

The *Co-pretérito* as Null Tense: Tense Anchoring and Sequence of Tense Revisited

Joshua Rodríguez
Northern Illinois University

0. Introduction

The phenomenon known as sequence of tense (*consecutio temporum* in the classical tradition) or tense agreement, consists of a morphologically matching but semantically simultaneous subordinate tense. Though the past tense is more commonly cited as participating in sequence of tense (hereafter SOT), the same phenomenon is attested for the present tense as well (though perhaps more subtle to detect). At its core, SOT comes about due to the interactions between three distinct facets of the grammar, including semantic, syntactic, and morphological contributions.

The literature regarding sequence of tense is likewise very diverse, with insights and proposals from various theoretical and traditional perspectives. The most prominent theoretical orientation on tense and aspect, including SOT, in the literature published in Spanish in recent years grows out of the traditions of Bello (1847) and Reichenbach (1947), including revisions by Hornstein (1990) and Klein (1994). Carrasco Gutiérrez and Fernández García (1996), Carrasco Gutiérrez (2000, 2001), Fernández García (1999) and Fernández García and Camus Bergareche (2004) provide many insights and examples regarding the interpretation of tense and aspect in Spanish, including some discussion specifically of SOT.

In the traditions of generative syntax and model theoretic semantics, the number of distinct approaches to SOT is quite extensive. Some of the more heavily syntactic approaches to SOT that will be relevant here include Ross (1967), Enç (1987), and Stowell (2007), while some of the more heavily semantic approaches include Ladusaw (1977), Ogihara (1996), Abusch (1997), and Song (2001). While I feel my own proposal grows more directly out of this latter, more semantic set, it is not independent of these other perspectives either.

My goal in this paper is to more fully integrate and simplify to the extent possible the diversity of perspectives about tense and aspect in general and SOT in particular. I will not attempt a revision to any one analysis per se, but rather propose a new mix of mechanisms that draws data and insight from a variety of sources. As a matter of practicality and general applicability, I will cast my proposal within a generative syntactic framework with detailed coverage of the semantics. The critical aspect of this orientation is the interface between syntax and semantics, traditionally known as LF or logical form. The structural representation of logical relationships provides a place to explore the interactions between various types of expressions, including tense/aspect, quantifiers, and verbs that create “opaque” or intensional environments, all of which will be relevant here.

In this paper I argue that the Spanish *co-pretérito*¹ may be analyzed as a null or neutralized tense. I layout various syntactic and semantic requirements for, and repercussions that follow from, this hypothesis. The principle requirements include (a) a means for distinguishing between morphologically identical forms that denote true temporal relations vs. a null or simultaneous temporal relation, and (b) a means for “anchoring” (a term coined by Enç (1987)) or relating all intervals referred to in a sentence back to the time of utterance in a systematic fashion. The predictions that stem from my proposal involve (a) principled scope interactions, (b) the aspectual contrast between the

¹ This is a term coined by Bello (1847) to describe a past tense form that is semantically simultaneous with a superordinate past and has traditionally been applied to the form commonly known today as the *imperfecto*. I will use the term to refer to any morphologically past form when it has a simultaneous interpretation.

Spanish past tenses, and (c) the interpretation of present tense complement clauses under a past tense matrix.

In section 1, I present some of the critical SOT data that must be accounted for. In section 2, I discuss mechanisms for representing temporal arguments and indices, the binding or co-indexation of these arguments in the syntax, and their role in interpreting temporal relations in a model theoretic semantics. Following Enç (1987), I will refer to this subpart of my proposal as tense anchoring. I will also show that this method of anchoring provides a welcome alternative to the various ad hoc semantic rules proposed by Ogihara (1996) that ultimately accomplish the same anchoring effect. In section 3, I will propose a mechanism for tense neutralization, which is at the heart of the idea of a *co-pretérito* or simultaneous past tense. This section is largely an adaptation of Ogihara's (1996) rule of tense deletion and mimics results of Abusch (1988) for past forms that make reference strictly to the future. Section 4 further elaborates on the logical and structural interaction of tense anchoring, tense neutralization, and intensionality. The results of this section parallel those of Abusch (1997), but do so more straightforwardly and in a syntactic orientation more applicable to generative syntax at large.

Sections 5 and 6 discuss additional consequences of my analysis. Section 5 deals with the *pretérito/imperfecto* contrast (i.e., the perfective and imperfective past forms) and the well known fact that a subordinate *pretérito* normally has a back-shifted or prior interpretation relative to a matrix past, as opposed to a subordinate *imperfecto*, which is normally simultaneous (i.e., which represents Bello's *co-pretérito*). And finally, section 6 reasserts the need for an "indexical" present tense (see Ogihara (1996), Abusch (1997), Gennari (1999, 2003), and Rodriguez (2004b)) and illustrates its use within the current proposal and its advantage over one aspect of both Enç (1987) and Stowell (2007). In the end, I hope to show that the principles of temporal indexation, tense anchoring, and tense neutralization that I propose form a solid theoretical basis for defining sequence of tense and accounting for Bello's notion of a *co-pretérito*.

1. The data

My proposal will be shown to account for the following well known types of examples. In this section I will simply present representative examples of the phenomena that should be accounted for, but I will postpone an analysis or explanation of these until subsequent sections. Examples (1-2) show both simultaneous and back-shifted interpretations of the *imperfecto* (PAST IMPERFECTIVE), as opposed to only the back-shifted interpretation of the *pretérito* (PAST PERFECTIVE), embedded under morphologically past forms (including the conditional). These stand in contrast to example (3), which shows that an *imperfecto* embedded under a 'present' future has only a back-shifted reading, though it does not necessarily refer to a time earlier than the time of utterance.

1. a. *Mario dij-o que María esta-ba enferm-a*
 Mario say\PST.PFV-3s that María be-PST.IPFV[3s] sick-F
(en ese momento/el día anterior).
(at that moment/ the day before).
- b. *Mario dij-o que María estuv-o enferm-a*
 Mario say\PST.PFV-3s that María be\PST.PFV-3s sick-F
*(*en ese momento/el día anterior).*
*(*at that moment/ the day before).*
 'Mario said that Maria was sick (at that moment/the day before).
2. a. *Anoche Mario soñ-ó que mañana María dir-ía que*
 Last_night Mario dream-PST.PFV.3s that tomorrow María say-COND[3s] that
esta-ba enferm-a (en ese momento/el día anterior).
 be-PST.IPFV[3s] sick-F (at that moment/ the day before).

- b. *Anoche Mario soñ-ó que mañana María dir-ía que*
 Last_night Mario dream-PST.PFV.3s that tomorrow María say-COND[3s] that
*estuv-o enferm-a (*en ese momento/el día anterior).*
 be\PST.PFV-3s sick-F (*at that moment/ the day before).
 ‘Last night Mario dreamed that tomorrow Maria would say that she was sick (at that moment/the day before).
3. *Esper-o que pas-e-s un buen cumpleaños con tu familia, pero*
 hope-1s that spend-SBJ-2s a good birthday with your family, but
me=imagin-o que (cuando vuelv-a-s,) nos=dir-ás que esta-ba-s
 myself=imagine-1s that (when return-SBJ-2s,) us=say-FUT-2s that be-PST.IPFV-2s
enferm-o el día de tu cumpleaños.
 sick-M the day of your birthday.
 ‘I hope you have a good birthday with your family, but I imagine that (when you return,) you will tell us that you were sick on your birthday.’

Examples (4-5) illustrate double access readings of the present tense embedded under either a past or future matrix. These imply evaluation of the subordinate event at a continuous interval that includes both the time of the matrix event and the time of utterance. The dual perspective implied by these types of examples underlies the term ‘double access’ (see Abusch (1988)).

4. *Mario nos=cont-ó anoche que María está enferm-a.*
 Mario us=tell-PST.PFV.3s last_night that Maria be[PRS.3s] sick-F
 ‘Mario told us last night that María is sick.’
5. *Mañana Mario confesar-á que ama a María.*
 Tomorrow Mario confess-FUT[3s] that love[PRS.3s] ACC María.
 ‘Tomorrow Mario will confess that he loves María.’

Finally, examples (6-7) provide evidence for correlations between specificity and tense reference. In this last area, Spanish is particularly helpful because of its subjunctive marking for an *irrealis* or *de dicto* interpretation of the relative clause, which is taken to correlate directly with a narrow scope interpretation of the DP relative to an intensional or ‘opaque’ verb. I will use this morphological contrast as direct evidence of more complex scope-tense interactions, as in (7). This is a temporally very rich example, consisting of four clauses and three non-equivalent tense anchorings and a whole host of distinct tense interpretations. Note that in (6-7) the temporal indices are purely expository and do not exactly reflect the indexing system that I will formally propose in section 2.

6. (Uttered on December 31)
El año pasado Mario esta-ba₁ busca-ndo a alguien que, esta navidad₂,
 the year past Mario be-PST.IPFV[3s] look_for-PROG ACC someone that, this Christmas
*{esta-ba/ *estuviera}₂ embarazad-a.*
 {be-PST.IPFV[3s]/*be\PST.SBJ[3s]} pregnant-F
 ‘Last year Mario was looking for someone who, this Christmas, was pregnant.’
7. *María le=dij-o₁ a Mario que ella espera-ba₁ que, en la sesión*
 Maria him=tell\PST.PTV-3s to Mario that she hope-PST.IPFV[3s] that, in the session
mañana, él ayuda-ra₂ a cualquier persona que {estuviera/₂
 tomorrow, he help-PST.SUBJ[3s] ACC any person that {be\PST.SUBJ[3s]/
estaba₃} llorando.
 be-PST.IPFV[3s]} crying.
 ‘María told Mario that she hoped that, in the session tomorrow, he helped any person that was crying.’

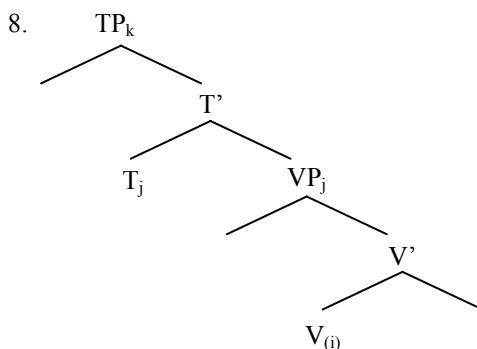
In example (6), the order of the temporal indices is $1 < 2$, where the past tense of the relative clause is later than the matrix past tense in accordance with the adverb *this Christmas*. Only the indicative is compatible with this temporal configuration given that the past subjunctive version would imply simultaneity or anteriority relative to the time of the search. I will return to similar examples below.

In example (7), time 2 (associated with the past subjunctive) is necessarily later than 1 and is located during the session the following day. On this version, the people spoken of cry during the session and are understood *de dicto* (i.e., there is no commitment regarding their actual existence). The indicative version, indexed at time 3, is understood *de re*, relying on there being a set of people who really did cry. This *de re* reading requires that time 3 be prior to the time of utterance. I will discuss this example in greater detail later on.

2. Tense anchoring

It is uncontroversial that TP and VP denote temporal expressions of one sort or another. The tense relation denoted by T, for example, is always a ternary (or three-place) relation relating two time coordinates and a tenseless proposition. On the other hand, V will always have at least one temporal argument which locates or anchors in time the event described by the verb, often referred to as the evaluation time of the verb, or its Event Time. Depending on the meaning of the verb, it may require two temporal arguments if it involves a pair of distinct temporal coordinates. This can be seen, for example, in verbs of desire in which the object of desire is normally inferred to be later than the time of the desire itself. These include such verbs as *querer* (*want*), *esperar* (*hope*), *requerir* (*require*), *recomendar* (*recommend*). Verbs of obligation (e.g., *necesitar* (*need*), *tener que* (*have to*)), and other verbs denoting futurity (e.g., *pensar* (*plan to*), *ir* [*a*] (*going to*)) will function the same. In principle, the perfect periphrasis should work in a similar manner, but introduce an earlier time, though I am postponing this question for later research.

I propose to treat the temporal coordinate of T or V which anchors its complement as the first² or innermost argument of these heads. Again, not all verbs will have such an internal temporal argument, but finite T (inasmuch as it denotes a temporal relation) always will. The temporal coordinate that anchors TP or VP itself, on the other hand, will be its outermost or last argument. Syntactically, since there is no overt constituent associated with these arguments, they will be represented merely as indices, as shown in (8). Semantically they will be treated as variables that take their denotation from the domain of times.



As shown in (8), the innermost temporal argument is represented as an index on the respective temporal head, namely T or V. T will therefore always be temporally indexed, while V will only be indexed if it introduces an additional temporal coordinate beyond its own anchoring coordinate. The

² In this case, ‘first’ implies the order in which arguments are compositionally applied in ‘bottom-up’ fashion, just as a direct object is logically applied to the verb first, and later the subject.

outermost temporal argument, on the other hand, appears on the corresponding maximal projection, TP or VP.

This configuration is similar to temporal argument structures assumed by Demirdache and Uribe-Etxebarria (2000) and Stowell (2007). In the latter case, Stowell assumes a representation of temporal arguments via ZPs or Zeit Phrases (i.e., German *Zeit* = time), which are modeled semantically and syntactically on DPs for nominal expressions. However, in Stowell's proposal there is no clear way of representing an internal temporal argument for verbs, which will be shown to be critical.

2.1 Temporal Government

I propose to accomplish most of the process of anchoring or assigning a temporal location to each temporal expression through a mechanism of temporal co-indexation or binding via temporal government, as defined in (9). This proposal, like Enç (1987), makes use of the familiar notions of government and binding, but is more broadly defined than Enç's anchoring conditions.

9. a. Only T and V are temporal heads.
- b. A temporal head can be a temporal governor iff it bears a temporal index.
- c. A governing (i.e., indexed) temporal head α governs a temporal index β iff the first maximal projection that dominates α also dominates β .
- d. Locality must be respected (i.e., no other potential temporal governor may intervene).

As a general principle of tense interpretation, I propose that all temporal variables must be co-indexed with their local governing temporal head. In root clauses or relative clauses in widest scope DPs, where the temporal index is ungoverned, the index on TP will be equated by default with the time of utterance. In this way, all tense interactions are ultimately anchored back to the time of utterance.

By the definition of temporal government in (9), T and V (when indexed) will govern their own index, which trivially requires the index to be identical with itself. More importantly, this implies that T does not govern the index on V, which would violate locality. On the other hand, T and V will not govern their outer temporal argument because it is not dominated by the maximal projection TP or VP. This further implies that T will govern the outer temporal argument on VP, by which VP must be co-indexed with T. This indexing is reflected in (8) above.

In addition, if an indexed V has a clausal or non-finite verbal complement, the outer temporal argument of the subordinate VP will consequently also be governed by and co-indexed with the matrix V, as in (10). If V is not indexed, temporal government will be carried out by T instead, as in (11). Furthermore, given the definition of government in (9), T will also temporally govern the tense of a clausal subject. In (12) I repeat Ross's (1967) example of sequence of tense in a clausal subject, but reflect my own analysis.

10. a. *María espera-ba sali-r pronto.*
 María hope-PST.IPFV[3s] leave-INF soon.
 'María hoped to leave soon.'
 [TP₀ María PAST₁ [VP₁ esperaba₂ [TP [VP₂ salir pronto]]]].
- b. *María espera-ba que salié-ra-mos pronto*
 María hope-PST.IPFV[3s] that leave\PST.SUBJ-1p soon.
 'María hoped that we left soon.'
 [TP₀ María PAST₁ [VP₁ esperaba₂ [CP que [TP₂ PAST₂ [VP₂ salíamos pronto]]]].
11. *Mario vi-o que no hab-ía nadie en la casa.*
 Mario see-PST.PFV.3s that not there_be-PST.IPFV[3s] no_one in the house.
 'Mario saw that there was no one in the house.'
 [TP₀ Mario PAST₁ vio [CP que [TP₁ PAST₁ no había nadie en la casa.]
12. [TP₀ [CP That [TP₁ the sun PAST₁ was up]] PAST₁ was obvious]].

I have represented null past tenses (i.e., those that are interpreted as simultaneous) as a crossed out tense, which I will discuss in detail in section 3, and I have used natural numbers as temporal indices, with 0 representing the time of utterance, following Enç (1987). In this and other examples below, I assume that an infinitival TP does not denote a tense relation and consequently has no temporal arguments or indices. Anchoring essentially ignores such a TP, which is unproblematic for my proposal.

2.2 Functional Application

Beyond the role of temporal government and co-indexation, the mediating relation between *distinct* indices is the tense or other lexical temporal relations. By normal compositional principles, namely functional application, the temporal indices will be computed as arguments of the temporal relations by the semantics. As long as we assume that temporal co-indexing takes place after all covert syntactic movement and prior to its translation into the semantics, the truth conditions in (13) may be assigned to the PAST tense, which reflects the indices shown above in (8).

$$13. \llbracket \text{PAST}(j)(\text{VP})(k) \rrbracket^{g,s} = 1 \text{ iff } g(j) < g(k) \wedge \llbracket \text{VP} \rrbracket^{g,s} = 1$$

I should point out that I am assuming that TP and VP are both of type t (i.e., a proposition or an expression that may be evaluated as true or false). They differ only in the amount of information they provide regarding the temporal location of the external temporal argument (i.e., the anchor) of V. This assumes that subjects are base generated within VP, as is normally assumed for independent reasons.

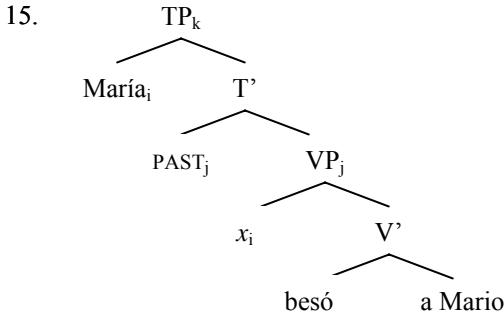
It is significant that the past tense, as defined in (13), is not directly responsible for anchoring the temporal reference of the tenseless proposition denoted by VP. This stands in contrast to Ogihara (1996), which achieves the same tense anchoring effect between T and VP as part of the truth conditions of the tenses. In fact, because all temporal arguments are supplied in the semantics alone, Ogihara must stipulate in ad hoc fashion how tense arguments are applied in over half of his approximately 30 interpretive rules corresponding to the various phrase structure and transformation rules of the syntax. Under that proposal, nearly every major syntactic category must be associated with a temporal argument, including not just VP and TP, but also CP and NP (or DP).

My proposal simplifies much of this semantic work by separating the mechanism of tense anchoring from the rest of the compositionally calculated semantics. As a result, (13) only establishes the appropriate precedence relation between the tense indices j and k . Because co-indexation of the temporal index on VP with j has already taken place in the syntax, and the same assignment function g is used in determining the denotation of both TP and VP, it is guaranteed that the denotation (and relative ordering) of the indices will be preserved within VP as well without further stipulation.

This method of tense anchoring is particularly useful when computing tense relations in a raised DP with a relative clause, as may occur when disambiguating scope relations. Again, this scenario raises problems for Ogihara (1996), who accounts for tense anchoring effects via a multitude of interpretive rules. Because of the variety of possible structural configurations that may result from Quantifier Raising, he must also posit an ad hoc set of distinct interpretation rules, one for each of these various possibilities. Such an ad hoc solution entirely obscures the principled correlation between scope dependency and tense anchoring. In the present proposal, on the other hand, this generalization falls out naturally because anchoring (via temporal government) and scope relations in general are both sensitive to similar command relations.

Sentence (14), its syntactic representation (15), and its semantic translation (16) provide a concrete example of the basic mechanisms considered so far. In this case, the verb *besar* (*kiss*) has no internal temporal argument and consequently no index on V. In cases where it would have an index, the procedure would be the same, except that another temporal coordinate would be introduced by the verb in a way that is parallel to the translation of the tense. The \Rightarrow symbol represents the semantic translation function in (16), and s^* is an object language expression whose denotation will always be the time of utterance or speech time (i.e., for all times t , $\llbracket s^* \rrbracket^t = t$).

14. *María bes-ó a Mario.*
 María kiss-PST.PFV.3s ACC Mario.
 ‘María kissed Mario.’



| | | | |
|--------|----------------------|---------------|--|
| 16. a. | VP | \Rightarrow | $besar(Mario)(x_i)(j)$ |
| b. | PAST | \Rightarrow | $\lambda t \lambda \phi \lambda t' [t < t' \ \& \ \phi]$ |
| c. | $[_T PAST_j]$ | \Rightarrow | $\lambda t \lambda \phi \lambda t' [t < t' \ \& \ \phi] (j)$ |
| d. | | | $\lambda \phi \lambda t [j < t \ \& \ \phi]$ |
| e. | $[_T' PAST_j VP]$ | \Rightarrow | $\lambda \phi \lambda t [j < t \ \& \ \phi](besar(Mario)(x_i)(j))$ |
| f. | | | $\lambda t [j < t \ \& \ besar(Mario)(x_i)(j)]$ |
| g. | $[_{TP} María_i T']$ | \Rightarrow | $\lambda x_i [\lambda t [j < t \ \& \ besar(Mario)(x_i)(j)]](María)$ |
| h. | | | $\lambda t [j < t \ \& \ besar(Mario)(María)(j)]$ |
| i. | k | \Rightarrow | s^* , by default |
| j. | $[_{TP_k}]$ | \Rightarrow | $\lambda t [j < t \ \& \ besar(Mario)(María)(j)](s^*)$ |
| k. | | | $j < s^* \ \& \ besar(Mario)(María)(j)$ |

Notice that both within TP and VP, the index j serves as a temporal argument of each head. In TP it is the innermost argument, while in VP it is the outermost argument, thereby linking or anchoring the proposition in VP to the tense. However, this identity of indices is not accomplished within the semantics proper, but rather via co-indexation in the syntax prior to semantic translation. Furthermore, the ungoverned index k is identified by default with the time of utterance and saturates the outermost argument position of TP, thereby anchoring the entire sentence back to the time of utterance.

In the final interpretation of this sentence within a specific context, the temporal index j will be assigned a value by the assignment function g . We must assume that the denotation of $g(j)$ will be further constrained by discourse context, such as principles of narrative time advancement and/or additional background knowledge. In the absence of any such constraining factors we should assume a process of existential closure whereby any variable assignment that satisfies the truth conditions is supplied (for related discussion see Partee (1973, 1984)).

3. Sequence of Tense as Tense Neutralization

Ogihara (1996), in an inverse proposal from Ladusaw (1977), defines sequence of tense not as marking a simultaneous (PRESENT) tense as past, but as semantically deleting or neutralizing a PAST form within a specific structural configuration. I will adopt Ogihara's structural specifications in my proposal, but it will be necessary to slightly modify the definition of the formal properties of the phenomenon itself.

I will follow in the spirit of Abusch (1997) in assuming that the feature or morpheme PAST is ambiguous between precedence ($<$) and identity ($=$), in accordance with the structural context in which it occurs. In addition, following Ogihara, I will assume a parallel ambiguity of PRESENT tense, where PRESENT may denote either inclusion of both its time of evaluation and the time of utterance (this being the 'indexical' definition), or denote simple temporal identity. Paradoxically, this implies that both

PAST and PRESENT morphology may be interpreted as an identity relation. However the two are not isomorphic in that the neutralizing contexts for the two are not identical, as will be shown below.

As in previous examples, I represent a given LF with a tense crossed out only to show that the intended interpretation of the tense will be “deleted” (in Ogihara’s sense) or neutralized (i.e., representing a temporal identity relation), though the tense feature itself is still present in the syntactic representation. Bearing this in mind, (17) provides an adaptation of Ogihara’s rule of sequence of tense (Ogihara 1996: 134).

17. If a tense feature α is the local tense feature of a tense feature β at LF, and α and β are occurrences of the same feature (i.e., either PAST or PRESENT), β may be optionally translated as a temporal identity relation (i.e., $\lambda t \lambda \phi \lambda t' [t = t' \ \& \ \phi]$).

By the phrase “local tense feature”, Ogihara intends to cover cases of a tense feature on a noun or as the head of TP. For simplicity I will focus exclusively on the latter. In such a case, the relevant structure is one in which a tense feature α asymmetrically m-commands a second tense feature β and no other tense feature intervenes. As can be seen, this description overlaps substantively with the phenomenon of temporal government given above. And in fact within such a structure, temporal government by T often also coincides with the appropriate structure to license tense neutralization.

However, the two structural descriptions are not in fact isomorphic, with the result that the domains of temporal government and tense neutralization are not necessarily identical. While temporal government requires an indexed temporal head, which can be T or V, tense neutralization is triggered by matching tense features, regardless of the kind of head the higher feature occurs on, though it is usually T. Thus, an embedded tense may be anchored by a governing V, but be neutralized by tense matching with the T that asymmetrically m-commands that V.

This is precisely the case that arises in (18), in which the verb *esperar* is indexed for a time that is later than its own anchor time. I have ignored aspect and mood in the corresponding LF structure.

18. *María espera-ba asusta-r a cualquier estudiante que estuviera*
 María hope-PST.IPFV[3s] startle-INF ACC any student that be\PST.SUBJ[3s]
durmie-ndo en su clase mañana.
 sleep-PROG in her class tomorrow.
 ‘María hoped to startle any student that was sleeping in her class tomorrow.’
 [TP₀ María PAST₁ [VP₁ *esperaba*₂ [TP [VP₂ *asustar a cualquier estudiante*
 [que [TP₂ ~~PAST₂~~ [VP₂ *estuviera durmiendo en su clase mañana*]]]].

In this example, the relative clause is anchored to the time projected by its locally governing temporal head, namely *esperaba*₂ (where 2 is a future time), not to the time of the tense of that verb, namely PAST₁ (where 1 is a past time). On the other hand, the lowest PAST tense is neutralized by matching with the next higher PAST tense, though it is indexed differently. The net effect is that this particular configuration licenses the use of a past tense form to mark simultaneity with a future anchor time. (See Abusch (1988) for similar examples, which cannot be accounted for by Enç (1987), nor by extension by Stowell (2007).)

It should be clear from this discussion that the mechanisms of temporal indexing, anchoring, and tense neutralization can be equally extended to account for the tense interactions in examples (2-3) above. However due to space limitations, I leave it to the reader to verify these results, particularly for past forms embedded under a future matrix.

4. Scope interactions

As we shall see in a moment, we need to allow specific indefinite DPs with relative clauses to escape the intensional domain of the verb, but maintain simultaneity with that verb’s tense. As argued by Ogihara (1996), this can be accomplished by allowing such DPs to raise only as high as VP in order to stay within the anchoring domain of T. By moving to TP, such DPs would fail to anchor to the

appropriate tense to achieve simultaneity, and would instead be anchored to a higher verb or tense, or to speech time if it is ungrounded. In (19) the object DP is raised and adjoined to VP.

19. *Mario esta-ba busca-ndo a una persona que estaba embarazad-a.*
 Mario be-PST.IPFV[3s] look_for-PROG ACC a person that be-PST.IPFV[3s] pregnant-F.
 ‘Mario was looking for ACC a person that was-IMP pregnant.’
 [TP₀ Mario PAST₁ [VP [a una persona [que [TP₁ PAST₁ estaba embarazada]]]; [VP₁ estaba buscando t_i]]].

The relative clause in (19) is anchored to the same tense that anchors the intensional verb, but allows the DP to escape the intensional environment. These sorts of possibilities are multiplied in (20) which repeats example (7) and provides 3 LFs to illustrate the 3 possible distinct anchorings, though there are even more possible landing sites for the raised DP. Furthermore, each case of tense neutralization should be understood to be optional as well where there are no additional constraints imposed by adverbs or other context. The possible relative orderings of indices in the examples below are as follows: $1 < 0$, $0 < 2$, and $3 \leq 1$ or $1 < 3 < 0$.

20. *María le dijo a Mario que ella esperaba que, en la sesión mañana, él ayudara a cualquier persona que {estuviera/estaba} llorando.*
 ‘Maria told Mario that she hoped that, in the session tomorrow, he helped any person that was crying.’
- a. [TP₀ María le PAST₁ [VP₁ dijo a Mario que [TP₁ ella PAST₁ [VP₁ esperaba₂ que, en la sesión mañana, [TP₂ él PAST₂ [VP₂ ayudara a cualquier persona que [TP₂ PAST₂ [VP₂ estuviera llorando]]]]]]].
- b. [TP₀ María le PAST₁ [VP₁ dijo a Mario que [TP₁ ella PAST₁ [VP [a cualquier persona que [TP₁ PAST₁/PAST₃ [VP_{1/3} estaba llorando]]]; [VP₁ esperaba₂ que, en la sesión mañana, [TP₂ él PAST₂ [VP₂ ayudara t_i]]]]]]].
- c. [TP [a cualquier persona que [TP₀ PAST₃ [VP₃ estaba llorando]]]; [TP₀ María le PAST₁ [VP₁ dijo a Mario que [TP₁ ella PAST₁ [VP₁ esperaba₂ que, en la sesión mañana, [TP₂ él PAST₂ [VP₂ ayudara t_i]]]]]]].

5. The *pretérito/imperfecto* contrast

One explanation that naturally follows from this proposal is why the simple (perfective) *pretérito* should not also normally function as a *co-pretérito* or simultaneous past. Though a thorough discussion of the aspectual distinctions between the *pretérito* and *imperfecto* would not be appropriate here, the phenomenon deserves at least some mention.

The following discussion relies on the presence of an additional functional projection between T and VP which to this point I have simply ignored, namely AspP (aspect phrase). I will assume the same overall argument structure for AspP as for TP and VP, such that the index on T binds the index on AspP, and in turn the index on the aspectual head will bind the index on VP. Bearing in mind this additional mediation between the tense and the VP, contrast the following examples. In (21a) the *imperfecto* (PAST IMPERFECTIVE) is ambiguous between a simultaneous reading and a back-shifted reading, while in (21b) the *pretérito* (PAST PERFECTIVE) only allows a back-shifted reading.

21. a. *Mario dij-o que María esta-ba en Colombia.*
 Mario say\PST.PFV-3s that María be-PST.IPFV[3s] in Colombia.
- b. *Mario dij-o que María estuv-o en Colombia.*
 Mario say\PST.PFV-3s that María be\PST.PFV-3s in Colombia.
 ‘Mario said that Maria was in Colombia.’

The notions of temporal co-indexing and tense neutralization predict that, under simultaneity, the temporal location and duration of the interval denoted by the temporal index of the matrix T will be identical with the temporal location and duration of the temporal index of the subordinate T. More specifically, under the simultaneous reading of both examples in (21), the subordinate AspP (IPFV/PFV [María be in Colombia]) must be evaluated relative to an interval equal to the exact duration of the time of saying.

In the case of the *pretérito*, which might be understood as an aspectual identity relation, this implies that the time of María’s stay in Colombia must be exactly co-extensive with the time of Mario’s saying—not a likely scenario. The difference in (21a), as opposed to (21b), is that the *imperfecto* specifically allows its external temporal argument to be a subinterval of its internal argument. Stated differently, the *imperfecto* allows a reading in which María’s being in Colombia is temporally more extensive than the time of evaluation projected by the tense. (See García Fernandez and Camus Bergareche (2004) and Rodriguez (2004a) for additional discussion of this phenomenon).

Due to this additional aspectual intervention, an identity between the matrix and subordinate tense indices does not commit the speaker to the proposition that both events are strictly contained within the same interval. Rather, the use of the *imperfecto* in the complement clause implies only that the two events temporally overlap at the interval of evaluation. In this case, the time of saying must be construed as properly included within the time of the visit. Interestingly, when we speak of two events being simultaneous, we do not normally imply that the two events are *strictly* simultaneous, but rather that the time of one event is included within the time of the other.

Elaborating a bit more on the ruled out simultaneous reading of (21b), I argue that, given the lack of imperfective aspect, such an example creates a virtual contradiction. As mentioned above, traditional grammatical insights suggest that, in contrast to the *imperfecto*, the *pretérito* implies that the interval or time of evaluation projected by T corresponds strictly with the maximal temporal bounds of the event or state denoted by the verb (see Cipria and Roberts (2000) for a formal definition of the *pretérito* along these lines). This would imply that the temporal bounds of the event of saying should correspond *exactly* with the temporal bounds of María’s being in Colombia. With only a little thought it should be evident that such an interpretation is not reasonable, and ultimately that the use of a semantically neutralized *pretérito* in any similar context should always be expected to be false. Consequently, from a pragmatic stance, this contradictory option will predictably be discarded as an inappropriate or unintended interpretation.

While this sort of strict temporal correspondence is not feasible in cases like (21b), it is precisely what is called for in (22b), cited from the *Real Academia Española* (1974: 519). As in (21a), the event of seeing in (22a) coincides with only a sub-part of the event of passing by, as allowed by the *imperfecto*, while in (22b) it is just as reasonable that the relevant event of seeing coincides strictly with the total event of passing by. That is, on the simultaneous or neutralized reading of (22b), the subordinate *pretérito* implies that the seeing in question lasted exactly the same time as the passing by.

22. a. V-i que pasa-ba-n.
 see-PST.PFV.1s that pass-PST.IPFV[3]-PL
I saw them going by.
- b. Vi que pasa-ro-n.
 see-PST.PFV.1s that pass-PST.PFV.3-PL
I saw them go by.

Generalizing the contrast between (21b) and (22b), we can infer that for verbs of sensory perception (particularly seeing and hearing—see Cipria (2002) for more discussion), a strict temporal

correspondence between matrix and subordinate events is natural and therefore available, while for verbs of communication, such a correspondence is unreasonable. In such cases, where simultaneity would automatically imply falsity, tense neutralization (which is optional) is simply not invoked. Furthermore, because verbs of communication are much more abundant and frequent than verbs of sensory perception, it follows why it is normally assumed that the *pretérito* lacks a simultaneous interpretation.

This is yet another welcome outcome of my proposal because it totally eliminates the need for any additional stipulations to deal with the usual correlation between perfectivity and non-simultaneity. This correlation, which manifests itself in a slightly different from in English as a correlation between stativity and simultaneity, has traditionally been dealt with by sheer stipulation, lacking any clear principled rationale. For this reason, traditional accounts of the correlation between stativity or imperfectivity with simultaneity will predictably fail to account for cases like (22b). (See Ogihara (1996), Song (2001), and Stowell (2007), among others for discussion of this stipulation in intra-sentential contexts in English, and Partee (1984) and Hinrichs (1986) for a similar phenomenon governing narrative time advancement.)

6. Double access readings

One of the substantive problems for sequence of tense analyses has been the relationship and interpretation of the present tense embedded under a past tense, as in (23). Under early assumptions about SOT, such as Ladusaw (1977), there was no mechanism that could account for nor distinguish this sentence from one that had a subordinate past form.

23. *Juan dij-o que María está embarazad-a.*
 Juan say\PST.PFV-3s that María be[PRS.3s] pregnant-F.
 ‘Juan said that Maria is pregnant.’

In response to this shortcoming, Enç (1987) (and later Stowell (2007)) argues that this configuration requires a double temporal evaluation (which is what the term ‘double access reading’ implies), ensuring that the subordinate event time include both the evaluation time implied by its embedding context, as well as the time of utterance. However, because evaluation at the time of utterance in these analyses requires movement of the subordinate clause to a wide scope position, they fail to account for the intensional interpretation of the subordinate clause (i.e., Maria may not actually be pregnant at all, though Juan believes she is).

An integral part of the solution to all three of these criteria (dual evaluation, continuous span, and intensional interpretation) is found in the “indexical” definition of the present tense proposed by Abusch (1988), and subsequent versions of it (cf. Ogihara (1996), Gennari (1999), and Rodriguez (2004)). The version I will adopt here is given in (24), where \subseteq is an inclusion relation between intervals.

24. $\llbracket \text{PRESENT}(j)(\text{VP})(k) \rrbracket^{g,s} = 1$ iff $g(k) \subseteq g(j) \wedge s \subseteq g(j) \wedge \llbracket \text{VP} \rrbracket^{g,s} = 1$

This definition is considered indexical because it always assumes access to the time of utterance, regardless of the context of its embedding. That is, the internal temporal argument of the present tense must be a continuous interval that includes both its own evaluation time (which it inherits from a superordinate tense), and the time of utterance. This interval j then serves as the event time for the VP. This definition of the present tense is not simply a relation of simultaneity, as assumed in early tense logic, including Montague (1973), and Ladusaw (1977), and persisting in Enç (1987) and Stowell (2007).

On closer inspection, however, this definition of the present tense introduces its own difficulties (cf. Abusch (1988, 1991, 1997) and Ogihara (1996) for in depth discussion of related issues). In summary, suffice it to say that the speaker who makes a report like (23), might be seen to inappropriately attribute to the original speaker that he or she in some sense predicts the continuation of the state in question (e.g., Juan predicts that Maria will continue to be pregnant). This sort of

interpretation must be ruled out. In addition, it appears that the perspective of the speaker of (23) is somehow coming to bear on the truth valuation of (23), in addition to the beliefs or perspective of the original speaker at the time of the original utterance.

In response to the rather elaborate semantic solutions proposed by Abusch and Ogihara, Gennari (1999) (corroborated by Rodriguez (2004b:169-173)) provides an alternative that is not just simpler, it is also more empirically accurate. Suffice it to say that Abusch's and Ogihara's accounts fail both to account for some acceptable examples that do not match their criteria, and to rule out unacceptable examples that do match their criteria. Gennari's alternative approach, an overtly pragmatic one, accepts the fact that sentences like (23) may ultimately be a distortion of the original speaker's beliefs. However, she claims that such sentences are felicitous provided that it is reasonable to assume (based on a series of principled pragmatic inferences) that the belief or assertion of the original speaker would likely continue valid to the present, regardless of (or despite) objective realities.

With this definition of the present tense in hand, including the additional felicity conditions it requires, we can now apply the mechanisms proposed above to sentences (4-5) mentioned at the beginning. These are repeated and analyzed below as (25-26).

25. *Mario nos contó anoche que María está enferma.*
 'Mario told us last night that María is sick.'
 [TP_{s*} Mario PAST_k nos contó anoche que [TP_k María PRESENT_j está enferma]].
 (thus $g(k) < s$ & $g(k) \subseteq g(j)$ & $s \subseteq g(j)$)
26. *Mañana Mario confesará que ama a María.*
 'Tomorrow Mario will confess that he loves María.'
 [TP_{s*} Mañana Mario (PRESENT_i) FUTURE_k confesará que [TP_k PRESENT_j ama a María]].
 (thus $s < g(k)$ & $g(k) \subseteq g(j)$ & $s \subseteq g(j)$)

One critical requirement met by an *in situ* interpretation of present tense, as alluded to above, is that the subordinate clause remains always within the scope of the matrix belief or attitude verb. This was in fact that the initial motivation for the indexical definition of the present tense.

In the absence of an indexical account of the present tense, which allows it to be interpreted *in situ*, Enç (1987) and Stowell (2007) argue that the interpretation of the present tense under past is dependent on movement of the clause to a widest scope position. However, such a move creates unwarranted entailments stemming from the subordinate clause. As a simple example, imagine in (25) that Maria had been pretending to be sick, but that Mario believed that she really was sick and told his friends so. Imagine further that Mario's friends already knew about Maria's charade, and have in fact helped her pull it off. Now they utter (25) as they get a good laugh out of Mario.

If the subordinate clause were required to move out of the scope of *contar* (*tell*) in order to interpret the present tense, this would also require the speaker who utters (25) to commit him- or herself to the proposition that Maria really is sick at the time of utterance, which is not implied by (25). By keeping the present tense clause *in situ*, this problem never arises because the subordinate clause remains within the scope of *dijo*, which overtly marks the lower clause as Mario's belief. The only additional requirement imposed by (25) is that Mario's friends can justifiably assume that Mario's belief, which he voiced the previous night, is still in effect.

The important thing to note here is that anchoring functions in double access reading examples as it does in other cases. Furthermore, the present-under-past context does not allow for tense neutralization, and therefore the indexical interpretation of the present tense is required. In contrast, example (26) allows for either a neutralized present tense or an indexical present interpretation (see Ogihara (1996) for additional examples in English). That is, (26) is compatible with Mario loving Maria continuously from now until tomorrow, or with Mario falling in love with her sometime after the time of utterance, thereby locating his love for her exclusively in the future. This is a possibility provided for by the mechanism of tense neutralization adopted here, based on Ogihara (1996), as long as we accept the analysis of the future as a PRESENT FUTURE (and conditional as PAST FUTURE).

7. Conclusion

In conclusion, I have proposed a system that predicts both when a past tense verb form may be interpreted as a *co-pretérito* (i.e., a neutralized or simultaneous past tense form), regardless of its aspect or mood, and what it may be simultaneous with. This same mechanism of tense neutralization also applies to the present tense when embedded under a matrix (present) future. The mechanism I have proposed for anchoring a subordinate tense via temporal government allows for a variety of distinct syntactic relations at LF, and any degree of complexity (taking into account quantifier and intensional verb scope interactions) while still capturing the relatedness between tenses in a principled and uniform way. And without modification of the underlying mechanisms of tense anchoring and tense neutralization, this proposal is also able to successfully predict when a subordinate *pretérito* may or may not be interpreted as simultaneous, as opposed to the *imperfecto* which always allows simultaneity.

References

- Abusch, Dorit. 1988. Sequence of tense, intensionality and scope. Proceedings of the Seventh West Coast Conference for Formal Linguistics, ed. by H. Borer, 1-14. Stanford: CSLI Publications.
- Abusch, Dorit. 1991. The present under past as de re interpretation. Proceedings of the Seventh West Coast Conference for Formal Linguistics, ed. by Dawn Bates, 1-12. Stanford: CSLI Publications.
- Abusch, Dorit. 1997. Sequence of tense and temporal de re. *Linguistics and Philosophy* 20.1-50.
- Acero, Juan José. 1990. Las ideas de Reichenbach acerca del tiempo verbal. *Tiempo y aspecto en español*, ed. by Ignacio Bosque, Juan José Acero, Ángel López García, Guillermo Rojo, and Margarita Suñer, 45-75. Madrid: Cátedra.
- Alcina Franch, Juan and José Manuel Bleca. 1975. *Gramática española*. Barcelona: Editorial Ariel.
- Alonso, Amado and Pedro Henríquez Ureña. 1983. *Gramática castellana: segundo curso*, 26th edition. Buenos Aires: Editorial Losada, S. A.
- Bello, Andrés. 1847 [1914]. *Gramática de la lengua castellana destinada al uso de los americanos*. París: R. Roger and F. Chernoviz.
- Binnick, Robert. 1991. *Time and the verb: a guide to tense and aspect*. New York: Oxford University Press.
- Carrasco Gutierrez, Ángeles. 2000. Los sistemas temporales de Andrés Bello y Hans Reichenbach. *La Gramática de Andrés Bello (1847-1997)*, ed. by Christian Schmitt and Nelson Cartagena, 319-347. Bonn, Germany: Romanistischer Verlag.
- Carrasco Gutierrez, Ángeles. 2001. Los dos significados de anterioridad del pretérito imperfecto. *Lengua española y estructuras gramaticales*, ed. by Alexandre Veiga and María Rosa Pérez, 59-73. Santiago de Compostela, Spain: Universidade de Santiago de Compostela.
- Carrasco Gutiérrez, Ángeles and Luis García Fernández. 1996. Observaciones sobre la correlación de tiempos en español. *El verbo español: Aspectos morfosintácticos, sociolingüísticos y lexicogenéticos*, ed. by Gerd Wotjak. 61-71.
- Cipria, Alicia and Craig Roberts. 2000. Spanish imperfecto and pretérito: truth conditions and Aktionsart effects in a situation semantics. *Natural Language Semantics* 8. 297-347.
- Cipria, Alicia. 2002. Tensed complements of perception verbs: issues in their temporal interpretation. *From Words to Discourse: Trends in Spanish Semantics and Pragmatics*, ed. by Javier Gutiérrez-Rexach, 37-60. Oxford: Elsevier Science Ltd.
- Demirdache, Hamida and Myriam Uribe-Etxebarria. 2000. The Primitives of Temporal Relations. *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik*, ed. by Roger Martin, David Michaels, and Juan Uriagereka, 157-186. Cambridge, MA: MIT Press.
- Enç, Mürvet. 1987. Anchoring Conditions for Tense. *Linguistic Inquiry* 18.633-657.
- García Fernández, Luis. 1999. Sobre la naturaleza de la oposición entre pretérito imperfecto y pretérito perfecto simple. *Lingüística Española Actual* 21.169-188.
- García Fernández, Luis and Bruno Camus Bergareche. 2004. *El pretérito imperfecto*. Madrid: Gredos.
- Gennari, Silvia. 1999. Embedded present tense and attitude reports. *Proceedings from Semantics and Linguistic Theory*, 91-108. Ithaca, NY: CLC Publications.
- Gennari, Silvia. 2002. Spanish Past and Future Tenses: Less (Semantics) is More. *From Words to Discourse: Trends in Spanish Semantics and Pragmatics*, ed. by Javier Gutiérrez-Rexach, 21-37. Oxford: Elsevier Science Ltd.
- Gennari, Silvia. 2003. Tense meaning and temporal interpretation. *Journal of Semantics* 20. 35-71.

- Gili y Gaya, Samuel. 1951. *Curso superior de sintaxis española*, 3rd edition. Barcelona: Publicaciones y Ediciones Spes, S. A.
- Gutiérrez-Rexach, Javier. 2002. *From Words to Discourse: Trends in Spanish Semantics and Pragmatics*. Oxford: Elsevier Science Ltd.
- Hinrichs, Erhard. 1986. Temporal anaphora in discourses of English. *Linguistics and Philosophy* 9.63-82.
- Hornstein, Norbert. 1990. *As time goes by: Time and universal grammar*. Cambridge: Massachusetts.
- Klein, Wolfgang. 1994. *Time in language*. London & New York: Routledge.
- Krifka, Manfred. 1992. Thematic Relations as links between nominal reference and temporal constitution. *Lexical Matters*, ed. by Ivan A. Sag and Anna Szabolcsi, 29-53. Stanford: CSLI Publications.
- Krifka, Manfred. 1998. "The origins of telicity". *Events and grammar*, ed. by Susan Rothstein, 197-235. Dordrecht, Netherlands: Kluwer Academic Publishers.
- Ladusaw, William. 1977. Some problems with Tense in PTQ. *Texas Linguistic Forum* 6. Austin: University of Texas.
- Montague, Richard. 1973. The proper treatment of quantification in ordinary English. *Approaches to Natural Language*, ed. by Jaakko Hintikka, J. M. E. Moravcsik and Patrick Suppes, 221-242. Dordrecht: D. Reidel Publishing Company.
- Nerbonne, John. 1986. Reference time and time in narration. *Linguistics and Philosophy* 9.83-95.
- Ogihara, Toshiyuki. 1996. *Tense, attitudes, and scope*. Dordrecht & Boston: Kluwer Academic Publishers.
- Partee, Barbara. 1973. Some structural analogies between tenses and pronouns in English. *The Journal of Philosophy* 70.601-609
- Partee, Barbara. 1984. Nominal and temporal anaphora. *Linguistics and Philosophy* 7.243-286.
- Pérez-Botero, Luis. 1997. Anterioridad y perfectividad en el sistema verbal del español. *Sintagma* 9.5-15.
- Real Academia Española. 1974. *Esbozo de una nueva gramática de la lengua española*. Madrid: Espasa-Calpe.
- Reichenbach, Hans. 1947 [1966]. *Elements of symbolic logic*. New York, The Free Press.
- Rodríguez, Joshua. 2004a. The Spanish Imperfecto: Resolving Some Issues of Aspect and Modality, WCCFL 23 Proceedings, ed. by Vineeta Chand, Ann Kelleher, Angelo J. Rodríguez, and Benjamin Schmeiser, 677-689. Somerville, MA: Cascadilla Press.
- Rodríguez, Joshua. 2004b. *Interpreting the Spanish imperfecto: Issues of aspect, modality, tense, and sequence of tense*. Columbus, Ohio: dissertation, The Ohio State University.
- Ross, John Robert. 1967. *Constraints on variables in syntax*. Cambridge, MA.: MIT dissertation. Reproduced by the Indiana University Linguistics Club, Fall 1968.
- Song, Mean-Young. 2001. A proper treatment of the sequence-of-tense phenomenon in English. *Ohak Yonku/Language Research* 37.741-761.
- Stowell, Tim. 2007. The Syntactic Expression of Tense. *Lingua* 117.437-463.
- Suñer, Margarita and José Padilla-Rivera. 1987. Sequence of tenses and the subjunctive, again. *Hispania* 70.634-42.
- Vendler, Zeno. 1967. *Linguistics in Philosophy*. Ithaca, New York: Cornell University Press.
- Zagona, Karen. 1988. *Verb phrase syntax: a parametric study of English and Spanish*. Boston: Kluwer Academic Publishers.

Selected Proceedings of the 10th Hispanic Linguistics Symposium

edited by Joyce Bruhn de Garavito
and Elena Valenzuela

Cascadilla Proceedings Project Somerville, MA 2008

Copyright information

Selected Proceedings of the 10th Hispanic Linguistics Symposium
© 2008 Cascadilla Proceedings Project, Somerville, MA. All rights reserved

ISBN 978-1-57473-427-0 library binding

A copyright notice for each paper is located at the bottom of the first page of the paper.
Reprints for course packs can be authorized by Cascadilla Proceedings Project.

Ordering information

Orders for the library binding edition are handled by Cascadilla Press.
To place an order, go to www.lingref.com or contact:

Cascadilla Press, P.O. Box 440355, Somerville, MA 02144, USA
phone: 1-617-776-2370, fax: 1-617-776-2271, e-mail: sales@cascadilla.com

Web access and citation information

This entire proceedings can also be viewed on the web at www.lingref.com. Each paper has a unique document # which can be added to citations to facilitate access. The document # should not replace the full citation.

This paper can be cited as:

Rodríguez, Joshua. 2008. The *Co-pretérito* as Null Tense: Tense Anchoring and Sequence of Tense Revisited. In *Selected Proceedings of the 10th Hispanic Linguistics Symposium*, ed. Joyce Bruhn de Garavito and Elena Valenzuela, 237-250. Somerville, MA: Cascadilla Proceedings Project.

or:

Rodríguez, Joshua. 2008. The *Co-pretérito* as Null Tense: Tense Anchoring and Sequence of Tense Revisited. In *Selected Proceedings of the 10th Hispanic Linguistics Symposium*, ed. Joyce Bruhn de Garavito and Elena Valenzuela, 237-250. Somerville, MA: Cascadilla Proceedings Project. www.lingref.com, document #1800.