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IMPERFECT MODALITY*

This paper is a study of the modal uses of the Imperfect both in main and embedded clauses. In particular, I offer an account of Imperfect Conditionals, which exhibit peculiar properties that distinguish them from both indicative and subjunctive conditionals. I provide an account of the modal uses of the Imperfect in main clauses based on the claim that past may not be interpreted inside the proposition where it superficially occurs. Cross-linguistic evidence is considered. Turkish conditionals offer syntactic and morphological support for the theory presented in this paper.

1. Introduction

The Italian Imperfect can be described as an imperfective past. One typical use of the Imperfect where you can see both the imperfective and the past component is its progressive use. In (1), the event of Abelard's sleeping is necessarily understood as going on in the past; that is to say, the time surrounded by the sleeping event – 3 o'clock – must be located in the past.

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(1) Ieri/*domani alle 3, Abelardo dormiva.

Yesterday/*tomorrow at 3, Abelard sleep_{IMP}

‘Yesterday/*tomorrow at 3, Abelard was sleeping’

The Imperfect can be used progressively not only with activity verbs but with accomplishments, stative predicates and, marginally, with achievements. This is shown in (2). Incidentally, notice that in the case of the achievement predicate *morire* ‘to die’, the Imperfect behaves differently from the English past progressive: the former but not the latter entails the proposition that Abelard died.

(2) Alle 3, Abelardo cenava/guardava un film/?moriva.

At 3, Abelard dine_{IMP}/watch_{IMP} a movie/die_{IMP}

‘At 3, Abelard was dining/watching a movie/dying’

I will not be concerned with the progressive uses of the Imperfect in this paper.

The second use of the Imperfect is modal. It can be used modally in either main or embedded clauses. I will argue that modality can be expressed by means of Aspectual heads, the modal and aspectual readings being in complementary distribution. Moreover, temporal information is not always interpreted as locating the event in the main predicate in time. If it is not, it must be interpreted as *dislocational*, that is to say it shifts the evaluation time to some contextually salient time. I will show that this is the case for the *past*. Crucially, the Imperfect instantiates both these properties.

In section 2, I analyze the modal uses of the Imperfect. In section 3, I present my proposal, developed within the framework of possible world semantics. In section 4, I investigate the interaction of the Imperfect with the modal domain *par excellence*, i.e. conditionals. Finally, I will argue that what we have discovered about the Imperfect is a mechanism available *cross-linguistically*, thus drawing a connection between domains previously left unrelated.

2. Modal Uses of the Imperfect

It has sometimes been claimed that, at least in some uses, the Imperfect has the function of “distancing” or “removing” the speaker from the situation (time and place) where she is actually located (cf. Bertinetto 1986, Bazzanella 1990 and Panzeri 2000). The label “modal” has thus been associated with the uses of the Imperfect listed in (3).¹

(3) a. oneiric

Sai cosa ho sognato l'altra notte a proposito del viaggio che farò il mese prossimo? *Ero* su un'isola deserta e *camminavo* in un mare di fiori. Ad un certo punto *cominciavano* a crescere smisuratamente...

Do you know what I dreamed last night about the trip that I'll make next month? I was_{IMP} on a desert island and I walk_{IMP} in a sea of flowers. Then, they start_{IMP} growing out of proportion...

¹ These examples are drawn and modified from Bazzanella (1990).

b. hypothetical

Se potevo, venivo.

If (I) could_{IMP}, I come_{IMP}

c. potential

Vincenzo *doveva* essere già qui. Non capisco cosa gli sia successo.

Vincenzo should_{IMP} be already here. I don't understand what happened to him

d. of play

Giochiamo ad un gioco nuovo! Io *ero* l'albero, tu il cavallo.

Let's play a new game! I was_{IMP} the tree, you the horse

e. of politeness²

Volevo del pane, grazie.

I wanted_{IMP} some bread, thank you.

'I would like some bread'

² The modal is not necessary in the "politeness" example, even though it is preferred. The discourse in (i) is also quite acceptable: as you can see in B's response, the Imperfect occurs on the lexical verb *prendere* 'take'. Crucially, the example has the same politeness flavor of the modal counterpart in the text.

- (i) A: Cosa desidera?
What do you desire?
'What would you like?'

B: Prendevo un caffè, grazie.
I take_{IMP} a coffee, thanks.
'I would like a coffee'

f. epistemic-doxastic

Che cosa c'era domani al cinema?

What was_{IMP} there tomorrow at the movie theater?

g. planning

A. Non puoi farlo domani?

B. Domani *andavo* in biblioteca.

A: Can't you do it tomorrow?

B: Tomorrow I go_{IMP} to the library

Leaving aside the 'hypothetical' use of the Imperfect – to which I shall devote the main part of this paper – I would like to suggest that the examples (a) through (g) share the following properties.

The first property is that there is a (potential) *mismatch* between the past component of the Imperfect and the non-past meaning of the adverbial phrase (for example, consider f-g). This is surprising given that in its progressive uses, the Imperfect necessarily has the meaning of past (analogous to the progressive uses of the past progressive in English). Indeed, in (4) the future adverb *domani* 'tomorrow' is incompatible with the rest of the sentence. Notice that the difference between (3g) and (4) is the position of the adverb *domani* 'tomorrow', which in (4), but not in (3), is left-dislocated (as signaled by the comma).

- (4) Ieri/*domani sera, Abelardo dormiva/cenava/guardava un film.
Yesterday/*tomorrow night, Abelardo sleep_{IMP}/dine_{IMP}/watch_{IMP} a movie
'Yesterday/*tomorrow night, Abelardo was sleeping/dining/watching a movie'

The second property is *modality*: the proposition *p* expressed by the sentence with the Imperfect is evaluated with respect to possible worlds that are in some relevant way compatible with the actual world (i.e. compatible with the actual world).³ The intuition mentioned above that the examples in (3) “remove” the speaker from the world and time of the utterance, is correct.

Third, the uses of the Imperfect in (3) convey the information that at the time of the utterance the speaker is not endorsing the proposition *p* expressed by her utterance because she at most has *indirect (unreliable) evidence*. Sometimes the speaker may even have some evidence that $\neg p$; sometimes the linguistic context may clearly convey that the speaker is not endorsing *p*, as in the case of the Imperfect occurring in a report of the content of a dream. In any event, what is required is just that the speaker at most have indirect evidence that *p*. It may also be the case that, at some point in the past, the speaker must have had access to the relevant source of information – or, putting it differently, at some past time she must have been able to (potentially) endorse the proposition in question. This last point together with the previous point requires that at the utterance time the speaker does not trust or does not have access to some piece of evidence she trusted or had access to in the past. This point does not hold for the “dream” (3a) and the

³ One question is what the proposition *p* expressed by (3f) is, given that (3f) is a question. As a first approximation, let *p* be the expected answer to the question.

“play” (3d) uses of the Imperfect, where the speaker makes no claim about the reality of p.

These three properties are reflected elsewhere. To see this point, consider the epistemic-doxastic case in (3f). The sentence is nonsense with normal interrogative intonation. It needs the echo-question intonation (with which we are familiar in *wh*-in situ questions in English), or explicit negation.⁴ This is shown in (5).

(5) a. *Cosa c’era domani al cinema? (* normal interrog. inton.)

What there be_{IMP} tomorrow at the movie theatre

‘What was there tomorrow at the movie theatre?’

b. Cosa <hai detto che> c’era al cinema domani?

What <did you say that> there was at the movie theatre?

‘What did you say there was at the movie theatre tomorrow?’

c. Ma non c’era “The Grand Illusion” domani al cinema?

But not there was “The Grand Illusion” tomorrow at the movie theatre?

‘But wasn’t there going to be “The Grand Illusion” at the movie theatre tomorrow?’

Why is the ‘echo-question’ intonation relevant? A question is called an echo-question when it asks for information that was already told – that is to say, that is supposed to be already in the context – but was not understood or heard. Because – as I argued above –

⁴ The crucial role played by negation in (5c) is very puzzling and intriguing. The discussion and analysis of this use of negation, though, cannot be included in this paper, as it would take us too far afield.

the modal uses of the Imperfect also involve the notion of information that was once (potentially) believed and whose evidence has now become inaccessible, the necessity of the echo question intonation in (5b) – instead of the regular interrogative intonation in (5a) – is not surprising. But why would the speaker have to signal that she no longer has the knowledge she used to have? In other words, why is it necessary to signal this change? This necessity seems to follow from whatever principle requires that the word *too* occur in (6), and the word *another* in (7).⁵

(6) a. After John left, Mary did *(too).

(7) (I have invited Mr. John over for coffee and, after offering him the first coffee, I ask:)

Mr. John, would you like a coffee?

✓ Mr. John, would you like another coffee?

In sum, I take the four properties above as essential characteristics of the meaning of the Imperfect. The next section is devoted to capturing this meaning.

3. The Proposal

As I mentioned at the beginning of this paper, its progressive uses show that the Imperfect has both an imperfective and a past component. In (8), the relevant time (3 o'clock) must be understood as past relative to the utterance time, and the sentence says

⁵ See Pesetsky *Phrasal Movement and its Kin* where (6) and (7) are credited to Irene Heim.

that at that past time there was an ongoing event of sleeping/dining/watching a movie by Abelard.

(8) Alle 3, Abelardo dormiva/cenava/guardava un film.

At 3, Abelardo sleep_{IMP}/dine_{IMP}/watch_{IMP} a movie

‘At 3, Abelardo was sleeping/dining/watching a movie’

I claim that it is in virtue of these two components that the modal interpretation in the examples in (3) is achieved. Let me explain how.

3.1 Modal Imperfect: “non-aspectual” imperfective, “real” past

I will not have much to say about the exact contribution of the imperfective component in the sentences investigated in this paper, as the focus of my analysis is the contribution of past. The “non-aspectual” label used in the title refers to the fact that the imperfective component is *not* interpreted aspectually (i.e. imperfectively).

As for the past component, I claim that it is “real”, in that it means what it generally means in simple clauses.⁶ What is special about this past is that it does not locate an event in the past but *contributes to the restriction of the accessibility relation*. This means that the accessibility relation I am proposing is slightly more complex than the standard notion of an accessibility relation, which is a binary relation between possible worlds ($\langle s, t \rangle$): the present accessibility relation is a relation between a

⁶ I will not discuss here what the correct analysis of past is: whether past is analyzed as a predicate expressing the relation *earlier than* (as in Stowell 1992), or as a presupposition (as suggested in Heim 1994), is not directly relevant to the presentation of my proposal. Thus, for the sake of simplicity I will assume that past is a predicate of times.

world-time pair and a set of worlds compatible with it ($\langle s, i, t \rangle$, $i \in I$, $I =$ the set of times). The world in the pair must be the actual world; the time must be a past time. This is summarized in the truth-conditions for a modal sentence with the Imperfect in (9).

- (9) $[S \dots V_{\text{Imperfect}} \dots]^{s,c}$ is true iff
 $[\forall w: \text{is } \phi\text{-accessible to the speaker in } w_c \text{ at } t_1, t_1 < t_c] [p \text{ is true in } w]$

where: $[S \dots T_{\text{Imperfect}} \dots]$ = the sentence with the Imperfect

p = the proposition expressed by the (tenseless) sentence

t_c = time of the context, i.e. time of the utterance

w_c = world of the context, i.e. the actual world

ϕ = relevant accessibility relation

The definition in bold in (9) says that the sentence with the Imperfect is true iff in all the worlds w that are ϕ -accessible to the speaker in the actual world at some time t_1 prior to the utterance time t_u , p (the proposition expressed by the sentence) is true in w . Universal quantification comes as a default (Kratzer 1981). Notice that the variable t_1 is an open variable that will pick up some time salient in the context as its value.

So far I have not said anything about the accessibility relation ϕ . First of all, recall that it is by means of the accessibility relation that the possible worlds compatible with some relevant aspect of the world (i.e. the law, the speaker's knowledge, the relevant circumstances, etc.) are selected. For example, in epistemic sentences such as *John must be at home now*, the modal base is constituted by all those worlds compatible with what

the speaker knows in the actual world; in assertions involving deontic modality, such as *You must pay your taxes*, the modal base is constituted by all those worlds compatible with the law in the actual world.⁷

What about ϕ in (9)? I suggest that the Imperfect introduces an **epistemic/evidential accessibility relation**. Given a sentence with the Imperfect, (9) says that the proposition expressed by the tenseless sentence is evaluated in worlds that are compatible with a (relevant) kind of evidence available to the speaker at some *past time* salient in the context.

In order to see that the proposal in (9) adequately captures the modality of the Imperfect, consider the **planning** use in (3g), repeated below for the reader's convenience.

(3) g. **planning**

A. Non puoi farlo domani?

B. Domani *andavo* in biblioteca.

A: Can't you do it tomorrow?

B: Tomorrow I go_{IMP} to the library

Intuitively, B's sentence in (3g) conveys that B had plans to go to the library tomorrow but that, in the face of A's request that B run some errands tomorrow, B's intention to go to the library is no longer firm, as he may now consider giving up his plans. The definition in (9) nicely captures this intuition. In (3g) the available evidence are B (the

⁷ Here I will use the term *modal base* with the meaning of a function of type $\langle s, t \rangle$ but – to be precise – in Kratzer's work on modality, *modal bases* are functions from worlds to sets of propositions ($\langle s, \langle st, t \rangle \rangle$).

speaker)'s plans: B's sentence is true if and only if in all those worlds w compatible with B's plans in the actual world *at some past time*, the proposition expressed by the (tenseless) sentence (i.e. that she goes to the library tomorrow) is true in w .⁸ As I said above, t_I is an open variable that will pick up a time before the utterance time salient in the context. What would this salient past time be? It is the time when A made the request that B run some errands, i.e. the time when B could no longer endorse the proposition that he will go to the library tomorrow.

Consider now the **epistemic-doxastic** use of the Imperfect in (3f), repeated below.

(3) f. **epistemic-doxastic**

Che cosa c'era domani al cinema?

What was_{IMP} there tomorrow at the movie theater?

Intuitively, the question conveys the information that, at the time of the utterance, the speaker (i) does not know what is playing at the movie theater tomorrow and does no longer have trustworthy evidence about the answer to the question, and (ii) at some point in the past she must have had access to the relevant source of information – or knowledge of the answer – but now (t_u) she only has indirect evidence about the answer. In particular, notice that the question in (f) does not simply seek information but seeks *old*

⁸ I use *that*-clauses to refer to propositions. Technically, though, a proposition is a function from possible worlds to truth-values.

information, i.e. information that was once available.⁹ Assume that the relevant proposition p is the expected answer to the question (e.g. “There will be *The Grand Illusion* tomorrow”), and let us abstract away from the exact semantics for questions. In (3f) the available evidence is the movie schedule. The proposition is true if and only if in all the worlds w compatible with the schedule available to the speaker at some past time, the proposition p is true in w .

The **politeness** use of the Imperfect follows from the definition in (9). I repeat the example below for convenience.

(3) e. of politeness

Volevo del pane, grazie.

I wanted_{IMP} some bread, thank you.

‘I would like some bread’

This sentence is true if and only if for all the worlds w compatible with some evidence available at some time t earlier than the utterance time, the proposition that *I want some bread* is true in w . What is the relevant evidence available at some past time? That she

⁹ To see this point, consider the following scenario. My sister and I want to go to the movies tomorrow but we don’t know what is playing then. So we call the movie theater to find out. In this scenario, I **cannot** use the question in (3f); I would have to use a “normal” question with a present tense, as shown in (i):

- (i) Cosa c’è domani al cinema?
 What there is tomorrow at the movie theater
 ‘What is there going to be at the movie theater tomorrow?’

The kind of scenario where (3f) is appropriate is the following. My sister and I went out for dinner together last night and on the way back home we walked by our favorite movie theater. We very briefly stopped to have a look at the schedule and see what would be playing in the next couple of days. Today I called her up and we decided to go to the movies tomorrow. Unfortunately, I can **no longer** remember what I read the night before and, because I know that the relevant evidence (the schedule) was available to you too yesterday night (indirect evidence), I seek the necessary information by asking you (3f).

had a certain desire. In other words, according to some desire that the speaker had (and knew she had)¹⁰ at some contextually salient past time, the proposition *that*-I want some bread is true. In this particular example, it is the lexical meaning of the verb *want* that makes the relevant evidence – the desires – contextually salient. For lack of space, I cannot go through all the examples in (3), but I believe that – modulo some differences – they would all be accounted for along the lines sketched above.¹¹

So far I have talked about evidence available to the speaker at some relevant past time. But what about the utterance time? I suggest that these uses of the Imperfect trigger a conversational implicature as in (10).¹²

(10) **Implicature**

At t_u the speaker does not have direct evidence that p and so is not fully endorsing p .

If, talking about the present or the future, I say that in the past I believed that p , my interlocutor will take my utterance to implicate that now – when I speak – I no longer

¹⁰ This is not meant to be absolutely true. It should be read as “In all the *relevant* cases of having some desire x , this is a case of knowing that you have x ”. This is just to exclude the possibility of unconscious desires, which clearly do not involve the knowledge of having them.

¹¹ As I wrote above, I take the accessibility relation to be *epistemic/evidential*, that is to say I leave open the possibility that it involves knowledge rather than simple evidence, the difference being that knowledge that p entails p , whereas evidence that p does not. The importance of this distinction and the relevance of the *epistemic* component, rather than the *evidential* one, will be clear when we’ll discuss the Imperfect Conditionals in III. Notice that if in our explanation of the modal uses in (3), we opt for an accessibility relation that is only epistemic, the ‘oneiric’ and ‘of play’ Imperfect in (3a) and (3d) respectively cannot be accounted for on the same lines as (3b, c, e, f, g). This would not be a completely unwelcome result, though, as ‘oneiric’ and ‘of play’ Imperfect seem to be different in other respects as well (see Giorgi and Pianesi (2000) for an analysis of the ‘oneiric’ Imperfect).

¹² If the accessibility relation were just epistemic, we could reformulate the implicature in (10) as follows:

(i) **Implicature**

At t_u the speaker does not know that p and so is not fully endorsing p .

believe that p. Notice that this is generally true of the past. For example, consider the following dialogue.

(11) A. Where is John?

B. He *was* in the office half an hour ago.

As shown by the present tense in the question, A asked B John's location at the time of the utterance. Why did B answer by saying what John's location *was* at some past time? Assume that the Maxim of Quantity holds¹³: if he had known John's location at the time of the utterance, he would have said so. He didn't; hence, it must be the case that he wasn't in the position to say so without violating the Maxim of Quality – which requires the speaker to say what is (believed to be) true. Person A will then conclude that B didn't know John's location at the time of the utterance.

All the properties of the modal uses of the Imperfect presented above are thus accounted for.¹⁴ Let me summarize the results of this section:

¹³ Grice (1975), Matsumoto (1995), and others.

¹⁴ Let me mention an interesting property of the Imperfect, what I call the “adversity to *de re* interpretation”. To begin, the Imperfect can be used in reported speech instead of the standard conditional mood, as shown in (i) below. Notice that there is a special “feeling” that accompanies this use, i.e. that the speaker is not endorsing the proposition that Gianni will arrive at 8, for example because it's now 8 and still Gianni has not arrived yet.

- (i) Gianni ha detto che arrivava alle 8.
Gianni said that he arrive_{IMP} at 8
'Gianni said that he would arrive at 8'

Consider (ii) and (iii): (iib) and (iiib) are fine with a *de re* interpretation of the *after*-clause; (iia) reports Gianni's highly uninformative statement; (iia) reports Gianni's contradictory statement. Why is the content of Gianni's speech in (iia) and (iia) necessarily understood as being contradictory and uninformative respectively?

- (ii) a. Gianni ha detto che arrivava dopo che arrivava. *contradictory*
Gianni said that he arrive_{IMP} after he arrive_{IMP}

- (a) The imperfective component of the Imperfect is ‘modal’ and contributes an *epistemic/evidential* modal base.
- (b) The past component contributes a relation of anteriority restricting the modal base (evidence available to the speaker at some past time). Because of this, I called it “real”.
- (c) The use of the Imperfect implicates that at the utterance time the speaker only has indirect evidence that the proposition is true and is not endorsing it.
- (d) The sentence with the Imperfect is *tenseless*, if by *tenseless* we mean that in the clause there is no tense information that locates the event. Hence, the event can be located in the past or in the future. Extra information will determine the temporal location (e.g. adverbs).

4. The Imperfect in Conditionals

Given the modal properties of the Imperfect, we expect it to occur in conditionals, and indeed it does. Imperfect Conditionals (ICs) – that is conditionals where the Imperfect occurs – have very striking properties that distinguish them from standard Indicative

	b. Gianni ha detto che arrivava dopo che è arrivato. Gianni said that he arrive _{IMP} after he arrive _{PAST}	<i>de re</i>
(iii)	a. Gianni ha detto che arrivava quando arrivava. Gianni said that he arrive _{IMP} when he arrive _{IMP}	<i>uninformative</i>
	b. Gianni ha detto che arrivava quando è arrivato. Gianni said that he arrive _{IMP} when he arrive _{PAST}	<i>de re</i>

According to Heim (2000), when a constituent stays in situ it can either be interpreted *de re* or *de dicto*, but when it scopes out of the embedding clause, it can only have a *de re* reading. (iib) and (iiib) tell us that the Imperfect simply cannot be interpreted *de re* when it is interpreted modally (regardless of whether it moves or not). I tentatively suggest that this is due to the nature of the *de re* reading: the *de re* reading of an XP consist in computing the denotation of the XP with respect to *the world and the time of the speaker’s utterance* and this is exactly what I argued the modal Imperfect *cannot* do. In other words, the shift of the time of evaluation to the past – operated by the modal Imperfect – is incompatible with the essential property of the *de re* reading.

conditionals (Stalnaker 1975), despite their being morphologically indicative conditionals. ICs are also different from *subjunctive conditionals* such as those investigated in Lewis (1973), Stalnaker (1968), Kratzer (1991) and Iatridou (2000), among others. Before presenting the set of data that I will be discussing in this paper, I shall briefly sketch the main properties of indicative and subjunctive conditionals. In section 4.3 I will finally present ICs.

4.1 Indicative Conditionals

The semantics analysis of conditionals proposed by Stalnaker (1975) takes the notion of *possible world* for granted, as developed in Kripke's modal logic. We should think of possible worlds as *properties* of the actual world, ways things may have been. To use Stalnaker's words,

“Possible worlds theory, as an explanatory theory of rational activity, begins with the notion of an alternative way that things may be or might have been (which is all that a possible world is) not because it takes this notion to be unproblematic, but because it takes it to be fundamental to the different activities that a theory of rationality seeks to characterize and relate to each other.”

(Stalnaker 1999, pp. 67)

This theory proposes that a conditional statement *if A, then B* asserts that the consequent is true not necessarily in the world as it is, but in the world as it would be if the antecedent were true. Formally, there will be a function f (selection function) that takes a given proposition (the antecedent) and the actual world as its arguments and gives as its

value the possible world in which that proposition is true.¹⁵ The semantic rule for a conditional sentence will be as follows: the conditional assertion *if A, then B* is true in a possible world w just in case B is true in possible world $f(A, w)$. Without going into the details of the analysis, one important point has to be mentioned: when a speaker utters the antecedent of a conditional, he presupposes that everything that holds in the actual world holds in the hypothetical situation in which A is true. This means that a constraint has to be put on the selection function. To do that, assume that a context set is the set of possible worlds compatible with the context of the speaker, i.e. with the presuppositions of the speaker. The condition is the following: if the conditional is being evaluated at a world in the context set, then the world selected must, if possible, be within the context set too (C being the context set, if $w \in C$ then $f(A, w) \in C$).

This is Stalnaker's general semantic theory of indicative conditionals. According to the proposal, it is appropriate to assert an indicative conditional only in a context which is compatible with the antecedent.

- (12) a. If Abelard goes to Dallas tomorrow, he will meet Heloise.
b. If Abelard went to Dallas yesterday, he (must have) met Heloise.

This seems indeed correct: the sentences in (13) are deviant and their deviance is due to the fact that their antecedent is incompatible with the presupposition of the context.

¹⁵ In this theory, a proposition is a function from a possible worlds to a truth-values. Since there are only two truth-values, a proposition is a way to dividing the set of possible worlds in those for which the function yields the value true (worlds in which the proposition is true) and those for which the function yields the value false (worlds in which the proposition is false).

- (13) a. #Abelard is dead. If he goes to Dallas tomorrow, he will meet Heloise.
 b. #Abelard died a week ago. If he went to Dallas yesterday, he (must have) met Heloise.

From the condition on indicative conditionals it follows that *counterfactual* conditionals must use the subjunctive, which Stalnaker takes as a conventional device to indicate that the selection function reaches outside the context set. In the next section, I shall present the basic features of subjunctive conditionals. In section III.3 I shall discuss ICs.

4.2 Subjunctive conditionals

Subjunctive conditionals talk about the past – (14b) – or about the present/future – (14a). First of all notice that, as the Italian sentences show, subjunctive conditionals have Mood, specifically Subjunctive mood in the antecedent and Conditional mood in the consequent. The difference between Italian and English is a mere morphological difference, i.e. the former has morphological mood, the latter does not.

(14) Subjunctive Conditionals: Non-Past and Past

- a. Se Eloisa andasse a Dallas domani, incontrerebbe JR.
 if Eloisa go_{IMP/SUBJ} to Dallas tomorrow, she meet_{PRES/COND} JR
 ‘If Eloisa went to Dallas tomorrow, she would meet JR’

b. Se Eloisa fosse andata a Dallas ieri, avrebbe incontrato JR.

if Eloisa be_{IMP/SUBJ} gone to Dallas yesterday, she have_{PRES/COND} met JR

‘If Eloisa had gone to Dallas yesterday, she would have met JR’

Second, there is a correlation between having two layers of past tense morphology in the antecedent and being a past counterfactual, i.e. talking about a past possibility. This correlation is pointed out and analyzed in Iatridou 2000. The background for her proposal is Stalnaker’s suggestion, which I presented above: the selection function will reach inside the context set *if possible*, that is to say, if the proposition added to the actual world (the antecedent) is consistent with the presupposition of the speaker. The selection function reaches *outside* the context set when the antecedent of the conditional is incompatible with the presupposition of the speaker.¹⁶ The subjunctive mood is a conventional device for indicating that presuppositions are being suspended, i.e. when the selection function reaches outside the context set (Stalnaker (1968, (1975). This theory is the basis of Iatridou’s proposal.

Consider the English pair in (15): whereas (a) talks about a future possibility, (b) talks about a past possibility. Call the former *non-past counterfactuals*, the latter *past counterfactuals*.

(15) a. If Heloise went to Dallas tomorrow, she would meet JR.

b. If Heloise had gone to Dallas yesterday, she would have met JR.

¹⁶ Stalnaker’s semantic theory suggests that counterfactual conditionals should be expressed in the subjunctive, but it does not force subjunctive conditionals to be counterfactuals. In other words, the falsity of the antecedent seems to be only implicated and, as such, cancelable. See the section entitled *The non-cancelability property* in this paper for the relevant examples.

This difference is mirrored in the morphology: the expression of a past counterfactual requires an extra layer of past (this is why the pluperfect is obligatory). Iatridou (2000) proposes that the past tense be analyzed as the Exclusion feature that will receive the interpretation in (16), where $T(x)$ stands for Topic x and $C(x)$ stands for the x of the speaker.

(16) $T(x)$ excludes $C(x)$

The variable x ranges either over times or over worlds. If it ranges over times, then (16) says that the topic time (i.e. the time we are talking about) excludes the utterance time; if x ranges over worlds, (16) says that the topic worlds (the worlds we are talking about) exclude the actual world. A simple sentence like (17) is interpreted as talking about the past. The conditional *if* in (15a) will force the modal reading of (16), i.e. will force the variable x to range over worlds rather than times.

(17) Eloisa went to Dallas.

Because past counterfactuals talk about past possibilities, they will then have to contain two layers of past, one interpreted as excluding the actual world (capturing the conditional meaning), the other as excluding the utterance time (capturing the past meaning). Thus, the necessity of a pluperfect in the antecedent (15b). I will not address Iatridou's proposal directly in this paper, and more generally I will not discuss standard subjunctive conditionals.

ICs *are* indicative conditionals. I will compare them to the kind of indicative conditionals described in III.1. This comparison will turn out to play a crucial role not only in the analysis of the properties of ICs but also in understanding the speaker's knowledge and use of language. In other words, we will discover that some of the properties of ICs *derive* from their standing in a *particular relation* to standard indicative conditionals in the speakers' knowledge of language.

4.3 ICs

In Imperfect Conditionals (ICs) the Imperfect indicative occurs in both the antecedent and the consequent.

(18) Se arrivavi prima, vedevi il film dall'inizio.

if (you) arrive_{Imperfect} earlier, (you) see_{IMP} the movie from the beginning

≈ If you had arrived earlier, you would have seen the movie from the beginning

In section 4.3.1 I shall discuss what I call “the temporal flexibility property” of ICs.

In section 4.3.2 I shall show that ICs are different from both indicative conditionals and subjunctive conditionals: ICs carry an implicature that the antecedent is false that is “not cancelable”.¹⁷

¹⁷ Properly speaking, the implicature *is* cancelable, as expected from the theory of implicatures. Nevertheless, the implicature that arises with ICs is *much harder* to cancel than it is standard to assume in a theory of conditionals after Anderson (1951) and Stalnaker (1975). In this paper I will use the term “non-cancelable” to emphasize this contrast. See footnote (20) too.

4.3.1 The temporal flexibility of ICs

As shown above, the conditional in (19) can be paraphrased “If you had arrived earlier, you would have seen the movie from the beginning”. ICs can be modified by a past adverbial.

(19) Se arrivavi ieri sera, incontravi mia sorella.

if you arrive-IMP yesterday night, you meet-IMP my sister

≈ If you had arrived yesterday night, you would have met my sister

But the paraphrase given above should not mislead the reader into thinking that ICs are subjunctive past counterfactuals *tous cour.*¹⁸. ICs can also be modified by future adverbials, such as *tomorrow*.

(20) Se partivi domani, incontravi mia sorella.

if you leave-IMP tomorrow, you meet-IMP my sister

≈ If you left tomorrow, you would meet my sister

The example in (21a) – where an extra layer of past occurs only in the antecedent – is ungrammatical. Adding an extra layer of past in the consequent too does not help to obtain the counterfactual reading: indeed, (21b) is ungrammatical in the counterfactual interpretation and only marginally acceptable with the epistemic interpretation (forced by the past perfect in the consequent). Incidentally, notice that in Italian the auxiliary in a

¹⁸ See section III.3.2 and III.3.3 for more on this subject.

past perfect is always an Imperfect, while the main verb is – as in English – a past participle).

(21) a. *Se eri arrivato ieri sera, incontravi mia sorella.

If (you) be_{IMP} yesterday night, (you) meet_{IMP} my sister

‘If you had arrived yesterday night, you’d have met my sister’

b. ?Se aveva incontrato mia sorella, (allora) era già arrivato.

If (he) have_{IMP} met my sister, (he) be_{IMP} already arrived

‘If he had met my sister, he must have already arrived’

Let me clarify a little more. When the past perfect (pluperfect) occurs in the antecedent of a *subjunctive* past counterfactual (cf. (14b) and (15b)), it is not understood as a perfect tense but as a simple past. In Iatridou 2000, this is so because one layer of past is not interpreted temporally but modally (i.e. the exclusion feature in (16) is interpreted as a function ranging over worlds, not times). Only one layer of past is interpreted temporally (i.e. the exclusion feature being a function ranging over times): hence, in a past subjunctive counterfactual, the past perfect is *temporally* interpreted as a simple past. Above, I claimed that when an IC is used to express past counterfactuality, no extra layer of past occurs in the antecedent (cf. 19)). This does *not* mean that a past perfect (pluperfect) cannot occur in the antecedent. What it *does* mean is that if a past perfect occurs in the antecedent of an IC, the perfectivity of the tense will actually be interpreted. (21a) is ungrammatical because the VP-internal position of the adverb *ieri sera*

‘yesterday night’ is incompatible with the perfective interpretation of the past perfect *eri arrivato* ‘you had arrived’.¹⁹ But if we locate the adverb in the *referential* position, the sentence improves, as (22a) shows. As the adverb *già* ‘already’ indicates, the past participle below the Imperfect auxiliary contributes what it generally does in perfect tenses, i.e. *perfectivity*. On the other hand, like in the IC case we saw above, the Imperfect (indicative) auxiliary does not have to be interpreted as past and can be modified by future adverbials, as shown in (22b).

- (22) a. Se ora Abelardo era già arrivato, andavamo al cinema tutti insieme.
 If Abelard be_{IMP} already arrived, we go_{IMP} to the cinema all together
 ‘If Abelard had already arrived, we would go to the movie theater all together’
- b. Se domani alle 7 eri già arrivato, ti facevo provare la mia nuova macchina.
 If tomorrow at 7 you be_{IMP} already arrived, I you make_{IMP} try my new car
 ‘If tomorrow at 7 you had already arrived, I would have you try my new car’

The temporal flexibility of ICs also distinguishes them from standard indicative conditionals where the occurrence of a past adverb requires the presence of a past tense and the presence of a future adverb requires the presence of a non-past tense (either present or future). This is shown in (23), the Italian counterparts of the English examples in (12).

¹⁹ It has been observed by many researchers (Bertinetto 1982, Hornstein 1990, Bianchi, Squartini & Bertinetto 1995, Ippolito 1997, among others) that “referential” adverbs – adverbs that have the function of the Reichenbachian Reference point – must be located to the left of the clause, arguably VP-externally.

- (23) a. Se Abelardo va/andrà/*è andato a Dallas domani, incontrerà Eloisa.
 If Abelard go_{Pres/Fut Ind} /*Past to Dallas tomorrow, he meet_{Fut Ind} Eloisa
 ‘If Abelard goes to Dallas tomorrow, he will meet Heloise’
- b. Se Abelardo è andato/*va/*andrà a Dallas ieri, ha incontrato Eloisa.
 If Abelard go_{Past} /*Pres /*Fut to Dallas yesterday, he meet_{Past} Heloise
 ‘If Abelard went to Dallas yesterday, he met Heloise’

To sum up, the counterfactual eventuality described in the antecedent of an IC can be located either in the past or in the future (depending on which adverb occurs). Extra past tense morphology (like the extra layer of past of a pluperfect) can only be interpreted aspectually. Temporal flexibility distinguishes ICs from subjunctive and indicative conditionals.²⁰

4.3.2 The non-cancelability property

As I said above, Stalnaker’s semantic theory is that counterfactual conditionals – which require to be expressed in the subjunctive – are characterized by the fact that the selection function reaches outside the context set, the most likely reason for reaching outside the context being that (the proposition expressed by) the antecedent is *incompatible* with the presupposition of the context. But this is not always the case. To accommodate examples such as those in (24) and (25), the counterfactuality of conditionals has been argued to be

Temporal adverbs located within the VP can never have the referential function and necessarily locate the event in time (or, in Reichenbachian terms, provide the Event time).

²⁰ The aspectual properties of ICs are not explained by Iatridou (2000)’s proposal. I leave to the future the deeper investigation of these facts.

conversationally implicated and, therefore, not asserted (Anderson 1951, Stalnaker 1975, among others). Because the falsity of the antecedent is not asserted but only conversationally implicated, the implicature can be asserted without redundancy as in (24) from Stalnaker (1975), or canceled as in (25) from Anderson (1951).

(24) The murderer uses an ice pick. But if the butler had done it, he wouldn't have used an ice pick. So the murderer must have been someone else.

(25) If the butler had done it, we would have found just the clues which we in fact found.

The cancelability of the implicature that the antecedent is false seems to be a property only of standard subjunctive conditionals. Indeed, ICs implicate the falsity of the antecedent, and such an implicature resists cancelability. Indeed, the IC in (20) – repeated in (26a) – can be paraphrased as “If you left tomorrow, you would meet my sister, *but you won't*”. The IC in (26a) is radically different from its subjunctive counterpart in (26b), which behaves as normal counterfactuals do: whereas the latter talks about a future possibility, the former talks about a *future impossibility*.

- (26) a. Se partivi domani, incontravi mia sorella.
if you leave-IMP tomorrow, you meet-IMP my sister
≈ If you left tomorrow, you would meet my sister

b. Se partissi domani, incontreresti mia sorella.

If you leave_{IMP/SUBJ} tomorrow, you meet_{PRES/COND} my sister

‘If you left tomorrow, you would meet my sister’

We can indeed strengthen this intuition. The IC in (27) is felicitous only if the proposition expressed by the antecedent is believed to be false by the speaker. Notice the contrast with the full acceptability of (28).

(27) **Imperfect**

#Ho regalato il biglietto del concerto a Gianni, per cui è probabile che venga. Se veniva, si divertiva da morire.

I gave the ticket for the concert to Gianni so it’s likely that he’ll come. If he come_{IMP}, he enjoy_{IMP} a lot.

‘I gave the concert ticket to Gianni, hence it’s likely that he’ll come. If he came, he would have a lot of fun (*but he won’t*)’

(28) **Subjunctive**

Ho regalato il biglietto del concerto a Gianni, per cui è probabile che venga. Se venisse al concerto, si divertirebbe da morire.

I gave the ticket for the concert to Gianni so it’s likely that he’ll come. If he come_{IMP/SUBJ}, he enjoy_{IMP/SUBJ} a lot.

‘I gave the concert ticket to Gianni, hence it’s likely that he’ll come. If he came, he would have a lot of fun’

The contrast with respect to the cancelability of the implicature that the antecedent is false holds between ICs and subjunctive past counterfactuals as well (cf. (29), (30)).

(29) **Imperfect**

#Se Gianni prendeva quel farmaco, gli venivano proprio questi sintomi. Quindi l'ha preso.

If Gianni take_{IMP} that drug, to-him come_{IMP} these very symptoms. Therefore, he took it.

“#If Gianni had taken that drug, he would have these very symptoms (*but he didn't*). Therefore, he took it”

(30) **Subjunctive**

Se Gianni avesse preso quel farmaco, gli sarebbero venuti proprio questi sintomi. Quindi l'ha preso.

If Gianni have_{IMP/SUBJ} taken that drug, to-him be_{IMP/COND} come these very symptoms. Therefore, he took it

“If Gianni had taken that drug, he would have these very symptoms. Therefore, he took it”

The conclusion seems to be that in ICs the implicature that the antecedent is false resists cancelability in Anderson-type sentences.

There is another kind of conditionals that differ from ICs even more greatly: the indicative conditionals we discussed in 4.1. The Italian counterparts to the English data in (12) and (13) yield the same effects, as shown in (31).

(31) a. #Abelardo è morto. Se va/andrà a Dallas domani, incontrerà Eloisa.

‘#Abelard is dead. If he goes to Dallas tomorrow, he will meet Heloise’

b. #Abelardo è morto un mese fa. Se è andato a Dallas ieri, ha incontrato Eloisa.

‘#Abelard died a month ago. If he went to Dallas yesterday, he met Heloise’

This is expected given the theory of Indicative conditionals given above: the indicative mood (or, better, the absence of the subjunctive) tells us that the selection function reaches *inside* the context set or, in other words, that the antecedent is compatible with the presuppositions of the context. Therefore, in indicative conditionals there is no implicature that the antecedent is false, not even a cancelable one. Hence, the deviance of (31).

The conclusion that we can draw at this point is that ICs are different from both kinds of conditionals accounted for by the semantic theory of conditionals proposed in Stalnaker (1968) and presented above. With respect to their implicature that the antecedent is false, ICs differ from both standard indicative conditionals and subjunctive conditionals. They differ from standard indicative conditionals because the latter do not carry an implicature of falsity. They differ from subjunctive conditionals because the

latter carry a *cancelable* implicature of falsity: as we saw above, the implicature of falsity carried by ICs strongly resists cancelability.

This last point raises a question. I referred to the falsity of the antecedent as an implicature, in particular a *non-cancelable implicature*. Recall that my hypothesis is that the use of the Imperfect in conditionals (ICs) follows into the same class as the modal uses I analyzed in section 3. There, I showed that a simple sentence with the Imperfect does not carry the meaning that the speaker believes that the proposition expressed is false, but only that the speaker does not know that p (and is not (fully) endorsing it). Since my aim is to provide a single analysis for the modal uses of the Imperfect, I will argue that the extra component of the meaning that we find in conditionals, i.e. that *the speaker believes that $\neg p$* , should be *derived*. How? In this paper I suggest that deriving the meaning that the speaker believes that $\neg p$ from her not knowing that p is an instance of the mechanism that generates *scalar implicatures*. Of course something has to be said about this particular implicature because implicatures are cancelable by definition. As I argue elsewhere and cannot mention here for lack of space, the falsity of the antecedent is an implicature and, as such, *is indeed cancelable under appropriate circumstances*. In other words, it can be shown that, under special circumstances, the implicature does not arise.²¹ Therefore, the objective of this paper is to account for the fact that, unless these very special circumstances arise, the implicature cannot be cancelable.

²¹ In the context of a broader discussion of conditionals, Ippolito (2001) argues that the falsity of the proposition expressed by the antecedent is a Gricean implicature, thus providing an account for (i) the strong feeling of non-cancelability in the contexts we have discussed above or, in other words, the

4.3.3 Explaining the non-cancelability property of ICs

How can we derive the meaning that the speaker believes that a certain proposition is false found in ICs from the meaning that the speaker does not fully endorse that proposition, found in simple clauses with the Imperfect? Above I already sketched my answer: this extra meaning is a Gricean scalar implicature. I propose that the relevant *Gricean competition occurs between ICs and indicative conditionals*. More generally, I would like to claim that Imperfect indicative conditionals cannot compete with subjunctive conditionals because the two kinds are fundamentally different. What is this difference? A possible answer – which will become more transparent in what follows – is that indicative, but not subjunctive conditionals have an *epistemic/evidential* character.

Consider the pair in (32). From now on, the reader should keep in mind that whenever I use the label “indicative” I mean “indicative but not Imperfect”.

(32) **Imperfect**

a. Se Abelardo arrivava domani mattina, incontrava Eloisa.

If Abelardo arrive_{IMP} tomorrow morning, meet_{IMP} Eloisa

‘If Abelardo arrived tomorrow morning, he would meet Eloisa (*but he won’t*)’

Indicative

b. Se Abelardo arriva/arriverà domani mattina, incontrerà Eloisa

If Abelardo arrive_{Pres/Fut Ind} tomorrow morning, (he) meet_{Fut Ind} Eloisa

‘If Abelard arrives tomorrow morning, he will meet Heloise’

difference between normal subjunctive conditionals and ICs; (ii) examples of cases where the falsity implicature is indeed cancelled, as expected in the Gricean theory of implicatures. See footnote 16 as well.

Following the definition of the Imperfect I gave in (9), the proposition expressed by the antecedent of the IC in (32a) (that Abelard arrives tomorrow morning) is evaluated in all those worlds w compatible with some (relevant) evidence available to the speaker in the actual world at some time *before the utterance time* t_u . Informally, (32a) is true if and only if in all the worlds w compatible with some evidence available to the speaker in the actual world at some time before t_u , and such that it is true in w that Abelard arrives tomorrow, it is also true in w that he meets Eloisa. As for the indicative conditional in (32b), we saw above that the proposition expressed by the antecedent *must* be compatible with the presupposition of the context or, in other words, when he utters (32b), the speaker must believe that the possibility expressed by the antecedent is still open at the utterance time.^{22,23}

My proposal is that the following felicity condition holds for both (32a) and (32b): at the time of evaluation the speaker must not know that the proposition expressed by the antecedent is false. In other words, at the time of evaluation the speaker must not know that $\neg p$ (i.e. that the proposition expressed by the antecedent is false).

(33) **General Felicity Condition: \neg (know ($\neg p$))**

At the time of evaluation x , the speaker does not know that $\neg p$.

The value of x will depend on the tense of the conditional: the Indicative will assign x the utterance time, the Imperfect will assign x some contextually salient past time. The result

²² A weaker variant of this requirement holds for non-past subjunctive conditionals. This point will be discussed in section V.

in the latter case is that the evaluation time is shifted to the past. After giving a value to the variable x in (33) will have two specific felicity conditions, as shown in (33').

(33') a. **Felicity Condition for the IC (32a)**

At x , $x = \textit{some past time}$, the speaker does not *know* that the proposition expressed by the antecedent is false.

b. **Felicity Condition for the Indicative conditional (32b)**

At x , $x = \textit{the utterance time}$, the speaker does not *know* that the proposition expressed by the antecedent is false.

Summing up, the felicity condition for (32a) requires that at some (contextually salient) past time the speaker did not know that $\neg p$; the felicity condition for (32b) requires that at the utterance time the speaker does not know that $\neg p$.

Not knowing that p is false at t_u entails not knowing that p is false at any time $t_i < t_u$, because we can assume that knowledge can only grow over time, never shrink. But not *vice versa*, i.e. $\neg \textit{know}(\neg p)$ at t_i does not entail $\neg \textit{know}(\neg p)$ at t_u , $t_i < t_u$. This is because at any time t_j later than t_i but earlier than t_u , something could have happened that caused the speaker to shift from $\neg \textit{know}(\neg p)$ to $\textit{know}(\neg p)$.²⁴

Traditionally, Gricean implicatures involve a competition between two assertions in a relation of *asymmetric entailment*: the Gricean implicature kicks in when the speaker

²³ I am assuming that *if*-clauses supply restrictions to independent operators (Kratzer (1986), (1991)). This means that in ICs the modal operator and the accessibility relation we described in (9), are supplied by the Imperfect in the consequent clause of the conditional.

chooses to utter A rather than B, where B entails (“is stronger than”) A. Here I am proposing that the competition that generates the Gricean implicature that the antecedent is false in (32a) does not occur between the two conditional statements (32a) and (32b), but occurs between their *felicity (appropriateness) conditions*, which differ in what the time of evaluation is. In other words, the Gricean competition occurs at the level of the presuppositions. What the felicity condition in (33) requires is that the speaker not know that $\neg p$. $\neg \mathbf{know} (\neg p)$ is different from $\mathbf{know} p$ because the former only requires that x know that p is possible, whereas the latter requires that x know that p is true. Moreover, given our assumption above, if x does not know that $\neg p$ at t_u , then x did not know $\neg p$ at any $t_i < t_u$.

Suppose x utters (32a). The implicature that x knows that p is false (p being the proposition expressed by the antecedent) will be generated *à la* Grice: x said that he did not know that not p at some past time. If it had been the case that x did not know that not p at the utterance time, x would have said so, for example by uttering (32b). X did not say so; hence, it must be the case that at the utterance time $x \neg (\neg \mathbf{know} (\neg p))$, i.e. $\mathbf{know} (\neg p)$.

In other words, in my account the non-cancelability of the implicature that the antecedent is false is a Gricean scalar implicature: the speaker could have presupposed that she does not know that p is false; instead, she only presupposed that she *didn't* know that. Hence, she must know that p is false.

So far I have derived the non-cancelable implicature for ICs that compete with non-past subjunctive counterfactuals. But above we also saw that ICs can talk about

²⁴ For a discussion of possible counterexamples to the claim that knowledge can only grow, see Ippolito

counterfactual past eventualities. How do we derive the non-cancelable implicature that the antecedent is false in this case? Here is where it is clear that ICs cannot compete with past subjunctive counterfactuals because it is not true that they are felicitous only when the speaker does not know that the option described in the antecedent could not have really been that way: a past subjunctive counterfactual can be uttered even if the speaker's presuppositions are incompatible with the antecedent (or, in Stalnaker's terms, even if the selection function reaches outside the context set).

- (35) Abelard left a week ago. If he had come to the party yesterday's night, you would have met him.

4.4 Past ICs

We can derive the non-cancelability property of past ICs as we derived the non-cancelability of non-past ICs. The Gricean competition will occur again between a past IC – like (36a) – and a standard past indicative conditional – like (36b).

- (36) a. Se Abelardo arrivava ieri sera, incontrava Eloisa.
 If Abelard arrive_{IMP} yesterday night, he meet_{IMP} Eloisa
 'If Abelard had arrived yesterday night, he would met Heloise (*but he didn't*)'
- b. Se Abelardo è arrivato ieri sera, ha incontrato Eloisa.
 If Abelard arrive_{Past} yesterday night, he meet_{Past} Eloisa.
 'If Abelard arrived yesterday night, he (must have) met Eloise'

(2001).

According to the definition of the Imperfect given in (9), (36a) is true if and only if in all the possible worlds w compatible with the some relevant kind of evidence in the actual world at some contextually salient past time t_I and such that the proposition that Abelard arrived yesterday night is true in w , the proposition that Abelard met Heloise is true in w . This past time is the time at which the speaker did not know that the proposition p expressed by the antecedent was false (i.e. when she believed that p was possible) and it is also the time at which the speaker acquired some new piece of information, thus going from $\neg \text{know} (\neg p)$ to $\text{know} (\neg p)$. As it did above, the *past shifts the evaluation time by removing the speaker from the actual time and dislocating her in the past*. Notice that it is not surprising that, whereas the evaluation time is located in the past (yesterday night in (36a)), the indexical is (necessarily) evaluated with respect to the utterance time. It is well-known that indexicals that appear in the complement of attitude verb are not interpreted as part of the content that is attributed to the subject of the attitude verb. For example in (37) the indexical *tomorrow* cannot have been part of the content of what John said (i.e. he couldn't have said "Mary will arrive tomorrow") because his tomorrow is clearly different from the speaker's tomorrow. There is a fundamental asymmetry between tense and adverbs in (37): the tense is evaluated with respect to John's original utterance, the indexical is evaluated with respect to the speaker.

(37) A week ago John said that Mary would arrive tomorrow.

What is important for our purposes is the realization that indexicals (necessarily evaluated with respect to the speaker's time) are allowed to occur even if the tense is *not* evaluated with respect to the speaker's time.

Let us go back to the pair in (36). Whereas (36a) presupposes that at some past time the speaker did not know that the proposition *that Abelard arrived yesterday night* was false, (36b) presupposes that she does not know that that proposition is false now. Now we are in the position to apply the same reasoning that we used for non-past ICs. (36b)'s presupposition entails (36a)'s presupposition and the Gricean mechanism kicks in. The speaker didn't say that she does not know that p is false at the utterance time, despite the fact that that would have been more informative²⁵. This must be because it is not the case that she does not know that p is false at the utterance time, i.e. it must be the case that she knows that p is false.

Notice that this analysis nicely agrees with another aspect of the standard indicative conditional in (36b), i.e. its epistemic/evidential character. Given this epistemic character, it does not come as a surprise that (36b) would actually enter into a Gricean competition with the IC in (36a), which I have argued is epistemic/evidential too. In what follows, I shall discuss (i) how my proposal accounts for what in III.3.1 I labeled the temporal flexibility property of ICs, and (ii) cross-linguistic evidence that the analysis above is correct.

The *temporal flexibility* (i.e. the possible co-occurrence of the Imperfect with either past or future adverbs) is explained as follows. Because the past component shifts

²⁵ When the proposition is *tensed*, as in the case of the past indicative conditional we are considering now, saying that the speaker must believe that the possibility expressed by the antecedent is open at the utterance time means to say that the speaker must believe that the past could have been that way (i.e. that the proposition was true at some past time).

the evaluation time to the past (or, in other words, it is interpreted outside the scope of the modal operator), the proposition is *tenseless* in the sense that in the clause there is no tense information that locates the event in time.

My proposal claims that ICs compete with (standard) indicative conditionals in virtue of (i) sharing the same mood and (ii) having an epistemic/evidential character. Turkish conditionals strongly support my analysis. To form conditional sentences, Turkish employs two morphemes, the past and the conditional morpheme. The basic order of these morphemes is [[V-past]-cond]. These morphemes can also occur in the opposite order: [[V-cond]-past]]. Crucially, when the order is [[V-cond]-past], the conditional carries the non-cancelable implicature that the antecedent is false. (38a) is the “inverted” conditional whose antecedent has to be understood as false.

- (38) a. Abelard Eloise-e dün çiçek ver-se-y-di, Eloise mutlu ol-ur-du.
 Abelard Eloise-dat yesterday flower give-**cond-cop-past**, Eloise happy be-aorist-past
 ‘If Abelard had given flowers to Eloise yesterday, Eloise would have been happy (*but he won’t*)’
- b. Abelard Eloise-e dün çiçek ver-di-y-se, Eloise mutlu ol-muş-tur.
 Abelard Eloise-dat yesterday flower give-**past-cop-cond**, Eloise happy be-perfect-copula2
 ‘If Abelard gave flowers to Eloise yesterday, Eloise must have been happy (*and maybe he did*)’

The regular conditional (38b) is not a subjunctive counterfactual but an *indicative conditional* which, exactly like the Italian (36b), has the epistemic/evidential character.²⁶

These facts fall naturally in my theory. Consider the deviance of example (39).

(39) #Abelard bir ay önce öl-dü-Ø. Abelard Eloise-e dün çiçek ver-**di-y-se**,
Eloise mutlu ol-muş-tur.

Abelard one month ago die-past-3sg. (38b).

‘#Abelard died a month ago. If Abelard gave flowers to Heloise yesterday, she must have been happy’

The deviance of (39) shows that (38b) is felicitous only when the speaker believes that the eventuality described by the antecedent may be true in the actual world. In other words, (38b) is only appropriate if the antecedent is compatible with the presuppositions of the context. The ungrammaticality of (40) below, where the future adverb *yarın* ‘tomorrow’ occurs, shows that the past morpheme in the antecedent of (38b) is interpreted as locating the eventuality described in the antecedent in the past.

(40) *Abelard Eloise-e yarın çiçek ver-**di-y-se**, Eloise mutlu ol-muş-tur.

Abelard Eloise-dat tomorrow flower give-**past-cop-cond**, Eloise happy be-
perfect- copula2

‘If Abelard had given flowers to Eloise tomorrow, Eloise would have been happy
(and maybe he will)’

²⁶ I would like to thank Meltem Keleşir for these data.

This observation, together with the fact observed above that (38b) requires the antecedent to be compatible with the presuppositions of the context, indicates that (38b) is the Turkish counterpart of (36b). Indeed, like (36b), it has the *epistemic/evidential* character (the consequent can only be translated in English as ‘must have been happy’ and could not be translated as a normal past subjunctive conditional ‘would have been’).

Furthermore, I would like to suggest that (38a) is the Turkish counterpart of (36a). If my hypothesis that the past is actually contributing to the restriction of the accessibility relation (cf. (9)) is right, we predict that the proposition should be tenseless and any adverb could in principle occur. This is correct: the variant of (38a) with *yarın* ‘tomorrow’ is also grammatical.

- (41) Abelard Eloise-e yarın çiçek ver-se-y-di, Eloise mutlu ol-ur-du.
 Abelard Eloise-dat tomorrow flower give-**cond-cop-past**, Eloise happy be-aorist-past
 ‘If Abelard gave flowers to Eloise tomorrow, she would be happy (*but he didn’t*)’

If (38a) is like (36a) and if we take the order of the morphemes in Turkish to indicate the structural position of the heads to which they correspond, we also capture and extend the observation made above that in ICs past is interpreted outside the scope of the modal operators.

Having shown that (38a) is like the IC (36a) and (38b) is like the indicative conditional in (36b), and following the proposal developed in this paper, we can claim that (38b) is stronger (more informative) than (38a). Consequently, we are in the position

of explaining the (non-cancelable) implicature that the antecedent is false in (38a) as a *Gricean implicature*, exactly as we did for the Italian pair in (36).

5. Temporal Mismatches in Conditionals

In a theory of conditionals where past counterfactuals talk about past possibilities, (42a) comes as a surprise. The examples are adapted from Ogihara 2000.²⁷

- (42) a. If Abelard had given flowers to Heloise *tomorrow*, she would have been happy.
b. If Abelard had given flowers to Heloise yesterday, she would have been happy.

First of all, notice that (42a) does not talk about what the past could have looked like but what the *future* could have looked like. Second, there is an implicature that the antecedent is false: for (a) to be true, it must be the case that something happened in the past that foreclosed the option expressed by the antecedent. Let's call (42a) a *future counterfactual*.

Examples such as (42a) raise important questions. First, how can we account for the mismatch between the temporal information in T (past) and the future oriented adverbial *tomorrow*? Second, where does the implicature that *p* is false come from? Third, why is this implicature non-cancelable? There is a clear analogy with the properties of ICs. I maintain that it is the *same problem* and that it should have the same solution.

²⁷ Ogihara tried to account for these examples where focus plays a crucial role. I will not discuss his proposal here but let me just mention that focus does not seem to be a necessary condition for the

Recall what I suggested above: two conditional sentences (or, precisely, their presuppositions) compete and generate a Gricean implicature, if they share the same mood. Hence, the counterfactual in (42a) will have to compete with a different kind of *subjunctive* conditional. The intuition that I will try to capture is that future counterfactuals do not talk about the past but about the future *from a past perspective*. My proposal is that (42a) is like the non-past *subjunctive* counterfactual *If Abelard gave flowers to Eloisa tomorrow, she would be happy* uttered at some time before t_u . This past time is contextually salient and is the time at which something happened that foreclosed the possibility that Abelard will give flowers to Heloise tomorrow.

Contrary to normal past counterfactual – (42b) – *but* like ICs, in future counterfactuals the past component of the tense does not locate the event talked about in the past shifts the evaluation time by *restricting the accessibility relation*. The truth-conditions for (42a) will be as shown in (43).²⁸

- (43) (42a) is true iff for all the w accessible to $w_@$ at some time $t_I < t_u$, such that Abelard gives flowers to Heloise tomorrow is true in w , Eloisa is happy is true in w .

Notice that the same mechanism that accounts for the modal uses of the Imperfect and ICs also accounts for the “special” use of the past in future counterfactuals. Indeed, in future counterfactuals too there is a non-cancelable implicature that the antecedent is false. I suggest that the Gricean explanation has to be extended to these cases too.

grammaticality of the examples in question (neither in English nor in Italian). For a full critique of Ogihara’s proposal and an analysis of the facts presented here, see Ippolito (2001a).

Specifically, I propose that (42a) competes with the subjunctive non-past counterpart in (44).

(44) If Abelard gave flowers to Eloisa tomorrow, she would be happy.

But the Gricean competition will be possible only if (44) can be shown to entail (42a).

Can we show that?

I will only sketch the beginning of a new analysis of conditionals. Thus, the discussion is not meant to be exhaustive.

I would like to suggest that the traditional way to think about non-past subjunctive conditionals as carrying the implicature that the antecedent is false is incorrect. I propose that the condition in (45) holds for non-past subjunctive conditionals such as (44).

(45) **Condition for the felicitous use of a non-past subjunctive conditional**

At t_u (the utterance time), the speaker does not know that $\neg p$.

This is supported by the deviance of example (46).²⁹ If the speaker knows that $\neg p$, then the non-past subjunctive conditional is infelicitous.

²⁸ Footnote (22) will extend to the English cases too.

²⁹ Consider the contrast between (i) and (ii).

- (i) Abelard is not drunk. If he were drunk, he would tell you the truth.
- (ii) #Abelard is dead. If he were drunk, he would tell you the truth.

The acceptability of (i) would seem to contradict Condition (45) above in that the antecedent of the conditional is known to be false by the speaker. This incompatibility between (i) and condition (45) is only apparent though, and disappears once we provide a more precise definition of “open option”. The key to the correct definition is provided by the contrast between (i) and (ii): superficially, the deviant example is such that what is presupposed by the antecedent of the conditional – i.e. that Abelard is alive – is *inconsistent*

(46) #Abelard is dead. If he came to the party, he would have fun

As we did in III.3 in our discussion of ICs, we could formulate the felicity condition in more general terms so as to satisfy both (42a) and (44).

(45') **General Condition for the felicity of a non-past subjunctive conditional**

At x (the time of evaluation), the speaker does not know that $\neg p$.

One layer of past in (42a) is interpreted outside the scope of the modal operator and shifts the evaluation time to the past by replacing x in (45') with some contextually salient past time. In (44), on the other hand, x is interpreted as t_u . Therefore, (44)'s presupposition will entail (42a)'s presupposition because saying that somebody does not know that p is false at the utterance time is more informative than saying that somebody did not know that p is false at some past time.

with what is asserted before the conditional and constitutes the presuppositions of the context (“Abelard is dead”). On the other hand, in the acceptable (i), the antecedent directly modifies the context where the conditional is evaluated, by replacing the presupposition “Abelard is not drunk” with the new proposition “Abelard is drunk”. In other words, what causes the deviance of (ii) is the *inconsistency* between the presuppositions in the context and the presuppositions of the conditional. Hence, condition (45) should be understood as (iii).

- (iii) The presuppositions of the (antecedent of the) conditional have to be consistent with the presuppositions already in the context (i.e. with the context itself).

Notice that the new condition in (iii) is not a general condition on the utterability of an arbitrary sentence, as shown by the fact that past counterfactuals do not show the same restriction:

- (iv) Abelard died last Monday. What a shame! If he had come to yesterday's party, he'd have seen Heloise again.

Notice that (iii) above unifies present counterfactuals like (i) above and future counterfactuals like those I have been considering in the text.

- (v) Gianni will not come to the party but if he came, he would have fun
(vi) #‘Gianni is dead but if he came to the party, he would have fun’

We can follow our reasoning backwards: if a conditional triggers the non-cancelable implicature of falsity, it is because one layer of past shifts the evaluation time to the past, i.e. the past is interpreted outside the scope of the modal operator. Interestingly, we know of another kind of conditionals that has been observed to carry the non-cancelable implicature that the antecedent is false: *inverted conditionals*.³⁰ The contrast in (47) shows this point.

- (47) a. #Had Abelard come down with the flu, he would have exactly the symptoms he has now. I conclude, therefore, that Abelard has the flu.
- b. If Abelard had come down with the flu, he would have exactly the symptoms he has now. I conclude, therefore, that Abelard has the flu.

The expectation is that inverted conditionals should then be the preferred way to express future counterfactuality, on a par with ICs. The native speakers I have consulted confirmed this point.

- (48) Had John given flowers to Mary tomorrow, she would have been happy.

We would like to be able to say *when* a certain interpretation will arise, i.e. what syntactic configuration has to hold for a certain interpretation to be possible. It is plausible to hypothesize that the non-cancelability of the falsity implicature is related to the T-to-C

³⁰ The syntax of inverted conditionals is discussed in Pesetsky (1989) and Iatridou and Embick (1994). In the latter, the non-cancelability issue is also mentioned.

movement that has been argued to occur *overtly* in Inverted conditionals (see footnote 29).³¹ We would thus incorporate the Turkish facts discussed above, where again the non-cancelability of the falsity implicature correlates with an order of morpheme where the past tense occurs in an outer position.³²

This is only a sketch of an analysis of temporal mismatches in English. The proper treatment of these cases will have to involve a general reassessment of the semantics and pragmatics of conditionals in general. For a thorough discussion and proposal, see Ippolito (2001a).

6. Conclusion and remaining issues

The most general conclusion is that tense is not always interpreted as locating events in time. Sometimes, it contributes to the restriction of the accessibility relation or, in other words, it is interpreted outside the scope of the modal. This is the case for the past component of the Imperfect when a mismatch occurs with some temporal adverb occurring in the sentence. Hopefully, the current research will tell us what are the *syntactic conditions* that determine one interpretation or the other. My proposal accounted for the modal uses of the Italian Imperfect both in main and embedded clauses and for puzzling examples of temporal mismatches in conditionals, which have been found cross-linguistically.

³¹ The role of C in the interpretation of tense has already been pointed out in the literature, e.g. Enç (1987), Stowell (1998), etc.

³² Aygen (1999) suggests that in Turkish conditionals where the order of morphemes is [[V]-cond]-past] the past has raised to C. Also, the relevance of the complementizer in achieving the (non-cancelable) falsity implicature would be supported if we found a language where this property overtly correlates with the choice of the complementizer, on the lines of what has been argued for Irish in the domain of *wh*-movement, where *wh*-movement is accompanied by a change in the form of the complementizer. In current work, I suggest that Slovenian may be such a language (Marvin (1999)).

I have analyzed the correlation between the “dislocational” role of past (its contribution to the restriction of the accessibility relation) and the falsity implicature, and I offered a pragmatic account based on the notion of Gricean competition. This analysis shed new light on standard future subjunctive conditionals and suggested a revision of the traditional view.

The cross-linguistic perspective I took in this paper raises the question of whether T-to-C movement is one of the *conditions* alluded to above. The question is relevant for inverted conditionals – for which T has been argued to overtly raise to C – and subjunctive conditionals with temporal mismatches (what I called “future counterfactuals”). Less transparently, the question arises whether the modal Imperfect too involves T-to-C movement. Still, at the moment, I have no argument to support the claim that this is the case.

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