie Zeit.*

Let's talk now, because you JA don't have time otherwise.

6 Conclusion: Future Work & Timeline

Accomplishments

I have shown that *because* can be expressed not only as an assertion, but also on the CI level. In German, this can be indicated lexically (by using *denn*), or by syntactic or phonological disintegration of the *because*-clause. My analysis accounts for the additional speech-act and epistemic uses of this type of *because*, as well as the special restrictions on it.

I have also developed a parallel analysis which accounts for relevance conditionals, a peculiar type of conditional clauses that has long puzzled semanticists.

In the realm of complement clauses, I have looked at the complements of German attitude verbs. I have identified a crucial semantic difference between verbs that allow V2-complements, and those that don't: verbs like *hope* that license V2-complements have an epistemic component that requires its complement to be possible, according to the knowledge of the speaker.

Future Work

In my dissertation, I intend to answer the questions that have opened up through this research.

For *denn*, two syntactic questions remain. The first is, why does *denn* only tolerate CP complements? And second, *denn* can be used more freely than expected for a coordinating conjunction (see ex. (50)). Would it be better characterized as a parenthetical?

One semantic issue also remained open for *denn*: 'because' normally triggers a factive presupposition about its complement. Does *denn* also introduce such a presupposition? If so, this is an excellent case to study the interaction of CIs and presuppositions, since a presupposition would be triggered from inside a CI.

On the topic of relevance conditionals, the most interesting empirical question is whether there is a conditional counterpart of the epistemic *denn*-sentences. Given the close semantic relations of conditionals and causal clauses, this would be expected, but it does not seem easy to identify these cases.

In addition, more inquiry into the meaning of *if* is needed to determine that the CI relevance conditionals contribute is indeed just \diamond . I will also study whether utterance-modifying CIs, such as relevance conditionals, or adverbs like *frankly*, aren't better analysed by an anaphoric approach, rather than Potts' extended syntactic structures.

For the attitude verbs, I intend to determine the correct formalization of the epistemic component that allows V2-complements, and in addition, which semantic tier it is located at. How does this semantic piece license V2-complements while still guaranteeing that sentences with V2 and *daß*-complements are synonymous? An interesting issue is also to determine the differences between *hope* + V2-complement and sentences with *I hope* as a parenthetical, as in *It is raining, I hope*. Furthermore, the question arises whether the characterization of V2 vs. non-V2 complements is related to the indicative vs. subjunctive distinction that is common in Romance and other languages (see Panzeri, 2003).

Finally, I will use novel data to improve our knowledge about the properties of presuppositions and CIs, by studying how these two levels of meanings differ, interact, and mix.

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References

- Bach, Kent. 1999. The myth of conventional implicature. *Linguistics and Philosophy* 22:327–366.
- Ballweg, Joachim. 2004. *Weil*–Ursachen, Gründe, Motive. In *Brücken schlagen. Grundlagen der Konnektorenssemantik*, ed. H. Blühdorn, E. Breindl, and U. H. Waßner, 325–332. Berlin: de Gruyter.
- Bhatt, Rajesh, and Roumyana Pancheva. 2006. Conditionals. In *The Blackwell Companion to Syntax*, ed. Martin Everaert and Henk van Riemsdijk, volume I, 638–687. Blackwell.
- Bonami, Olivier, and Danièle Godard. 2005. Les adverbes évaluatifs dans une approche multidimensionnelle du sens. In *Questions de Classification en Linguistique: Méthodes et Descriptions*, ed. I. Choi-Jonin, M. Bras, A. Dagnac, and M. Rouquier, 19–37. Berne: Peter Lang.
- von Stechow, Kai. 1999. NPI licensing, Strawson entailment, and context dependence. *Journal of Semantics* 16:97–148.
- von Stechow, Kai. 2000. Whatever. In *Proceedings of SALT X*.
- Grice, H. Paul. 1975. Logic and conversation. In *Syntax and Semantics 3: Speech Acts*, ed. P. Cole and J. Morgan, 43–58. New York: Academic Press.
- Grice, Paul. 1989. *Studies in the Way of Words*. Cambridge, MA: Harvard University Press.
- Iatridou, Sabine. 1991. Topics in Conditionals. Doctoral Dissertation, MIT.

- Karttunen, Lauri, and Stanley Peters. 1978. Conventional implicature. In *Syntax and Semantics 11: Presupposition*, ed. D. A. Dineen and C.-K. Oh. New York: Academic Press.
- Keller, Rudi. 1995. The epistemic *weil*. In *Subjectivity and Subjectivisation*, ed. D. Stein and S. Wright, 16–30. Cambridge, MA: Cambridge University Press.
- Kratzer, Angelika. 1991. Conditionals. In *Semantik. Ein internationales Handbuch*, ed. A. Stechow and D. Wunderlich, 6651–656. Berlin: de Gruyter.
- Kratzer, Angelika. 1999. Beyond “ouch” and “oops”. A comment on Kaplan’s paper. Available at <http://semanticsarchive.net/Archive/WEwNGUy0/>.
- Küper, Christoph. 1984. Zum sprechaktbezogenen Gebrauch der Kausalverknüpfers *denn* und *weil*: Grammatisch-pragmatische Interrelationen. *Linguistische Berichte* 92:15–30.
- McCready, Eric. 2004. Two Japanese adverbials and expressive content. In *Proceedings of SALT XIV*. CLC Publications.
- Panzeri, Francesca. 2003. In the (indicative or subjunctive) mood. In *Proceedings of the Conference “sub7 – Sinn und Bedeutung”*, ed. M. Weisgerber, 215–227.
- Pasch, Renate. 1983a. Die Kausalkonjunktionen “da”, “denn” und “weil”: drei Konjunktionen – drei lexikalische Klassen. *Deutsch als Fremdsprache* 332–337.
- Pasch, Renate. 1983b. Untersuchungen zu den Gebrauchsbedingungen der deutschen Kausalkonnektoren *da*, *denn* und *weil*. *Linguistische Studien des ZISW* 104. Berlin (DDR).
- Pasch, Renate. 1997. *Weil* mit Hauptsatz – Kuckucksei im *denn*-Nest. *Deutsche Sprache* 25:252–271.
- Pasch, Renate, Ursula Brauße, Eva Breindl, and Ulrich Hermann Waßner. 2003. *Handbuch der deutschen Konnektoren*. Berlin: Walter de Gruyter.
- Potts, Christopher. 2005. *The Logic of Conventional Implicatures*. Oxford: Oxford University Press.
- Potts, Christopher. to appear. Conventional implicatures. In *The Oxford Handbook of Linguistic Interfaces*, ed. G. Ramchand and C. Reiss. ?
- Reis, Marga. 1997. Zum syntaktischen Status unselbständiger Verbzweit-Sätze. In *Sprache im Fokus. Festschrift für Heinz Vater zum 65. Geburtstag*, ed. C. Dürscheid and K.-J. Ramers, 121–144. Tübingen: Niemeyer.
- Scheffler, Tatjana. 2005. Syntax and semantics of causal *denn* in German. In *Proceedings of the Fifteenth Amsterdam Colloquium*, ed. P. Dekker and M. Franke.
- Siegel, Muffy. 2006. Biscuit conditionals: Quantification over potential literal acts. *Linguistics and Philosophy* 29:167–203.
- Sohmiya, Yoshikazu. 1975. Syntax und Semantik der kausalen Konjunktionen, *denn* und *weil*. *Doitsu Bungaku* 42:108–119.
- Sweetser, Eve E. 1982. Root and epistemic modals: Causality in two worlds. In *Proceedings of BLS 8*, 484–507.

- Sweetser, Eve E. 1990. *From Etymology to Pragmatics*. Cambridge Studies in Linguistics. Cambridge: Cambridge University Press.
- Thim-Mabrey, Christiane. 1982. Zur Syntax der kausalen Konjunktionen *weil*, *da* und *denn*. *Sprachwissenschaft* 7:197–219.
- Truckenbrodt, Hubert. 2006. On the semantic motivation of syntactic verb movement to C in German. *Theoretical Linguistics* 32:257–306.