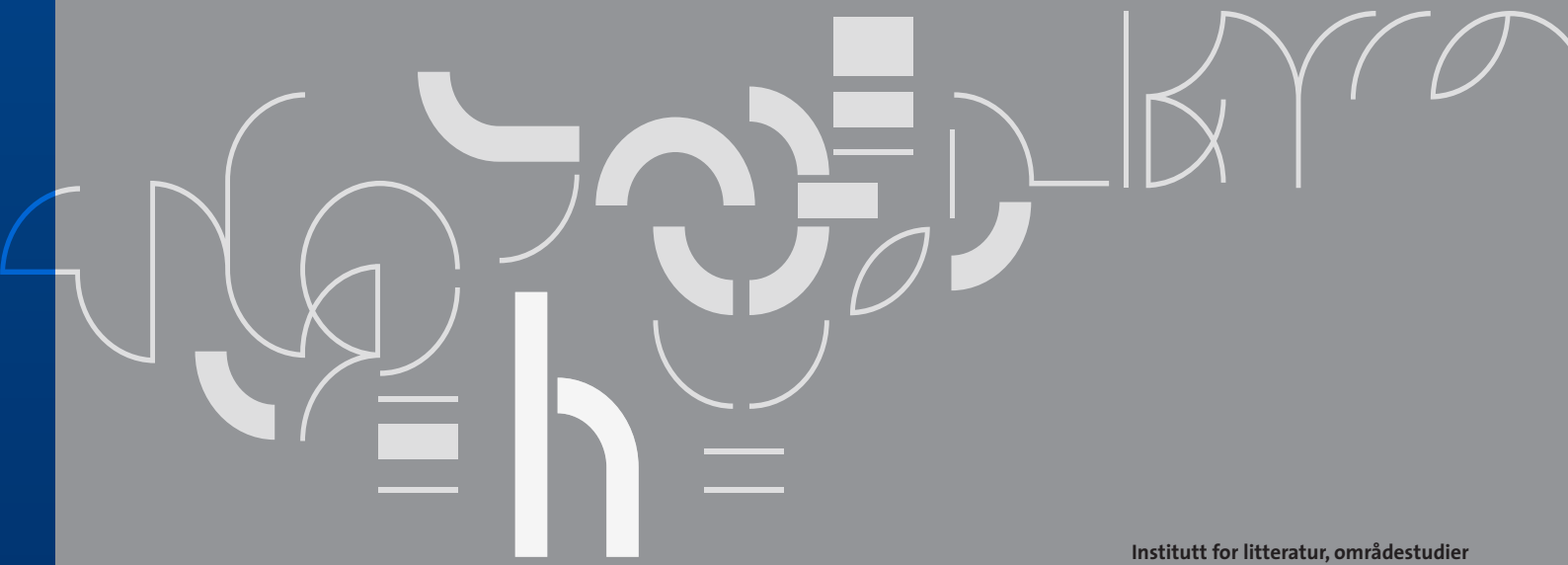
UNIVERSITY OF OSLO
FACULTY OF HUMANITIES

Subjunctive Conditionals

Michela Ippolito
Dept. of Linguistics
University of Toronto



Institutt for litteratur, områdestudier
og europeiske språk

Department of Literature, Area Studies and
European Languages

Grønn, Atle (ed.): Proceedings of SuB12, Oslo: ILOS 2008 (ISBN 978-82-92800-00-3), 256-270.

Subjunctive Conditionals *

Michela Ippolito
Dept. of Linguistics
University of Toronto

michela.ippolito@utoronto.ca

1 Introduction

In Ippolito (2002) and subsequent work[1], I discussed the fact that within the domain of subjunctive conditionals (SC) there seem to be morphological and felicity differences. To illustrate this point, consider the following pair. (1-a) is a *simple past SC*; (1-b) is a *past perfect SC*.

(1) a. If John played the last game tomorrow, his team would win.
b. If John had played the last game tomorrow, his team would have won.

Both subjunctive conditionals talk about the future but they show difference tense morphology: unlike (1-a) which shows a single layer of past in both the antecedent and the consequent clauses (*played* and *would*), (1-b) shows two layers of past in both clauses (*had played* and *would have*).[2] Interestingly, these two SCs have different felicity conditions, as illustrated in (2).[3]

(2) John's team played the last game yesterday. The weather was terrible and they lost. Tomorrow the weather is expected to be beautiful.
a. #If they played the last game tomorrow instead, they would win.
b. If they had played the last game tomorrow instead, they would have won.

Intuitively, if an event e has already happened we can counterfactually talk about it happening at some future time only by using the past perfect future SC.

*I would like to thank Kai von Fintel for helpful comments and the audience and organizers of *Sinn und Bedeutung 12* for comments and helpful discussion.

[1]Ippolito (2003, 2006).

[2]I take it that the auxiliary *have* here instantiates a second layer of past.

[3]This contrast is also central to Ogihara (2002). For a critical review of his proposal, see Ippolito (2003). Dudman (1983) also discusses past perfect future SCs.

Grønn, Atle (ed.): *Proceedings of SuB12*, Oslo: ILOS 2008 (ISBN 978-82-92800-00-3), 256–270.

In this paper I will present an analysis of subjunctive conditionals that accounts for their semantic and pragmatic properties. The central claim is that these properties follow from the temporal structure that embeds the "bare" modal clause, and that, despite the name, being a "subjunctive conditional" (in English) means to be a bare conditional embedded under a temporal operator. Different temporal structures can embed the same modal clause, giving rise to subjunctive conditionals that have different meanings and felicity conditions, as well as different morphological forms.

2 Some facts about subjunctive conditionals

The facts about subjunctive conditionals are more complex than what I laid down in the introduction. First, if the eventuality (event or state) described in the antecedent has already happened in the past, a simple past SC cannot be used to counterfactually be talking about that event happening in the future. This point is illustrated in (3-a)-(4-a), where the *instead*-test is used to force the counterfactual reading of the past eventuality.

(3) John was sick yesterday. Now he is well, but he missed his chance to watch the final ball game. That was very unfortunate.
   a. #If only he were sick tomorrow instead, he would be happier.
   b. If only he had been sick tomorrow instead, he would have been happier.

(4) I called John yesterday to wish him a happy birthday, but it was the wrong day. His birthday is tomorrow and he got really upset. I am mortified.
   a. #If only I called him tomorrow instead, he would be happy.
   b. If only I had called him tomorrow instead, he would have been happy.

Second, if the eventuality has not already happened, the antecedent can be counterfactual.

(5) a. John is not in love with Mary. If he were, he would ask her to marry him.
   b. John is not sick now and he will not miss the final ball game. If he did, he would be devasted.

Third, even if the eventuality described in the antecedent is counterfactual, presuppositions in the antecedent (if any) cannot be.[4] Take Musan's existence presupposition (Musan (1997)): according to Musan, most predicates presuppose that their subject is in existence at the time of predication: for example, that John loves Mary now presupposes that John is alive now; similarly, that John wrote a book (at some past time) presupposes that he was alive at the time of writing. In (6)-(7), the presupposition that John is alive now is not true.

[4]See Ippolito (2006) and references cited there.

(6) John died last year. #If he were in love with Mary (now), he would ask her to marry him.

(7) John died last year. #If he finished his manuscript this year, it would be accepted for publication.

Fourth, if the antecedent of a simple past SCs has no presuppositions, the simple past SC is always felicitous.

(8) Pigs with wings do not exist. If they did, they could fly.

Fifth, when one of the presuppositions in the antecedent is not met, a past perfect SC is required.

(9) John died last year. If he had completed his manuscript this year, it would have been accepted for publication.

Sixth, past perfect SCs that are not about the past seem to be obligatorily counterfactual.[5]

(10) It's very unlikely that John will play the last game tomorrow, even though still possible.
#If he had played the last game tomorrow, he would have won.

2.1 More on presuppositions

One of the generalizations made above is that when one of the presuppositions in the antecedent is not met, a simple past SC is not felicitous and a past perfect SC is required. The presupposition we used above to illustrate this generalization was Musan's existence presupposition (cf. (9)). In this section, I will consider more types of presupposition triggers to check whether the generalization given above holds. We will see that for change of state verbs, factive verbs, and cleft-sentences, the generalization does indeed hold. Let us begin with the verb *to quit*, a change-of-state verb normally considered to be a presupposition trigger. For example, both *John will quit smoking tomorrow* and *John will not quit smoking tomorrow* presuppose that John will smoke tomorrow. The judgments reported in the following pair supports our generalization: in a context entailing that Lucy is no longer a smoker, a past perfect SC is felicitous, unlike a simple past SC.[6]

[5]For lack of space I cannot elaborate on this property of non-past past perfect SCs in this paper. For possible analyses, see Ippolito (2003, 2006). In this paper, I will just assume that this observation is true.

[6]The example in (11) is slightly changed from Ippolito (2003).

(11) Lucy was a heavy smoker but she quit smoking ten years ago, after she had pneumonia. A new law was passed last week requiring people who have quit smoking to take a new medical test (the law is not retroactive). This test detects long-term problems in ex-smokers but is very painful. Thinking about Lucy, I say:

a. #Good for her. If she quit smoking tomorrow instead, she would have to take this new painful test.

b. Good for her. If she had quit smoking tomorrow instead, she would have had to take this painful test.

For reasons of space I cannot discuss the nature of the presupposition triggered by *quit*, but the anaphoric nature of the presupposition triggered by change-of-state verbs has been defended in Heim (1990), Kripke (1990).[7] Suppose then that, in a context with a salient smoking by Lucy, the presupposition triggered by *quit* is that the salient smoking by Lucy will continue until tomorrow. This presupposition is not satisfied by the context of utterance in (11) and, according to the generalization under discussion, the simple past SC—unlike the past perfect SC—is infelicitous.

Similarly for factive verbs. Consider the pair below.

(12) John and Sue were supposed to marry this morning, but he broke off the engagement when he found out that she had cheated on him. Since he's very conservative, I am glad he found out in time:

a. #if in the future he regreted marrying her, he would never ask for a divorce.

b. if in the future he had regreted marrying her, he would have never asked for a divorce.

The presupposition triggered in the antecedent is that John married Sue, which is not true in the context of utterance. The generalization then correctly predicts that the simple past SC, unlike the past perfect SC, should be infelicitous.

Finally, consider the cleft-construction in (13).

(13) Tomorrow's baseball game has been cancelled due to the weather. Our team has three pitchers. John, the good pitcher, was not going to play tomorrow since he injured himself last week. Bill and Fred are terrible pitchers but, since John is injured, one of them was certain to play. You seem upset that tomorrow's game has been cancelled, but I am actually relieved.

a. #Why are you upset? We were going to lose the game! If it were Bill who pitched tomorrow, we certainly would lose, and if it were Fred who pitched tomorrow, it would be just as bad.

b. Why are you upset? We were going to lose the game! if it had been Bill who pitched tomorrow, we would have certainly lost, and if it had been Fred who pitched tomorrow, it would have been just as bad.

[7] In Ippolito (2008), I discuss this question further and how it bears on the analysis of SCs.

The presupposition triggered by the cleft-construction is that someone will pitch tomorrow, which in not satisfied in the context described above. According to our generalization, the simple past SC should not be felicitous, which is indeed correct.

What about cases like (2), (3), and (4), where the infelicity of the simple past SC seems to be due to the fact that the eventuality supposed to happened in the past actually already happened? For reasons of space, I cannot explore this important issue in detail here and the following remarks must be sketchy, but I refer the reader to Ippolito (2008) for a lengthier discussion. I am going to tentatively suggest that, along the lines of Musan's existence presupposition, (most) predicates carry a "novelty" presupposition, that is that the eventuality described by the predicate has not occurred yet at the time of predication. This presupposition together with the fact that the eventuality described by the predicate can be interpreted referentially (i.e. as referring to a contextually salient eventuality of the relevant type) gives rise to infelicity in the examples in question: the reason why the simple past SCs in these examples are infelicitous is because in all these cases *the* eventuality in question is known to have already happened in the past and therefore the "novelty" presupposition (that it will not have happened before tomorrow) is not met.[8]

I take these judgments to be telling us that the generalization I proposed above is correct for at least Musan's existence presupposition, the change-of-state presuppositions, factive presuppositions, and the presupposition triggered by the cleft-construction (and maybe the "novelty" presupposition, if it turns out to be correct). (There are some well-known cases of presuppositions that do not seem at first to behave according to our generalization in that when these presuppositions are not satisfied by the context of utterance, a past perfect SC is infelicitous as well. This is the case for the presupposition triggered by the definite article[9] and the presupposition triggered by additive particle such as *too* and *again*[10]. In Ippolito (2003) I discussed why I don't think *too* and *again* should be viewed as counterexamples. As for the definite article, in Ippolito (2008) I defend the view that this too should not be viewed as a counterexample to the current proposal.)

3 The role of tense

The proposal I would like to defend here is that conditionals sentences should be analyzed as "bare" conditional structures embedded under a temporal operator. By "bare conditional structure" I mean the structure formed by the modal operator, its restriction and its nuclear scope. The semantic differences between simple past SCs and (future) past perfect SCs follow from the fact that in different types of conditionals, the bare conditional is embedded under a different temporal structure. The goal of the next sections is to show that the facts we observed above follow from this hypothesis.

[8] A discussion of the "novelty" presupposition and an exploration of its consequences must await another occasion.

[9] Arregui (2004)

[10] Ippolito (2003)

What are the possible temporal structures embedding bare conditionals? Suppose with Iatridou (2000) and others, that the distinctive feature of SCs is the past tense: in simple past SCs a past tense occurs which cannot be interpreted within the antecedent or the consequent clauses, and in past perfect SCs a past perfect occurs that might not be interpreted in either the antecedent or the consequent clauses.[11] Let us suppose that the marking of SCs with the past tense is not a quirk of English morphology but the surface realization of the presence of a real tense operator embedding the bare conditional structure. The preliminary proposal is the following: "structural" simple past SCs are bare conditionals embedded under a simple past; "structural" past perfect SCs are bare conditionals embedded under a past perfect.[12,13]

3.1 A bare conditional

A bare conditional structure is a structure of the form *Modal* φ, ψ. Following Kratzer (1981, 1991), among others, I take the modal operator to be an operator quantifying over possible worlds; φ, the restriction of the operator, is provided by *if*-clause; ψ, the nuclear scope of the operator, is provided by the consequent. The two parameters for the interpretation of the modal – the conversational background and the ordering source, in Kratzer's terminology – are the historical accessibility function H and the similarity function $MAX_{\leq}$. H is such that, given a world w, a time t, and a proposition φ, it will select the worlds w' that share the same history as w up to t and where φ is true.[14] A more formal definition is given in (14-a). The similarity function $MAX_{\leq}$ is such that given the set of accessible worlds A and a world w, the similarity function will select the worlds w' in A that are maximally similar to w.[15] Its definition is given in (14-b).

(14) a. $\mathrm{H}_{w,t}(p) = \{w'\colon w' \in p \text{ and } w' \text{ shares the same history as } w \text{ up to } t\}$
b. $\mathrm{MAX}_{\leq,w}(A) = \{w' : w' \in A \wedge \neg\exists w'' : w'' \in A \wedge w'' \leq_w w'\}$

Given these definitions, the meaning of the bare modal structure *Modal* φ, ψ will be as follows.

(15) $[\![[\textbf{Modal } \varphi]\ \psi]\!]^{w_c,t} = 1$ if $\forall w' \in MAX_{\leq,w_c}(HIST_{w_c,t}(\varphi)) : w' \in \psi$

With these pieces in place, let us look at the structure of a simple past SC.

[11] This can be seen in past perfect SCs where adverbs that can't normally occur with a past perfect can in fact cooccur with the past perfect in the antecedent; this point is clearly even stronger in the case of future past perfect SCs of the type we have been discussing in this paper.

[12] I used the word "structural" because, as we will see later, what looks like a past perfect SC might structurally be a conditional embedded under a simple past, that is, what I called a structural simple past SC.

[13] An extensive discussion of indicative conditionals and their relation to simple past SCs must await another occasion.

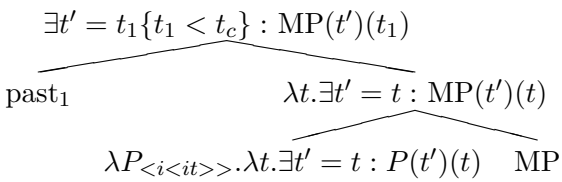
[14] Thomason and Gupta (1980), Condoravdi (2001), Ippolito (2002, 2006), among others.

[15] The definition in (14-b) follows von Fintel (2001).

3.2 A simple past SC

A simple past SC is a bare conditional embedded under a simple past.[16] In Reichenbach (1947)'s theory of tense, each tense is complex in that it expresses two relations: a relation between the event time (t_e) and the reference time (t_r) and a relation between the reference time and the speech time (t_c). In this picture, the relation between the event time and the speech time is indirect and mediated by the reference time. For example, the present tense will say that t_e coincides with t_r and t_r coincides with t_c ($t_e = t_r = t_c$); the simple past will say that t_e coincides with t_r but t_r precedes t_c ($t_e = t_r < t_c$); and the past perfect will say that t_e precedes t_r and t_r precedes t_c ($t_e < t_r < t_c$). I am going to recast Reichenbach's view in a system where each temporal relation (t_e-t_r, and t_r-t_c) is realized by a distinct temporal operator expressing either an "overlap" relation or a "precedence" relation. For example, the syntactic realization of a simple past will be as follows.[17] The material in curly brackets is the past presupposition carried by the time variable t_1. MP is the embedded bare conditional phrase.

(16)



Before I spell out the contribution of tense to the modal sentence, let me introduce my proposal about the meaning of the modal operator.

(17) $[\![\mathbf{Modal}_\forall]\!]^{c,g} = \lambda p.\lambda q.\lambda t.\lambda t'\{$ there is a w s.t. it is a historical issue in w at t' whether $p.\}$ For all p-worlds w' historically accessible from w_c at t and overall maximally similar to w_c, q is true in w'.

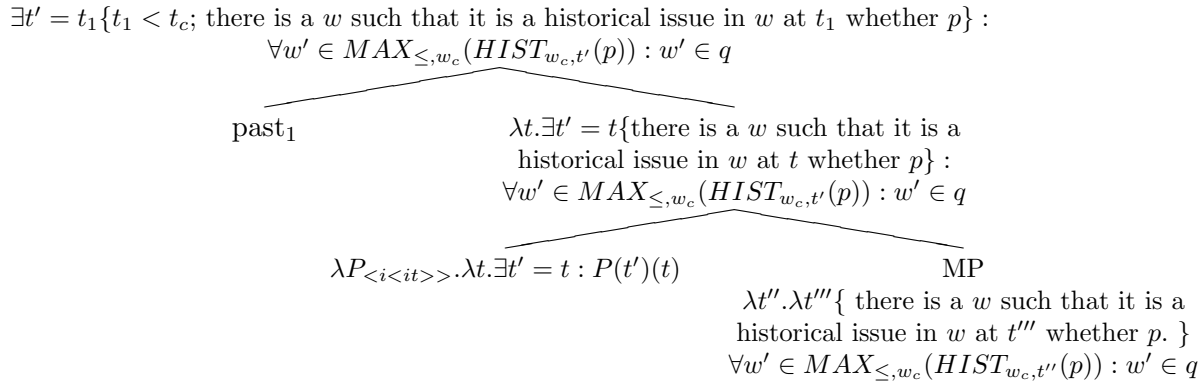
One obvious way in which the tense operator affects the interpretation of the modal sentence it immediately embeds is by manipulating the time argument of H. In particular, the event time (the existentially quantified time variable) becomes the time-argument of H. This is in line with our definition of H in (14-a). But there is more. As (17) shows, the modal operator triggers a presupposition as well, that is the presupposition that there is a world such that in that world at time t' it is a historical issue whether the antecedent proposition p is true. Let us call this presupposition the "historical issue presupposition" (HIP). If HIP is satisfied, then the sentence is true if all p-worlds historically accessible from the actual world at t and (overall) maximally similar to the actual world, are q-worlds. There are two questions that arise: (a) we have said that the time-argument of H, t, is going to be manipulated by the tense operator above the modal, but what is

[16] Unlike Ippolito (2006) where the bare conditional was embedded under a present perfect. See that reference for more details.

[17] For lack of space, I am leaving open the question of what the right labels for these two temporal heads are. Moreover, for convenience, I assume that while the lower temporal component is an operator quantifying over times, the higher temporal element is a time variable carrying a past presupposition (see Heim (1994) for the presuppositional analysis of tense I am presupposing here).

the value of t' going to be? (b) what is the definition of "historical issue"? Let us begin with question (a). The value of t' is also going to be determined by the tense operator immediately c-commanding the modal structure, as shown in (18).[18]

(18)



The result of combining the lower tense operator with the denotation of the modal phrase is that, while the time relevant to H will be the event time, the time relevant to HIP will be the reference time. Because the event time and the reference time coincide in (18), both the time-argument of H and the time relevant for HIP are going to coincide. Turning now to question (b), let us define "historical issue" as follows.

(19) **Historical Issue**
For any proposition p, world w and time t, p is a historical issue in w at t just in case:
(i) w is historically as close to w_c as allowed by the fact that the set of worlds accessible from w at t (call this set A) must include both p-worlds and $\neg p$-worlds;
(ii) all the worlds $w' \in A$ maximally similar to w_c are worlds where ps(p) are true (ps(p) = presuppositions in p).

Could w be the actual world w_c? It could, so if p is foreclosed in w_c, t must be a time immediately before the time when p got foreclosed in w_c. I am now in a position to give the full truth-conditions for *If John were in love with Mary, he would ask her to marry him.*

(20) Where (i) $g(1) < t_c$ and (ii) there is a world w such that it was a historical issue in w at $g(1)$ whether John is in love with Mary (now):
$[\![$**[PAST$_1$[T$_2$[Modal$_{\forall,t_2}$ [John is in love with Mary] [he will ask her to marry him]]]]**$]\!]^{c,g} = 1$ if $\exists t_2 = g(1)$ s.t. $\forall w'$ s.t. John is in love with Mary in w' and $w' \in H_{w_c,t_2}$ and $\neg\exists w''$ s.t. John is in love with Mary in w'' and $w'' \in H_{w_c,t_2}$ and $w'' <_{w_c} w'$, he will ask her to marry him in w'.

[18] This requires the type of this operator to be $<< i < it >>< it >>$ so that it can combine with a node of type $< i < it >>$.

Because in a simple past $t_e = t_r$, the time relevant for HIP and the time-argument of H are going to coincide and precede t_c.

3.3 Explaining felicitous and infelicitous simple past SCs

Reconsider the contrast below.

(21) a. John is not in love with Mary. If he were, she would be happy.
b. John is dead. #If he were in love with Mary, she would be happy.

The truth-conditions for the simple past SC were given at the end of the previous section. Recall that the conditional in question is felicitous if HIP is satisfied. Let's begin with (21-a) and why it is felicitous. Firstly, in order for HIP to be satisfied there must be a world such that at the reference time t_r p and $\neg p$ are accessible, where t_r is a time before t_c. Suppose w is w_c. In this case, t_r must be a time immediately before the time when the possibility that John would be in love with Mary now got foreclosed. The set of worlds accessible at this time will contain both worlds where he is in love with Mary now as well as worlds where he isn't. Secondly, in order for HIP to be satisfied it must be that p's presuppositions (if any) are true in all worlds in this set maximally similar to w_c. In (21-a), p's presupposition is that John is alive now. Since w_c in the closest world to itself in the set of worlds historically accessible from w_c at t_r, p's presupposition is required to be true in w_c. Since John is indeed alive now in w_c, HIP is satisfied. Furthermore, there are antecedent-worlds accessible from w_c at t_r (technically, t_e is H's time-argument, but here $t_e = t_r$), and the conditional is therefore not vacuously true. The simple past SC in (21-a) is felicitous.

What goes wrong in (21-b)? The truth-conditions are the same truth-conditions we gave for (21-a). We need to check whether HIP is satisfied. Suppose $w = w_c$. If so, t_r (the time relevant for HIP) must be the time immediately before the time when the possibility that John would be in love with Mary now got foreclosed, that is a time immediately before John died. Since w_c is the closest world to itself in the set of worlds historically accessible from w_c at t_r, HIP is satisfied iff the presupposition that John is alive now is true in w_c. This presupposition is not satisfied in w_c since in w_c John is dead. Therefore, HIP is not satisfied by w_c. Suppose $w \neq w_c$. If $w \neq w_c$, w would have to be a world which diverged from w_c immediately before the time when John died: t_r would then be some time after the divergence (but before t_c) such that in the worlds historically accessible from w at t_r maximally similar to w_c John is alive now.[19] However, this will not work because this later reference time t_r is also required to be the time-argument of

[19] An important issue that for reasons of space I cannot expand on is what counts as maximally similar to w_c. Briefly, let me say here that I follow Lewis (Lewis (1979)) in taking worlds that diverged once and then followed their own course of events to be more similar to w_c than worlds that diverged once and where convergence was later restaured. This is an intricate issue, though, and central to the present discussion, and I regret that I cannot pursue this discussion further. For lack of space, here I will assume that among the worlds which diverged from w_c just before John died, the ones where John is still alive now are worlds more similar to w_c than worlds where he died sometime between the actual time of death in w_c and now.

H in the truth-conditions (again, this is because $t_e = t_r$), but since it follows the time when the possibility that John would be in love with Mary now was foreclosed, there are no worlds historically accessible at this time from w_c where John is in love with Mary now. The conditional turns out to be vacuously true and therefore, infelicitous.

To sum up our discussion of (21-b), if w is w_c and if we take the time relevant for HIP to be the time immediately before John died, then HIP won't be satisfied. If w is some other world which diverged from the actual world immediately before John died, thus making the time relevant for HIP some time after the divergence (even though still before t_c), HIP will be satisfied but the conditional will be vacuously true because, this time being required to be the time parameter of H, there are no longer any antecedent-worlds histrically accessible from w_c at that time. In conclusion, either way the conditional is infelicitous.

3.4 Past perfect SCs

The observation we made at the begining of this paper was that, in the examples we considered, when a simple past SC was infelicitous, a past perfect SC was felicitous. Why? Take (22).

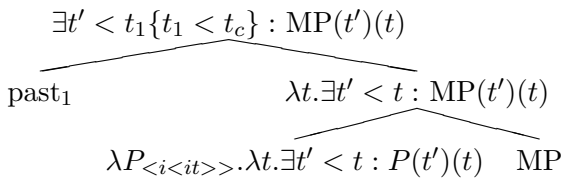
(22) John is dead. Bill, the man Mary is engaged with, has shown no inclination to marriage whatsoever. John's plans for the future, on the other hand, had always included marriage.

a. #Unlike Bill, if John were in love with Mary now, he would ask her to marry him.

b. Unlike Bill, if John had been in love with Mary now, he would have asked her to marry him.

The schematic structure of a past perfect SC is given below. Just like the simple past, the past perfect is realized by two distinct heads. In the structure below, MP is the bare conditional structure with the same meaning we gave in (18).

(23)



As in the case of simple past SCs, the lower tense head in (23) will provide both the time relevant for HIP (t_r in Reichenbachian terms) and the time-argument of H (t_e). Unlike simple past SCs, though, here these two times do not coincide: the time-argument for H precedes the time relevant for HIP. The truth-conditions are given below.

(24) Where (i) $g(1) < t_c$ and (ii) there is a world w such that it was a historical issue in w at $g(1)$ whether John is in love with Mary (now):

> $[\![$**past**$_1$ [**T**$_2$ [**Modal** [**John is in love with Mary now**] [**he will ask her to marry him**]]]$]\!]^{w_c}$ is true if $\exists t_2 < g(1)$ s.t. $\forall w'$ s.t. John is in love with Mary now in w' and $w' \in H_{w_c,t_2}$ and w' is $\neg\exists w''$ s.t. John is in love with Mary in w'' and $w'' \in H_{w_c,t_2}$ and $w'' <_{w_c} w'$, he will ask her to marry him in w'.

We need to check whether HIP is satisfied. Suppose w is w_c. Then, t_r (the time relevant for HIP) must be a past time immediately before the time when John died. Since w_c is among the set of historically accessible worlds from w_c at t_r, and is the closest to itself, HIP will be satisfied only if John is alive now in w_c. Since John isn't alive now in w_c, HIP is not satisfied for $w = w_c$.

Just like we did for simple past SCs, suppose $w \neq w_c$. This must be a world which diverged from w_c immediately before John died and, therefore, t_r must follow the time of the divergence (but still be before t_c). HIP will be satisfied because worlds historically accessible from w at t_r maximally similar to w_c are going to be worlds where John is alive now (these are going to be worlds where John didn't die when he did or anytime between that time and now—see footnote 19). Now, if t_r were the time-argument of H in (24) then we would have a problem in that there are no longer antecedent-worlds accessible from w_c at t_r. However, because this is a past perfect SC, the time-argument of H isn't t_r but a time before t_r. In other words, for the sentence not to be vacuously true there must be a time before t_r such that antecedent-worlds are accessible at that time. Is there such a time? Yes, it is the time immediately before the time of the divergence, i.e. the time immediately before John died. HIP is then satisfied and the conditional is not vacuously true.

Let me sum up our discussion of past perfect SCs. If $w = w_c$ and t_r is the time immediately before the time when John died, HIP will not be satisfied. If w is some other world which diverged from w_c just before John died, and t_r is therefore a past time later that the divergence time, HIP will be satisfied. Choosing this later time for the satisfaction of HIP will not cause the conditional to be vacuously true because the time argument of H is a time before t_r and this is indeed the time of the divergence. The two layers of past in the past perfect allow the time-argument of H to precede the time relevant for HIP and therefore, allow the conditional to be felicitous when the presuppositions in its antecedent aren't true in the actual world.

4 The temporal interpretation of antecedent and consequent clauses

Superficially, simple past SCs and past perfect SCs differ with respect to their compatibility with different temporal adverbs: simple past SCs only seem to be compatible with non-past adverbs, whereas past perfect SCs are compatible with both past and non-past adverbs.

(25) a. If John were cooking now/*yesterday, I would not have to.

b. If John cooked tomorrow/*yesterday, I would not have to.

(26) a. If John had been cooking now, I would not have had to.
b. If John had cooked tomorrow, I would not have had to.
c. If John had cooked yesterday, I would not have had to.

In this section I will argue that the apparent generalization that simple past SCs cannot be about the past is not correct: a SC whose antecedents is about the past can have the structure of a simple past SC but it cannot look like one for morphological reasons. Consider the fact that the present tense can be used to talk about both the present and the future if the predicate is stative, but only to talk about the future if the predicate is eventive.[20] Now, as we know the same pattern holds in SCs, as shown again in (28).

(27) a. I hope John is well tomorrow/every day/right now.
b. I hope John cooks fish tomorrow/every day/*right now.

(28) a. If John were sick tomorrow/every day/right now, ...
b. If John cooked fish tomorrow/every day/*right now, ...

This tells us that (i) the antecedents of conditionals are tensed and are evaluated with respect to the speech time;[21] (ii) a present tense occurs in the non-past antecedent of a simple past SC. With respect to point (ii), the structure of non-past simple past SCs looks like (29-a): the past tense we see is interpreted above the modal (which is what makes this conditional a "subjunctive" conditional, and not an indicative one), but the tense of the antecedent is a present. However, there is a second possibility, that is that a past tense occurs within the antecedent (in addition to the one above the modal), as shown in (29-b).

(29) a. PAST [MODAL [**PRESENT** φ]^{t_c} [...]]
b. PAST [MODAL [**PAST** φ]^{t_c} [...]]

The question is then, if the structure in (29-b) is allowed, why is (30) bad?

(30) *If John cooked fish yesterday, I would not have to.

The answer is that the structure of (30) cannot be (29-b) because, the one past tense in (30) needs to be interpreted outside the antecedent proposition (since (30) is understood as a subjunctive conditional) and therefore there cannot be any past tense in the antecedent. Since the antecedents of SCs are tensed, the only available possibility is that a present tense occurs in the antecedent, which is incompatible with the past adverb and causes the sentence to be uninterpretable. Since (30) cannot realize (29-b), what

[20] Note that the possibility of interpreting the embedded present in (27) as a future is not forced by the semantics of *hope*, since this verb can also embed the past tense as in *I hope John cooked fish last night for his guests.*

[21] See Kaufmann (2005) for another proposal about the temporal interpretation in conditionals.

can? Because English can realize two layers of past within the same clause with the past perfect form, it must. Therefore, (29-b) is going to the spelled out as (31).

(31) If John had cooked fish yesterday, I would not have had to.

In conclusion, some SCs which look like past perfect SCs are simple past SCs structurally. What does this tell us about past perfect SCs in general? We know that they can occur with past, as well as present and future adverbials (cf. (26)). We know that (26-a) and (26-b) can structurally only be past perfect SCs, since neither layer of past can be interpreted in the antecedent. The situation is more complex in the case of (26-c). As we saw above, (26-c) could be the spell out of the structure in (29-b), that is (26-c) could structurally be a simple past SCs (about the past). But (26-c) could also be the spell out of a structural past perfect SC about the past.

(32) [PAST PERFECT[MODAL [**PAST** φ]^{t_c} [...]]

Because in English there is no tense form that can realize three layers of past within the same sentence, the possible structure in (32) is always going to be spelled out as (26-c), and as such will be indistinguishable from the surface form of (29-b). The structural ambiguity I am proposing may explain some of the "mixed" properties of subjunctive conditionals about the past. For example, on the one hand, just like structural past perfect SCs, these conditionals are felicitous even though the presupposition in the antecedent (if any) are not true in the actual world.

(33) John quit smoking ten years ago. If he had quit smoking only a year ago, he still wouldn't be able to win the marathon.

On the other hand, unlike structural past perfect SCs but like simple past SCs, the antecedent of a subjunctive conditional about the past doesn't have to be counterfactual.

(34) If the butler had killed Mr. Jones, we would have found precisely these marks on the floor. So, he must have killed Mr. Jones!

In the present analysis, the past perfect SCs that are obligatorily counterfactual are the structural past perfect SCs, that is modal structures embedded under a past perfect. We can see that this is true in Standard English with past perfect SCs that are about the present and the future (since in these cases we know we have structural past perfect SCs), but because of the limitation of Standard English morphology, there are no unambiguous structural past perfect SCs and therefore we cannot check whether this is the case with past perfect SCs about the past. However, other varieties of English might be more hepful in this respect. Dancygier and Sweetser (2005) discuss a kind of conditional found in some American and British colloquial dialects (previously discussed in Fillmore (1990)), where they argue that an extra auxiliary head occurs. In (35), the *a*-form is presumably this extra auxiliary head. Both examples are cited in Dancygier and Sweetser (2005).

(35) a. If I hadd-*a* known you were coming, I would-*a* stayed home.
b. If I hadn't *a*-been ill, I'd *a*-got him away all right,...

Interestingly, when writing about these examples, Dancygier and Sweetser say that "these -*a* forms seem necessarily to convey the speaker's belief that the described situation does not hold in the reality space." (Dancygier and Sweetser, 2005, pg. 63.) Or elsewhere, "we see no possible non-counterfactual interpretation for *if hadn't a-been ill*." (Dancygier and Sweetser, 2005, pg. 65.)

5 Conclusion

SCs can be devided in two kinds: structural simple past SCs and structural past perfect SCs. Both kinds share the same bare modal structure, but while in the former this structure is embedded under a simple past, in the latter it is embedded under a past perfect. We saw that what look like past perfect SCs about the present and the past are always interpreted as structurally past perfect SCs because no layer of past can be interrpeted within the antecedent without causing the sentence to be uninterpretable. However, because of the limitations of Standard English morphology, even though SCs about the past always look like past perfect SCs, they are structurally ambiguous between structural simple past SCs and structural past perfect SCs. This was argued to be able to potentially shed some light on the fact that SCs about the past show a mixed behavior with respect to their semantic and pragmatic properties.

References

Abusch, Dorit (1988) "Sequence of tense, intensionality and scope", in *Proceedings of WCCFL VII*, Stanford, CA: CSLI Publications, 1–14.

Arregui, Ana (2004) *On the accessibility of possible worlds: the role of tense and aspect*, Amherst, MA: GLSA Publications.

Condoravdi, Cleo (2001) "Temporal Interpretation of Modals", in David Beaver, Stefan Kaufmann, and L. Casillas (eds.) *Stanford Papers on Semantics*, Stanford, CA: CSLI Publishers.

Dancygier, Marbara and Eve Sweetser (2005) *Mental Spaces in Grammar: Conditional Constructions*, Cambridge: Cambridge University Press.

Dudman, V. H. (1983) "Tense and Time in English Verb Clusters of the Primary Pattern", *Australian Journal of Linguistics* **4**, 143–204.

von Fintel, Kai (2001) "Counterfactuals in a Dynamic Context", in Michael Kenstowicz (ed.) *Ken Hale: A Life in Language*, Cambridge, MA: MIT Press.

Heim, Irene (1990) "Presupposition Projection", in Robert van der Sandt (ed.) *Presupposition, Lexical Meaning and Discourse Processes: Workshop Reader*.

Heim, Irene (1994) "Comments on Abusch's theory of tense", in Hans Kamp (ed.) *Ellipsis, Tense and Questions*, Amsterdam: University of Amsterdam Press.

Iatridou, Sabine (2000) "The Grammatical Ingredients of Counterfactuality", *Linguistic Inquiry* **31**, 231–270.

Ippolito, Michela (2002) *The Time of Possibilities. Truth and Felicity of Subjunctive Conditionals*, Cambridge, MA: MITWPL.

Ippolito, Michela (2003) "Presuppositions and Implicatures in Counterfactuals", *Natural Language Semantics* **11**, 145–186.

Ippolito, Michela (2006) "Semantic Composition and Presupposition Projection in Subjunctive Conditionals", *Linguistics and Philosophy* **29**, 631–672.

Ippolito, Michela (2008) *Subjunctive Conditionals: A Linguistic Analysis*, manuscript (to appear in *Studies in Linguistics and Philosophy*, Springer).

Karttunen, Lauri and Stanley Peters (1979) "Conventional Implicature", in C.-K. Oh and D. A. Dinneen (eds.) *Syntax and Semantics 11: Presupposition*, New York: Academic Press, 1–56.

Kaufmann, Stefan (2005) "Conditional Truth and Future Reference", *Journal of Semantics* **22**, 231–280.

Kratzer, Angelika (1981) "The Notional Category of Modality", in H.-J. Eikmeyer and H. Rieser (eds.) *Words, Worlds, and Contenxts*, Berlin: de Gruyter.

Kratzer, Angelika (1991) "Modality", in A. von Stechow and D. Wunderlich (eds.) *Semantics. An International Handbook of Contemporary Research*, Berlin: de Gruyter.

Kripke, Saul (1990) *Presupposition and Anaphora: Remarks on the Formulation of the Projection Problem*, manuscript, Princeton University.

Lewis, David (1979) "Counterfactual Dependence and Time's Arrow", *Noûs* **13**, 455–476.

Musan, Renate (1997) "Tense, Predicates and Lifetime Effects", *Natural Language Semantics* **5**, 271–301.

Ogihara, Toshiyuki (1996) *Tense, Attitudes, and Scope*, Kluwer Academic Publishers.

Ogihara, Toshiyuki (2002) "Counterfactuals, Temporal Adverbs, and Association with Focus", in *Proceedings of SALT X*, Cornell, NY: CLS Publications.

Reichenbach, Hans (1947) *Elements of Symbolic Logic*, New York, NY: The Macmillan Company.

Thomason, Richmond and Anil Gupta (1980) "A Theory of Conditionals in the Context of Branching Time", in William Harper, Robert Stalnaker and Glenn Pearce (eds.) *Ifs. Conditionals, Belief, Decision, Chance, and Time*, Dordrecht: Reidel Publishing Company.