Spanish past and future tenses: less (semantics) is more

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1. Introduction

Spanish simple future and *pretérito* can receive interpretations that are difficult to explain in terms of a single underlying lexical meaning. Consider the case of simple future. It can receive either a temporal or a modal interpretation (Gili Gaya, 1961). The temporal interpretation denotes a time later than the speech time (ST), as exemplified in (1). The modal interpretation conveys a probability or certainty judgment, what Gili Gaya (1961) calls future of probability, as in (2) and (3). Critically, this interpretation is often accompanied by a non-future temporal reading, i.e., an interpretation compatible with a situation in which the sentence in question is true at the ST:

Temporal interpretation:

(1)   El presidente hablará por televisión.

       The president speak-fut by television.

       'The president will speak on TV.'

Modal interpretation:

(2)   Acabo de ver las luces. Juan ya estará en casa.

       (I) finish of see the lights. Juan already be-fut in home.

       'I just saw the lights on. Juan will be at home already.'

(3)   El avión llegaba a las cuatro. Pedro ya estará en Kansas.

       The plain arrive-imperf to the four. Pedro already be-fut in Kansas.

       'The plain was arriving at 4. Pedro will already be in Kansas.'

Thus, the modal interpretation is problematic for traditional accounts of the meaning of simple future that propose either a basic future meaning underlying all uses (King 1992), or the existence of different "senses" composing the meaning of the tense (Gili Gaya, 1961). This is because these proposals fail to systematically explain when and why the non-future reading is available.

The case of Spanish *pretérito* presents a similar problem. It can receive a temporal reading together with an aspectual one. Temporally, *pretérito* denotes a time before the ST, while in the aspectual domain, it indicates the completion of the action denoted before the ST. This aspectual component of *pretérito* is usually contrasted with that of *imperfecto*, which does not require completion (Gili Gaya, 1966, Cipria and Roberts 1999). However, this aspectual reading is not always available: *pretérito* can but need not convey completion. For example, (4) entails that the letter is finished (confirming the completion interpretation), but (6) does not entail or convey the end of the sickness:

Completion interpretation:

(4)   Juan escribió una carta. * Pero no la terminó.

       Juan write-pret a letter. But not it finish-pret.

       'Juan wrote a letter. *But he did not finish it.

(5)   Juan corrió esta mañana. #Y todavía corre.

       Juan run-pret this morning. And still run-pres.

       'Jun ran this morning. # And he is still running.

Non-completion interpretation:

(6)   Juan estuvo enfermo ayer. Y todavía lo está.

       Juan be-pret sick yesterday. And still it be-pres.

       'Juan was sick. And he still is.'

(6) can receive an interpretation in which the same state referred by the first sentence continues into the present. This is incompatible with the postulation of an aspectual meaning that specifies the completion of the event before the ST. However, it should be noted that this interpretation only arises under special circumstances. In contrast to the non-future reading of simple future, an isolated *pretérito* sentence does not generate a reading in which the interpretation of the sentence continues into the present. In fact, in isolation, *Juan estuvo enfermo ayer* 'Juan be-pret sick yesterday' receives an interpretation in which Juan most likely is no longer sick. It is the continuation of the second sentence in (6) that brings about the possibility of the continuation into the present. These facts are puzzling and pose a problem for most accounts, those that attribute to *pretérito* both temporal and aspectual meanings (Bello, 1847, Gili Gaya, 1961, Cipria and Roberts, 1999) and those that attribute to it a simple past meaning (Gennari 1999b). In either case, the absence or presence of the completion reading would need to be systematically explained. Thus, for both simple future and *pretérito*, there are readings that cannot be captured by a single underlying definition of the

tense, no matter whether this definition is simple or complex (with one or two basic components).

In this paper, I investigate the specific distributions of the temporal readings available for each simple future and *pretérito* in order to identify what is common in all interpretations (i.e., part of the semantic lexical meaning) and what is a result of the context of occurrence. I claim that the correct allocation of the work of semantics and pragmatics can improve our understanding of the meanings and interpretations of these tenses.

The basic idea of my proposal is that both simple future and *pretérito* have relatively simple lexical meanings, but independent factors such as aktionsart and conversational implicatures explain the unexpected readings. The proposal is presented in several steps. First, I show that the aktionsart of the sentence involved determines the temporal reading. In particular, it determines whether the future tense receive a future or non-future temporal reading and whether *pretérito* is compatible with a non-completion reading. Thus, the meanings of the tenses need not include an especial specification to treat these readings. Second, I discuss the meaning of *pretérito*. I argue that its meaning only contains past temporal information, while its completion reading follow from aktionsart facts and a pragmatic conversational implicatures that arises from the speaker's choice between *pretérito* and *imperfecto*. Finally, I show that different occurrences of simple future have a unique meaning with both temporal and modal components, where the modal component is defined as a function from the context of occurrence (as Kratzer 1977, 1979, 1981 has noted for other modals). For any given occurrence, both temporal and modal specifications are present so that there is no temporal use independent from a modal one. The temporal meaning is treated as quantification over future intervals, whereas the modal part of the meaning quantifies over worlds but requires the sentence to follow from the assumptions in the context of utterance (conversational background).

2. Accounting for the temporal interpretations

i.   Temporal interpretation and aktionsart

The main question addressed in this section is why simple future can receive non-future readings and why *pretérito* can receive non-completion readings. To understand this problem, one needs to look at aktionsart properties, since the temporal interpretation of these tenses is determined in predictable ways by the aktionsart of the sentence involved. Consider first the case of simple future:

Stative sentences

(3)   Juan estará en casa ahora.
        Juan be-fut at home now.
        'Juan will be at home now.'

(7)   El cura sabrá mucho de teología.
        The priest know-fut much of theology.
        'The priest will know a lot of theology.'

Eventive sentences

(8)   Leerá el libro. / Conducirá todo el día.
        Read-fut the book./ drive-fut all the day.
        'He will read the book.' / 'He will drive all day long.'

Stative sentences are correlated with the possibility of non-future readings, although future readings are also possible. In contrast, event sentences (whether activities or accomplishments) are correlated with future readings. A similar situation obtains for the case of the *pretérito* with reference to the non-completion reading:

Stative sentences

(9) Estuvo en casa esta mañana. (Y todavía lo está.)

Be-pret at home this morning. (And still it be-pres)

He was at home this morning. (And he still is).

(10) Sospechó que ella lo engañaba. (Y todavía sospecha).

Suspect-pret that she him deceive-imperf. (And still suspect-pret).

'He suspected that she was deceiving him. He still suspecting.'

Event sentences

(11) Juan escribió una carta. (*Y todavía la está escribiendo.)

'Juan write-pret a letter. (*And still it be-pres writing).

Juan wrote a letter. (*And he still writing.)'

(12) Caminó en silencio. (#Y todavía está caminando.)

Walk-pret in silence. (# And still be-pres walking.)

'He walked silently. (# And he is still walking).'

Stative sentences are compatible with an interpretation in which the past state continues into the present, while this interpretation is not possible with event sentences. Thus, for both simple future and *pretérito*, stative sentences correlate with temporal interpretations that can overlap the ST.

This generalization is supported by independent facts. Discourse Representation Theory (e.g., Kamp & Reyle 1983) and Dowty (1986) have pointed out that stative sentences, including generics (Carlson & Pelletier 1995) and progressive ones, typically generate overlapping readings in discourse contexts. In contrast, event sentences generate sequential readings. Consider some examples:

(13) I went to Bill's office this morning. He was sick.

(14) I went to Bill's office this morning. We discussed the budget proposal.

Similarly, the temporal effects of *imperfecto* in Spanish and progressive in English are attributed to the properties that imperfective aspect shares with stative sentences (cf. Cipria & Roberts 1999, Dowty 1979, 1986, Gennari 1999b). These properties explain why *imperfecto* and progressive correlate with overlapping readings in subordinate contexts, while simple tenses, which lack these properties, correlate with sequential readings:

(15)   a. Juan dijo que María estaba viniendo.
           Juan say-pret that María be-imperf coming.
        b. Juan said that María was coming.

(16)   a. Juan dijo que María vino.
           Juan say-pret that María be-pretcoming.
        b. Juan said that María came.'

The temporal effects of aktionsart properties are thus not restricted to simple future and *pretérito*, or to interpretations relative to the ST. Rather, it is a general phenomenon that occurs with several tenses in both English and Spanish and relative to times other than the ST.

Why does this phenomenon occur? Following a suggestion made by Dowty (1986), I have proposed that stative sentences generate overlapping readings because they trigger a temporal pragmatic implication: states imply that they are true at a larger interval that includes the interval (past or future) specified by the meaning of the tense. I call this implication the superinterval implication (Gennari, 1999a, 1999b). The intuition behind this implication is the following. If a certain state holds at interval i, one can infer that the state held for some time prior to i and will hold for some time later than i, i.e., that the state holds at a superinterval surrounding i. For example, if I am Argentinean now, you can infer that I was and I will be Argentinean for a while.

This inference follows from what we know about states, their very nature. Note that states do not have internal temporal developments like events do, there is no transformation or internal causal structure. Something can cause a state to come into existence (as my being Argentinean was caused by my being born in Patagonia), but once you are in a certain state, it can persist in time until some other event stops it. Events in contrast, are contingent on causal forces acting upon them. This causal dependency makes them temporally bounded. They entail changes that go from an initial state to a final state. Accomplishments entail a single definite change, while activities entail a sequence of changes (see Dowty 1979 for a discussion of the change-of-state entailment). Such changes, due to their dependency on external forces, are not taken to go on indefinitely but to start and stop within the interval specified by the tense. Intuitively, if an activity or accomplishment is true at interval i, it does not necessarily lead us to conclude that the event holds at an interval earlier or later than i, since the causal force that applies at i may not obtain at any other time. Thus, states, but not events, have the superinterval implication.

The temporal effects of the superinterval implication can be clearly seen in the temporal interpretation of future tenses. Consider, first, the case of simple future:

(3)   Juan estará en casa ahora.
        Juan be-fut at home now.
        'Juan will be at home now.' $= \exists i \ [i>st \ \& \ be\text{-}home(j, i)]$

According to the standard account of simple future, (3) is true iff there is a future interval i later than the ST at which Juan is home. Now, given the implication associated with states, i.e., that there is a superinterval i' that contains i at which Juan is home, it follows that both the ST and the interval of being home can overlap. This is exemplified below where the slashes represent the superinterval inferred around the future interval specified by the tense:

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_____/_/_/_/_/_|_/_/_/_/_/_/_/_/_/_/_|||||||||/_/_/_/_/_____
                         ST                    be-home
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Note that if the sentence was eventive, the event will be interpreted to happen within the future interval provided by the future tense. So, no overlapping reading would be possible. Note also that the superinterval implication does not necessarily trigger an overlapping reading. The context will help to determine whether such an inference is plausible. For example, *John will be at home next week* may not trigger the inference, because the state involved is not likely to hold true for such a long period.

A similar reasoning applies for the case of the *pretérito* in order to obtain the non-completion reading. The temporal information of the tense is such that it denotes an interval prior to the ST. However, *under special conditions* such as those of (6), the state involved can be inferred to obtain at a larger interval so that this interval is able to overlap with the ST:

(6)   Juan estuvo enfermo. (Y todavia lo está).

        Juan was-pret sick. (And still it is).

        Jaun was sick. And he still is. = *∃i [i<st & be-sick(j, i)]*

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                       be-sick                    ST
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Note that this account of the non-completion reading of *pretérito* presupposes that the meaning of this tense is simply past. If the semantic specification of the tense contained some specification about the completion of the event/state involved, such a specification would contradict the pragmatic inference of a superinterval, and therefore, the superinterval inference would not be possible. The fact that this

inference is possible suggests that the meaning of the *pretérito* does not lexically specify aspectual information. Although there are several remaining questions regarding the interpretations of *pretérito* (discussed in next section), it is fair to conclude that the superinterval implication explains why the non-future reading of simple future and the non-completion reading of *pretérito* may arise with states but not with events. Therefore, it is possible to maintain that the semantic lexical specification of the simple future is always future and that of *pretérito* is simply past. Independent aktionsart facts will explain the problematic readings for each case.

ii.   Pretérito and the completion reading

In the previous section, I argue that the lexical meaning of *pretérito* only specifies past temporal information because the non-completion reading is possible under certain conditions. This contrasts with Cipria and Roberts's (1999) proposal according to which *pretérito* entails completion, i.e., its meaning specifies what they call the end-point requirement. But if *pretérito* does not lexically specifies the end-point requirement, why does *pretérito* typically receive completion readings? And why does the non-completion reading arise in very specific circumstances? In this section, I address these questions by investigating when and why each possible reading is available. On the one hand, I show that the key to understand the distribution of the completion readings is the type of aktionsart with which *pretérito* combines. On the other hand, I argue that the non-completion reading arises from the cancellation of an otherwise present pragmatic inference, hence the specificity of the contexts in which it occurs.

To start with, note that *pretérito* inherits the aktionsart from the phrase it modifies (Cipria and Roberts 1999). For example, if the verb phrase (VP) denotes an accomplishment or achievement verb, the result of combining the *pretérito* + VP is an accomplishment or achievement sentence. The same is true for other type of

events. This contrasts with *imperfecto*, which changes the basic VP aktionsart into atelic aktionsart, i.e., into an aktionsart that does not entail a definite change of state. Compare the following:

(4)   Juan escribió una carta. *Pero no la terminó.
          Juan write-pret a letter. * But he not it finish-pret.
          'Juan wrote a letter. But he did not finish.'

(17)   Juan escribía una carta. Pero no la terminó.
          Juan write-imperf a letter. But he not it finish-pret.
          'Juan was writing a letter. But he did not finish.'

While (4) entails that Juan finished writing the letter, (17) does not necessarily does so. Juan could have been writing a letter without having finished it. This clearly exemplifies the different aspectual effects of *pretérito* and *imperfecto*. *Pretérito* does not change the aktionsart of the phrase with which it combines. This means that whichever entailments the basic VP has are inherited by the *pretérito* sentence.

Note also that Dowty (1979), Taylor (1978), Verkuyl (1993) and many others have pointed out that accomplishment/achievements entail a change of state. This amounts to entailing the falsehood of the proposition in question at a certain interval i and its true at an interval i' later than i (see definition of BECOME in Dowty 1979). For example, if you write a letter at i, this entails that the letter was not written before i, and that it was written immediately after i. The resulting state must therefore obtain if the accomplishment sentence is true. This explains why *pretérito* sentences with achievements or accomplishments receive a completion interpretation: the event denoted finished within the interval specified by the tense. This also explains why the second sentence of (4) is contradictory: the entailment of this aktionsart is logically incompatible with the truth of the sentence at longer intervals or at the present.

Another way to describe the judgment of (4) is in terms of discourse dynamics. According to Stalnaker (1978), Heim (1988) and dynamics Montague semantics, every utterance context or conversational background (CB) is a set of propositions shared (set of possible worlds) by the participants of the conversation. This context updates as conversation proceeds. Every new sentence in discourse causes a change in the CB according to which some new set of propositions is generated. According to Stalnaker (1978), this set is the intersection of the CB and the new proposition. As an example, consider a case given by Roberts (1989):

(18)   A thief might break into the house. He would take the silverware.

Once the first sentence is added to the utterance context, it generates a set of propositions compatible with the actual situation (the intersection of the initial CB and the proposition). The second sentence in the discourse is evaluated relative to these propositions, i.e., to a situation in which a thief breaks into the house, and not relative to the utterance situation. The new CB is a set of worlds in which the two propositions are true. Thus, each new sentence in discourse causes a rearrangement in the CB.

In our example (4), the first sentence introduces in the CB a given set of propositions compatible with the proposition expressed. One of these propositions is the entailment that the letter writing was finished at the past interval specified. When the second sentence comes in, the proposition that the letter was not finished logically contradicts that of the current CB. The intersection of the current CB and the new sentence is empty. This, according to Stalnaker (1878) is the characteristic of a self-defeating assertion. The interpreter cannot generate the new CB without concluding that either the second statement or the first one is false. The discourse thus result incoherent.

Consider now the occurrence of *pretérito* with activities:

(19)   Juan bailó. ??Y todavía está bailando.

        Juan dance-pret. ??And still be-pres dancing.

        'Juan danced. ?? And he is still dancing.'

An interpretation in which there is continuation of the activity into the present is not available. This is because activities in general have temporal implications which are inconsistent with their truth at intervals beyond the one specified by the tense. To see this, note that activities are normally assumed to be contained within the interval provided by the temporal operator (the interval of evaluation). They typically imply that they take place within some arbitrary initial and end point of their interval of truth (Smith 1991). Consider the following (where $\Rightarrow$ means *implies*):

(20)   Juan bailó esta mañana. $\Rightarrow$ Juan terminó de bailar esta mañana.

        Juan dance-pret this morning. Juan finish-pret of dance this morning.

   'Juan danced this morning. $\Rightarrow$ He stopped dancing this morning.'

When activities occur with simple non-aspectual tenses, they are interpreted to occur within the boundaries specified by temporal adverbs. This stems from the fact that a quantity pattern of implicature is triggered by the grammatical elements of the sentence, in particular by the possible alternation between *pretérito* and *imperfecto*. Consider the following:

(21)   Juan bailó.

        Juan dance-pret.

        'Juan danced.' $= \exists i \ [i < ST \ \& \ dance(j, i)]$

(22)   Juan bailaba.

        Juan dance-imperf..

'Juan was dancing.' = $\exists i \; [i < ST \; \& \; PROG[dance(j, i)]]$

By the definition of *imperfecto*, (22) <u>logically entails</u>, rather than implicates, that there is superinterval containing *i* during which the process of dancing took place (Gennari 1999b). This is because, like the English progressive (see Dowty 1969), *imperfecto* has both an aspectual and temporal component. The temporal component, as *pretérito*, denotes an interval prior to the ST. The aspectual meaning introduces a superinterval surrounding the past interval provided by the past component. (22), for example, is true iff there is a past interval and a superinterval containing this interval at which Juan is in the process of dancing[1]. The intuition behind the superinterval is that it allows the event in question to be in progress at the given past interval, rather than being completed at this interval. This explains why (17) is compatible with a situation in which the letter was not finished and why the activity of (22) can keep obtaining until the ST[2]. (22) thus clearly contrasts with (21), which simply says that the process of dancing took place at a past interval *i*. This is represented below:

_____|||||||||_____|_____

bailó   ST

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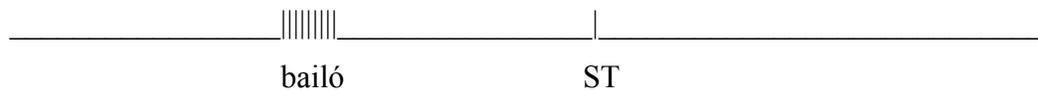
[1]   The definition of imperfecto is actually more complex, since it also contains modal specifications, as the English progressive. For this, see Dowty 1979.

[2] This also explains why the subordinate sentence of (15) overlaps with the time of the matrix: the past component of imperfecto denotes an interval prior to the matrix's interval, but the superinterval of imperfecto is able to overlap with it.

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                bailaba                    ST
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Imperfecto introduces a superinterval surrounding the relevant past interval. Since *imperfecto* conveys more temporal information, this is the type of situation that triggers Gricean quantity inferences. The choice of *pretérito* over *imperfecto* triggers a Gricean implicature. For if the speaker does not choose *imperfecto* (the most informative form), he/she implicates that the superinterval does not obtain, i.e., that the continuation of the event into the present is not possible. This amounts to a completion reading, in which the event is interpreted as ended in the past[3]. The *imperfecto* sentence is the most informative form because it can be true in more situations than the *pretérito* sentence. In fact, the situation in which the *pretérito* sentence is true is a subset of those in which the *imperfecto* sentence is true. Thus, when *pretérito* occurs with activities, it yields completion readings due to a Gricean inference triggered by the grammatical elements of the sentence. I will call this Gricean inference the end-point-implicature.

That *pretérito* activities implicate rather than entail completion is clear from the fact that the implicature in question can be cancelled, a typical characteristic of Gricean inferences (Levinson, 1983). Consider the following:

(23)   El presidente habló por televisión. En realidad, (creo que) todavía está hablando.

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[3] Note that the pragmatic inference involved in this case is parallel to the quantity inference found between *some* and *all*. *Some students are good* (the less informative form) implicates that *Not all student are good*.

The president speak-pret by television. In fact, (think-pres-1per that) still be-pres speaking.

'The president spoke on TV. In fact, (I think) he is still speaking.'

(24) Hoy llovió. ?En realidad, todavía no ha parado.

Today, it rain-pret. In fact, still not have stopped.

'Today, it rained. In fact, it has not stopped yet.'

Note that the first sentence in the discourse implies that the event in question is finished in the past. However, the second sentence cancels this implication by bringing up a situation in which the speaker corrects his/her statement. The judgments are similar to other cancellation cases. Consider for example, *John has three kids. In fact, he has four.* This contrasts with the case of accomplishments in (6), since the second sentence of the discourse does not make the first one false. There is no logical contradiction involved. The context changes from a set of possible propositions compatible with the first statement to another set intersecting the first and second one (this is the set of worlds in which Juan watched TV for a while and continues to do so). These sets are different but not mutually exclusive. Because, the end-point inference is compatible with the first set but not the second one, the cancellation takes place (the proposition corresponding to the end-point inference is dropped from the first CB). This confirms that the completion interpretation associated with *pretérito* activities comes from a pragmatic implicature, rather than from a logical entailment.

Consider now the case of *pretérito* occurring with states. Recall from our discussion of the previous section that states can receive an interpretation compatible with their continuation into the present. However, I also noted that state sentences, when occurring in isolation, do not suggest such continuations, as in (6):

(6) Juan estuvo enfermo.

Juan be-pret sick.

Juan was sick.

(6) seems to imply that the state of being sick ended in the past. This is because if an interpretation in which the possibility of the continuation into the present was intended by the speaker, the speaker would have used the *imperfecto*. As with activities, stative *pretérito* sentences in isolation trigger a quantity inference by contrast with *imperfecto*. This means that superinterval implication of states discussed earlier does not arise. In (6) for example, the superinterval implication does not arise because this implication is logically incompatible with the pragmatic inference triggered in the current context. As it stands, it is reasonable for the interpreter to infer the end-point implicature from the speaker's statement, given the speaker's grammatical choice. However, a cancellation is possible and easily available. A continuation such as *Y todavía lo está* 'And he still is' would cancel the end-point inference and would bring up the fact that states can persist for longer periods than those specified by the speaker. The superinterval implication becomes compatible with the current CB and so becomes the non-completion reading of the *pretérito*. As with activities, this thus confirms that the end-point requirement is not en entailment but a pragmatic implication.

Note that there is a difference between states and activities in the way the cancellation occurs. Activities can be cancelled in situations in which the speaker rectifies his/her assertion. In contrast, states do not require this because the superinterval implication makes the cancellation more accessible. Bringing up the possibility of a continuation into the present is enough to cancel the implicature.

The answers to the questions posed at the beginning of this section are now clear. The completion reading of *pretérito* can occur because of two main reasons: wither there is an aktionsart entailment of completion, in which case the reading always obtains, or there is a pragmatic inference by contrast with the *imperfecto*. The former occurs with accomplishments and achievements. The latter, with

activities and states. However, the non-completion reading can arise in specific circumstances if the pragmatic inference is cancelled by incoming discourse.

3. Modal interpretation of simple future

i. Basic Assumptions

In this section, I introduce Katzer's (1979, 1981) account of modals necessary to understand the modal interpretation of simple future.

Context dependency: modals are context dependent. They are interpreted relative to the conversational from which conclusions can be drawn. Formally, CBs are functions that apply to the utterance context and return the set of propositions in it. Thus, *CB(st, w)*, where *w* is the actual world, is the set of proposition assumed at ST and *w*. Modals' context dependency is clear in the following English example:

(25)   John must not be the student who failed the exam.

Intuitively, the speaker makes a conclusion that follows from the implicit assumptions taken for granted in the context of utterance. The meaning of *must* thus specifies that (25) is true if it follows from the CB that John is not the student who failed the exam.

Types of CBs: different interpretations of modals depend on different kinds of CBs. Consider again (25). The CB can be deontic or epistemic and so can the interpretation: (25) can be uttered in a context where the speaker makes a conclusion from what he/she knows or in a situation in which the speaker (say, John's mother) makes a conclusion from the set of John's responsibilities assumed in the context. Each context thus generates a different interpretation.

Restrictions of the CB: the lexical specification of the modals may impose certain conditions on the CB in which they occur. For example, *must* cannot occur in every context, but requires either epistemic or deontic contexts:

(26)   ??If I was sick, I must be home.

Hypothetical counterfactual situations are not appropriate for the occurrence of *must*. One way of viewing this sort of restrictions on the context is to say that modals presuppose certain set of worlds/propositions in their CB for them to be felicitous. (26) is thus infelicitous because the requirement of an epistemic or deontic context associated with *must* is not satisfied by the current CB, which contains only propositions compatible with the hypothetical situation of the *if*-clause (see below for this point).

ii. Simple future and CBs

Consider first some examples:

(3)   Juan estará en casa ahora.
       Juan be-fut at home.
       'Juan will be at home now.'
(27)   Juan vendrá.
       Juan be-fut come.
       'Juan will come.'

Note that in all these cases, as with modals in general, there is a logical relation to the implicit CB. For example, (3) is true iff it follows from the CB that Juan will be at home. It is taken for granted that the speaker knows something from which he/she makes this inference, hence the inferential or probabilistic interpretation. In

(27), the implicit inference is less obvious but is still there. In order to make a prediction about the future, the speakers assumes certain knowledge about Juan, otherwise the prediction could not be made. Thus, in all cases there is an inference relation with the implicit current CB. The future sentence is true iff it follows from the CB.

Note also that there is something specific about these CBs. A certain kind of CB is required. In the same way that *must* requires epistemic or deontic contexts (but not, for example, context where a hypothetical world is assumed), simple future requires a realistic or factual CB. A realistic CB is such that propositions that are known true in the actual world are taken for granted. In all examples, including the subordinate case, the future sentences follow from sets of propositions known to be facts. I take this to be a presupposition associated with the meaning of the tense. Realistic CBs are required for the future tense to be felicitous and to have a truth value relative to it. This explains why (28) and (29) are not felicitous:

(28)   #Si fuera rica, compraré un auto.
        If be-subj. rich. Buy-fut-1per. a car.
        'If I was rich, I will buy a car.'
(29)   ?? Juan quiere venir pero no sabe si puede. Vendrá el jueves.
        Juan want-pres come but not know-pres if can-pres. Come-fut the Thursday.
        'John wants to come but he does not know whether he can. He will come on Thursday.'

In (28), the *if*-clause introduces a non-realistic hypothetical proposition into the CB so that the CB no longer contains a set of proposition known to be true in the actual world. It rather contains propositions compatible with the non-factual antecedent. In (29), the first sentence of the discourse adds to the CB the

proposition that John does not know whether he can come. This conflicts with the fact that the future sentence requires this knowledge in the CB to be felicitous. Thus, in both cases, the CB violates the presupposition associated with the tense and therefore the sentences are infelicitous.

3.   Final proposal

I am now in a position to give the formal semantic definitions and pragmatic requirements of simple future and *pretérito*, according to the discussion above:

(30)   *-ré/-rá[Q] = MOD[FUT[Q]]* is true iff it follows from the CB that *FUT[Q]* = $\exists i$ *[i > ST & Q(i)]*, i.e., iff $\forall w'$ such that *w'* belongs to the CB, *FUT[Q]* is true at *w'*.
        <u>Presupposition</u>: *CB is factual*

(31)   *PRET*[Q] = is true iff $\exists i$ *[i < ST & Q(i)]*

(30) says that a sentence Q modified by the simple future is true in the actual worlds at the ST iff it follows from the (realistic) CB that there is time later than the ST at which Q is true, i.e., iff for all worlds *w'* in the realistic CB, there is a time later than the ST at which Q is true in *w'*. (31) says that a *pretérito* sentence is simply true iff there is an interval prior to the ST at which the sentence is true.

Note that in (30), the meaning of simple future is composed by a (presuppositionally restricted) modal operator, which quantifies over the worlds of the CB, and a temporal operator, which quantifies over intervals. The non-future readings arises due to the superinterval implication. Note also that there is no aspectual information in the meaning of *pretérito*. However, the completion reading typically arises for different reasons. It arises with accomplishment-achievements sentences because they entail the resulting state of the event in

question. It typically arises with activities and states because of the end-point pragmatic implicature. Furthermore, cancellation is more likely to occur with states because their aktionsart properties can generate an interpretation overlapping the ST due to the superinterval implication. Activities lack such an implication so that cancellation only depends on the speaker's rectification of his statement as in other cases of implicature cancellation. Thus, for all interpretations of these tenses, the pragmatic context of occurrence as well as the aktionsart involved play a role when generating a particular reading.

4.   Conclusions

In this paper, I have addressed the problem of the multiple interpretations that simple future and *pretérito* can receive. I have shown that because there are systematic restrictions on the temporal interpretations of the tenses, such interpretations cannot be accounted for by complicating the lexical meaning of the tenses. In contrast, I have argued that by including aktionsart and pragmatics in our model of temporal interpretation, we can simplify traditional lexical tense definitions, and consistently account for all possible readings. Thus, the data discussed here support an integrated semantic-and-pragmatic approach to Spanish tenses, and to temporal semantics in general.

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