

The Grammatical Ingredients of Counterfactuality

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Counterfactual constructions convey the meaning that the speaker believes a certain proposition not to hold. This article investigates the morphosyntactic composition of counterfactual conditionals and counterfactual wishes and the question of how the form of counterfactuals is related to their meaning. Across languages, there are combinations of tense, mood, and aspect morphemes that are used repeatedly in the expression of counterfactuality. I discuss the role of all three components.

Keywords: aspect, conditionals, counterfactuals, mood, tense, wishes

1 General Background

In general, and as the term itself suggests, I will take *counterfactuality* to refer to grammatical constructions that express or make reference to situations that are "contrary to fact" (although we will soon see that this is too strong and inaccurate a term). A situation can be counterfactual to the present (i.e., different from the present situation) or counterfactual to the past (i.e., different from a situation that obtained in the past). Although we will come back to this point, it would appear that we cannot have a counterfactual to the future as the future is conceptualized as not yet fact. Put simply, then, *counterfactuality* is used as a term only with respect to situations that cannot be helped anymore.

What I describe as "counterfactuality" can be found in two environments, and I will deal in turn with each of them. First, there are counterfactual wishes, whereby the subject expresses a desire for things to be different from what they are or were. I will refer to sentences like (1a) as *present counterfactual (CF) wishes* and to those like (1b) as *past counterfactual (CF) wishes*.

- (1) a. I wish I had a car. (conveys "I don't have a car now")
- b. I wish I had had a car when I was a student. (conveys "I didn't have a car then"; nothing about whether I have one now)

The second environment of counterfactuality, and the one I will start the discussion with, is conditionals. A *present counterfactual* (PresCF), as in (2a), conveys that the antecedent (*p*) and

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consequent (q) of a conditional ($p \rightarrow q$) do not hold at present. A *past counterfactual* (PastCF) conveys that p and q did not hold at a particular time in the past, and it remains neutral with respect to whether p or $\sim p$ (or q or $\sim q$) holds at present.¹

- (2) a. If he were smart, he would be rich. (conveys "he is not smart" and "he is not rich")
 b. If he had been smart, he would have been rich. (conveys "he was not smart" — in general or on one particular occasion — and "he was not rich")

Until now I have been using the term *conveys* to avoid the question of whether the counterfactuality of (1) and (2) is asserted, presupposed, or implicated. In fact, this question has been the subject of some debate. It has often been argued that the counterfactuality of conditionals is conversationally implicated and not asserted (Anderson 1951, Stalnaker 1975, Karttunen and Peters 1979, Palmer 1986). At least two types of arguments have been taken to support this position. First, we can cancel the counterfactuality without producing a contradiction.

- (3) If the patient had the measles, he would have exactly the symptoms he has now. We conclude, therefore, that the patient has the measles.

This is probably the most well-known argument. It shows, for one, that a CF conditional can be used to argue for the proposition in the antecedent. It also shows that it is utterable when the speaker believes the proposition contained in the antecedent (which can also be made clearer by the fact that it is possible to append the parenthetical *which he does* to the antecedent).

The second argument in favor of the position that the counterfactuality of conditionals is not an assertion, is that we can assert the falsity of p without producing redundancy or, in Stalnaker's (1975) words, "begging the question."

- (4) If the butler had done it, we would have found blood on the kitchen knife. The knife was clean; therefore, the butler did not do it.

If the first sentence of the discourse in (4) asserted (or presupposed) that the butler was not the guilty party, then the last sentence would feel like a repetition rather than a conclusion drawn from the preceding premises. This discussion of the issue is oversimplified and it does not do justice to the vast philosophical literature that exists on this topic. However, it will have to do for our purposes. I will side with the view that the counterfactuality of conditionals is a conversational implicature and will therefore consider the goal of this article to investigate how the meaning of counterfactuality is derived — in particular, how it is derived as an implicature.

CF conditionals differ from non-CF conditionals in meaning as well as in form. I will argue that it is possible to attribute the difference in meaning to a systematic difference in verbal

¹ I will not address the issue of whether the CF status of the antecedent and the consequent is the same. This question is raised by examples like B's utterance, where the antecedent is contrary to fact but the consequent is not.

(i) A. John is very rich and his wealth has gotten him quite a few friends.

B: Yes, but if he were nice, he would also have friends / if he had been nice he would also have had friends.

Throughout this article I will ignore the presence of *then* in conditionals. See Iatridou 1994 for more on this topic.

morphology. I will now temporarily switch to drawing most of my examples from Modern Greek (MG), as the richer morphology of this language will facilitate the investigation.²

2 The Morphological Makeup

2.1 Conditionals

In MG, as in English, the pluperfect is used in the antecedent of a PastCF.³

- (5) An iχ₁e pari to siropi θa iχ₁e γ₁ini kala.
 if had taken the syrup FUT had become better
 'If he had taken the syrup, he would have gotten better.'

The PastCF consequent also contains the same elements in both languages: morphology for future, morphology for past perfect (or pluperfect). The difference between MG and English lies in that the future is expressed as an undeclinable particle in MG and as a result, the highest verb in the sentence, which is the auxiliary forming the perfect, carries the past morphology (of the past perfect). In English future is verbally expressed and therefore, as the highest verbal element, combines with past morphology. The position that would is the past form of will is held by many (Palmer 1986, Comrie 1985, Quirk et al. 1985, Abusch 1988 (where *woll* is introduced as a convention for the tenseless form of will)) and can also be seen in sequence-of-tense environment ~ . ~

- (6) a. Mary: "It will rain."
 b. Mary said that it would rain.

² In fact, Greek has a CF conditional that does not have the same conditions of use as the CF conditional I discuss in this article. Consider the following contrast (putting aside how the antecedent is derived). *Na* is an undeclinable Infl-area clitic particle, which, in combination with the position of the subject, might indicate that the verb has undergone I-to-C movement. The counterfactuality of such conditionals seems to be asserted.

- (i) An o Kostas iχ₁e χrimata θa ayoraze afto to spiti ala Sen ksero an ex₁i χrimata.
 if Kostas had money FUT buy this house but NEG know if has money
 'If Kostas had money, he would buy this house, but I don't know if he has money.'
 (ii) Na iχ₁e χrimata o Kostas θa ayoraze afto to spiti ## ala 6en ksero an ex₁i χrimata.
 NA had money Kostas FUT buy this house but NEG know if has money
 'If Kostas had money, he would buy this house ## but I don't know if he has money.'

³ Abbreviations used in glosses of MG examples, and symbols used in transliterating MG, are as follows:

FUT future	NPST nonpast	y = back voiced velar fricative
IMP imperfective	PRF perfective	y ₁ = front voiced velar fricative
MOD modal	PST past	χ = back unvoiced velar fricative
		χ ₁ = front unvoiced velar fricative

I use the term *nonpast* instead of present, following Mackridg (1987). (See also Philippaki-Warbuton 1973, Joseph and Philippaki-Warbuton 1987.)

⁴ Unfortunately, I have to leave for a different occasion a discussion of the role in CFs of morphology corresponding to the future. In English and MG it is possible to make a non-CF conditional without the future marker in the consequent (*If it rains, we go to the park*), but it is impossible to form a CF conditional without using the future marker (or might). This obligatory presence of a future/modal is not found in all languages I have looked at.

(5) is a PastCF and has as part of its meaning that the speaker (speaks as if he or she) believes the patient not to have taken the syrup at some (possibly specified) time in the past. It cannot be uttered by way of instructions to a caretaker, as (7) can.

- (7) An pari afto to siropi tha γ₁ini kala.
 if take/NPST/PRF this syrup FUT become/NPST/PRF well
 'If he takes this syrup, he will get better.'

2.1.1 *Fake Tense?* Now consider (8).

- (8) An eperne afto to siropi tha γ₁inotan kala.
 if take/PST/IMP this syrup FUT become/PST/IMP well
 'If he took this syrup, he would get better.'

Unlike (5), (8) can be uttered as an instruction to a patient's caretaker. This may be taken to indicate that (8) is, in a sense, still about the future, therefore still realizable, and by that token, not a CF. I will use the term *future less vivid* (FLV) conditional for (8).⁵ In contrast to sentences like (8), sentences like (7) have been called "future more vivid," but I will not use this term; instead, I will refer to sentences like (7) as *future neutral vivid* (FNV). As a first approximation, I take the meaning of an FLV to be that in (9).

(9) *Future less vivid conditional*

Assertion: the reader's favorite semantics for an FNV conditional 'if p, q'

Implicature:⁶ the actual world is more likely to become a $\sim p$ world than a p world

Before continuing, let us clarify the proposed meaning of the implicature: What is remote are the p cases, not the $p \rightarrow q$ relationship. In other words, (9) conveys the meaning that the patient is less likely to drink the syrup than to not drink it. (9) does not mean that the drinking of the syrup and the healing are less likely to cooccur than to not cooccur. That is, (9) does not mean that p and q are less likely to cooccur than to not cooccur.

The unlikelihood that is part of the FLV can be seen in the contrast in (10).

- (10) a. If John comes to the party, and I think he will, we will have a great time.
 b. #If John came to the party, and I think he will, we would have a great time.

That the FLV's counterfactuality is an implicature and not an entailment can be seen from the fact that it remains unaffected by negation.

- (11) It is not the case that if he took the syrup, he would get better.

⁵ This term is taken from English-language grammars of Classical Greek (see, e.g., Smyth 1920:578, sec. 2566).

⁶ The FLV can also be used as a conversational move to emphasize that the speaker is truly ignorant about the possibility of the actual world turning into a p world.

(i) I don't know whether John will come to the party, but if he came, we would have a great time.

We will see that this "distancing" happens with the other types of CFs as well and is a natural by-product of the way counterfactuality is derived.

I will later argue that the FLV's implicature arises from the same source as the counterfactuality in PresCFs and PastCFs, calling into question the earlier assumption that there is no such thing as a "future CF."

As noted earlier, both (7) and (8) can be uttered to a patient's caretaker as instructions for future action. The future orientation of (8) is shown by **continuations** like that in (12)—which are not possible after the PastCF (5).

- (12) An eperne afto to siropi θa γ₁inotan kala ala ime siyuri oti θa
 if take/PST/IMP this syrup FUT become/PST/IMP well but am certain that FUT
 arniθi na⁷ to pχ₁i otan tu to zitisume.
 refuse NA it-drinks when of-him it ask
'If he took this syrup, he would get better, but I am certain that he will refuse to drink it when we ask him to do so.'

Also, the FLV permits future-oriented adverbials.

- (13) a. An eperne afto to siropi pende fores mesa stin erχomeni evdomaða
 if take/PST/IMP this syrup five time in the coming week
 θa γ₁inotan kala.
 FUT become/PST/IMP well
 'If helshe took this syrup five times in the coming week, helshe would get better.'
 b. An efevy₁es avrio θa eftanes eki tin ali evdomaða.
 if leave/PST/IMP tomorrow FUT arrive/PST/IMP there the other week
 'If you left tomorrow, you would get there next week.'

But whereas the FNV and the FLV have the same assertion and are both future-oriented, they differ in form. The FNV contains present (or nonpast) tense morphology; the FLV contains past tense morphology.

In other words, we are dealing here with past tense morphology that does not receive a past tense interpretation. I will refer to such occurrences of past morphology that do not receive a temporal past interpretation as *fake past* or *fake tense*. Is this fake past a quirk, an indication that morphology goes haywire in these environments, or is there a principled way to account for the presence of past tense morphology? I will assume the latter as a working hypothesis, partly on the basis of the crosslinguistic frequency of past tense morphology in such environments (James 1982 and later sections of this article), and partly because it is the more interesting option.

2.1.2 Fake Aspect? The discussion in section 2.1.1 focused on a part of an FLV's verbal morphology that is shared by English and MG. In this section we will look at a part on which English and MG differ. Consider the by now familiar pair, the FNV conditional (7) and the FLV (8).

⁷ Na is the Greek version of an inflectional particle that appears in nonindicative sentences in most of the Balkan Sprachbund. Its exact nature is well outside the scope of this article, but it has no particular CF meaning. I will gloss it as NA to avoid commitment to any particular position about its status.

- (7) An pari afto to siropi tha γ₁ini kala.
 if take/NPST/PRF this syrup FUT become/NPST/PRF well
 'If he takes this syrup, he will get better.'
- (8) An eperne afto to siropi tha γ₁inotan kala.
 if take/PST/IMP this syrup FUT become/PST/IMP well
 'If he took this syrup, he would get better.'

We already saw that (7) and (8) differ in their tense morphology. However, they also differ in their aspect morphology: the FNV has perfective, the FLV imperfective morphology.

It appears, though, that in (8) the aspectual (imperfective) morphology is fake, in that even though the sentence displays imperfective morphology, the event is interpreted perfectly.⁸ (8) does not mean that if the patient will be in the process of taking the syrup, he will be in the process of getting better; instead, it means that after he takes the syrup, he will get better. The same can be seen in (14)–(16).

- (14) An peθene o arχ₁iγos tha ton Oavame stin korifi tu vunū.
 if die/PST/IMP the chief FUT him bury/PST/IMP on-the top the mountain
 'If the chief died, we would bury him on the top of the mountain.'
- (15) An pandrevotan mia prigipisa, tha esoze tin eteria tu.
 if marry/PST/IMP a princess FUT save/PST/IMP the company his
 'If he married a princess, he would save his company.'
- (16) An piy,ene sto tax₁iðromio tha evlepe ton Petro.
 if go/PST/IMP to the post office FUT see/PST/IMP Peter
 'If helshe went to the post office, he/she would see Peter.'

(14), for example, does not mean that if the chief were in the process of dying, we would be in the process of burying him. Nor does (15) mean that during the wedding ceremony the groom would be in the process of saving his company. And (16) does not mean that on the way to the post office Peter will be seen. The burial will happen after the chief's death, the company will be saved after the wedding ceremony, and Peter will be seen after the post office has been reached. These are all perfective interpretations of the actions involved, yet the morphology on the verbs is imperfective.

That the imperfective morphology found in an FLV is interpreted perfectly can also be shown by the use of completive adverbials like *mesa se mia ora* 'in one hour' (Vendler 1967). Normally, such adverbials are compatible only with perfective morphology on the verb (17), not imperfective (18).

⁸ By this I mean that the antecedent refers to a situation where the drinking of the syrup has been completed. I write as if from the imperfective morphology we expect a progressive interpretation, though the progressive is, of course, only one of the uses of the imperfective, another one being the generic, which is also not the appropriate interpretation of (8).

- (17) Eχtise afto to spiti (mesa) se ena mina.
 build/PRF this house in one month
 'He/She built this house in one month.'
- (18) *Eχtize afto to spiti mesa se ena mina.'
 build/IMP this house in one month
 *'He/She was building this house in one month.'

However, in an FLV such completive adverbials cooccur with a verb that carries imperfective morphology, providing another indication that even though the FLV verbs look imperfective, they behave "perfectively."

- (19) An eχtizēs to spiti (mesa) se ena mina θa prolavenēs
 if build/IMP the house in one month FUT "have time enough"/IMP
 na to pulisīs prin to kalokeri.
 to it-sell before the summer
 'If you built this house in a month, you would be able to sell it before the summer.'

In other words, we are dealing here with "fake imperfective," that is, imperfective that receives a perfective interpretation. And again, we are faced with the question of whether this fake imperfective is a quirk or whether there is a principled way to account for its presence.

2.1.3 Cooccurrence In sections 2.1.1 and 2.1.2 we saw that fake past tense and fake imperfective aspect morphology are present in FLV conditionals. In this section we will see that the fake past can only appear with the fake imperfective (the reverse will be addressed in a later section).

Fake past cannot appear with perfective morphology. By this I mean that when the aspectual part of the verb is perfective, the past morpheme becomes real; that is, it receives a past tense interpretation and it talks about events of the past. This means that when the verbs in a conditional contain both past and perfective morphology, they will not permit a future-oriented interpretation; that is, the conditional will not be an FLV. For example, (20), which differs from (8) only in that its aspect is perfective, is not an FLV, but an epistemic conditional relating events that, if they occurred, did so in the past."

- (20) An ipχie afto to siropi (θa¹¹/prepi na) eγine kala.
 if drink/PST/PRF this Syrup (MOD/MUST_{NA}) become/PST/PRF well
 'If he drank the syrup, he must be better.'

⁹ I am talking here about the progressive use of the imperfective morphology. (18) also permits a generic interpretation along the lines of 'In those days he/she was able to build such a house within one month.' The generic reading is not relevant here; that is, (19) is perfectly fine without such a generic reading.

"That (20) receives an epistemic interpretation is not surprising, given that the sentence talks about eventualities of the past.

¹¹ The status of future marking in consequents is unclear. That is, it is unclear whether we are dealing with a modal or temporal interpretation, if the latter exists at all (there has been a long debate about whether items like *will* are modals or a future tense, and whether such a thing as future tense exists). In (20) the use of *θa* is clearly epistemic. For example, if I see somebody walk into the house wet, I can say *Hi vreχi* 'It must be raining', which translates into English as 'It must be raining'. It is possible that a sentence like *Hi vreχi* 'It must be raining' is the consequent of an unspoken antecedent of the form

Both the FLV (7) and the epistemic conditional (20) contain past tense morphology, but the past morphology in the FLV is fake, in that the sentence receives a future orientation, whereas the past tense morphology in (20) receives a temporal past interpretation. In other words, *it seems that by just changing the aspectual morphology of the verb, we affect its temporal interpretation, even though we leave the tense morphology untouched.*

This result is also demonstrated in the following examples. We have already seen that an FLV (which contains past imperfective morphology) has a future orientation, which can be brought out by future-oriented adverbials as in (21a). If we retain the past tense morphology but change the aspectual morphology from imperfective to perfective, the future-oriented adverbials are no longer possible. These adverbials clash with the past orientation of the sentence, as in (21b). The ungrammaticality of (21b) has, of course, nothing to do with some general unacceptability of adverbials. If the adverbs are past-oriented, the sentence becomes fine again, as in (21c).

- (21) a. An efevy₁es avrio Oi eftanes eki tin ali evdomaða.
 if leave/PST/IMP tomorrow FUT arrive/PST/IMP there the other week
 'If you left tomorrow, you would get there next week.'
- b. *An efiy₁e avrio tha eftase tin ali evdomaða.
 if leave/PST/PRF tomorrow FUT arrive/PST/PRF the other week
- c. An efiγ₁e proxtes (Oaiprepi na) eftase xθes.
 if leave/PST/PRF day-before-yesterday (MOD/must NA) arrive/PST/PRF yesterday
 'If he/she left the day before yesterday, he/she must have arrived yesterday.'

(21a) includes both a fake past and a fake imperfective, and so future-oriented adverbials can occur in this sentence. In (21b) the presence of perfective prevents past morphology from being fake (as we saw, past needs imperfective morphology in order to be fake). In other words, past morphology in (21b) receives a temporal past interpretation, and so future-oriented adverbials are excluded. The morphology of (21b) (past and perfective) can, of course, be accompanied by past-oriented adverbs, as shown in (21c).

The next logical step is to search for other occurrences of the fake past and see whether the fake imperfective can appear there. There is indeed another environment where we can observe the cooccurrence under discussion. It's time then to discuss wishing, albeit in cursory fashion.

2.2 Wishes

2.2.1 *Form. . . The morphology found in CF wishes is identical to that found in CF conditionals. This similarity can be seen only partly in English, where the item **wish** has lexicalized a meaning*

'If you are so wet, . . .'. Given the clearly epistemic use of *H* here, I give it a different gloss than I have so far, putting aside the question of whether the appearance of this particle in nonepistemic sentences is also modal. I will assume that there is a principled way to relate the future and other modal uses of *tha* but I will not attempt this here, other than to say that the epistemic use can also be argued to include something of temporal precedence. For example, it could indicate that the consequent is a conclusion that can be drawn after the antecedent has been incorporated as a premise (*Well, if this creature you discovered has a heart, it will also have a kidney*).

that appears with more morphology in other languages. Greek (along with many other languages) uses the verb *want*¹² with particular morphology to convey what English wish does.

- (22) O Kostas tha iθele na oðiγuse kokino aftokinito.
 Kostas MOD want/PST/IMP PART drive/PST/IMP red car
 'Kostas wishes he drove a red car.'

The morphology seen in the complement of verbs of CF wishing is the same as that in a CF conditional antecedent, namely, imperfective and past. The morphology seen on the matrix verb of a CF wish is that of a CF consequent, namely, future marking, imperfective, and past. In other words, a common crosslinguistic picture is the following, where M_1 , M_2 stand for particular combinations of morphemes on the verb:

- (23) a. if ... M_1 ... then ... M_2 ...
 b. *want*- M_2 that ... M_1 ...

The similarity between CF wishes and CF conditionals also extends to the temporal component of counterfactuality. Recall that a PresCF has past morphology and expresses a situation that is counterfactual to the present. This is also the case in CF wishes, as can be seen in (22), where even though the verb is in the past tense, what is conveyed is that Kostas does not at present drive a red car. Again, then, we see that past morphology can be put to CF purposes and that it then can receive a present tense interpretation (i.e., it is a fake past).

A PastCF contains pluperfect morphology. Similarly, in wishes a wisher who counterfactually desires that a situation had been different in the past uses the pluperfect in the complement.

- (24) O Kostas tha iθele na iχi,e pai stin Olanðia prin apo Geka xronia.
 Kostas MOD want/PST/IMP NA had gone to Holland before from ten years
 'Kostas wishes he had gone to Holland ten years ago.'

(24) conveys that Kostas did not go to Holland ten years ago.

In English the facts are similar. The English verb *wish* has the characteristic that the clause below it cannot appear in the present tense. To convey an unfulfilled desire about the present, a speaker uses past tense morphology. We are dealing with a fake past since this past tense morphology does not receive a past interpretation. To convey an unfulfilled desire about the past, the speaker uses the pluperfect.¹³

- (25) a. *I wish I have a car.
 b. I wish I had a car (at present).
 c. I wish I had had a car (back then).

¹² The verb *prefer* can also be put to CF purposes.

¹³ The same pattern holds for a more archaic construction (Jon Nissenbaum, personal communication).

- (i) *Would that John is here.
 (ii) Would that John smoked.
 (iii) Would that John had left.

The past tense morphology in (25b) lacks certain other interpretive characteristics of the real (i.e., temporal) English past tense. Specifically, past tense permits both generic and eventive readings, whereas present tense permits only generic readings. The sentence *John smoked* can mean either that John smoked on a particular occasion in the past or that John in the past had the habit of smoking. On the other hand, *John smokes* means only that John is a smoker, not that he is smoking at the moment of utterance. If we observe the past tense morphology in CF wishes under this light, we see that it does not have the generic/eventive ambiguity of the past tense. Sentence (26) can mean only that the speaker desires John to be a smoker (and in particular to be a smoker in the present). It does not express a desire for John to have smoked on a particular occasion in the past. For the latter, the pluperfect (27) must be used, just as the pluperfect in CF conditionals is used to talk about a CF situation of the past.

(26) I wish John smoked ('yesterday).

(27) I wish John had smoked yesterday.

I will argue in the next section that a pluperfect, which is commonly assumed to contain two levels of past, uses one of its 'past' layers for CF purposes and the other for temporal purposes. The complement sentence in (27), then, has one layer of temporal past, and the English temporal past is ambiguous between a generic and an episodic interpretation. So *I wish John had smoked* talks either about a desire for John to have smoked on a particular past occasion or about a desire for John to have been a smoker in the past.

We have seen that the morphology in CF wishes is similar to that in CF conditionals. There is one difference that can be seen in English. I will briefly point it out here and return later to what underlies it. Consider the FLV in (28a) and its *wish* equivalent. Given what I have said so far—namely, that the morphology of a CF antecedent is the same as the morphology on the complement of a CF wish—one would expect the CF wish to look like (28b). However, (28b) is ungrammatical and instead the CF wish looks like (29).

(28) a. If he left tomorrow, he would get there next week.¹⁴

b. *I wish he left tomorrow.

(29) I wish he would leave tomorrow.

The presence of *would*¹⁵ in (29) becomes unsurprising once we realize that the verb *leave* inside an antecedent receives a future interpretation. For example, *if he leaves* means 'if he leaves in the future', not 'if right now he is in the process of leaving'. This becomes clear especially in contrast to a predicate like *he sick* in the antecedent (e.g., *if he is sick*, which can be about the

¹⁴ (28b) is fine on the scheduled reading of the present tense, that is, with the complement CP corresponding to *he leaves tomorrow* (David Embick, personal communication).

¹⁵ This is not dispositional *would* since it can appear also with nonagentive subjects.

(i) I wish it would rain.

(ii) I wish it would become obvious to you once and for all that . . .

present—i.e., 'if he is sick right now'). In other words, an antecedent contains an interpretive element of futurity. This element is missing in the structure of the complement of *wish* and is therefore lexically provided in the form of *woll* (= *will* minus tense). This element, in combination with the past morphology in the complement, is overtly realized as *would*. With these considerations we make the content of the complement of CF (FLV) *wish* identical to that of the CF (FLV) antecedent, in that they both contain past (and imperfective) morphology as well as an interpretive element of futurity.

English *wish* is not restricted to CF contexts.

- (30) a. We wish you a Merry Christmas.
 b. He wished for a car.
 c. I wish to go to Holland for my sabbatical.

The verb *wish* is counterfactual only if its complement is a (tensed) CP, and then CF morphology is obligatory.

Similarly in MG (and other languages) the form of the verb *want* that is used in CF wishes can be used in non-CF environments, along the lines of (30a–c), only this must be shown in a more roundabout way. It can, for example, take an NP complement.¹⁶

- (31) θa iθela ena kokino aftokinito.
 MOD want/PST/IMP one red car
 Lit. 'I would want a red car.'
 'I would like a red car.'

MG has no embedded infinitival clauses (see Iatridou 1988, and references therein), but we can still set up the equivalent of (30c) (i.e., of *wish* with a clausal complement but without a CF interpretation). Compare the following two sentences:

- (32) θa iθela na itan psilos.
 MOD want/PST/IMP NA be/PST tall
 'I wish he were tall.'
- (33) θa iθela na ine psilos.
 MOD want/PST/IMP NA be/NPST tall
 'I would like him to be tall.'



(32) and (33) differ only in the morphology of the embedded verb 'be'. In (32) this verb carries past morphology, in (33) nonpast. As the translations indicate, only (32) expresses a CF wish. (33) is not ungrammatical (as English **I wish he is tall* is), but it expresses a still fulfillable and indirectly expressed desire, similar to *I would like him to be tall*.

In other words, when we compare the morphology of CF conditionals to that of wishes, we must make sure we are dealing with CF wishing. (To put it differently, just as there are non-CF conditionals, so there are also non-CF desires.) It is only when the complement of *wish* or its

¹⁶ Polite, indirect requests are often expressed in this way.

equivalent in other languages contains past morphology that we are dealing with CF wishing. That is, just as conditionals must contain past tense morphology in both antecedent and consequent to be CFs, so CF wishes must contain past tense morphology in both clauses—on the matrix verb *want* (lexicalized into the verb *wish* in English) and on its (CP) complement.

Looking finally at the aspect component of the complement of CF wishes, we find that as with CF conditionals, only the imperfective can appear.

- (34) Qa iθela na etroy₁e kalitera.
 MOD want/PST/IMP NA eat/PST/IMP better
 'I wish he/she would eat better.'

- (35) *θa iθela na efay₁e kalitera.
 MOD want/PST/IMP NA eat/PST/PRF better

The only difference between (34) and (35) is in the aspectual morphology on the embedded verb: imperfective in (34), perfective in (35). Only (34) is grammatical.

And again this imperfective can be shown to be fake: the predicates in question have a completive (i.e., perfective) interpretation, not the interpretation of an ongoing event, and they are compatible with completive adverbials.

- (36) θa iθela na telioname / χtizame to spiti mesa se ena mina.
 MOD want/PST/IMP NA finish/PST/IMP / build/PST/IMP the house in a month
 'I wish we would build the house in a month.'

So far we have seen that fake past and fake aspect both occur in CF wishes. I described the case of MG, but formal similarity between CF conditionals and CF wishes is very widespread. As I said earlier, the complex of morphemes that appears on the CF conditional antecedent also appears on the complement of CF *want*, and the complex of morphemes that appears on the CF conditional consequent also appears on the embedding verb *want* (which in English lexicalizes into *wish*). Besides temporal and aspectual morphology, one other morphological component supports the pattern of similarities between CF conditionals and CF wishes; this regards mood. I will return later to the general issue of mood in CF conditionals; for now I will just say that **the languages that have subjunctive in the antecedent of a CF conditional also have subjunctive in the complement of a CF wish (this can also be seen in the English register that contains subjunctive were: *If he were here . . . and I wish he were here*). Also, the languages that have conditional mood in the consequent have conditional mood on *want* (in its form that means *wish*).**

2.2.2 . . . and (a Tiny Bit on) Meaning of Wishes We have seen that CF conditionals and CF wishes contain the same morphological elements on the verb. Before I discuss how this morphology may be related to the meaning of counterfactuality, I would like to discuss (and reject) one possibility. Could the counterfactuality of wishes simply arise because CF wishes contain (overtly or covertly) the verb *want*; could it be this verb that contributes the counterfactuality, not the complex of CF morphology? More specifically, the question is whether and how **A** wants **B** says that **A** thinks she is not in a **B** world. Is this an implicature, a condition on felicitous use, or an assertion? And does CF *wish* mean something more than this?

First of all, with *want*, the meaning that A is not in a B world is cancelable (37)–(39), showing that **A's not being in a B world is not part of the assertion of *want*. Such cancellation does not seem possible with *wish*** (40)–(41).

(37) I have what I want.

(38) I live in Bolivia because I want to live in Bolivia.

(39) A: You're drunk!

B: Yes, and I want to be because only this way can I forget about . . .

(40) *I live in Bolivia because I wish I lived in Bolivia.

(41) *I am drunk and I wish I were drunk.

So the A-not-being-in-a-B-world meaning of CF *wish* (or of *want* augmented by CF morphology in languages like Greek) is stronger than that of plain *want*; in other words, it is not cancelable. This means that the meaning of counterfactuality associated with CF wishes is not reducible to the presence of *want*. I will therefore assume that the difference is located in the CF morphology, which is where CF *wish* differs from *want*.

The issue of cancelability brings us to the question of the similarity between the counterfactuality of CF wishes and that of CF conditionals. There is ample discussion in the literature to the effect that the counterfactuality of conditionals appears to be cancelable. But if (40) and (41) show that the counterfactuality of CF *wish* is not cancelable, isn't this a difference that should dissuade us from trying to find a common morphological source for the counterfactuality in the two environments? Fortunately not, because it seems that a difference can be teased apart. Consider the following sentences:

(42) John wishes he were married to exactly the type of woman he is married to but he doesn't know it.

(43) In the movie *True Lies* Jamie Lee Curtis wishes she were married to an exciting person and she is.

(44) (Said by an expert on van Gogh:) Jean, who lives in Arles, wishes he lived in a place where van Gogh had spent some of his life. Poor Jean! He thinks that van Gogh was an Icelander who never left his island.

What (42)–(44) show is that **the counterfactuality is subject-, not speaker-oriented. If the subject is the speaker, as in (40)–(41), then the counterfactuality appears noncancelable. If the speaker is not the subject, then the counterfactuality is cancelable with respect to the beliefs of the speaker.**

We might be able to capture these intuitions with paraphrases like the following:

(45) A wishes that B (CP): A thinks that if she had B, she would be happy (that she has B)

(46) A wants B (INF/NP): A thinks that if she has B, she will be happy (that she has B)

These paraphrases capture the fact that the counterfactuality of CF wishes is subject-oriented and

not speaker-oriented, since they contain an opacity-inducing attitude verb. In addition, they capture the fact that the desire expressed, even if it is about a situation in the past, is a desire the subject has in the present. **Possibly they should make us suspect that the only true CF environment is the CF conditional and that CF wishes are counterfactual because they contain CF conditionals as part of their meaning.**'' However, I will leave further reduction between CF wishes and CF conditionals for a different occasion. As is obvious, this basic description and these paraphrases of the meaning of wishes need considerable refining.

3 Possible Accounts of Past Tense Morphology in Counterfactual Environments

Until now I have been using the term *fake past* to refer to past morphology that receives a nonpast interpretation. I will explore the working hypothesis that the contribution of this morphology is, in fact, real. However, I will continue to use the term *fake* for convenience in referring to the apparently problematic interpretations of the morphemes under consideration.

In the previous section we saw that CF wishes contain fake past. We have also seen that FLVs contain fake past. I will return later to a comparison between FLVs and PresCFs; for present purposes, I will simply show that there is fake past in PresCFs as well.

- (47) a. If Fred was drunk, he would be louder.
 b. If Mary knew the answer, she would be the only one.
 c. If Peter believed in ghosts, he would be afraid to be here.
 d. If I had green eyes, I would be prettier.
 e. If Anne worked at a university, she would have better benefits.

These sentences convey that the speaker believes that Fred isn't drunk *now*, that Mary doesn't know the answer *now*, that Peter doesn't believe in ghosts *now*, that I don't have green eyes *now*, and that Anne doesn't work at a university *now*. In other words, the (CF) situations described overlap with the utterance time; that is, they are not temporal past, even though they contain past tense morphology. In other words, PresCFs contain fake past. Exactly the same holds for PresCFs in MG and many other languages.

It is also easy to show that PastCFs contain fake past. Recall that PastCFs in both MG and English contain a pluperfect. The pluperfect contains two layers of past (Steedman 1997, and many others). In counterfactual environments one of these layers of past is fake; the other one

¹⁷ Of course, these representations inherit the known nonmonotonicity properties of conditionals. If I get the car I want, but my son is sick, will I be happy? See von Stechow, forthcoming, and references therein for more on this topic.

There are at least two more issues that the representations in (45)–(46) do not solve. First, one should resist the temptation of thinking that the morphology on the embedded consequent is what appears on *want* in languages like MG; recall that *want* even with CF morphology, like English *wish*, is not in itself sufficient to ensure counterfactuality. Second, there is a question about what sentences like (i) mean.

(i) He thinks he wants to have a car.

It seems that (i) means what (46) does and not what (46) embedded below another occurrence of *think* would mean. It is unclear to me at this point whether this is a problem, or exactly what we would expect.

receives a temporal past interpretation. This point becomes clearer if we consider a sentence that cannot normally take the pluperfect. Consider (48a), which is ungrammatical on the most common reading of what it means to be tall, but acceptable when it forms a PastCF antecedent.

- (48) a. "Napoleon had been tall.
 b. Napoleon was tall.
 c. If Napoleon had been tall, he would have defeated Wellington.

The PastCF antecedent in (48c) describes a (CF) past situation. One layer of past is not interpreted temporally (fake past). The second layer of past of the pluperfect is interpreted temporally and yields the equivalent of *Napoleon was tall*.

In other words, FLVs, PresCFs, and PastCFs all contain a fake past. What is this fake past? There are, in principle, several ways to deal with a morpheme when it does not appear to be receiving its expected interpretation.

One approach is to say that the morphology simply coincides with that of another paradigm (accidental homophony). In the case under discussion it would be to say that there is a feature that has counterfactuality as a primitive meaning and that this happens to look like the overt signal for the past/imperfective. This is the approach assumed by Portner (1992) and others (especially philosophers, for whom matters of form do not usually arise). This morphological "coincidence" should probably be dismissed under the weight of the wide crosslinguistic distribution of the phenomenon in question. Past tense morphology as a component of CF morphology is found not only throughout Indo-European but also in totally unrelated languages, among them Papago (Hale 1969), Proto-Uto-Aztecan (Steele 1975), Japanese, Korean (Han 1996, Cho 1997, both within the framework of an earlier version of this article), Hebrew, Turkish, Basque, and others (James 1982, Fleischman 1989).

A second approach is to assume that, contrary to appearances, the morpheme *does* mean what it always does, but that other interpretive parts of the environment contribute to the final interpretation in such a way that the contribution of the problematic morpheme is hidden or overridden. In the case of the fake past in counterfactuality, for example, this approach would translate into assuming that the past morphology does contribute the meaning of a temporal past but that elements of the semantics of conditionals combine with this contribution to give the CF reading. Such an approach is briefly sketched by Hornstein (1991), who relies on the work of Dudman (1983, 1984a,b). (I should emphasize, though, that deriving counterfactuality is a very small side point in this work; it may be unfair to highlight shortcomings on a topic clearly outside the scope of the work.)

Finally, in a third type of approach the past tense morpheme always has the same meaning, but the domain it operates on varies according to the environment. In other words, what we call the "past tense morpheme" has a certain meaning σ such that in certain environments E_1 , σ receives a temporal past interpretation and in certain other environments E_2 it receives a different one. Under this approach the meaning of temporal past is not a primitive but is derived from a in combination with other interpretive elements of E_1 .

The last kind of approach is the kind I am taking here.¹⁸ More specifically, I propose that what we call the "past tense morpheme" — or rather, the feature whose phonetic realization we call the "past tense morpheme" — provides a skeletal meaning of the form (49).

(49) $T(x)$ excludes $C(x)$.

$T(x)$ stands for "Topic(x)" (i.e., "the x that we are talking about"). $C(x)$ stands for "the x that for all we know is the x of the speaker." From now on I will use the term exclusion feature (*ExclF*) to refer to the feature that, when it ranges over times, we call "past tense."

The variable x can range over times or worlds. When it ranges over times, we get

(50) $T(t)$: the time interval (set of times) that we are talking about (I borrow the term topic time from Klein 1994)

(51) $C(t)$: the time interval (set of times) that for all we know is the time of the speaker (i.e., utterance time)

We can now see that (49) will yield the following when its range is the time dimension:

(52) The topic time excludes the utterance time.

I will follow Palmer (1986), Vlach (1993), Kamp and Reyle (1993), and many others in treating tense as only past or present and woll as modal. It follows, then, that (52) means that the topic time is in the past with respect to the utterance time.¹⁹

The above captures the fact that the past tense expresses a temporal relation of precedence between the topic time and the utterance time and not between the utterance time and the situation (or event) time (the interval throughout which the predicate holds). I would like to emphasize this point, because if the meaning of the past tense were a temporal relation between an event and the utterance time, the skeletal frame that is attributed here to *ExclF* would not be able to generate the meaning of temporal past. Simplifying an example of Klein's (though others have made this point as well), if temporal past were the relationship between an event and the utterance time, we would be making the wrong prediction in, for example, the following case:

- (53) a. She walked into the room and saw a table.
b. It was wooden.

Sentence (53b) does not assert that the woodenness of the table precedes the utterance time; rather, it asserts that the topic time (as already set in the first utterance) precedes the utterance time, and furthermore, that the topic time is characterized as containing a wooden table. The

¹⁸ Lyons (1977) and Isard (1974) appealed to a notion of "distancing" that as a metaphor would cover both the past tense and counterfactuality. See Givón 1994, where Fleischman's (1989) metaphor approach is criticized for not relying on any coherent notion of metaphor. I take the current proposal and Lyons's and Isard's to be based on the same intuition. In a similar vein, see Hale 1969.

¹⁹ Even though there are independent arguments in favor of this position, the reason I use it here is simplicity. Suppose the future is a tense. Then, if we substituted 'precedence' (i.e., noninclusion augmented by before) for mere noninclusion, we would get the meaning of temporal past. The 'before' part of this skeletal frame when the latter is applied to the domain of worlds could then be said to be inapplicable or vacuously satisfied.

nature of the predicate 'wooden' is such that we understand it to hold of the table at the utterance time as well, but nothing is asserted directly about that. This becomes clearer when a stage-level predicate is used.

- (54) a. She walked into the room and saw Peter lying on the floor.
b. He was drunk.

Here, sentence (54b) merely asserts that Peter was drunk during the topic time. Nothing is said about whether his drunkenness extends and includes the utterance time. **It is important for us to be clear on the fact that the temporal past is a relationship between the topic time and the utterance time and not between the situation time and the utterance time; this relationship will be duplicated when ExclF ranges over worlds.**

When access to alternative worlds is given, as is the case in conditionals²⁰ and below want/wish, then the skeletal frame (49) can range over worlds (toward the end of this section I discuss whether it must). In such a case we get

- (55) T(w): the worlds that we are talking about (topic worlds)
(56) C(w): the worlds that for all we know are the worlds of the speaker²¹ (actual world)

Plugging these values into the schema in (49), we then get

- (57) The topic worlds exclude the actual world.

In other words, the worlds of the antecedent do not include the actual world. This follows the lead of Stalnaker (1975), who argues that in CF conditionals the speaker goes outside the common ground to satisfy the antecedent. In the current approach I argue that (57) is added to the meaning of a non-CF conditional. In other words, the meaning of a CF conditional is exactly the meaning of a non-CF conditional augmented by (57).²² This view permits us to isolate the morphosyntactic elements that distinguish CF conditionals from non-CF conditionals and investigate how they provide the former with the meaning of counterfactuality.

How, then, is the meaning of counterfactuality contributed? And why is it cancelable (see section 1)? Consider, for comparison, the cancelable implicature in the following conversation:

- (58) A: What do you think about Peter and Ian?
B: Well, I like Ian.

²⁰ Of course, ExclF takes scope inside the conditional (antecedent) and not outside it.

²¹ For this subset relationship to hold, the "world according to the speaker" should be a set. This has been independently argued for. As Lewis (1986:27) puts it, "The content of someone's knowledge of the world is given by his class of epistemically accessible worlds. These are the worlds that might, for all he knows, be his world; world W is one of them iff he knows nothing, either explicitly or implicitly, to rule out the hypothesis that W is the world where he lives." For example, I definitely think that the actual world can be characterized right now by the proposition "I am sitting in front of my computer." However, as I have no knowledge about the weather conditions in Thessaloniki at this moment, my actual world (set of worlds) also contains the mutually incompatible "I am sitting in front of my computer and it is raining in Thessaloniki" and "I am sitting in front of my computer and it is not raining in Thessaloniki."

²² A long discussion in the literature argues that a CF conditional does not entail the corresponding non-CF conditional (for discussion, see von Stechow, forthcoming, and references therein).

B's response can have the implicature that B does not like Peter, and this may indeed be the right conclusion to draw. But B has asserted no dislike for Peter, and so can always come back later to cancel the implicature and add that he likes Peter too. Speaker B can choose to make the conversational move in (58) if he either dislikes Peter or does not know how he feels about him. These are similar to the conditions under which a CF conditional is uttered, namely, when the speaker believes $\sim p$ or when the speaker is ignorant about the status of p . In fact, I argue that this description of the nature of the above conversation also depicts CF conditionals. The speaker aims to discuss p , q , and their relationship, and while doing so marks his or her utterance as being about a set of worlds (the topic worlds) to which the actual world does not belong. The topic world is a subset of the p worlds; that is, the topic worlds do not exhaust the p worlds (e.g., Lewis 1973, Stalnaker 1975). (A CF conditional is a statement not about *all* p worlds but about those that are in many/all relevant respects similar to the actual world (Lewis and Stalnaker differ regarding the issue of similarity, but that debate lies outside the scope of this article). Remote or "strange" p worlds, on the other hand, are not among the topic worlds. Take a classical example like Lewis's *If kangaroos had no tails they would topple over*. This sentence is not about worlds in which kangaroos have no tails but hold crutches. It is about worlds that are like ours as far as relevant properties of kangaroos are concerned (except, of course, for the question of whether kangaroos have a tail). These worlds may differ from ours in whether it is raining in Thessaloniki, or in whether all dogs like cheese, but such differences have no impact on the truth conditions of the conditional.) This conversational move brings about a certain implicature, namely, that if the speaker chooses to predicate p of worlds other than the actual one, it is because he or she does not think that the actual world is a p world. But of course the speaker has not *asserted* that the actual world is $\sim p$ any more than speaker B in (58) asserts that he dislikes Peter. All a CF conditional marks is that the actual world is not among the p worlds *that we are talking about*; it does not mark that the actual world is not among the p worlds. So cancelability is not a problem for the present approach; it is, actually, predicted by it.

As a reviewer points out, there is a temporal analogue to the cancelability of the counterfactuality of CF conditionals. Consider the case of a speaker who utters the following two sentences:

- (59) a. John was in the classroom.
 b. In fact, he still is.

Sentence (59a) asserts that at the topic time the situation S (= John is in the classroom) holds and that the topic time excludes the utterance time. But the speaker did not assert that the situation time excludes the utterance time. If the speaker had asserted this, then (59b) would have been a contradiction (and could not have been introduced by *in fact*). The discourse in (59) *first asserts that the topic time excludes the utterance time and subsequently asserts that the situation time includes the utterance time*. In effect this means that the discourse asserts that the situation time is large enough to include both the topic time and the utterance time, with the former excluding the latter.

Similarly, when the counterfactuality of a CF conditional is canceled, the discourse *first asserts that the topic worlds (the analogue of topic time) exclude the worlds of the speaker and*

subsequently asserts that the set of p worlds (the analogue of situation time) includes the worlds of the speaker. And again, this means in effect that the set of p worlds is large enough to contain the topic worlds and the utterance worlds, with the former excluding the latter.

Before I conclude this section, a final point about the interpretation of the past tense morpheme inside a conditional: I said earlier that when access to alternative worlds is given, the morpheme under discussion can range over worlds. However, nothing said so far forces it to do so; thus, we predict that "past" morphology should also be able to have a truly temporal interpretation in conditionals. This is borne out. The verb carrying "past" morphology in the antecedent in (60a–b) can be interpreted either way.

- (60) a. If he took that syrup, he would get better. (FLV)
 b. If he took that syrup, he must be better now. (epistemic)

Of course, once adverbs are added, an antecedent like the one in (60a–b) ceases to be ambiguous. Future-oriented adverbs will permit only the FLV reading and past-oriented adverbials only the epistemic reading. As noted earlier, the fact that an epistemic interpretation arises in examples like (60b) is no mystery; this is the only way a conditional whose two clauses talk about situations of the past can be interpreted.

I have been using the term *fake past* to refer to the cases where the past tense morpheme does not receive a past temporal interpretation but ranges over worlds and yields a CF reading. It should be clear by now that within the present proposal there is nothing "fake" about this use. I will keep the term for convenience for the cases where *ExclF* ranges over worlds, not times. I will use *ExclF* when I refer to the morpheme—or the feature—without any specification of the domain (worlds or times) it operates on.

Consistent with, if not supportive of, the present position—that one and the same syntactico-semantic feature can receive either the past temporal or CF interpretation—is the widespread crosslinguistic distribution of the phenomenon described.

I have not argued that the morphology associated with past tense must have this wider function in all languages—only that it is a common and, in a way, reasonable source for the expression of counterfactuality.²³

4 Reenter the PresCF

So far we have looked at the morphology of an FLV. Let us now consider the form of the PresCF. Here, again, is an example:

- (61) If I believed in ghosts, I would be afraid now

It turns out that the PresCF and the FLV have the same grammatical components. They both have past morphology on the predicate of the antecedent, and in the consequent they both have

²³ For example, according to Rackowski (1998), in Tagalog CF conditionals use a specialized complementizer and the morphology is real; Hebrew uses both a specialized complementizer and a fake past. According to Cho (1997), both Japanese and Korean have fake past; but in addition, when a specialized CF complementizer is present, temporal morphology receives a temporal interpretation.

future marking in combination with past morphology. We just finished connecting the meaning of the FLV with ExclF, but now it turns out that the very same morphology appears in a PresCF. What, then, determines whether a conditional will be a PresCF or an FLV? The answer, as we will see, lies in the Aktionsart of the predicate involved. An FLV contains a telic predicate (e.g., *drink the syrup*), whereas the PresCF contains an (individual-level) stative (e.g., *believe* in (61)). The sentences in (62) and (63) contain more examples of telic predicates with ExclF yielding FLVs and individual-level statives with ExclF yielding PresCFs, respectively.

- (62) a. If he took the syrup, he would get better.
 b. If you gave him that book, he would read it.
 c. If he read this book, he would pass his exams.
- (63) a. If I knew this were chocolate, I would eat it.
 b. If I were tall, I would be able to reach the ceiling.
 c. If Peter smoked/were a smoker, I would not like him.

What about stage-level statives? ExclF on stage-level stative predicates can yield either FLVs or PresCFs, depending on the larger environment. Such configurations are compatible with future-oriented adverbs and can therefore form an FLV, as in (64a). But they can also be used to form a PresCF, as in (64b).

- (64) a. If he were drunk at next week's meeting, the boss would be really angry. (FLV)
 b. If he were drunk, he would be louder. (PresCF)

So far we have seen that in a conditional, ExclF will yield an FLV with a telic predicate, a PresCF with an individual-level stative predicate, and either an FLV or a PresCF with a stage-level stative predicate. Why should this be? A logical strategy is to see whether there is another part of the grammar on which these predicate types group in a similar way. And indeed there is. Consider the three types of predicates when they are combined with present tense morphology in the antecedent of a conditional. The point of (earliest possible) evaluation will differ with predicate type. When the antecedent contains a telic predicate, the situation described can only come about at a time after the utterance time. When it contains an individual-level stative predicate, it is talking about a situation that, if it is to hold, will already be doing so at the utterance time. Finally, when the antecedent contains a stage-level stative predicate, it can either describe a situation that, if it is to hold, will do so in the future, or a situation that can contain the utterance time. In short:

(65) *Telic predicates*

If he takes the syrup, ... (if *p* is true, it will be so in the future)

(66) *Individual-level statives*

If he is tall, ... (if *p* is true, it will be so always, hence also now)

(67) *Stage-level statives*

a. If he is drunk next week, ... (if *p* is true, it will be so in the future)

b. If he is drunk, we should not let him drive. (if *p* is true, it will be so now)

Table 1

What type of conditional the predicate types yield when combined with a "past tense" in the antecedent

	FLV	PresCF
Telics	+	
Individual-level statives		+
Stage-level statives	+	+

Table 2

Time of evaluation with present tense in the antecedent

	Future	Now
Telics	+	
Individual-level statives		+
Stage-level statives	+	+

Table 1 shows the type of conditional the predicate types yield when combined with past tense morphology. Table 2 shows the points of earliest evaluation of the three predicate types. From the fact that the marks are in the same boxes in the two tables, we conclude that for both diagnostics, telic predicates behave one way, individual-level stative predicates another way, and stage-level stative predicates in both ways.²⁴

Without going into detail, I believe that the pattern shown in table 2 might be explained along the following lines. For nonstative predicates, the simple (i.e., nonprogressive) form in English is interpreted as a perfective (bounded). A perfective can never be interpreted as being contemporaneous with the utterance time. In fact, many languages simply lack the morphological paradigm for present perfective. In languages and environments that have this form, it is reinterpreted as past or future (Comrie 1985). Something like this may also be going on in table 2, where the telics are interpreted as perfective and the conditional construction permits them to be reinterpreted as being about the future. At any rate, the exact explanation of table 2 is less relevant for our purposes than the parallels between tables 1 and 2.²⁵

²⁴ Missing from this discussion are activities. They are well behaved with respect to the generalizations in tables 1 and 2; they have the "+" in the same place as telics. Activities in the bare form inside (English) conditionals are similar to telics, in that they are interpreted as inchoatives, effectively change-of-state predicates. That is, *If he pushes the cart* means roughly *If he starts pushing the cart or If he gets some pushing of the cart done*.

²⁵ In many of the languages examined, FLVs and PresCFs have the same morphology—some exceptions being Hindi, Classical Greek, and Korean (see Han 1996 for the last). The languages in which PresCFs and FLVs have the same morphology are the languages where the same morphology is carried by all the predicates in table 2 (*not* table 1!). That is, if a language needs a future marker in order to have its conditional antecedent interpreted in the future (left column of table 2), whereas it uses (e.g.) present tense in the right column of table 2, then FLVs and PresCFs will of course not have the same morphology. Such a case is Hindi (Rajesh Bhatt, personal communication).

Let's see how it all fits together. Recall that one ExclF is used in setting up topic worlds that exclude the world of the speaker. The remainder of the morphology/predicate is interpreted further. Take, for example, a conditional that contains one ExclF on an individual-level predicate. After the topic worlds have been set up, the remainder of the sentence contains a predicate that can be evaluated in the present (see table 2). This means that the topic worlds are a set of worlds that are alternative to the present (a PresCF).

For the FLV and the PastCF things work similarly. First let us look at the PastCF, which contains a pluperfect in the Indo-European languages discussed here. The pluperfect contains two levels of past (Steedman 1997). For us this means that the pluperfect contains two ExclFs. In the PastCF the two ExclFs are interpreted as follows. One ExclF ranges over worlds, the other over times. In other words, one ExclF is used to set up topic worlds that exclude the world of the speaker. The second ExclF is interpreted temporally; it is used to set up a topic time that excludes the time of the speaker (the utterance time). In other words, the second ExclF reaches back into the history of the topic worlds, *not* into the history of the world of the speaker (the actual world). This permits us to talk about CF situations of the past.²⁶

Implicit in the above is that it is possible inside the topic worlds that exclude the world of the speaker/actual world to refer to time points/intervals of the world of the speaker/actual world. In other words, temporal designation behaves like rigid designation.²⁷ In the terminology used by Bach (1981), time points/intervals in the topic worlds are interpretable because time is absolute across possible worlds. This means that the reference of expressions like February 22, 1995, *now*, *tomorrow* will be the same in different possible worlds and by extension, the same in the topic worlds as in the actual world.

Finally, let us consider FLVs, which contain ExclF on a telic predicate. The ExclF is used to set up topic worlds that exclude the world of the speaker. What remains, since the sentence contains a telic predicate, is evaluated in the future (table 2).

Before proceeding to the last issue in this section, I would like to emphasize two points. First, implicit in the discussion so far is a certain treatment of conditionals without CF morphology,

²⁶ What happens when we want a CF conditional to have the temporal interpretation of pluperfect? This is, in fact, possible.

(i) If Rembrandt had already married five times by the time he was thirty, we would have found traces of that in his self-portraits.

It seems that a CF conditional with a pluperfect temporal interpretation would need three levels of ExclF: one for counterfactuality and two for the temporal interpretation. English has no such form and the pluperfect has to do the job here, in effect a case of haplology.

There is one use of the pluperfect in CF conditionals that seems mysterious to me. Consider the following sentence (which, however, is not accepted by all):

(ii) If Fred had left tomorrow, he would have had a more pleasant journey

Sentence (ii) may seem like a counterexample to the description of the role of the pluperfect in the text. However, things are much more complicated in that (ii) is only utterable if Fred has already left. One cannot say (ii) if one is merely considering different possible days of departure. How this meaning comes about is unclear to me.

²⁷ One can say things like *If it were 3 p.m. now, . . .* But this is no more an argument against temporal designation being rigid than clauses like *If I were you, . . .* or *If I was Mary, . . .* show that proper names or referential pronouns are not rigid designators.

namely, the position that present tense morphology does not receive a straightforward temporal interpretation any more than ExclF does in this environment. This can be seen in (65)–(67) and table 2 where, even though there is present tense morphology, the temporal interpretation depends on the Aktionsart. The present tense — or possibly just the absence of ExclF, if its absence results in a default morphology — would then just indicate the absence of the exclusion relationship we have been talking about.²⁸

Second, we can begin to flesh out one of the questions we started with: is there such a thing as a future CF? It would be misleading to describe FLVs as not being CF conditionals.²⁹ They have the components that bona fide CF conditionals have (i.e., CF morphology); it is the Aktionsart of the predicate that causes the future-oriented meaning, with the only CF residue being the "L" in the FLV. So let us try to make this question more precise, without really giving an answer at this point. How different are FLVs from PresCFs? What if they differ very little? Let us consider the present account under the following description: On the one hand, there are PastCFs, which have two ExclFs, one ranging over worlds and the other over times. On the other hand, there are conditionals that have only one ExclF, ranging over worlds. If one of these "single-ExclF conditionals" contains a telic predicate, the conditional makes reference to the future; that is, it is what I have called an FLV. If it contains an individual-level stative predicate, it is interpreted like a PresCF. If it contains a stage-level stative predicate, it can be interpreted as an FLV or as a PresCF.

Under the above scenario, PresCF and FLV are names of interpretations of conditionals that have the same CF setup and differ only in the Aktionsart of their predicates. In other words, the counterfactuality content, so to speak, of a PresCF and of an FLV should be the same. In a way, this appears to be true. Both can appear in cases where their antecedent is false, as well as in cases where the speaker is agnostic about the truth of the antecedent.³⁰

- (68) a. I don't know if he will come, but if he came, he would have a great time.
b. He's not going to come. Too bad, because if he came, he would have a great time.
- (69) a. I don't know if he is rich, but if he were rich, he would be popular with that crowd.
b. He's not rich. Too bad, because if he were rich, he would be popular with that crowd.

²⁸ The only temporality that present tense morphology shows in conditionals is in forbidding past-oriented adverbs (**If he takes the syrup yesterday, . . . , *If he is smart back then, . . .*). This may be because past-oriented adverbs require nondefault morphology on the verb; this would be a very common morphological phenomenon, easy to incorporate in most theories of underspecification. This could be so, especially given what I said earlier in the text, namely, that the topic worlds are alternative to the world of utterance *at the time of utterance*.

²⁹ Lewis (1973:4): "... there are subjunctive conditionals pertaining to the future, like '*If our ground troops entered Laos next year, there would be trouble*', that appear to have the truth conditions of indicative conditionals, rather than of the counterfactual conditionals I shall be considering." As far as I can tell, such conditionals are not mentioned in the rest of the book, nor does Lewis mention under what conditions they arise.

³⁰ Some people have the intuition that the easiest obtainable meaning of an FLV involves unlikelihood, whereas the easiest obtainable meaning of a PresCF involves counterfactuality. If these are substantially different, the question is why and how.

5 What the Imperfective Does

So far I have presented a way to treat the "fake" past tense morphology that appears in FLVs and CFs as a case of "real" morphology, by reinterpreting ExclF as an exclusion relation. Recall that CF conditionals and CF wishes in MG (as well as French, Hindi, and other languages) have one more morphological oddity; namely, they require imperfective morphology (henceforth Imp). I have argued that the actual job of counterfactuality is done by ExclF. This means that remaining elements of verbal morphology do not contribute necessary elements for the CF meaning. This in turn predicts that the languages that use ExclF for counterfactuality might differ among themselves in the aspectual morphology (and, as we will see later, mood morphology) that they use in environments that express counterfactuality. This could be the case if the appearance of a particular grammatical aspect is governed by (language-particular) considerations not directly related to the expression of counterfactuality. This, indeed, appears to be the general picture. We saw that in MG the grammatical aspect that appears in CFs is always imperfective. The imperfective is, in fact, quite commonly used in CF environments; but there are also exceptions. For example, in Polish, which also has a "fake past" (i.e., uses ExclF to express counterfactuality), grammatical aspect can be either perfective or imperfective (Barbara Citko, personal communication).

In the remainder of this section I will focus primarily, though not solely, on MG as an example of how language-specific constraints force the appearance of a particular aspect in CFs. The arguments also transfer to some languages (e.g., French) but obviously not to others (e.g., Polish).

In some environments in MG, Imp appears to be receiving an interpretation that we would expect with perfective morphology. One such environment is the FLV.

- (70) An piy₁ene sto taχ₁iðromio θa evlepe ton Petro.
if go/PST/IMP to the post office FUT see/PST/IMP Peter
'If he/she went to the post office, he/she would see Peter.'
- (71) An peθene o arχ₁iγos θa ton θavame stin korifi tu vunū.
if die/PST/IMP the chief FUT him bury/PST/IMP on-the top the mountain
'If the chief died, we would bury him on the top of the mountain.'
- (72) An pandrevotan mia prigipisa, θa esoze tin eteria tu.
if marry/PST/IMP a princess FUT save/PST/IMP the company his
'If he married a princess, he would save his company.'

The question that arises is whether this "fake" Imp is a perfective in disguise. If this were so, we would expect other perfective behavioral characteristics as well. In section 2.1.2 we saw that, indeed, fake Imp appears with completive adverbials. But there are other tests with respect to which fake Imp does not behave like a perfective. For example, in MG, as in many other languages, a perfective on stative predicates yields an inchoative reading.

- (73) χθes ton ayapisa.
yesterday him love/PST/PRF
'Yesterday, I fell in love with him/came to love him.'

If our fake Imp were, deep down, a perfective, wouldn't we expect the same inchoative result? That is, (74) should be able to mean something like the FLV 'If she came to love him tomorrow, I would be very happy', but it cannot. Instead, it means something like 'If tomorrow she was in the state of loving him, . . .'; that is, 'love' is reinterpreted as a (stage-level) stative.

- (74) An ton ayapuse avrio, tha imun poli eftixismeni.
if him love/IMP/PST tomorrow FUT was very happy

In other words, fake Imp does not behave entirely like a perfective.

However, (74) has something very interesting to tell us. Instead of being an FLV, (74), without the adverbial, is interpreted as a PresCF.

- (75) An ton ayapuse, tha itan poli eftixismeni.
if him love/IMP/PST FUT was very happy
'If she loved him, she would be very happy.'

But this means that the antecedent conveys the meaning that loving isn't going on right *now*; this is an imperfective meaning! So is Imp not fake in (75)? Is Imp sometimes fake and sometimes not? It turns out that it is possible to make all the antecedents of the FLVs in (70)–(72) be part of PresCFs; that is, **it is possible to make all the Imps in (70)–(72) appear to be "real" (i.e., have a progressive/ongoing event interpretation).** For example, contrast (70) with (76), (71) with (77), and (72) with (78).

- (76) A: I saw Mary on Mulberry Street. She must have been going to the post office.
B: That can't be . . .
. . . An piyene sto taxidromio tha piyene apo alo Sromo.
if go/PST/IMP to the post office FUT went from other street
'If she were going to the post office, she would be on a different street.'
- (77) A: The chief is dying.
B: No, that's not so . . .
. . . An o arxios peθene tha itan dipla tu o yatos.
if the chief die/PST/IMP FUT was next his the doctor
'If the chief were dying, the doctor would be with him.'
- (78) A: That's some big wedding. John must be marrying a princess.
B: That can't be . . .
. . . An pandrevotan mia prigipisa, tha ixie perisoterus musikos.
if marry/PST/IMP a princess FUT had more musicians
'If he were marrying a princess, there would be more musicians.'

As is clear from their meaning, (76)–(78) are all PresCFs. So are we at an impasse? We seem to be observing that in an FLV Imp is fake (i.e., it receives a perfective interpretation), but in a PresCF Imp is real (i.e., it receives an imperfective interpretation). How can this be?

What if fake Imp does not specify any grammatical aspect at all and the presence of the Imp morpheme is dictated by some yet-to-be-determined factor(s)? Before we start speculating on what this other reason might be, there is another question: if the verb is truly not specified

for grammatical aspect, then where does the aspectual interpretation come from? I suggest that the presence of other elements in the environment determines the aspectual part of the interpretation. When the discourse is about the present now, as in the case of (76)–(78), the eventualities are discussed as ongoing; that is, they have an imperfective progressive interpretation. But when the discourse is about the future, an eventuality can be discussed as either ongoing or completive. This view is very much in the spirit of the discussion of temporal morphology in Vlach 1993 and in Iatridou, Anagnostopoulou, and Izvorski 1999, where it is argued that it is adverbials, not temporal morphology, that are responsible for temporal interpretation. Temporal morphology on the verb, if the latter is inflected, must agree with the adverbial. For example, *yesterday* requires a past tense, *now* (overt or covert) a present tense, and so forth. However, in the absence of temporal morphology (e.g., in an infinitival), the interpretation can go any way the adverbial wants.

This view of tense morphology as agreement permits a parallel to subject agreement: when the subject is *Peter*, and the verb is inflected, the morphology that appears must be third person singular. When a verb does not inflect, as in *I consider Peter to be the best candidate*, *Peter* can still be the subject. What is not possible is for *Peter* to be the subject of a verb that is e.g., second person plural. Similarly in the domain of temporal interpretation: the adverbs determine the meaning and if the verb inflects, it must do so appropriately. If it does not inflect then there is no mismatch in features and the adverbial interpretation goes through. (Iatridou, Anagnostopoulou, and Izvorski 1999: 13, fn. 24)

In the examples we have been looking at, I am arguing, completive adverbials can appear and contribute their meaning to the sentence precisely because there is no mismatch with the morphology. Similarly, it is possible to discuss an event as ongoing, in the sense that nothing in the morphology blocks the derivation of the desired meaning.

As expected, one can also form an FLV with the illusion of "real" Imp.

- (79) An avrio kata tin diarkia tis teletis diavazes tin efimerida, tha
 if tomorrow during the ceremony read/IMP/PST the newspaper FUT
 se apelian.
 you fire/PST/IMP
 'If you were reading the newspaper during the ceremony tomorrow, you would get fired.'

So if Imp in PresCFs and FLVs does not make any semantic contribution with respect to whether the eventuality is talked about as ongoing or as completed, we still have a way to deal with the fact that the sentences under consideration do receive an aspectual interpretation.

A look at other languages also supports the conclusion that Imp's role in CF environments is not based on its ability to contribute the semantics of an ongoing event (progressive). It is not just that it would be very difficult to perform a reduction between the semantics of the progressive and the semantics of counterfactuality. It is also crosslinguistically not the right generalization. Many languages have a form to mark an eventuality as ongoing without necessarily having to use that form in counterfactuality. Such progressive markers are used in CFs only when the speaker is truly talking about an ongoing eventuality. For example, the English progressive is

not a necessary part of CFs. Instead, the language uses a form that does not have the meaning of an ongoing event (ate, took, etc.). English can use the progressive in CFs but only if the speaker is truly talking about (CF) ongoing events (*If he were* was drinking, . . .). That is, the progressive in English is not a necessary ingredient of CF morphology. Put differently, **the progressive is never "fake" in English CFs the way Imp is "fake" in MG CFs. Similarly to English, many Indo-Aryan languages (Punjabi, Nepali, Hindi, Assamese, Sindhi, Bengali) have a morpheme that marks ongoing events only, but none of those morphemes are a sine qua non of CF morphology. Similarly, in Romance the periphrastic progressive is not a necessary ingredient of CF morphology (though the imperfective is).**

I conclude, then, that in CF morphology the reason for Imp's obligatory appearance is not that there is a need for the semantics of an ongoing eventuality. What other function does Imp have, what other environment must Imp occur in in MG, and can we attempt a reduction between that environment and counterfactuality?

One other environment where Imp appears in MG (and many other languages) is generic/habitual sentences.

- (80) Ta koritsia prepi na pandrevonde noris.
 the girls must_{NA} marry/IMP early
 'Girls must marry young.' (generic statement)
- (81) Ta koritsia prepi na pandreftun noris.
 the girls must_{NA} marry/PRF early
 'The girls must marry young.' (familiarity with the set of girls)

This pair, taken from Newton 1979, is particularly striking: the two sentences differ only in the aspectual morphology on the verb 'marry'. When the verb is in the imperfective, the speaker is talking generically about girls, as the translation indicates.³¹ When the verb is in the perfective, the speaker is talking about a specific set of girls.

Could the reason that some languages require Imp in CF morphology be that counterfactuality has something in common with habituais/generics? **In MG, as we saw, CFs and generics have the same aspectual marking. The same holds for Romance. And in English as well, CFs and generics share the same form of the verb.**

- (82) **If you ate this, you would get better.**
- (83) **Dinosaurs ate kelp.**

In addition to MG and Romance, of the Indo-Aryan languages, Punjabi, Hindi, Bhojpuri, Gujarati, Bengali, and Marathi must always use their habituality marker in CF morphology, even when there is no habitual or generic meaning; that is, we are dealing with a fake Hab.³² (I will

³¹ There are no bare plural subjects of generic sentences in MG.

³² There are also Indo-Aryan languages (Kashmiri, Assamese, and Sindhi) that do not use their Hab morpheme in CFs; instead, they use a morpheme that seems similar in all three languages and that seems to have no use other than in CFs (Bhatt 1997).

use *Hab* instead of *Imp* for the morphology that appears in generics and CFs in Hindi as a mnemonic that this morpheme does not appear as a progressive marker, unlike *Imp*.) To illustrate that *Imp* in Greek behaves strangely, I showed environments where *Imp* receives a perfective interpretation. I cannot do the same thing in Hindi, as Hindi *Hab* never contributes the semantics of ongoing events, the language having a specialized progressive marker. However, in Hindi as well it is possible to show that *Hab* is fake in CFs (Bhatt 1997). Outside CFs, *Hab* cannot cooccur with the progressive marker, as is shown in (84a). However, *Hab* can cooccur with the progressive in CFs, as in (84b), with CF ongoing events. In such a case the progressive is needed to convey the semantics of the ongoing eventuality, and *Hab* is there because it is an obligatory part of CF morphology.

- (84) a. *Meera do baje bhaashaN de rahii ho-tii (hai).
 Meera 2 o'clock speech give PROG.F be-HAB.F PRS
- b. Agar [Meera kal do baje bhaashaN de rahii ho-tii] to
 if Meera yesterday 2 o'clock speech give PROG.F be-HAB.F then
 Shyam-ne us-ko zaroor dekh-aa ho-taa.
 Shyam-ERG her-ACC definitely see-PRF be-HAB
 'If Meera had been giving a speech yesterday at 2 o'clock, Shyam would definitely have seen her.'

There are other grammatical elements that cannot cooccur with *Hab* except in CFs. For example, *Hab* cannot appear on individual-level adjectives with proper name subjects, as in (85a). However, it must appear in the related CF antecedent, as in (85b).

- (85) a. Yusuf lambaa (*ho-taa) hai.
 Yusuf tall be-HAB PRS
- b. Agar [Yusuf lambaa ho-taa] to us-ko yeh naukrii mil
 if Yusuf tall be-HAB then he-DAT this job.F found (UNACCUSATIVE)
 jaa-tii.
 GO-HAB.F
 'If Yusuf was tall, he would have gotten this job.'

From the above discussion it becomes obvious that Hindi is like MG and other languages in which one and the same morpheme appears in generics and in CFs. This covers (84b) and (85b). The explanation for (84a) is obvious, but what about (85a)? If *Hab* is a marker of habituality/genericity, shouldn't we expect it in (85a) as well? I will suggest a solution to this once we have understood the role of *Imp/Hab* in CFs.

We are, then, evaluating the following answer to the question of which languages require *Imp* as an ingredient of CF morphology: A particular aspect marking appears obligatorily in CFs in a language if it also appears in generic sentences in this language. *Imp* can appear in progressive, generic, or CF sentences. However, if genericity and the progressive take different forms, then counterfactuality will always pattern with the former, never with the latter. I have found no counterexample to this.

But why should CFs and generics show the same morpheme? Clearly CFs are not generic predications. This should be obvious from all the examples discussed so far. Is there some other element of meaning that is present in both CFs and generics, and that could be reflected in the meaning of Imp?

There exist several accounts that discuss Imp in the context of genericity (e.g., Newton 1979, Cipria and Roberts 1996, Bonomi 1997). The common goal of these accounts is to achieve a reduction between the semantics of an ongoing eventuality and the semantics of genericity, at the same time solving or avoiding problems like the imperfective paradox.³³ Although these accounts each have strong and weak points, I will not discuss them here. Instead, I would like to emphasize that if the sameness of form of the verb in ongoing events and in generics suffices to tempt us in the direction of reductionist accounts, then the sameness of form of the verb in generics and in CFs should compel us much more. The reason is very simple: the languages in which ongoing events and generics share the same form are a subset of the languages in which generics and CFs share the same form. As I said earlier, Imp can appear in ongoing events, generics, and CFs alike. If there is a split, then ongoing events choose a separate form (which convention would call "progressive"), and generics and CFs go together. As I also said earlier, I have not encountered a language where CFs and ongoing events have one form, and generics a different one.

So let us attempt a reduction where the generalization is the strongest, namely, where it covers generics and CFs.

The proposals by Newton, Cipria and Roberts, and Bonomi all postulate some universal force in Imp in generics, and even though genericity itself is actually not a case of universal quantification (Carlson 1989 and many others), such a view might be said to be advantageous when it comes to CFs because Imp in CFs yields would CFs. However, might CFs also contain Imp, so we lose that advantage. And non-CF conditionals can contain a perfective without losing their universal force. I will therefore proceed to a suggestion that does not rely on universal force, because there is at least one more environment in MG where Imp necessarily appears and where universal quantification is clearly not the issue.³⁴

³³ Underlying these approaches, though never stated explicitly, is the belief that the sameness of form, that is, the appearance of Imp in both the progressive and generic sentences, is not the result of underspecification of a certain sort. Indeed, the simplest form of underspecification cannot be maintained. A simple form of underspecification, whereby Imp appears just when the perfective does not, can easily be maintained for MG, where Imp is effectively the absence of the perfective (e.g., *agapo* 'love/Imp', *agapiso* 'love/Prf'). But such a claim cannot be maintained for other languages (e.g., Romance) where Imp is not just the absence of the perfective morphology, but the presence of particular morphology. However, there are other possible underspecification accounts. For example, it could be that the perfective/imperfective distinction is only relevant for episodic sentences and that outside the domain of the episodic — for example, in generic sentences — the language chooses the morpheme with the smallest semantic content just to fill in the aspectual part of the verb form.

³⁴ Actually, universal force is not the appropriate characterization anyway, as Imp appears when the overt quantifier does not have universal force. Newton's "scenarios" seem a more appropriate characterization.

(i) Ekini tin epoχi i piγena poli spania stin eklisia.
during that period went very rarely to church
'During that period I went to church very rarely.'

The facts of sequence of tenses have been described well for English and some other languages. MG and English do not behave identically with respect to sequence of tenses, but there is a part of the grammar where they behave alike. Consider the following two sentences:

- (86) a. A week ago, Peter said that he would leave in two days.
 b. A week ago, Peter said that he will leave in two days.

In (86a) the adverbial *in two days* can be interpreted with respect to either the time of Peter's speaking or the utterance time (I will call the latter the *underspecified* reading). That is, the departure could be said to be either five days ago, or two days from today. On the other hand, (86b) is unambiguous: the departure is scheduled for two days from today. So, taking *would* to consist of *ExclF* and *woll*, in the presence of *ExclF* the time anchoring of the embedded clause is left ambiguous, or open. When *will* appears, time counts from the moment of utterance. I do not want to discuss and compare different theories for sequence of tenses and what is responsible for what I call the underspecified reading; the facts alone will have to suffice for now.

Recall that in MG, unlike in English, the future marker is an undeclinable particle and that if *ExclF* is going to appear, it will do so on the (first) verb. Putting this difference aside, MG shows the same pattern that we see in (86): when *ExclF* is absent from the embedded verb, time counts from the moment of utterance. When *ExclF* is present, the underspecified reading arises. However, in MG there is one more complication.³⁵ In the case that is equivalent to *would*, the embedded verb has *Imp*. In the case that corresponds to *will*, the verb is in the perfective.

- (87) a. Ipe oti Qa efeyγie.
 said that FUT leave/PST/IMP
 'He/She said that helshe would leave.'
 b. Ipe oti Qa fiγi.
 said that FUT leave/NPST/PRF
 'He/She said that helshe will leave.'

What actually is the case is this: in (87b), the sentence corresponding to the English *will* sentence, where the future counts from the utterance time, the morphology is real, in the sense that "what you see is what you get." *Imp* gives the reading of an ongoing event, and perfective morphology receives its expected perfective/completive interpretation.

- (88) Ipe oti Qa χtisi / *χtizi to spiti mesa s'ena mina.
 said that FUT build/NPST/PRF / build/NPST/IMP the house in one month
 'He/She said that helshe will build the house in one month.'
 (89) Ipe oti otan tin ksanaðume θa χtizi / *χtisi to spiti.
 said that when her again see FUT build/NPST/IMP I build/NPST/PRF the house
 'She said that when we see her again, helshe will be building the house.'

³⁵ French and Spanish behave the same way as MG. However, to test this point in these languages, one should take the discussion in section 6 into account. As for Indo-Aryan, at least in Hindi there do not appear to be any morphological shifts that accompany sequence of tenses (Rajesh Bhatt, personal communication).

Table 3

Interpretation of aspectual form in conditionals and sequence-of-tense environments containing FUT

Form	Aspectual interpretation
Present + Imp	Imperfective (progressive)
Present + Perf	Perfective
ExclF + Imp	Imperfective or perfective (nonpast)

On the other hand, in (87a) (which corresponds to the English *would* sentence) the morphology can once again be fake: the form is always Imp, but the verb can receive a perfective interpretation and it is compatible with completive adverbials.

- (90) Ipe oti θa ex̣tize to spiti mesa s'ena mina.
 said that FUT build/PST/IMP the house in a month
 'He/She said that he/she would build the house in a month.'

In addition, just as we saw in the discussion of fake Imp in CFs, we can achieve the illusion that Imp is contributing its "normal" interpretation by imposing an imperfective reading through the use of appropriate adverbials.

- (91) Ipe oti kata tin diarkia tis teletis θa etreχ₁e pano kato.
 said that during the ceremony FUT run/IMP/PST up down
 'He/She said that during the ceremony he/she would be running up and down.'

In other words, in this particular sequence-of-tenses environment (future embedded under past), either ExclF is present, the underspecified reading is possible, and Imp can be fake (it can receive perfective interpretation), or there is no ExclF, no underspecified reading is possible, and the aspectual morphology is real (also the situation in CF environments). Table 3 contains a summary of how the aspectual morphology of the verb is interpreted in conditionals and in sequence-of-tenses environments containing FUT.

In both CFs and the underspecified reading in a sequence-of-tenses environment, Imp is, in MG, a necessary part of the morphology. But its necessary presence should not be attributed to some putative morphological gap. That is, one should not be tempted to say that in the presence of the future marker and of ExclF, the aspectual part of the morphology is necessarily Imp. It is entirely possible to have the future marker and ExclF with perfective on the verb. However, then, as is the case in CF conditionals, the interpretation is epistemic.

- (92) Ipe oti θa efir₁e.
 said that FUT leave/PST/PRF
 'He/She said that he/she must have left.'

I propose that (93) captures the distribution of Imp in MG and other languages where we diagnose fake Imp.

- (93) When the temporal coordinates of an eventuality are set with respect to the utterance time, aspectual morphology is real; when the temporal coordinates of an eventuality are not set with respect to the utterance time, morphology is always Imp.

In other words, when the temporal morphology does not connect to the utterance time, the aspectual morphology is necessarily Imp.

The generalization in (93) is easily visible in the sequence-of-tenses facts, but we can also make it applicable to CFs and generics. In the case of CFs, recall that ExclF does not provide any temporal information (in fact, we saw that there is reason to believe that PresCF and FLV antecedents lack true temporal morphology). So (93) correctly fits the facts of the presence of Imp in CFs.

Now, how do generics fit (93)? Surely generics have a true temporal specification — after all, both present and past generics exist.

- (94) a. Dogs eat cheese.
b. Dinosaurs ate kelp.

It is true that there are present and past generics, but it is not this fact that is directly relevant. As has been pointed out many times (Carlson 1989 and others), a generic sentence may be true for a certain interval without the nongeneric predicate that it contains being true for that interval. As a famous example has it, the sentence *Bears hibernate* can be uttered truthfully in mid-August, when no bear is hibernating. Similarly, (94a) is true at the present time; it means that it is at present generically true of dogs that they are cheese eaters — not that some dog is involved in eating cheese at the moment. In other words, the predicate that the generic sentence is based on does not have any temporal coordinates, though the generic sentence that is built on it does. In still other words, temporal morphology modifies the generic sentence. The aspectual part of the verb, though, is under the level of derived genericity. The generalization in (93), then, predicts that the aspectual part of the verb is Imp in generics.

We can also now explain the mysterious Hindi fact in (85), repeated here. That (85b) (like (84b)) is acceptable, we can attribute to (93) the way we did for corresponding sentences in MG. But what about (85a), where Hab cannot appear on individual-level predicates, which is unexpected from the point of view of Imp in European Indo-European languages?

- (85) a. Yusuf lambaa (*ho-taa) hai.
Yusuf tall be-HAB_{PRS}
b. Agar [Yusuf lambaa ho-taa] to us-ko yeh naukrii mil
if Yusuf tall be-HAB_{then} he-DAT_{this} job.F found(UNACCUSATIVE)
jaa-tii.
GO-HAB.F
'If Yusuf was tall, he would have gotten this job.'

According to (93), Imp/Hab appears because the predicate from which the generic sentence is derived does not have temporal coordinates, the tense of the sentence modifying the generic predicate. However, someone's height is specified with respect to the utterance time. That is, *tall*

is not a derived generic predicate. This behavior of *tall* contrasts with what we find in generic sentences based on verbs like *eat*, where the presence of *Hab* indicates that the underlying eventuality does not have a temporal specification, as in (95).

(95) Yunus machhlii khaa-taa hai.

Yunus fish eat.HAB PRS

'Yunus eats fish.'

The present tense in (95) temporally locates the habit of eating fish. Notice that if *Hab* were simply and only a marker of genericity, its absence in (85a) would pose a serious problem for any account that describes such sentences as generic (this basically covers all recent accounts of genericity that I can think of).

And of course, if a CF antecedent contains a derived generic predicate, we expect that two occurrences of *Hab* will be possible.

(96) Agar [Daoud roz paRhaii kar-taa ho-taa] to vo fel nahiiN ho-taa.

if Daoud daily study do-HABbe-HABthen he fail NEG be-HAB

'If Daoud studied every day (as a matter of habit), he would not have failed.'

In other words, (93) captures a variety of facts in Hindi as well. I conclude, therefore, that (93) governs the behavior of *Imp* in languages in which *Imp* appears as a necessary part of CF environments. This means that *Imp* does not play a necessary role in the expression of counterfactuality; instead, CF environments end up with properties that in turn dictate the presence of *Imp*.

6 Mood

So far I have not mentioned mood, which of course is an omission, especially since CF conditionals are often referred to as "subjunctive" conditionals and since some languages are said to have "conditional mood."

6.1 Subjunctive Mood

There are languages in which CF morphology includes subjunctive;³⁶ that is, subjunctive can be found in the complement of CF *wish* and the antecedent of CF conditionals (sometimes the consequent as well). Such languages include German, Icelandic, Spanish, and Italian. Yet not all languages do this. Some languages do not have a subjunctive at all (Danish, Dutch). Other languages have a subjunctive but do not use it in CF morphology (French, and all of the Indo-Aryan languages that have a subjunctive).³⁷ If the subjunctive were indeed responsible for counterfac-

³⁶ By subjunctive I will refer to the morphological paradigm different from the infinitive that appears in the complement of verbs of volition and/or command. Typically the subjunctive shows agreement for person and number and can have an overt subject. Of course, not all languages have a subjunctive, but even in those where such a category can be argued to exist, it has so far proven very difficult to unite what comes under this term crosslinguistically (Binnick 1991, Giorgi and Pianesi 1997) even within Indo-European (cf., e.g., the use of the subjunctive in Icelandic with that in Romance).

³⁷ MG has been argued by some to have a morpheme that marks subjunctive clauses. However, that debate turns

tuality, then these three groups would differ in how they derive the CF meaning, a result that does not seem desirable.

There are then several questions of form-to-meaning mapping. If I am right about the particular role that ExclF plays in yielding counterfactuality, then what does the subjunctive contribute? And why does it appear in CFs in some languages but not in others?

First let us see, for the languages that have a subjunctive, what factors determine whether the subjunctive will be used in CFs. I have argued that the morpheme responsible for counterfactuality in the languages under discussion is ExclF. I am predicting, then, that the subjunctive will appear in CFs only if the subjunctive can cooccur with ExclF. In other words, I am predicting that the subjunctive will appear in CFs only in those languages that have a paradigm for past subjunctive. To my knowledge, this prediction is entirely verified: German, Italian, and so on, have a past subjunctive and use it in CFs. On the other hand, French, Indo-Aryan, and so on, have only a nonpast subjunctive and do not use it in CFs. I know of no exception to this rule. That is, I know no language that uses a nonpast subjunctive in (e.g.) a CF antecedent. In other words, if a language does not have a past subjunctive and must therefore choose between ExclF and plain (i.e., nonpast) subjunctive in counterfactuality, ExclF wins. All this shows that ExclF is indeed the element relevant to the meaning of counterfactuality.

Similarly in historical change. There are languages that once had a past subjunctive and used it in CFs but then lost it over time. Once the past subjunctive is lost, the language in principle has a choice between ExclF and plain subjunctive (if the latter is retained in nonpast paradigms) to express counterfactuality; but again, it is always ExclF that is retained in CFs. French provides such a case. French no longer has a past subjunctive, but it has retained the dubitative subjunctive, which appears on complements of verbs like *doubt*, *don't know*, *don't believe*, though not on their affirmative counterparts. In other Romance languages (e.g., Spanish), in addition to appearing in the dubitative subjunctive, the verb of the complement should reflect the tense of the original sentence. For example, if A claims that Maria is sick and B doubts it, B's utterance must contain present subjunctive. If A claims that Maria *was* sick and B doubts it, B's utterance must contain past subjunctive.

out to be irrelevant to the present discussion. Here are the facts with respect to MG: it has very often been remarked that MG lacks infinitival complements. It has indicative complements introduced by the complementizer *oti* or *pu*, and a second type of clause that contains the particle *na*. The issue is whether *na* clauses are, in fact, subjunctive, infinitival, or ambiguous between the two. But even if *na* clauses are subjunctive, what is relevant for our purposes is that there is no reason to believe that the subjunctive is involved in CF morphology in MG. First of all, there is no overt *na* particle in conditionals, and the negation, when present, takes the form *dhen* (which is the negation that appears in *oti* clauses) and not *mi* (the negation reserved for *nu* clauses). One might consider that since the verb in MG conditionals can appear in perfective/nonpast form, a morphological possibility only for *na* clauses, not *oti* clauses, there are elements of *na* clauses in conditionals after all, thereby raising the question of the subjunctive again. But even if this diagnostic truly tests for some "subjunctiveness," we should note that that is exactly not the form that appears in CF conditionals; instead, it is the form that appears in FNV conditionals. Therefore, for MG also there is no reason to relate the subjunctive (if it exists in this language) to counterfactuality.

- (97) a. Dudo³⁸ que Maria *esta / *estaba / este / estuviera enferma.
 I doubt that Maria be/PRS/IND / be/PST/IND / be/PRS/SUBJ / be/PST/SUBJ sick
 b. Dudo que Maria *ama / *amaba / ame / amara
 I doubt that Maria love/PRS/IND / love/PST/IND / love/PRS/SUBJ / love/PST/SUBJ
 a Juan.
 to Juan

French has no past subjunctive and when faced with the choice between present subjunctive and past indicative below 'doubt'—that is, when faced with the choice of satisfying the subjunctive selection of 'doubt' or remaining loyal to the temporal makeup of the original sentence—it opts for the former.

- (98) A: Marie avait un parapluie rouge.
 Marie had an umbrella red
 B: Je doute que Marie ait / *a / *avait
 I doubt that Marie have/PRS/SUBJ / have/PRS/IND / have/PST/IND
 un parapluie rouge.
 an umbrella red

However, the loss of the past subjunctive brought about a different result in French CFs. The antecedent contains past indicative.

- (99) Si Marie avait / *ait un parapluie rouge, . . .
 if Marie have/PST/IND / have/PRS/SUBJ an umbrella red
 'If Marie had a red umbrella, . . .'

In other words, with the loss of the past subjunctive, there was in principle a choice between present subjunctive and past indicative for CFs, as there was for dubitative contexts. But whereas in the latter, the strong need for a subjunctive overrode other requirements (like staying loyal to the tenses of previous discourse), in CFs the opposite choice was made. This follows from the present account: the contribution of ExclF is substantive here, and without it counterfactuality could not be derived. If the subjunctive were an interpretive part of CF morphology (in the sense that *it* made the semantic contribution of counterfactuality), then we would expect the choice to have gone in its favor. There are varieties of Spanish that are currently losing the past subjunctive though they retain nonpast subjunctive. It appears that CF antecedents in these varieties uniformly carry the past indicative.

The above discussion explains when the subjunctive can appear in a CF, but it does not explain why it always does when it can. That is, it does not explain why in languages that have a productive use of the past subjunctive, the latter is always used in CFs. The answer may be simple: in certain languages the subjunctive appears when the proposition talked about is marked by something as not true in the set of worlds that as far as the speaker knows is the actual world.

³⁸ The facts are the same when the subject and the speaker are not the same

The semantics of some other element brings about the particular meaning, but the subjunctive is a well-formedness condition.³⁹ For example, in the dubitative subjunctive *it is clearly the semantics of doubt, don't believe, and so on, that contribute the meaning that the embedded complement is not part of the subject's beliefs.*⁴⁰ But the complement of these verbs is marked with the subjunctive, to reflect that this proposition is not in the world according to the subject. Possibly this is done through selection via the complementizer (Laka 1990 and others) or by what Embick (1997) calls "dissociative morphology," that is, morphology that reflects, rather than brings about, a syntacticlesemantic change. So if a language has such a use for the subjunctive and the paradigm for a past subjunctive, then the latter would also be expected to appear when ExclF in CFs has caused a sentence to be interpreted as not part of the subject's beliefs. And as expected, if a language has the subjunctive in a CF antecedent, it will also have it in the complement of 'wish'. If there is also a subjunctive in the CF consequent, the subjunctive will appear on the verb 'want' (= 'wish') as well.

6.2 Conditional Mood

There is a verbal paradigm in (among others) some Romance languages that is called "conditional mood." It appears in the consequent of the type of conditionals we have been looking at. Consider the following examples from French:

- (100) Si Pierre partait demain, il arriverait 18-bas la semaine prochaine. (FLV)
 if Pierre left tomorrow he would arrive there the week next
 'If Pierre left tomorrow, he would arrive there next week.'
- (101) Si je savais que c'était du chocolat, je le mangerais. (PresCF)
 if I knew that this were of the chocolate I it would eat
 'If I knew that this were chocolate, I would eat it.'
- (102) Si Pierre C'tait venu, je l'aurais vu. (PastCF)
 if Pierre had come I him would have seen
 'If Pierre had come, I would have seen him.'

But does this verbal paradigm really provide evidence for the existence of a different (third) mood? The question here is not merely one of labeling, but of the analysis that a nonindicative mood might receive. If, for example, one believes that the subjunctive/indicative distinction should be captured in a particular way (e.g., by the presence of an operator), then the representation of the conditional mood should be different from either.

I will try to argue that what is referred to as "conditional mood" is in fact nothing but the indicative, that the Romance languages that are supposed to have it behave exactly the same as MG and English, and that their counterfactuality is composed of the same morphological elements.

³⁹ We could also describe it as a condition on the PF branch.

⁴⁰ When the complement of such predicates is an NP, then its content is sufficiently marked as not being part of the subject's beliefs, without the issue of subjunctive arising.

In English the consequents of FLV, PresCF, and PastCF conditionals contain the futurelmodal verb *will* followed by an infinitival verb. As mentioned, however, this is not a serious difference between the languages. In MG the futurelmodal is expressed with an invariant particle, which cannot carry any morphology and therefore cannot carry ExclF either. In English the future is expressed with a verbal form, which, as the first element in a verb sequence, absorbs past tense morphology. These cases are quite transparent.

Unlike MG and English, where the future is periphrastic (composed of a future-specific element in addition to the verb), the Romance languages have a synthetic future as well as a synthetic past. (103) shows the French paradigms for the future and for what is called the imperfect (i.e., past imperfective) for the verb *chercher* 'search'.

(103) a. <i>Future</i>	b. <i>Imperfect</i>
je chercherais	je cherchais
tu chercherais	tu cherchais
il/elle chercherait	il/elle cherchait
nous chercherions	nous cherchions
vous cherchiez	vous cherchiez
ils/elles chercheraient	ils/elles cherchaient

Now let us ask the following simple question: what would the French CF (FLV or PresCF) look like if the language were like MG and English in all relevant respects except for the fact that it has a synthetic future? In other words, what would we expect to see in a language that (in the indicative mood) wants to put the future, ExclF, and Imp on one and the same verb? One way to combine the two would be to put imperfect (= ExclF + Imp) endings on a stem that already has (some of) the morphology for the future.⁴¹ In short, this solution could very well look like (104), which is exactly the paradigm for what is described as "conditional mood."

(104) <i>Conditional</i>
je chercherais
tu chercherais
il/elle chercherait
nous chercherions
vous cherchiez
ils/elles chercheraient

In other words, the forms in (104) are excellent candidates for what a French verb would look like if, in the indicative, the future and past morphologies combined. The same pattern can be seen in other Romance languages.⁴²

⁴¹ There are in principle two ways: future above past or past above future. If the Mirror Principle were correct, then the forms would show that past is higher than future. This is compatible with English and can be made compatible with MG if we take the MG order to be the result of a morphological rearranging that has to happen given that the future particle cannot inflect and is cliticized on the matrix verb. See Cinque 1998 for orderings of future and past.

⁴² In Romance languages the future is historically derived from the present tense (indicative) of the verb 'have'

All this means that there is no need to look for the contribution of a conditional mood, given that we have all the elements we need anyway, or at least all the elements we found in MG and English, namely, a future and a past morphology (and Imp). In addition, there is no longer evidence that there is such a thing as a separate conditional mood, since we have traced the elements whose combination has been called "conditional mood" to different sources.

We can also see why we should expect the so-called conditional mood to appear only in the consequent and not the antecedent of the conditional: it is in the consequent where, in languages without conditional mood, we find the past/future combination. Moreover, and as expected, "conditional mood" is found on the verb *want* in CF wishes, consistent with the pattern of similarities we have found between CF wishes and conditionals.

7 Conclusion

I have argued that the past tense morphology that appears in MG and so many other languages in CFs is the main element responsible for the meaning of counterfactuality. I also argued that the designation "past tense" is an accident of the fact that it has primarily been described in unembedded declarative sentences like *John left*. A closer look at a wider range of environments shows that the function of this morphology is a particular relation (exclusion) between a topic timelworld and the timelworld of utterance.

I also discussed the role of imperfective aspect and subjunctive mood. Within the large set of languages that use ExclF to express counterfactuality, there is great variation in the behavior of aspect and mood. This is consistent with the conclusion that they are not necessary ingredients for counterfactuality and that their appearance is governed by language-particular rules sensitive to other factors of the environment. I argued that conditional mood does not exist as a mood at all.

I did not address the question of whether ExclF plays an equal role in the antecedent and in the consequent, leaving open the possibility that the appearance of ExclF in one is an agreement phenomenon of sorts with the other. In the main languages under discussion, ExclF must appear in both the antecedent and the consequent of a CF conditional. But in Japanese and Korean ExclF in the antecedent sometimes appears to suffice (Cho 1997).

In all, I have argued that CF constructions have specific grammatical components that combine to yield the (implicature of) counterfactuality. I cannot, nor do I want to, argue that the morphological means discussed are the only ones by which languages express counterfactuality. Nor do I exclude the possibility that there are languages or constructions in some languages that express counterfactuality in such a way that it is noncancelable; I mentioned one such construction in MG in footnote 2.

followed by the infinitive form of the verb. In short: Future = HAVE + Present + Infinitival, Conditional = HAVE + Past + Infinitival. It seems unlikely that the actual synchronic derivation of the future form contains as a subpart the derivation of the infinitive, followed by the operation that would add the suffixes in the appropriate paradigm. Moreover, an infinitive by itself does not suffice to yield a future interpretation, nor do the present tense suffixes for the person and number features.

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