1 Introduction

1.0 Preview

I will start by giving a preview of what this dissertation is about by presenting some of the key data and the essence of the analysis. This preview uses some terminology without proper introduction or definition, but this should not impede the informed reader as all of it follows standard use in the literature.

Counterfactual conditionals as in (1) typically carry two counterfactual inferences: one inference that the antecedent is contrary to fact (John did not take the bus), and one inference that the consequent is contrary to fact (he was not on time). As a conditional is typically denoted '$p \rightarrow q$', I will write these inferences as $\mathbf{CF}_p$ and $\mathbf{CF}_q$, respectively.

(1) If John had taken the bus, he would have been on time.
CF_p: John did not take the bus
CF_q: John was not on time

The inference CF_q is sometimes **cancelled**, which is to say that there are conditionals that contain certain lexical items, or are uttered in certain contexts, for which CF_q not being inferred. Here is one example, in which the presence of the word 'also' has the effect of cancelling CF_q:

(2) A: John took the subway and was on time for our meeting.
B: Well, <u>if John had taken the bus, he would ALSO have been on time</u>.

Here CF_q of the underlined counterfactual conditional is cancelled, because it is felicitously uttered in a context that makes the consequent true (John was in fact on time).

This dissertation asks in which cases CF_q gets cancelled, and what theoretical explanation we can give for this cancellation. As is the case with most problems in linguistics, this question contains an empirical and an analytic part. The empirical task is to characterize the set of contexts that cancel CF_q. That this is not straightforward is indicated by the observation that not all instances of 'also' in the consequent of a subjunctive conditional result in a cancellation of CF_q (as does happen in (2)).

(3) A: John met Mary yesterday.
B: <u>If John had gone to the party, he would also have met LINDA</u>.

Although the underlined conditional in (3) appears to have a very similar form as the one in (2), here we infer that John did not meet Linda, hence CF_q is not cancelled, but triggered in the normal fashion. This leads to an important new empirical generalization: some but not all instances of 'also' in the consequent of a subjunctive conditional have the effect of cancelling CF_q.

Moreover, many speakers can use 'still' instead of 'also' in (2):

(4) If John had taken the bus, he would still have been on time.

'Still' here appears to have roughly the same meaning as 'also' and likewise results in the cancellation of CF_q. Just as for 'also' though, not all instances of 'still' cancel CF_q:

(5) A: John had been singing for an hour when someone rang at the door, and he stopped.
B: If John hadn't heard the doorbell, he would still have been singing.

Here we infer that John is not still singing, so CF_q is not cancelled.

Finally, cancellation of CF_q is not always brought about by the presence of some lexical item (such as 'still' or 'also'), but can be merely the result of the surrounding context. Imagine that speaker A and B work for a large company that has just signed a lucrative business deal. Speaker A thinks that they got the deal because it was Mary that led the negotiations, and considers Mary to be the most qualified person to negotiate deals. Speaker B, however, thinks that many other people are able to do this.

(6) A: Mary is our best salesperson, so since Mary led the negotiations, we got the deal!
B: We've got lots of good people. If Peter had led the negotiations, we would have got the deal, and if John had led the negotiations, we would have got the deal, and if Linda had led the negotiations, we would have got the deal, …

B's utterance (which should be read with the intonation that is typical for listing things) contains counterfactual conditionals with consequents that are true in the context: the company actually got the deal. Hence (6) is another example of a context that cancels CF_q, although at this point it is not clear what makes the context of (6) special to set it apart from, say, (1) in which CF_q is triggered.

Examples (2), (4), and (6) represent key examples of CF_q-cancellation contexts, but do not form an exhaustive list of such contexts. Yet, it is already clear that the empirical situation is complicated: *some* conditionals containing 'also' in their consequent and *some* conditionals with 'still' in their consequent cancel CF_q, as well as some other conditionals by virtue of the context in which they appear, whose characterization is not immediately clear.

A major goal before I start with the theoretical analysis of CF_q-cancellation is to find an empirical characterization of the difference between (2) and (3), i.e. a characterization of when 'also' does and does not make a context that cancels CF_q. I will argue that this depends on how 'also' associates with *focus*. Looking back at examples (2) and (3), we can see that there is a prosodic difference between the two: 'also' is stressed in (2) but not in (3) (indicated by capital letters). This prosodic difference reflects the difference in focus association. In a similar way, I will show that whether or not 'still' leads to cancellation of CF_q depends on how 'still' takes scope with respect to the modal verb in the consequent of the conditional.

With a better view of the empirical situation, the analytic task is now twofold: (a) to say what these various CF_q-cancellation contexts have in common, and (b) to explain how this shared property leads to CF_q not being generated in these contexts. My analysis can be succinctly summarized by the following three independent claims:

(A)	The various CF_q-cancellation contexts are characterized by the pragmatic property that they are *multiple cause contexts* (they make more than one cause salient for the same consequent).
(B)	*Conditional perfection* (the pragmatic strengthening of conditionals into biconditionals) is a necessary ingredient for CF_q to arise.
(C)	Contexts with the pragmatic property in (A) do not have conditional perfection.

The logical conclusion of the conjunction of (A), (B), and (C) is that CF_q does not arise in the contexts empirically identified above, and thus constitutes an answer to the central question of when and how the counterfactual inference of the consequent is cancelled.

The (A) claim can be made separately for the different types of CF_q-cancellation contexts. As for the cases involving 'also', recall that whether or not they cancel CF_q depends on their association with focus. Focus association semantically relates to the generation of alternatives. In (2) the relevant alternatives are ways in which John can be on time for our meeting: John's taking the subway, John's taking the bus, etc. By the nature of these alternatives, they constitute different causes for the same consequent (namely, being on time for the meeting). I call such a context a *multiple cause context*. In (3), however, which has a different focus association, the relevant alternatives are people that John meets at the party (Mary, Linda, etc.). Because the alternatives are different from those in (2), in (3) it is not the case that different causes for the same consequent are generated, but rather different consequents (meeting Mary, meeting Linda, etc.). Hence, (3) does not make a multiple cause context.

The other types of CF_q-cancellation contexts are multiple cause contexts by virtue of the (implicit) question they answer. In (6) this is made explicit, as several causes for getting the deal are being listed. In some additional examples that we will encounter later on, this is less obvious. I show that in those cases it is the question under discussion (QUD) that the conditional statement answers that determines whether or not multiple causes are salient.

The (B) claim goes back to an idea due to Karttunen (1971). He proposes that the generation of CF_q is the result of CF_p and *conditional perfection*. Conditional perfection refers to the pragmatic strengthening of conditionals into biconditionals, as illustrated (for an indicative) in (7).

(7) *Conditional perfection*
If you mow the lawn, I'll give you $5. (Geis and Zwicky 1971)
↦ if you don't mow the lawn, I won't give you $5

Karttunen's explanation for CF_q is schematically given in (8) (this is a simplified version that we will need to revise later on).

(8) *Karttunen's schema* (first version, to be revised) (Karttunen 1971)
Utterance: $p \rightarrow q$
Implicatures:

$\neg p$	(counterfactuality of p)
$\neg p \rightarrow \neg q$	(conditional perfection on $p \rightarrow q$)
$\neg q$	(by Modus Ponens)

The crucial prediction of this, not discussed by Karttunen, is that in contexts in which for some reason no conditional perfection occurs, CF_q is not generated either. This provides a natural explanation of CF_q-cancellation, and is indeed the type of explanation that I will follow.

The (C) claim completes the analysis, since it says that multiple cause contexts do not have conditional perfection: together with the characterization in claim (A), and the prediction resulting from claim (B), it explains why and when CF_q gets cancelled. There exists an extensive pragmatic literature on conditional perfection that has proposed several restrictions on the occurrence of conditional perfection. The claim that multiple cause contexts block conditional perfection, however, is new, and I will show how it follows from various theoretical accounts of conditional perfection. The basic insight is quite intuitive. To illustrate, let's go back again to CF_q-cancellation contexts with 'also': in (2) we do *not* have conditional perfection, since we do not infer the biconditional statement that *if and only if* John had taken the bus, he would have been on time, precisely because the subway, and other alternatives are salient as other hypothetical causes for being on time. In (3) on the other hand, we infer that if and only if John had gone to the party, he would have met Linda.

In recent theoretical work conditional perfection has been linked to discourse structure in the sense that conditional perfection is seen as the result of an exhaustive interpretation of a conditional answer (e.g. von Fintel 2001; Nadathur 2015; Herburger 2015a). I show that a conditional in a multiple cause context can not be taken to be exhaustive. This connection provides a new way to study counterfactuality: via Karttunen's schema in (8) and my characterization of CF_q-cancellation contexts as multiple cause contexts, results and insights from the study of discourse structure and exhaustive answers can now directly be applied to the study of counterfactuality.