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The Syntax of Temporal Interpretation in Embedded Clauses

Gustavo Ariel Guajardo

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THE SYNTAX OF TEMPORAL INTERPRETATION IN EMBEDDED CLAUSES

By

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Thesis

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The Syntax of Temporal Interpretation in Embedded Clauses

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In this thesis I argue that verbs in embedded clauses are temporally interpreted by being bound to the temporal arguments of AspP and VP in the matrix clause. I build up this claim by proposing that (i) Reichenbach’s relation of association can be expressed in terms of Binding Theory in the syntax, (ii) Tense is subject to different binding principles depending on its syntactic realization so that T in main clauses must be free (i.e., subject to Principle B) but in embedded clauses T must be bound (i.e., subject to Principle A), (iii) the Spanish present subjunctive is a tenseless form which behaves syntactically very similar to an infinitive and (iv) (non-)finiteness can be defined in terms of binding. This thesis aims to contribute to linguistic theory by presenting a solution to the problem of the Spanish subjunctive and the violation of the rule of concordantia temporum, by establishing another parallel across domains, namely between the nominal and the temporal domain, which are argued in this thesis to be subject to the same syntactic principles of Binding Theory, and by providing empirical evidence that natural language makes use of syntactic relations to arrive at semantic interpretations. Finally, the findings and proposals in this thesis predict that cross-linguistically languages should prefer to use syntactic configurations over morphological systems for semantic interpretation.
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LIST OF ABBREVIATIONS

1: first person
2: second person
3: third person
acc: accusative
AnimP: animate pronoun
Clitic: clitic pronoun
Cond: conditional
conj: conjunctive mood
dat: dative
Det: determiner
dir: direct participant
dur: durative marker
EMB: embedding marker
fem: feminine
Fut: future
Imp: imperfect aspect
INA: intransitive animate
inchoat: inchoative marker
Ind: indicative
Inf: infinitive
masc: masculine
NOMIN: nominative
Past: past
PastPart: past participle
pl: plural
Plup: pluperfect
Pret: preterite
pro: null subject
Prs: present
PrsPart: present participle
PrsPerf: present perfect
reflex: reflexive pronoun
sg: singular
Subj: subjunctive
1. INTRODUCTION

In this thesis I discuss the role of tense in embedded clauses. I propose that tense in embedded clauses does not contribute to the temporal interpretation of the proposition and I use the current development of the Spanish subjunctive to support my proposal.¹ I argue that the modern Argentine Spanish subjunctive (but predictably other dialects as well) lacks tense, which accounts for its wide and unlimited distribution in embedded clauses independent of the tense of the main clause. Furthermore, I propose that the temporal interpretation of embedded clauses is derived through binding and I put forth that the functional category tense shows a dichotomy in its syntactic behavior between main and embedded clauses. While tense in embedded clauses must be bound, in main clauses it must be free.

The proposal of this thesis has numerous implications for linguistic theory. First, it accounts for the cross-linguistic phenomenon that tenseless forms only occur in embedded clauses but not in main clauses. Second, it predicts that languages should evolve such that tense is lost in embedded forms since tense is semantically vacuous in this environment. Third, it provides further evidence of current claims on the syntax-semantics interface that syntax determines interpretation and not the other way around (Borer 1994, 2005; Marantz 1996, 1997, Harley 1995 among others). Fourth, it provides an answer to an unresolved issue in the Spanish literature on the distribution of subjunctives and the (in)applicability of concordantia temporum.

The thesis is organized as follows. In §2 I discuss the Spanish present subjunctive, the concept of concordantia temporum, and I illustrate the current usage of the present

¹ For the present purposes, the term embedded clause is restricted to desiderative clauses and embedded commands. For ease of exposition I will refer to them as embedded clauses throughout the thesis, but the reader should bear in mind that I am referring to a subset of all embedded clauses.
subjunctive in Argentinean Spanish. The end of the section discusses previous analyses of violations of *concordantia temporum* with the subjunctive. §3 deals with time and language. In this section I discuss tensed and tenseless languages. I outline Reichenbach’s theory of tense and I introduce Hornstein’s (1990) adaptation of Reichenbach’s theory. The sequence of tense phenomenon is also discussed in this section. §4 deals with the syntactic realization of tense where I discuss the internal structure of TP and AspP. Then I present the tense structure of infinitival clauses and I present my proposal that the Reichenbachian *association* relationship is established through binding. I present my analysis of the Spanish subjunctive in §5 and develop the proposal in this thesis that the Argentinean Spanish subjunctive lacks tense. I also discuss temporal adjunct clauses to further support the claim that subjunctives lack tense in Argentinean Spanish. In §6 I discuss finiteness. First I present non-finite forms cross-linguistically and then I propose a direct result of my analysis by using binding to define non-finiteness. I present an extension of my theory in §7, where I discuss language change in relation to economy conditions. This section presents further empirical support from Blackfoot for the claims herein. §8 is a discussion of the proposal in this thesis, the implications it raises and the contribution of this thesis to linguistic theory. I present my conclusion and issues for further research in §9.
2. THE SPANISH PRESENT SUBJUNCTIVE

In this section I discuss the current situation of the present subjunctive in South American dialects such as Peruvian, Bolivian and especially Argentinean. In §2.1 I illustrate the rule of *concordantia temporum*. I present data from Argentinean Spanish that violates *concordantia temporum* in §2.2. I discuss previous accounts of subjunctives in Spanish in §2.3 and propose that the Spanish subjunctive lacks tense.

2.1 Concordantia Temporum

In the Spanish literature on subjunctive clauses it has been argued that a present subjunctive can only be embedded under a present or a future matrix clause and that a past subjunctive must follow if the matrix clause is in the past. This phenomenon is referred to as *concordantia temporum* (Sessarego 2008 and references therein). In other words, the *concordantia temporum* states that the sequences [-PAST, +PAST] and [+PAST, -PAST] are not possible in Spanish when the embedded clause is in the subjunctive so the tense specification of both matrix and embedded clauses must be the same.
1.

a. Juan quiere que María compre [ -PAST ]
   Juan want.3sg.Prs.Ind that María buy.3sg.Prs.Subj
   la casa
   the house
   ‘Juan wants Maria to buy the house’

b. Juan querrá que María compre [ -PAST ]
   Juan want.3sg.Fut.Ind that María buy.3sg.Prs.Subj
   la casa
   the house
   ‘Juan will want Maria to buy the house’

c. Juan quería que María comprara [ + PAST ]
   Juan want.3sg.Past.Ind that María buy.3sg.Past.Subj
   la casa
   the house
   ‘Juan wanted Maria to buy the house’

d. Juan había querido que María [ + PAST ]
   Juan have.3sg.Past.Ind want.PastPart that María
   comprara [ +PAST ]
   buy.3sg.Past.Subj
   la casa
   the house
   ‘Juan had wanted Maria to buy the house’

The data in (1) illustrate typical cases of *concordantia temporum* where the embedded tense of the subjunctive matches the tense in the main clause. The main tenses in (1a) and (1b) are present and future respectively and these two tenses must be followed by a
The present subjunctive. The matrix clauses in (1c) and (1d) are in the past tense and the pluperfect, respectively, both of which must be followed by the past subjunctive according to concordantia temporum.

In the next section I present data from Argentinean Spanish and other South American dialects that do not conform to concordantia temporum.

2.2 The Present Subjunctive in Argentinean Spanish

In some modern Spanish dialects the so-called present subjunctive does not show the distributional restrictions predicted by concordantia temporum (Kany 1945; Obaid 1967; Lunn 2007). Data from Latin American dialects like Quito, Peruvian and Bolivian show that concordantia temporum can be violated so that the present subjunctive can occur in embedded clauses regardless of the tense of the main clause (Sessarego 2008). This thesis further explores the violations of concordantia temporum of the present subjunctive in Argentinean Spanish. The data in (2) show that regardless of the tense of the main clause, the present subjunctive can be used in the embedded clause.  

---

2 Spanish has lost the future subjunctive, which has been replaced by the present subjunctive (Haverkate 2002) so the future tense in a matrix clause must be followed by the present subjunctive in the embedded clause.

3 The data in Spanish are either my own sentences or sentences that I have collected in spontaneous conversation with native speakers of Argentinean Spanish unless otherwise noted.
2.

a. **Present**

[Quiero [que vayas al mercado]]

want.1.sing.Prs.Ind that go.2.sg.Prs.Subj to.the store

‘I want you to go to the market’

d. **Past**

[Quería [que vayas al mercado]]

want.1.sg.Imp.Ind that go.2.sg.Prs.Subj to.the market

‘I wanted you to go to the market’

e. **Past Perfect**

[Había querido [que vayas al mercado]]

have.1.sg.Plup.Ind want.PastPart. that go.2.sg.Prs.Subj to.the market

‘I had wanted you to go to the market’
f. **Conditional**

[Querría [que **vayas** al mercado]]

want.1.sg.Cond that **go.2.sg.Prs.Subj** to.the market

‘I would want you to go to the market’

g. **Conditional Perfect**

[Habría querido [que **vayas** al mercado]]

have.1.sg.Cond want.PastPart that **go.2.sg.Prs.Subj** to.the market

‘I would have wanted you to go to the market’

h. **Future Perfect**

[Habré querido [que **vayas** al mercado]]

have.1sg.Fut want.PastPart that **go.2sg.Prs.Subj** to.the market

‘I will have wanted you to go to the market’

The sentences in (2) are all introduced by a different tense in the main clause. The present subjunctive in (2a), (2b) and (2c) is expected since the tenses in the main clause are present, future and present perfect respectively, and this is what the *concordantia temporum* predicts. What is striking is that in all the other examples, the embedded verb is also in the present subjunctive. The expected form in (2d) through (2h) is the past subjunctive form *fueras* ‘that you went’, and not *vayas* ‘that you should go’. From these data, we can see that the occurrence of the present subjunctive is independent of the tense of the main clause. Note that the past subjunctive is still available in (2d) through (2f) but
the present subjunctive is ruled out by *concordantia temporum* so it is this violation that needs an explanation (see footnote 18 and §9.2 for further discussion)

2.3 **Previous Accounts of Violations of *Concordantia Temporum***

Gili Gaya (1948) and Suñer & Padilla-Rivera (1987) argue that the present subjunctive can surface in embedded clauses with past main verbs only when the verb in the embedded clause refers to an event still to occur. However, in Argentinean Spanish, even when the event denoted by the embedded verb has already taken place, the present subjunctive still surfaces in the embedded clause.

3. 
   a. [Le **dije** todo [antes de que se muera]]
      
      *muera]*
      
      *died.3.sg.Prs.Subj*
      
      ‘I told him everything before he died’

      (Argentinean Sp)

   b. [No necesitaban más [que **haga** con ellos]].
      
      **Terminó** y **terminó.**
      
      *Terminó* with them **finish.3.sg.Pret.Ind** and **finish.3.sg.Pret.Ind**
      
      ‘They didn’t need me to do anything else. It[the job] was over and it was over.’

      (Argentinean Sp)

In (3a) the event referred to by the verb in the subjunctive *muera* ‘that he should die’ has already occurred since the speaker is asserting that he was able to tell the dying person everything he wanted to before the person died. In (3b) the event referred to by the embedded verb has already happened and is finished as the speaker is telling about why
he was fired from his job. In both examples the subjunctive is used for events that are in the past and which are completed actions whose outcome is already known.

There have also been attempts to explain the sequence of tense mismatch between the main and the embedded clause according to the semantics of the verb and the type of embedded clauses in which the subjunctive occurs. Suñer & Padilla-Rivera (1987) argue that of all the clause types in which the subjunctive occurs, only with nominal clauses is the sequence of tense obligatory. The sequence [+PAST, -PAST] is not possible in this type. The list in (4) shows their classification of subjunctive clauses.

4. Suñer & Padilla-Rivera’s (1987) classification of subjunctive clauses
   a. adjunct (adverbial) clauses
   b. relative (adjectival) clauses
   c. nominal (subcategorized) clauses
      i. subjunctive possible only with some operator-like element.
      ii. subjunctive required irrespective of the presence of an operator.

Because Suñer & Padilla-Riviera (1987) allow the sequence [+PAST, -PAST] in (4a) and (4b) I will not discuss these clause types any further as the data in this thesis is consistent with their analysis. However, the argument that subjunctive embedded nominal clauses show a strong dependency with the tense of the main clause cannot explain the current situation in the Latin American Spanish dialects under discussion. The data in (5) illustrate the distribution of the subjunctive in nominal clauses.
5. a. Quería que telefonearas/*tefonées
   [+PAST]    [+PAST]    [-PAST]
   ‘I wanted that s/he would telephone/will telephone’

   b. Prefirió que llegaras/*llegues a las 4.
   [+PAST]    [+PAST]    [-PAST]
   ‘S/he preferred that you arrived/arrive at 4.’

   (Suñer & Padilla-Rivera 1987: 636)

In (5) the main verb is in the past tense and the sentence is deemed ill-formed when the
verb in the embedded clauses is in the present subjunctive. The only possibility according
to Suñer & Padilla-Rivera is the past subjunctive in the embedded clause. They conclude
from the data above that verbs of desire enforce a strong sequence of tense restriction.
They further argue that lack-of-knowledge verbs, such as ignorar ‘to not know’ and
desconocer ‘to ignore, to be unaware of’ show restrictions similar to the desire-verb
class. Their claims about lack-of-knowledge verbs are inconsistent with the data in
Argentinean Spanish. Verbs like ignorar ‘to not know’ can appear in any tense, including
present (or [-PAST]), and can be followed by a subjunctive clause, as illustrated in (6).

6. Desconozco que un libro así exista.
   [-PAST]    [-PAST]
   Not-know.1.sg.Prs.Ind that a.masc.sg book.sg so exist.3.sg.Prs.Subj
   ‘I don’t know whether a book like that exists’

In (6) the main verb desconozco ‘I don’t know’ is in the present tense, and the embedded
verb existe ‘that it may exist’ is in the subjunctive, which is not predicted to occur by
Suñer & Padilla-Rivera. Furthermore, they argue that these verbs do not allow the
sequence [+PAST, -PAST], and claim that [+PAST, +PAST] is the only available option. This
is illustrated by the data in (7).
The data in (7) are meant to support their claim that lack-of-knowledge verbs in Spanish can only appear in the past tense and they only allow the [+PAST, +PAST] sequence. Both instances of the present subjunctive in (7) are considered ill-formed by the authors.

The same argument is put forth for impersonal expressions, of which there are three types: expressions of uncertainty, desire and emotion. The canonical form of an impersonal expression in Spanish is given in (8).

8. Copula + Adj/NP + Clause in the subjunctive

Suñer & Padilla-Rivera argue that impersonal expressions behave the same way as their verbal counterparts in that they show sequence of tense restrictions. The data in (9) illustrate this.
9. a. Era difícil que Erendira *acepte/ aceptara nuestros regalos. 

[+PAST] [-PAST] [+PAST]

‘It was difficult that Erendira *accept/accepted our presents’.

b. Fue preciso/necesario que la *tome/ tomara yo de la mano para poder 

[+PAST] [-PAST] [+PAST]

tranquilizarla.

‘It was required/necessary that I *take/took her by the hand to be able to calm her’

(Suñer & Padilla-Rivera 1987: 637)

In (9) the copula is in the imperfect past and perfective past, respectively. According to Suñer & Padilla-Rivera, the only acceptable sequence is [+PAST, +PAST] and for them the present subjunctive in the embedded clause would make the sentence ungrammatical. However, the data in (10) below from Peruvian and Bolivian Spanish are of the form [+PAST, -PAST] and are considered grammatical by native speakers of these dialects.

10. a. Le adaptó un parlante mayor

It.dat connect.3.sg.Pret.Ind a.masc.sg speaker bigger

porque quería que suene más

because want.3.sg.Imp.Ind that sound.3.sg.Prs.Subj more

fuerte loud

‘He connected to it a bigger speaker because he wanted it to sound louder’

(Bolivian Sp)
In (10a) and (10b) the subjunctive occurs in a nominal clause whose matrix clause has a verb in the imperfect past and the main verb requires the use of a subjunctive verb in the embedded clause. These are all instances of the sequence [+PAST, -PAST] in a nominal clause, which is ruled out by Suñer & Padilla-Rivera’s analysis.

The data above illustrate that the occurrence of the present subjunctive in an embedded clause is not restricted by or dependent upon the tense of the main clause. The only restriction constraining the occurrence of the present subjunctive is the requirement that the clause in which it occurs should be an embedded clause. I argue that neither the semantics of the main verb, nor the tense of the main clause, nor the type of embedded clause, have any effect on the choice of the present subjunctive over the past subjunctive. These forms (i.e., present and past subjunctive) are in free variation, with the present subjunctive becoming more and more common across clause types and tenses (see footnote 18 and §9.2 for further discussion)

In the next section I discuss tense cross-linguistically and outline Reichenbach’s and Hornstein’s theories of tense.
3. TIME AND LANGUAGE

This section deals with the grammatical category of tense. In §3.1 I discuss tense cross-linguistically, providing a definition of what it means to say that a language has (or does not have) tense. In §3.2 I present Reichenbach’s theory of tense as a first approximation to formalize the notions introduced in §3.1. In §3.3 I outline Hornstein’s (1990) adaptation of Reichenbach’s theory and in §3.4 I discuss the sequence of tense phenomenon within this framework.

3.1. Tensed and Tenseless Languages

In most languages clauses come in two types: finite and non-finite (Palmer 1986). Tensed forms are considered to be finite and tenseless forms are non-finite (see §6.1 for a detailed discussion and definition of finiteness). In English, for example, a clause can be finite or non-finite depending on whether it is a main clause or an embedded clause. Main clauses must always be inflected for tense, though not all embedded clauses lack tense.

11.

a. John slapped Paul.

b. [John wants [to slap Paul]]

c. [John said [that he slapped Paul]]

In (11a) there is only one clause, which is inflected for past tense. Tensed clauses are finite so (11a) is a finite clause. In (11b) there are two clauses; the main clause being
John wanted and the embedded clause to slap Paul. As we said above, main clauses are always finite and in this case the verb is inflected for present tense. The embedded clause is non-finite, and it contains the infinitive form of the verb to slap. In (11c) there are also two clauses; the main clause John said and the embedded clause that he slapped Paul. Both clauses in (11c) are finite and inflected for past tense.

Regardless of whether a clause is finite or non-finite it always receives a temporal interpretation. For main clauses their temporal interpretation is most commonly obtained from the tense of the main verb. The temporal interpretation of embedded clauses, on the other hand, is always derived from the temporal interpretation of the main clause. In other words, main clauses have a temporal interpretation of their own, usually from the tense morphology on the verb but the temporal interpretation of embedded clauses is dependent upon the main clause (Hornstein 1990).

Following Comrie (1985) I assume that time can be represented as a straight line as in (12), where an event located to the left of 0 represents Past and an event right to 0 represents Future. An event at 0 represents Present.

12.

| Past | 0 | Future |

Tense is the grammaticalized expression of location in time (Comrie 1985). In other words, tense is the strategy natural languages use to convey that an event has occurred to

---

4 English also allows gerunds, present and past participles as complements of verbs, which are also non-finite forms.

5 This holds only for languages with overt tense morphology; see discussion below for so-called tenseless languages.
the left or to the right of 0 or exactly at 0. This is usually achieved by means of bound morphemes attached to verbs, though other languages, such as Bamileke-Dschang, make use of free (i.e., not bound) auxiliaries to distinguish between tenses (Comrie 1985). In the definition adopted above, grammaticalized means that the language uses special bound morphemes to denote tense and these morphemes are obligatory. Languages in which temporal interpretation is derived via lexical aspect, grammatical aspect or adverbials would be said to be tenseless under such definition. In Burmese, a language that is considered to be tenseless, time reference is arrived at by sentence-final particles with modal meanings (Comrie 1985). The distinction these particles establish is between realis and irrealis. Realis particles are used in sentences that have present or past time reference (ex. 13a). For future, the irrealis particles must be used (ex. 13b) (Comrie 1985). However, the irrealis particles can also be used for present or past reference provided it is not limited to the real world (ex. 13c).

13.  
   a. Sâneîñtain myeʔ hpyaʔ-te  
       Saturday-every grass cut-realís  
       ‘(He) cuts the grass every Saturday.’

   b. Mâneʔhpán sá-me  
       tomorrow begin-irrealís  
       ‘(We) will begin tomorrow’

   c. Hman- leín-me  
       be.true undoubtedly-irrealís  
       ‘That may well be true’

(Comrie 1985: 51)

---

6 Tense, though, is not marked exclusively in the verbal domain. Tense can also be marked in the nominal domain. See Nordlinger & Sadler (2004) for a typological investigation from a wide-ranging survey of languages where the phenomenon occurs.
The data in (13a) contain the realis particle –te and the sentence is interpreted in the present tense. In (13b) the irrealis particle –me occurs and the sentence is interpreted in the future tense. Note, also, that both (13a) and (13b) contain the adverbials ‘every Saturday’ and ‘tomorrow’, and most likely the present and future interpretation of these sentences is derived from the presence of these adverbials. Although (13c) contains the irrealis particle –me, the sentence can be interpreted in the present but the interpretation is modal (i.e., not about actual worlds but possible worlds). We can see that the opposition between the realis and irrealis particles is not one of tense, but of actual versus possible worlds. Moreover, these examples show us that tense in Burmese is not grammaticalized, i.e., there is no tense, or at least, it is not obligatory. The Burmese data also show that in the absence of tense morphemes it is still possible for a sentence to receive a temporal interpretation in other ways such as by means of adverbials like ‘tomorrow’ in (13b) or modal particles.

Other tenseless languages use lexical aspect and syntactic relations to interpret sentences temporally (Déchaine 1991). One such example is Haitian. In Haitian a bare eventive predicate (e.g. vann ‘sell’) is generic with a bare NP object, and past with a specific NP object. A bare stative predicate (e.g. renmen ‘like’) is consistently non-past regardless of the specificity of its object (Damoiseau 1982).
The example in (14a) has a bare eventive predicate ‘sell’ with a bare NP, a combination which renders the temporal interpretation of the sentence unambiguously present. In (14b) the same bare predicate with a definite NP receives a past interpretation. (14c) and (14d) have a bare stative predicate and is consistently interpreted as present regardless of the definiteness of the NP.

3.2. Reichenbach’s Theory of Tense

The notion that tense is the grammaticalized location of events in time has been formalized by Reichenbach’s (1947) theory. He proposes that tense is made up of three primitives, namely event time (E), speech time (S) and reference time (R). The data in (16) show how Reichenbach’s primitives work.
15.

a. John slapped Paul.

b. John is slapping Paul.

c. John will slap Paul.

In each case in (15) we evaluate the temporal location of the slapping event relative to the moment of speech (i.e., now). In (15a) we understand the event to have taken place before the moment of speech, in (15b) the event occurred at the moment of speech, and, in (15c) after it. The temporal ordering of the sentences in (15) is represented by arranging the E and S points in linear order assuming the following conventions:

(a) A point earlier than another point is located to the left separated by a line.

(b) If two points are contemporaneous they are placed adjacent to each other separated by a comma and they are said to be associated.

Adopting the conventions above, the sentences in (15) have the following representations.
16.  
   a. John slapped Paul.  
   
   \[
   \begin{array}{c}
   \text{JOHN SLAP PAUL} \\
   \text{Now}
   \end{array}
   \]

   b. Reichenbachian representation: E___S

17.  
   a. John is slapping Paul.  
   
   \[
   \begin{array}{c}
   \text{JOHN SLAP PAUL} \\
   \text{Now}
   \end{array}
   \]

   b. Reichenbachian representation: S,E

18.  
   a. John will slap Paul.  
   
   \[
   \begin{array}{c}
   \text{JOHN SLAP PAUL} \\
   \text{Now}
   \end{array}
   \]

   b. Reichenbachian representation: S___E

S is a deictic element that designates the moment of speech and it is anchored by the utterance time. The context-dependent nature of finite sentences is traced back to the presence of the S point in the tense representation. The S point plays two roles. Its general role is that of a deictic element that is anchored to the speech situation (i.e., the moment of speech). Another, more specific role is to anchor the temporal specification of the event time E relative to the moment of speech. To understand this distinction it is important to bear in mind that sometimes tenses are not evaluated relative to the moment
of speech, though they are always deictic. S can be different from the utterance time, which is very common in narratives where the narrative time and the actual speech time are different.  

A third element in Reichenbach’s theory is the reference point R. The R point mediates the relationship between S and E. The primary tense relation is said to be between S and R, and then R is related to E. The link between S and E is derivative, dependent on the relationship between these other two links (i.e., R and S, and R and E). The effect of the R point is not clear in simple tenses because it is always contemporaneous with E, but it plays a decisive role in complex tenses such as perfect tenses. Consider the future perfect sentence in (19).

19. John will have arrived by 5 o’clock.

The interpretation of (19) places E (John’s arriving) some time in the future relative to the moment of speech but before 5 o’clock. This amounts to saying that E is located relative to two points. The second point, in this case 5 o’clock, is R. The representation of (19) is given in (20) below.

20. \[ S \quad E \quad R \]

\[
\text{Now} \quad \left( \text{JOHN ARRIVE} \right) \quad \left( 5 \text{ O’CLOCK} \right)
\]

---

7 See Hornstein (1993) for a more detailed discussion.
Reichenbach argues that R is actually part of every tense, not only perfect tenses. This means that R is not introduced merely to facilitate the interpretation of complex tenses, but it is rather a syntactic relation that obtains even when not semantically visible. In his treatment of tense, Reichenbach implicitly assumes that the temporal interpretation of tenses underdetermines their syntactic forms in that the R point may not be temporally visible (i.e., it may not contribute to the temporal interpretation of the sentence) in a simple tense but it is still present in the tense structure.

Having introduced the three components of Reichenbach’s theory of tense, we can now define what a Reichenbach tense is. It is a complex of three points (S, R and E), temporally ordered with respect to one another. S is a deictic element anchored within the discourse situation, often the moment of speech. The primary tense relation is between S and R, the reference point. E, the event time, is located through its relationship to R.

3.3. Hornstein’s Neo-Reichenbachian Theory of Tense

Hornstein (1990) argues that the linear order of overlapping points also plays a role in individuating tenses. So even if R and E are contemporaneous in the past tense, two logical possibilities exist; either R,E___S or E,R____S. Hornstein proposes that these two linear orders represent two syntactically different tenses although they may represent the same tense semantically. He argues that this is another way in which temporal interpretation underdetermines the syntactic structure of the tense system. That is, the temporal interpretation of tense may not be sensitive to the actual structural organization of its primitives. In a sense, he puts forth that the syntax of tense may be more precise and distinguish more tenses than the temporal interpretation in natural language is
capable of capturing and interpreting. However, there is yet another way to explain the fact that E and R can be linearly ordered in two different ways in the past tense with no apparent change in interpretation. Since R and E are contemporaneous (i.e., they occur at or refer to the same time) it is predicted that natural language will not capture the ordering of two elements that point to the same time. In fact, this is probably the result of a limitation in human cognition (i.e., the inability to distinguish two elements that refer to the same time span) rather than a limitation of the linguistic system. Moreover, it is also a limitation of the two-dimension representational system that E and R have to be linearly ordered. A more accurate way to illustrate two simultaneous points would be to have them occupy the same position in space. It is not possible to achieve this in writing but it should be borne in mind that when E and R are contemporaneous speaking of their linear order is at least physically impossible and logically inaccurate.

Because this thesis is concerned with embedded clauses, which yield complex tense structures, I introduce some rules and constraints for the derivation of complex tenses below. The structures in (15) through (20) are called Basic Tense Structures (BTS), which are tense structures not modified by adverbs and which occur in main clauses. By the same token, a Derived Tense Structure (DTS) is a tense structure which is either modified by an adverb or which occurs in an embedded clause. By definition two points are said to be associated if they are contemporaneous.
21. Rules and Constraints for the Derivation of Complex Tense Structures

- X associates with Y = X is separated from Y by a comma.

- Basic Tense Structure (BTS) is preserved iff
  a) No points are associated in Derived Tense Structure (DTS) that are not associated in BTS.
  b) The linear order of points in DTS is the same as that in BTS.

- Constrain on DTS (CDTS): DTS must preserve BTS

(Hornstein 1990: 15)

Hornstein (1990) argues that these constraints are common to all languages and therefore universal (in Chomsky’s (1957) sense). One way in which a DTS arises is through the use of adverbs. Adverbial modification linearly arranges R and E points in accordance with the meaning of the particular adverbs. For example, ‘tomorrow’ will move the points R and E to a position to the right of S.

22.

a. John ran.        b. E,R___S

23.

a. *John ran tomorrow  b. BTS DTS

E,R___S  \rightarrow  S___E,R

| tomorrow |

(22a) is a BST with the structure in (22b). This sentence locates the E point prior to S and since this is a simple tense E and R are contemporaneous. When the BST in (22b) is
modified by an adverb such as ‘tomorrow’, E and R are evaluated after S, yielding the DTS in (23b). The linear order of S and E,R in the DTS is different from the BTS in (22a), so (23b) violates the constraint on DTS (CDTS), which requires that DTS preserve BTS, and the sentence is correctly predicted to be ill-formed. Note that whether the adverb ‘tomorrow’ modifies E or R is immaterial to the interpretation as the two points are temporally contemporaneous.

Another way in which a DTS arises is through embedding. Before we discuss the tense interactions between main and embedded clauses, however, we must first look at a phenomenon called sequence of tense (SOT) which occurs when tenses in main clauses interact with tenses in embedded clauses.

3.4. Sequence of Tense (SOT)

When a finite sentence is embedded as a propositional argument under a finite verb, the temporal interpretation of the embedded clause is dependent on that of the main clause (Hornstein 1990). This is illustrated by the examples in (24).8

24.

a. John heard that Mary is pregnant.

b. John heard that Mary was pregnant.

(Hornstein 1990: 120)

The event time of the embedded clauses in (25) is interpreted relative to the utterance time. In (24a) what John heard was that Mary was pregnant at the moment of utterance of

8 The ensuing discussion and the examples in this section contain stative verbs. However, the same facts hold for eventive verbs as well.
the sentence as a whole. This means that Mary is still pregnant now (provided the information is accurate). Sentence (24b) is ambiguous. Mary may still be pregnant now or she may already have had the baby. These two interpretations can be exemplified as in (25).

25.

    a. John heard “Mary is pregnant”.
    b. John heard “Mary was pregnant”.

The reading of (25a) is an instance of the sequence of tense (SOT) phenomenon, usually referred to as the *shifted reading*. The interpretation of the embedded present tense is evaluated relative to the temporal evaluation of the main clause event time. As this event time (i.e., the matrix event time) is in the past, the present tense is also evaluated as in the past. The past tense of the matrix event time triggers a temporal shift from present tense morphology to past tense.

When a finite clause is embedded under a past time clause, this temporal dependency is signaled by a change in the verb form of the embedded clause. The following are some of the changes that occur in English. (26a) and (26b) are temporal changes and (26c) through (26e) are modal changes.
26. 
   a. “I am tired” → John said he was tired.  
      present → past  
   b. “I kissed a girl” → John said he had kissed a girl.  
      past → past perfect  
   c. “I will leave” → John said he would leave.  
      will → would  
   d. “I can sing” → John said he could sing.  
      can → could  
   e. “I may leave” → John said he might leave.  
      may → might

The sentences in (26) illustrate the morphological reflexes that occur in English as a result of SOT. The sentence to the left of the arrow is the actual utterance, and to the right is the sentence after the SOT rule has applied.

Not all languages show the SOT phenomenon in which the verbal morphology changes as a reflex of the shifted interpretation. Languages like Russian or Greek still have the same two possible interpretations in (25) but without any change in the verbal morphology (Hornstein 1990). For languages that do undergo the SOT, this means that the past morphology in the embedded verb is superficial in that the underlying form (i.e., the actual semantic interpretation) is still present tense. In other words, the overt morphology may be past, but it is semantically a present tense. This is illustrated in the examples in (27).

27. 
   a. John said Mary was leaving tomorrow.  
   b. John thought that Mary arrived tomorrow.  
   c. *Mary was leaving tomorrow.  
   d. *Mary arrived tomorrow.
(27a) and (27b) contain the adverbial ‘tomorrow’ modifying a sentence in the past. As (27c) and (27d) show, modifying a sentence in the past with ‘tomorrow’ is ungrammatical in matrix clauses. The fact that (27a) and (27b) are grammatical can be explained if the underlying form of the embedded verb is present and not past. Note that the reverse also holds. An embedded future tense cannot be modified by ‘yesterday’ in the sentences below.

28.

   a. *John said that Mary would come home yesterday.\(^9\)

   b. *Mary will come home yesterday

Both sentences in (28) are ungrammatical as a past adverbial is modifying the future modal ‘will’. (28a) illustrates that even when the surface form of ‘will’ is its past counterpart ‘would’, the sentence is still ungrammatical. This also follows if the underlying form of the embedded clause is ‘will’, which, as (28b) shows, is incompatible with ‘yesterday’.

The shifted reading in SOT phenomena is accompanied by a morphological change on the embedded verb only under a past tense main verb. When the main clause is in the future, the shifted reading does obtain but no morphological change occurs.

---

\(^9\) This is to be read without an intonation break at the end of the sentence. Without the break, the adverb is read as modifying the downstairs tense, on analogy with ‘*John said that yesterday Harry would leave for New York’ (Hornstein 1993: 218)
29.

a. John will think that Mary is pregnant.

b. John will think that Mary was pregnant.

The embedded clauses in (29a) and (29b) can both have a shifted reading. In (29a) Mary’s being pregnant is taken to be contemporaneous to John’s thinking, which is in the future. In (29b) John’s thinking is in the future relative to the moment of speech, but Mary’s being pregnant is prior to it. We can see then that there exists a shifted reading in which the temporal interpretation of the embedded clause is dependent on the main clause. Crucially, in neither case is there a morphological change in the embedded clause. In (29a) surface present tense equals underlying present tense, and surface past tense represents underlying past tense.

To summarize, SOT phenomena are characterized by two mechanisms. First, the embedded clause receives a shifted temporal interpretation and the event time of the embedded proposition is evaluated relative to the event time of the main clause. Second, in languages like English, when the temporal interpretation of an embedded sentence is dependent on an event time in the past, the surface form of the verb changes. Shifted to the present or the future, however, results in no morphological changes on the verb.

In the next section I follow Demirdache & Uribe-Etxebarria (1997a) and incorporate the Reichenbach’s E,R,S points into phrase markers to show how their interaction can be captured structurally in the syntax.
4. THE SYNTACTIC REALIZATION OF TENSE

In this section I introduce the current theories of the syntactic organization of tense. In §4.1 I outline Stowell’s (1993) and Demirdache & Uribe-Etxebarria’s (1997a) theories of the syntax of temporal interpretation. In §4.2 I examine the tense structure of infinitival clauses. §4.3 discusses the syntax of infinitival clauses and I argue that T is subject to Principle A and B of Binding Theory depending on its position in the sentence, with the result that tense in embedded clauses does not play a role in the temporal interpretation of the clause.

4.1. The Internal Structure of TP and AspP

From a syntactic point of view tense has been proposed to be a head that projects a maximal projection TP, which takes two time-denoting phrases as its arguments (Zagona 1990, Stowell 1993). The external argument of $T^0$ is the utterance time (UT) and its internal argument denotes the time of the event associated with the verb and its arguments, i.e., the EV-T. Stowell (1993) further argues that tense is a dyadic or two-place predicate that establishes the ordering relation between its two time-denoting arguments. Moreover, T is assumed to be hierarchically higher than VP.\(^\text{10}\)

\(^{10}\)Stowell expresses speech time as UT. For consistency, I use the Reichenbachian symbol S in the representation of Stowell’s structures.
30. Phrase Structure for Tense

\[
\text{TP} \\
\text{S} \quad \text{T}' \\
\text{T} \quad \text{ET}
\]

Stowell (1993) analyzes past tense as a temporal ordering predicate with the meaning of \textit{after} (S after E), present tense with the meaning of \textit{within} (S within E) and future tense with the meaning of \textit{before} (S before E). The (simplified) tense structure is shown in (31).

31.

Stowell follows Kratzer (1995) in analyzing the temporal argument as the true external argument of the verb. This external argument is base generated in the highest position of a recursive VP shell structure as (34) shows.

Aspect also plays an important role in the temporal interpretation of a sentence. Smith (1991) defines grammatical, viewpoint, aspect as:
Aspe ctual viewpoints function like the lens of a camera, making objects visible to the receiver […] And just as the camera lens is necessary to make the object available for a picture, so viewpoints are necessary to make visible the situation talked about in a sentence. […] We shall say that the part focused by a viewpoint is visible to semantic interpretation […] What is focused has a special status, which I will call visibility. Only what is visible is asserted […] (Smith 1991:91)

The time interval focused by Aspect is the time of assertion, or R in Reichenbach’s terms. Demirdache & Uribe-Etxebarria (1997a) provide a syntactic account of why Aspect should pick up precisely a time interval within the internal temporal structure of the event.

Recall that Stowell (1993) argues that Tense orders two times, speech time and event time. Klein (1995), however, argues that Tense also establishes the relationship between two times, but for him these are reference time and speech time (i.e., R and S). Klein proposes that Aspect also relates two times: event time and reference time (i.e., E to R). Note that in compliance with Reichenbach’s theory outlined above, Klein’s proposal suggests that the relationship between S and E is established through R. In other words, we can say that the interaction of Tense and Aspect establishes the relationship between S and E.

Demirdache and Uribe-Etxebarria (1997a) propose that Aspect, like Tense, is a head that projects a maximal projection (ASP-P) and takes two time denoting phrases as arguments. For them, ASP-P is also a spatiotemporal predicate that establishes a temporal ordering relation between its two time denoting arguments. This relationship is established between R and E and it can be either after/before (R after/before E) or within (R within E). The phrase structure of Tense and Aspect is given in (33) below.
The structure in (32) is argued to be the basic template for any matrix clause in natural language. The different temporal interpretations are arrived at by the interaction of the spatiotemporal relationships established by the corresponding tense and aspect. The sentence ‘John had smiled’ in the past tense and perfect aspect has the structure in (33).

33. Phrase Structure for Past Tense and Perfect Aspect

John had smiled. [past, perfect]
In (33) the time denoting argument R is ordered after E, which yields the perfect reading. The other time denoting argument S is ordered after R, which gives the past tense interpretation. In Reichenbachian terms the past perfect has the structure (34).

34.
Past Perfect:  E___R___S

If we compare the two structures we can see that (33) shares with (34) that the linear order in (34) is derived from the spatiotemporal relationship established by the temporal arguments of TP and AspP. The phrase marker in (33) captures the role of R in the temporal interpretation of the sentence by arguing that R is responsible for the relative reading of the past perfect in English. In other words, R plays a dual role in the syntax in that it is involved both in the temporal and the aspectual interpretation of a proposition. In the temporal interpretation of a sentence R interacts with S, giving rise to the different tenses such as present, past or future. The interaction between R and E provides a different type of information, namely whether the sentence has perfect or progressive aspect.\(^{11}\)

So far we have discussed the syntactic structure of main clauses. The present thesis is mainly concerned with the temporal interpretation of embedded verbs. In the next section I adapt the aforementioned proposals to embedded clauses.

\(^{11}\) See Demirdache & Uribe-Etxebarria (2007) for the derivation of perfective aspect.
4.2. The Tense Structure of Infinitival Clauses

Infinitival clauses have two distinct properties across languages. First, they only occur in embedded clauses, they can never occur on their own. Second, their temporal interpretation is always dependent on the tense of the main clause (Hornstein 1990). These two properties can be derived by the assumption that infinitival clauses lack an S point, and therefore must always undergo the SOT (Hornstein 1990). As a result, the tense structure of infinitivals only specifies the relationship between R and E.

The interpretation of the S, R, E points can therefore be achieved in two ways. If the embedded clause is tensed, the SOT rule can apply, associating S and the R,E points of the embedded clause with the matrix E point. Another way is to assign S the default interpretation (i.e., utterance time) and map it onto the moment of speech. Once the embedded S is interpreted as the utterance time, then R and E can also be interpreted. If the S point is absent, as in infinitivals, there is no way to assign S the default interpretation and therefore the SOT rule must always apply. This correctly accounts for the fact that there can be no matrix infinitives as the R and E points cannot be interpreted due to their lacking a default interpretation. R is an arbitrary reference point and E always gets interpreted through its relationship with R. Therefore, if there is no S point, R cannot receive a temporal value and as a consequence E ends up without a temporal interpretation as well. Chomsky’s (1986) Principle of Full Interpretation (PFI) requires that no linguistic element in a sentence be vacuous. As a result, all S,R,E points must be interpreted in a sentence. Matrix infinitival clauses are ill-formed since in the absence of the S point, R and E are left uninterpreted.
The unacceptability of the sentences in (35) can be explained in terms of the PFI. The R and E points in the structures in (35) cannot be anchored without an S point. Left without an interpretation, the sentences violate the PFI and are therefore ungrammatical.

Hornstein argues that in embedded sentences, infinitival clauses can avoid the violation of the PFI by associating a point R_{n+1} with a point E_n in the main clause. The data in (36) illustrate this.

36.

a. John wants to go.

\[
\begin{array}{c}
S_1, R_1, E_1 \\
\mid \\
R_2, E_2
\end{array}
\]

b. John will want to go.

\[
\begin{array}{c}
S_1 \_ \_ R_1, E_1 \\
\mid \\
R_2, E_2
\end{array}
\]

c. John wanted to go.

\[
\begin{array}{c}
E_1, R_1 \_ \_ S_1 \\
\mid \\
R_2, E_2
\end{array}
\]
In the temporal representations in (36) R$_2$ is associated with E$_1$ and so it receives whatever temporal interpretation E$_1$ receives. The range of temporal interpretations that infinitivals exhibit is expected since these verbal forms do not show tense sequence restrictions like tensed forms do in SOT phenomena. In (36a) John’s going is located at the moment of speech, associating R$_2$ with E$_1$ results in this interpretation. As E$_2$ is associated with R$_2$, and R$_2$ is associated with E$_1$, we derive the interpretation that John wants to go now.$^{12}$ The same applies to the sentences in (36b) and (36c). In the former John’s wanting is in the future relative to the moment of speech indicated in the matrix clause, in the latter it is in the past. The Reichenbachian structures in (36b) and (36c) provide these interpretations.

Following Hornstein (1990) I have shown that infinitival clauses lack an S point and so their R point must be associated to the E point in the matrix clause. In the next section I propose that the Reichenbachian associative relationship can also be captured in terms of Binding theory in a syntactic structure.

4.3. The Syntactic Structure of Infinitival Clauses

In §4.1 I described the syntactic structure of Tense and Aspect in main clauses. Following Stowell (1993), Demirdache & Uribe-Etxebarria (1997a) and Klein (1995) I showed that tense and aspect establish an ordering relationship between two time denoting arguments. The time denoting arguments are assertion time (R in Reichenbach’s theory), utterance time (S) and event time (E). Tense establishes an ordering relationship

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$^{12}$ There is another possible interpretation of (36a) in which ‘John’s going’ is to take place in the future. For this interpretation to obtain, E$_2$ cannot be contemporaneous with R$_2$ but it must be located to the right of R$_2$. 

37
between S and R, whereas Aspect orders R in relation to E. This approach has the advantage of capturing what Reichenbach proposes in that it supports the idea that R is present in every tense and it mediates between the other two syntactic primitives, S and E.

In the previous section we saw that infinitival clauses lack an S point. As a result the R point in these clauses must be associated with the E point of the main clause. In this section, I incorporate Hornstein’s neo-Reichenbachian associative relationship into a syntactic phrase marker and I argue that what in Reichenbach’s terms is an association between two points can be captured in terms of binding theory.

Building on ideas of Enç (1987) and Roberts and Roussou (2002) I take tense to have semantic properties similar to pronominals. The denotation of a pronoun must be fixed in relation to something else (a higher NP in the clause, or an NP previously mentioned in the discourse), i.e., it is not intrinsically fixed by properties of the pronoun. Regarding tense, this means that the denotation of a certain time or interval must be fixed. One way in which denotations can be fixed is through syntactic binding. Roberts and Roussou (2002) propose the following criterion.

37. T- criterion:
   T must be bound.
Roberts and Roussou define binding as a co-membership in a chain or dependency. They define dependency as in (38). Condition (38a(ii)) essentially states that $\alpha$ attracts $\beta$; (38a(iii)) incorporates the Minimal Link Condition (MLC).

38.

a. $(\alpha, \beta)$ is a well-formed dependency iff:
   i. $\alpha$ asymmetrically c-commands $\beta$.
   ii. there is some feature F such that $\alpha$ and $\beta$ share F.
   iii. there is no $\gamma$ such that $\gamma$ asymmetrically c-commands $\beta$ but not $\alpha$.

b. If $(\alpha_1...\alpha_n)$ is a well-formed dependency and $(\beta_1...\beta_m)$ is a well-formed dependency and $(\alpha_n, \beta_1)$ satisfies (32a), then $(\alpha_1...\beta_m)$ is a dependency.

Roberts and Roussou (2002) depart from Demirdache and Uribe-Etxebarria (1997a) in that they locate speech time in C. For them this ensures that T is bound as C is higher than T. As the analysis in this thesis is concerned with the temporal interpretation of infinitival embedded clauses, and I have discussed above that infinitival clauses lack an S point, the position of S is not relevant for my proposal simply because it is absent in these types of embedded clauses. For consistency I follow Roberts and Roussou in locating S in spec-CP only because I am incorporating their proposal on dependencies. My analysis does not preclude S being located elsewhere (i.e., in spec TP). I depart from Roberts and Roussou in that I argue that like pronominals (both pronouns and anaphors) Tense sometimes must be bound and sometimes must be free. More specifically, I propose that temporal binding is sensitive to the syntactic environment in which T occurs. As a result,

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13 The Minimal Link Condition (Chomsky 1995), which states that $\alpha$ cannot move to $\gamma$ if there is a $\beta$ that can also move to $\alpha$ and is closer to $\gamma$ than $\alpha$, is a condition similar to Rizzi’s (1990) Relativized Minimality that ensures that derivations abide by locality and economy considerations.

14 The question of whether S is located in C or in T necessitates further research and a thorough analysis of the implications of positioning S in either position, which is beyond the scope of this thesis.
T must be free in main clauses but must be bound in embedded clauses. The different binding conditions in the temporal domain, between embedded and main tenses, parallels the difference between pronouns and anaphors in the nominal domain. Matrix tenses and pronouns must be free in their minimal domain, whereas embedded tenses and anaphors must be bound. This also explains the anaphoric behavior of embedded tenses as they cannot be interpreted on their own, but are always evaluated in terms of a higher, c-commanding tense. Moreover, much like anaphors cannot occur as subjects of main clauses, nor can infinitivals in general occur in matrix clauses. The proposal that these forms must be bound accounts for this distribution without further stipulation. Consider (39a) and (39b).

39.  
   a. *Himself goes to the store.  
   b. *To go to the store.

(39a) is a main clause that contains the anaphor ‘himself’. Anaphors must be bound, which in the definition adopted above means they must be part of a dependency with their antecedent. In this case, ‘himself’ cannot be bound because there is no higher, c-commanding NP that agrees in gender and number with it and therefore the sentence is ungrammatical because the anaphor is not bound. The same holds for the non-finite clause in (39b) where the infinitival ‘to go’ cannot be bound because there is no

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15 Russian allows matrix infinitivals but they receive a modal interpretation. The interpretation is that what the clause describes is beyond the subject’s control. The subject in these clauses is always in the dative case (see Perlmutter & Moore 2002 and references therein)
dependency in which its temporal argument (i.e., R) can be bound. Unable to receive a temporal interpretation, the sentence is ungrammatical.

The dependencies in main clauses are usually (C...T), (T...Asp) and (Asp...V). There are numerous morphosyntactic correlates of the (C, T) dependency. For example, in English, the complementizer for must be followed by an infinitive whereas that is followed by a finite clause (Stowell 1981, Pesetzky 1982).

40.

a. I hope that John leaves.

b. I hope for John to leave.

In Irish the (C, T) dependency is manifested morphologically in that there exist different complementizers depending on the tense of the embedded clause (Cottell 1995). In Spanish, however, although the complementizer que ‘that’ is usually followed by a finite form, it is also used with an infinitive when combined with the verb tener ‘have’.

41.

a. Juan quiere [CP que vayas].
   Juan want.1.sg.Prs.Ind that go.2.sg.pro.Prs.Subj
   ‘Juan wants you to go there’

b. Juan quiere [CP ir].
   Juan want.1.sg.Prs.Ind go.Inf
   ‘Juan wants to go there’

c. Juan tiene [CP que ir].
   Juan have.3.sg.Prs.Ind that go.Inf
   ‘Juan has to go there’
In (41a) the bracketed clause is a finite CP introduced by the complementizer *que* ‘that’ and the embedded verb is *vayas* ‘that you should go’ in the present subjunctive. This form agrees in person and number with the subject of the embedded clause (in this case the subject is *pro*). In (41b) the embedded clause is the verb *ir* ‘to go’ which is the infinitive of the verb, with no person or number agreement. In (41c) the embedded clause is introduced by the complementizer *que* ‘that’ but the verb in the embedded clause is the infinitive. Thus, in Spanish although the (C…T) dependency is usually manifested in that the complementizer *que* is followed by a finite form, this is not always the case as (41c) shows. That is, the (C…T) dependency may not have a morphological reflex with the result that the same complementizer can be followed by both finite and non-finite forms. This does not mean that the dependency is not formed, but simply that this syntactic relationship is not grammaticalized in the language.

Consider (42), an example of how an infinitival embedded clause derives its temporal interpretation.

42. John wants [CP to leave].

We said above that the embedded CP in (42) cannot receive a temporal interpretation on its own because it lacks an S point. The syntactic tree in (43) illustrates how the temporal interpretation of (42) arises in the syntax.
The dependencies responsible for the temporal interpretation of the embedded infinitive in (43) are (VP₁…AspP₂) and (Asp₂…VP₂). The dependency (VP₁ …AspP₂) ensures that R is bound by the main clause E argument so that it can be interpreted temporally. The second dependency (Asp₂…VP₂) is established so that the embedded E argument can also receive a temporal interpretation through that of the embedded R point.

In this section I have demonstrated how the syntactic structure and mechanisms outlined above account for the fact that a tenseless verb form can receive a temporal interpretation even when a clause has no tense morphology. The fact that a temporal interpretation can be obtained without any tense morphology calls into question the role that tense may have in embedded clauses with morphological tense. Bearing this in mind, I propose that tense in embedded clauses does not play a role in the temporal interpretation of the embedded proposition. I develop this proposal in the next section with examples from the subjunctive in Spanish.
5. A TENSELESS SUBJUNCTIVE IN ARGENTINEAN SPANISH

In this section I develop my proposal to account for the distribution of the present subjunctive in Argentinean Spanish. I argue that subjunctive clauses are tenseless and behave syntactically like infinitival clauses. In §5.1 I illustrate the analysis of how a subjunctive clause derives its temporal interpretation. In §5.2 I discuss the temporal interpretation of temporal adjunct clauses, which provide further empirical evidence to the proposal in this thesis.

5.1. The Analysis

The analysis in this section is concerned with the Spanish spoken in Argentina and the dialects of Peru and Bolivia, where the same phenomenon (i.e., the violation of *concordantia temporum*) has been reported.

In §2.2 I showed that the so-called present subjunctive in Argentinean Spanish does not show distributional restrictions in relation to the tense in the main clause. That is to say, in this dialect the Spanish present subjunctive can be embedded under any tense, contrary to what *concordantia temporum* would state and what Suñer & Padilla-Rivera (1987) claim. In this section I present a syntactic analysis that explains this unpredicted behavior and propose that the morphology of the subjunctive in Spanish encodes only agreement and mood, but not tense.

44. Juan dijo que vaya.
   Juan tell.3.sg.Pret.Ind that go.1.sg.Subj.Prs
   ‘Juan told me to go’
(44) contains the main verb *dijo* ‘s/he told’ in the matrix clause in the past tense. In the embedded clause the verb is *vaya* ‘that I should go’ in the present subjunctive. The past tense locates the event time \( E \) prior to the speech time \( S \). The reference time is contemporaneous with \( E \) so the main clause in (44) has the representation in (45).

45. \( E,R \_\_\_ S \)

The temporal interpretation of the embedded clause is dependent on that of the main clause. As presented in §4.2 infinitival clauses, by virtue of their lacking tense, do not have an \( S \) point, and so they derive their temporal interpretation by associating the \( R \) point in the embedded clause with the \( E \) point in the main clause. I propose that the subjunctive in (44) derives its temporal interpretation in the same way as an infinitival, such that the embedded clause in (44) also lacks an \( S \) point. I further propose that all subjunctive clauses in Argentinean Spanish lack an \( S \) point and are therefore restricted to occur embedded under a main clause so that they can be interpreted temporally. Thus, the sentence in (44) has the following Reichenbachian structure.

46. \( E_1,R_1,\_\_\_ S \)

\[
\begin{array}{c}
R_2,E_2
\end{array}
\]

(46) states that the reference time \( R_2 \) can be temporally interpreted because it is associated with \( E_1 \). This means that the reference time of the embedded clause receives the temporal interpretation of the matrix event time. As \( E_1 \) is interpreted prior to \( S \), and
R₂ is interpreted contemporaneous with E₁ we derive the correct temporal interpretation that the embedded clause que vaya ‘that I should go’ is located prior to S as well (i.e., in the past).

The analysis that a so-called present form like the present subjunctive can have a past interpretation suggests that the name is actually a misnomer. The unpredicted fact that this form can occur in dependent clauses embedded under any matrix tense becomes possible if we understand that the present subjunctive lacks tense altogether. In other words, the so-called present subjunctive is actually a tenseless form with person and number agreement used to signal embedding and/or mood. This proposal places the present subjunctive on a par with the uninflected infinitive in that both forms lack tense.

There are many similarities between infinitival and present subjunctive clauses. Neither subjunctive nor infinitival forms can occur in main clauses (47). In Spanish, infinitival and subjunctive clauses can be the subject of a clause (48) and they can be the complement of adjectival clauses (49). Also, both subjunctive and infinitival clauses can be the object of transitive verbs (50).

47.  
a. *Salir  
     leave.inf  
     a las 8.  
     to the.fem.pl 8 
     ‘That you should leave at 8’

b. *Salga 
    leave.1sg.Subj.Prs 
    a las 8. 
    to the.fem.pl 8 
    ‘To leave at 8’
48.  
a. Fumar contradice tu filosofía.  
   smoke.Inf contradict.3.sg.Prs.Ind your philosophy  
   ‘Smoking contradicts your philosophy of life’

   b. Que fumes contradice tu filosofía.  
   That smoke.2.sg.Subj.Prs. contradict.3.sg.Prs.Ind your philosophy  
   ‘That you smoke contradicts your philosophy of life’

49.  
a. Es importante hacer ejercicio.  
   be.3.sg.Prs.Ind important do.Inf exercise  
   ‘It is important to do physical exercise’

   b. Es importante que hagas ejercicio.  
   Be.3.sg.Prs.Ind important that do.2sg.Prs.Subj exercise  
   ‘It is important that you do physical exercise’.

50.  
a. Quiero irme.  
   want.1.sg.Prs.Ind go.Inf.reflex.1.sg  
   ‘I want to leave’

   b. Quiero que Juan se vaya.  
   want.1sg.Prs.Ind that Juan reflex.3.sg go.3.sg.Prs.Subj  
   ‘I want Juan to leave’

(47a) and (47b) show that neither the subjunctive nor the infinitive form can occur in main clauses, respectively. In (48a) the subjunctive clause que fumes ‘that you smoke’ is the subject of the sentence, and so is the infinitive fumar in (48b). The sentences in (49) show that the subjunctive and the infinitive can be used as complements of adjectival clauses. Finally, the pair in (50) contains the transitive verb quiero ‘I want’, which can be followed by a subjunctive clause in (50a) or an infinitival clause in (50b). The difference between the subjunctive and the infinitival clauses is that the infinitive shows no
agreement morphology. As a result, the infinitival clauses usually receive a generic reading as in (50a) or the null subject of the infinitive (i.e., PRO) is coindexed and referential with the subject in the main clause as in (50b) or it can be recovered from the discourse as in (48a) (where the DP *tu filosofía* ‘your philosophy’ identifies the referent of the infinitival subject as *tú* ‘you’).

In §4 I showed where the Reichenbachian primitives E, R and S are located in a syntactic structure and I proposed that the relationship of association that Reichenbach proposes among the primitives can be captured in terms of binding. That is to say, when two points are associated in a Reichenbachian structure they are bound in the syntax. As a result, the sentence in (44) is syntactically represented as (51).
51. Syntactic Representation of *Juan dijo que vaya* ‘Juan told me to go’ ( = (45) )
The syntactic structure in (51) shows that the matrix E₁ binds the embedded R₂, which in turn binds E₂. Binding takes place in the form of dependencies as discussed in §3.1. The dependencies formed in (51) are (VP₁…AspP₂) and (AspP₂…VP₂). The first dependency (VP₁…AspP₂) binds the temporal argument of VP₁ with the temporal argument of AspP₂. This dependency assigns a temporal interpretation to the reference time of the embedded clause and it is therefore temporally interpreted as contemporaneous with E₁. The second dependency (AspP₂…VP₂) binds the temporal argument of the embedded AspP (i.e., AspP₂) with the temporal argument of the embedded VP (i.e., VP₂). Because in simple tenses R and E are contemporaneous, the event time of the embedded clause gets interpreted as contemporaneous with the matrix event time through R₂ (which is bound by E₁).

In the same way that infinitival clauses can be modified by adverbials and yield a DTS so too can subjunctive clauses be modified by adverbials, as in (52) below.

52.

a. Juan dijo ayer que vaya hoy.
   Juan say.3.sg.Pret.Ind yesterday that go.1.sg.Pres.Subj today
   ‘Yesterday Juan told me to go today’

In (52) there are two adverbials. The adverbial ayer ‘yesterday’ modifies the main clause and hoy ‘today’ modifies the embedded clause. (52) has the Reichenbachian structure below.
The structure in (53) shows that *ayer* ‘yesterday’ modifies either $E_1$ or $R_1$ and the adverb *hoy* ‘today’ modifies the embedded event time $E_2$. So we derive the interpretation that the *saying* event occurred yesterday and the *going* event should occur today. Note that, as was proposed above, $R_2$ must be bound by $E_1$ to be temporally interpreted. Once $R_2$ has a temporal value, $E_2$, which is modified by the adverbial *hoy* ‘today’, can be linearly ordered with respect to $R_2$. As $R_2$ is temporally located in the past, $E_1$ is interpreted after $R_2$. The data in (52) further support the proposal in this thesis that the temporal arguments $E$ and $R$ must be bound in embedded clauses. Even though the adverbial modifying $E_2$ in (52) seems to assign it a temporal interpretation, the meaning of ‘today’ is semantically vacuous unless $R_2$ has a temporal interpretation. The adverbial ‘today’ being a deictic element, the temporal value of $R_2$ is required to evaluate whether $E_2$ with the temporal value of ‘today’ is placed after, before or contemporaneous with $R_2$.

The proposal in this thesis also accounts for the distribution of infinitives and subjunctives in embedded clauses. We saw above in the data in (48) through (50) that infinitives and subjunctives share the syntactic environments in which they occur. However, their occurrence is usually in complementary distribution and not in free variation. Subjunctives must be used in embedded clauses when the subject of the main
clause is different from that of the embedded clause. Conversely, when both the main and the embedded clause contain the same subject an infinitive must be used.

54.

a. Juani quiere [PRO_{ij} ir]
   Juan want.3sg.Prs.Ind go.Inf
   ‘Juan wants to go’

b. Juan quiere [que Maria vaya]
   Juan want.3sg.Prs.Ind that Maria go.3sg.Prs.Subj
   ‘Juan wants Maria to go’

c. Juan quiere [PRO_{uij} que vaya]
   Juan want.3sg.Prs.Ind that go.3sg.Prs.Subj
   ‘Juan wants him/her to go’

The difference between (54a) and (54b) is that in (54a) the subject of the main clause and the embedded clause is the same. Or rather, the infinitival null subject is referential with the subject of the main clause. In this case, Spanish requires an infinitive, and the example with a subjunctive is ungrammatical as in (54c), in which the subject of the embedded clause cannot be coindexed with the matrix subject.\textsuperscript{16} When the subject of the embedded clause is different, then a subjunctive must be used and the use of the infinitive results in ungrammaticality as well. In (54b) the subject of the main clause is Juan and the subject of the embedded clause is Maria. Even when the subject of the embedded clause is not overt but it is different from that of the main clause, the subjunctive must be used as in (54c).

\textsuperscript{16} In the subjunctive, first and third person singular share the same form so one cannot tell from the morphology alone which person it is. Either context or syntax as in (54c) help disambiguate meaning.
The complementary distribution of subjunctives and infinitivals is accounted for by the proposal in this thesis. Since binding is responsible for the temporal interpretation of subjunctive embedded clauses, subjunctive clauses are a transparent domain for binding and therefore binding principles apply. In the Minimalist framework (Chomsky 1995) Principle B of Binding Theory states that a pronoun must be interpreted as disjoint from every c-commanding phrase in its domain (Chomsky & Lasnik 1993).\(^{17}\) If the subject of the matrix clause were the same as the subject of the subjunctive embedded clause, the former would c-command the latter. If the embedded pronoun and the matrix subject co-refer, the embedded pronoun would not be disjoint from the c-commanding matrix DP and this would violate Principle B since the embedded pronoun would not be free in its minimal domain. Spanish does not allow overt subjects with infinitives as it lacks ECM predicates except with perception verbs (Castillo 2002) and therefore a form other than the infinitive must be used so that the overt subject (or null pro) can check nominative case. The subjunctive fulfills this need as the $\phi$-features of person are crucial for case checking (Hornstein et al 2005).

The proposal in this thesis that subjunctives in Argentinean Spanish behave like infinitives entails that $R_2$ receives whatever temporal interpretation the event time of the matrix clause receives. That is to say, the subjunctive clause receives whatever temporal interpretation the main clause receives. Also, the present proposal argues that subjunctive clauses do not have an S point and are therefore unable to have a temporal interpretation of their own. As a result, they cannot occur in main clauses because the temporal

\(^{17}\) Minimal Domain of $\alpha$ or MinD($\alpha$): The set of categories immediately contained or immediately dominated by projections of $\alpha$, excluding projections of $\alpha$ (Hornstein et al 2005).
arguments (E and R) in the subjunctive clause could not be bound. Furthermore, the fact that they derive their temporal interpretation through binding from the matrix clause also accounts for their unrestricted distribution in embedded clauses with respect to the tense in the matrix clause. I showed in §2.2 that the so-called present subjunctive in Argentinean Spanish does not follow the *concordantia temporum* so it co-occurs with any tense in the main clause. The proposal that subjunctives are tenseless and dependent on the temporal arguments of the main clause explains this fact without further stipulations. Tenseless forms do not have to agree with the tense of the matrix clause simply because they do not have any tense of their own and therefore no agreement relationship can be established.

In the next section I illustrate another prediction of my proposal with respect to adjunct temporal clauses, which always get an independent interpretation (Demirdache & Uribe-Etxebarria 2007). The analysis in this thesis predicts that if the subjunctive lacks tense it should not be available in embedded clauses that get an independent interpretation as the temporal arguments would be left uninterpretable in violation of Chomsky’s (1986) PFI. This prediction is borne out by the Argentinean Spanish data.

5.2. **Temporal Adjunct Clauses**

So far I have discussed complement clauses and have argued that verbs in these types of clauses derive their temporal interpretation through a binding relationship established between the temporal arguments of the main clause and those of the embedded clause. However, it is not the case that all embedded clauses yield a dependent temporal interpretation. Only complement clauses do. Temporal adjuncts, on the other hand,
always yield an independent construal (Demirdache & Uribe-Etxebarria 2007). The analysis in this thesis predicts that in those instances in which a subordinate clause can have an independent temporal interpretation (i.e., in temporal adjuncts), then a tenseless form like the subjunctive should not be available to occur in such clauses because the temporal arguments in the embedded clause could not be bound and therefore the subordinate clause could not be interpreted temporally. This prediction is borne out by the data from Argentinean Spanish, which contrast with other Spanish dialects in allowing indicative forms in temporal adjuncts.

55.

a. Te llamo [en cuanto salgo (cf.salga)
you.Acc call.1sg.Prs.Ind in how.much leave.1sg.Prs.Ind
del trabajo] of.the.masc.sg work
‘I’ll call you as soon as I get off work’

b. Pagálo [cuando vas (cf.vaya) al
pay.2sg.Imp-3sg.masc.Clitic when go.2sg.Prs.Ind to.the.masc.sg
supermercado] supermarket
‘Pay for it when you go to the grocery store’

c. No lo voy a saber
Not 3sg.masc.Clitic go.1sg.Prs.Ind to know.inf
[hasta que no voy (cf.vaya)]
until that not go.1sg.Prs.Ind
‘I won’t know until I go there’
In the examples in (55) the verb in the temporal adjunct clauses is in the indicative. This contrasts with other Spanish dialects in that the subjunctive is obligatory in this environment. In Argentinean Spanish the subjunctive is also possible but the fact that the indicative is available shows that the language is changing, namely that the subjunctive has lost tense and is therefore unable to have an independent interpretation.\textsuperscript{18}

In the next section I discuss non-finite forms and the syntactic distribution that these forms have cross-linguistically and I propose that binding also plays a role in the notion of finiteness.

\textsuperscript{18} Since this is language change in progress speakers’ acceptability will vary, with younger speakers most likely preferring the indicative forms and older speakers the subjunctive. This prediction was borne out in a small written questionnaire I conducted among speakers of Argentinean Spanish. Younger speakers would correct the sentences that grammatically required the past subjunctive by replacing the past subjunctive with the present subjunctive.
6. FINITENESS

In this section I discuss the concept of non-finiteness cross-linguistically. In §6.1 I present a cross-linguistic examination of non-finite forms and propose that the Argentinean Spanish subjunctive is a less finite form than an indicative verb but more finite than an infinitive. I propose a syntactic definition of non-finiteness using binding theory in §6.2.

6.1. Non-Finite forms cross-linguistically

The term non-finite is often used to describe verb forms that are not inflected for person, number and/or gender. But the term is also extended to refer to forms that are unmarked for features such as aspect, tense and mood (Palmer 1986). Whatever definition one may adopt, non-finite forms are almost always limited to occur in subordinate clauses. It is this particular characteristic that mainly distinguishes finite from non-finite verbs. Cross-linguistically, languages differ in what types of non-finite forms they may have. In English, for example, we find gerunds (writing), infinitives (to write), and past (written) and present participles (writing).

In Hixkaryana derived nominals (a verb form containing formal markers associated with nouns) are the ‘dominant form of subordination’ (Derbyshire 1979: 23). In an intransitive sentence, the subject is marked as a possessive in a noun phrase.

---

19 See footnote (15) for an exception to this generalization.
20 The gerund and the present participle have the same morphological realization (i.e., they are both suffixed with –ing) but a different syntactic distribution. Gerunds behave more like nouns and so they can occupy the same argument positions as nouns (i.e., objects, subjects, prepositional complements). Present participles, on the other hand, behave more like verbs and are the complement of the copula to be in the progressive aspect and can act as adjectives (i.e., the crying baby). See Quirk et al (1985) for a detailed discussion of gerunds and present participles in English.
56. Koseryehyaha ryehurkanir hona  
   I am afraid my falling to  
   ‘I am afraid of falling’ (literally: my falling frightens me)  
   (Palmer 1986: 159)

In (56), ryehurkanir ‘my falling’ bears the nominalizing marker – (*)(ɨ). Turkish also uses nominalized forms in relative clauses.

57. Hasan-in Sinan-a ver-dig-i patates-i yedim  
   Hasan-of Sinan-to give-NOMIN-his potato-Acc I ate  
   ‘I ate the potato that Hasan gave to Sinan’  
   (Comrie 1989:142)

In (57) the verb verdigi ‘gave’ in the relative clause bears the nominalizer morpheme – dig-. Note that in both (56) and (57) the verb in the subordinate clause does not bear person or number morphemes. In other words, the verb does not contain agreement morphology associated with the subject. Under the definition above, that non-finite forms are not inflected for person, number or gender, these forms are non-finite.

In Spanish, much like in English, non-finite forms comprise infinitives, gerunds and past participles. What these forms have in common is that they do not usually inflect for person, number or gender.
58. Spanish non-finite forms for *escribir* ‘to write’.

<table>
<thead>
<tr>
<th>Form</th>
<th>Subject</th>
<th>Verb</th>
<th>Object</th>
<th>Pronoun</th>
<th>Inflectional Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Me/les</td>
<td>Me.dat</td>
<td>les</td>
<td>gusta</td>
<td>escribir</td>
<td>una carta.</td>
</tr>
<tr>
<td></td>
<td>they.dat</td>
<td></td>
<td>like.3.sg.Prs.Ind</td>
<td>write.Inf</td>
<td>a.fem letter</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>‘I/ they like to write a letter’</td>
</tr>
<tr>
<td>b. Estoy/están</td>
<td>be.1sg.Prs.Ind</td>
<td>estar</td>
<td>escribiendo</td>
<td>escribiendo</td>
<td>una carta.</td>
</tr>
<tr>
<td></td>
<td>be.3pl.Prs.Ind</td>
<td></td>
<td>write.Prspart</td>
<td>a.fem letter</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>‘I am/ they are writing a letter’</td>
</tr>
<tr>
<td>c. He/han</td>
<td>have.1sg.Prs.Ind</td>
<td>haber</td>
<td>escrito</td>
<td>escrita</td>
<td>una carta.</td>
</tr>
<tr>
<td></td>
<td>have.3pl.Prs.Ind</td>
<td></td>
<td>write.PastPart</td>
<td>a.fem letter</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>‘I have/ They have written a letter’</td>
</tr>
</tbody>
</table>

The sentences in (58) illustrate that the non-finite forms in bold do not inflect for person or number contrary to what finite verbs do as in (59).

59. **Escribo/** escribes/ escriben una carta.  
<table>
<thead>
<tr>
<th>Form</th>
<th>Subject</th>
<th>Verb</th>
<th>Object</th>
<th>Pronoun</th>
<th>Inflectional Features</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>write.1sg.Prs.Ind</td>
<td>escribir</td>
<td>una carta.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>write.2sg.Prs.Ind</td>
<td>escribir</td>
<td>una carta.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>write.3pl.Prs.Ind</td>
<td>escribir</td>
<td>una carta.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a.fem letter</td>
<td></td>
<td>a.fem letter</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>‘I/ you/ they write a letter’</td>
</tr>
</tbody>
</table>

The finite verbs in (59) are inflected for person, number, tense (present tense) and mood (indicative). None of these inflectional features are present in the non-finite forms in (58) as they are not sensitive to the change of subjects.

Thus far, it seems that a non-finite verb is a verb that is never inflected for $\phi$-features, tense, aspect or mood or any other category. However, if we look at the past participles in passive constructions in Spanish (or any Romance language) the picture becomes less clear.
The sentences in (60) are all passive constructions in which the past participle agrees in gender and number with the subject of the passive sentence. These data raise two different problems. First is the question of whether these verb forms, namely the past participles, are to be considered finite or non-finite. Under the definition given above, that non-finite forms are not inflected for person, number and gender features, these verbs should be considered finite. However, I have also said, and shown in (58c), that the past participle in Spanish is non-finite since in the perfect tenses it does not inflect to agree with the subject. The other problem is that Spanish verbs do not inflect for gender in active sentences so the verbs in (60) are doing something that verbs do not usually do in Spanish. The past participles in (60) look more like adjectives in that adjectives also inflect for number and gender and can be the complement of the verb to be.
In (61) the adjective viejo ‘old’ agrees with the noun it modifies in gender and number. In (61a) it is masculine singular because the noun el libro ‘the book’ is masculine and singular. In (61b) the adjective becomes viejas ‘old’ which is feminine and plural because the noun las cartas ‘the letters’ is feminine and plural. Note that the past participles in both (61a) and (61b) have the same endings as the adjective (viejó/escrito for masculine singular and viejas/escritas for feminine plural). This shows that active past participles in Spanish are different from passive past participles. The former are invariable across person, number and gender, whereas the latter inflect for number and gender. Note, however, that unlike finite verbs, passive participles do not inflect for person. Spanish finite verbs also inflect for tense, aspect (in the past only) and mood but passive participles do not. Palmer (1986) suggests that finiteness should be thought of as a continuum with fully finite forms at one end and fully non-finite forms at the other. In Spanish, the past tense indicative is the most finite since it is inflected for person, number, tense, aspect and mood. At the other end of the continuum would be the infinitive, which never bears any agreement features.

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21 Spanish distinguishes between perfective and imperfect aspect only in the past tense (e.g caminó ‘he walked’; caminaba ‘he was walking/used to walk’).
The question now is where the subjunctive falls in this continuum. I have argued that the so-called present subjunctive lacks tense in the dialects of Peru, Bolivia and Argentina. Moreover, unlike the indicative, the subjunctive paradigm does not distinguish between imperfect and perfective aspect. The subjunctive verbs do inflect for person and number, like the indicative forms. This places the subjunctive in a position which is less finite that the indicative in that it makes fewer distinctions via inflectional morphology. Informally speaking, we can say that the subjunctive is more finite than an infinitive but less finite than an indicative verb.

Table 1. Feature distinctions in the indicative and subjunctive moods in Spanish.

<table>
<thead>
<tr>
<th>Verb Form</th>
<th>Person</th>
<th>Number</th>
<th>Gender</th>
<th>Tense</th>
<th>Aspect</th>
<th>Mood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicative</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Subjunctive</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>✓</td>
</tr>
</tbody>
</table>

In table (1) we can see that out of six possible distinctions, the indicative makes use of five, with gender being the only feature not employed by the system. The subjunctive distinguishes only three features, namely person, number and mood. The person and number morphemes are the same in the indicative and the subjunctive mood\textsuperscript{22}.

\textsuperscript{22} The only exception being 2\textsuperscript{nd} person singular in the past perfective which does not bear the usual ending \textsuperscript{–s} (e.g. \textit{caminaste} ‘you walked’).
Table 2. Person and number inflections for indicative and subjunctive in Spanish.

<table>
<thead>
<tr>
<th>Mood Person</th>
<th>Indicative</th>
<th>Subjunctive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st sg</td>
<td>∅</td>
<td>∅</td>
</tr>
<tr>
<td>2nd sg</td>
<td>-s</td>
<td>-s</td>
</tr>
<tr>
<td>3rd sg</td>
<td>∅</td>
<td>∅</td>
</tr>
<tr>
<td>1st pl</td>
<td>-mos</td>
<td>-mos</td>
</tr>
<tr>
<td>2nd pl</td>
<td>-n</td>
<td>-n</td>
</tr>
<tr>
<td>3rd pl</td>
<td>-n</td>
<td>-n</td>
</tr>
</tbody>
</table>

What is clear from the two tables above is that the subjunctive and the indicative paradigms are different merely in that the role of the indicative and subjunctive moods is the distinction between main and embedded clauses. In other words, the language has come to have two verb paradigms, one which is used in main and embedded clauses (i.e., the indicative) and another paradigm which is restricted to embedded clauses (i.e., the subjunctive). Due to the nature of the syntax of embedded clauses as discussed above, tense distinctions in these environments are not necessary for their temporal interpretation and therefore the language has developed in a way that these distinctions have become opaque.

6.2. **Finiteness and Binding**

From the discussion above it follows that non-finite forms are limited to embedded clauses and Palmer (1986) suggests that this is probably the main distinction between finite and non-finite forms. In light of the analysis in this thesis I propose that non-finiteness be defined in terms of binding as in (62).
Non-finite form: Let $\alpha_1, \alpha_2, \alpha_3... \alpha_n$ be any anaphoric feature in the verbal domain. A form is non-finite iff there exists at least one $\alpha_i$ that must be bound by a c-commanding $\beta$ such that $\alpha_i$ can be interpreted.\(^{23}\)

The definition in (62) implies that finite forms must not be bound and it therefore predicts that they can occur in main clauses. When they do occur in embedded clauses they will receive an independent interpretation from the main clause because binding is ruled out by the definition in (62). This is compatible with Demirdache and Uribe-Etxebarria’s (2007) argument that complement clauses always get a dependent interpretation but adjunct clauses do not. The continuum that languages show in terms of finiteness can be captured as a corollary of (62). More precisely, the more features that must be bound, the less finite a certain form will be. The infinitive, for example, must have all its $\phi$-features and its tense features bound for its interpretation and therefore it is the most non-finite form in English. Regarding the Spanish subjunctive, it follows that it is a non-finite form since it always needs to be bound for its temporal interpretation. Because the subjunctive is inflected for person and number these features need not be bound to be interpreted, which renders the subjunctive a less finite form than an infinitive (the infinitive is never inflected) as discussed in the previous section.

In the next section I examine the implications of the proposals made in this thesis and look at another instance of language change, in this case in Blackfoot, which further supports the claims herein.

\(^{23}\) $\alpha$ is any anaphoric feature that can be realized in the verbal domain such as number, person, gender, tense.
7. THEORY EXTENSION

In this section I offer an extension of the proposal that tense does not contribute to the temporal interpretation of embedded clauses and apply the theory developed in this thesis to functional categories other than tense. In §7.1 I discuss language change in light of the different economy conditions that languages are known to follow. In §7.2 I provide data from Blackfoot that support the discussion and the claims made in this section that languages should make use of structural configurations over morphological systems.

7.1. Language Change driven by Economy Conditions

So far, I have proposed that because binding is responsible for the temporal interpretation of embedded verbs, then tense is not necessary in embedded clauses. I have argued that as a consequence of this syntactic mechanism a language may lose the tense feature of embedded verbs simply because it does not contribute semantically to its interpretation. As a complex grammatical system, languages have been shown to abide by many different economy constraints or conditions (Hornstein 1995; Chomsky 1993 & 1995; Collins 2001; Fox 2000; Bresnan 2001; Toivonen 2001; Grimshaw 2001; Demirdache & Uribe-Etxebarria 2007) and therefore a more optimal system is one that does not make use of redundant or vacuous processes such as tense morphology in embedded clauses in the case of Spanish. If, as I have argued, tense does not contribute to the interpretation of an embedded clause, then a language that does not use this feature is more optimal than one that does use it.

Another implication of proposing that binding is responsible for the temporal interpretation of embedded verbs is that other features dependent on the syntactic
structure could also be rendered vacuous or unnecessary for the interpretation of embedded verbs. Bybee et al (1991) raise the issue of whether or not subjunctives contribute semantically to the clause in which they appear. Cross-linguistically, subjunctives are used in very many different ways and linguists have not agreed upon a common feature that subjunctives share, except for the fact that they tend to be restricted to embedded clauses. The same could be argued about other verb forms seemingly restricted to dependent clauses. If a form only occurs in one particular syntactic environment, the semantic contribution of it may be lost (see Bybee et al (1991) for a discussion of the development of subjunctive should in British English). A morphological system whose only purpose is to mark embedding is arguably less optimal than one that does not, due to the fact that embedding is a syntactic mechanism that is independent of morphological processes. Embedding can be recognized and/or processed simply by the fact that a form occurs in a particular syntactic position, namely as a complement of a matrix CP (or in the case of multiple embedding a higher CP). The morphology that an embedded verb may bear is just an overt reflex of the syntactic position in which the verb is located. That is to say, it is the grammaticalized form that a particular language may have developed to overtly mark and distinguish this position. However, removing the morphology does not change the status of an embedded verb. If a verb occurs in a clause which is a complement of a higher CP, the clause (and the verb) will have a dependent status regardless of the morphology. A language may develop a system in which certain morphemes come to be associated with specific positions, such as the Spanish subjunctive, or the conjunctive in Blackfoot, but the syntactic process of embedding is independent of morphology.
As a result, a morphological system whose only function is to distinguish embedded verbs from main verbs will be a non-optimal system and therefore should be less stable and prone to disappearance from the language. This may explain why subjunctive systems are unstable cross-linguistically and tend to disappear from the language (Bybee et al. 1991). I will further develop this claim using the conjunctive paradigm in Blackfoot, which, I argue, has been lost in New Blackfoot.

7.2. **Language Change and the Conjunctive Mood in New Blackfoot:**

**An economy-driven change**

Blackfoot (an Algonquian language spoken in Alberta, Canada and northwestern Montana, USA; see Frantz 1991 for a detailed description of the language) has two dependent moods, the conjunctive and the subjunctive, whose function is to distinguish between main and embedded clauses. Blackfoot is a language that has been argued to not have tense (Demirdache & Uribe-Etxebarria 2005; Ritter & Wiltschko 2004) and therefore the question that arises is how the proposal in this thesis applies to a so-called tenseless language. In this section, I argue that because embedding is a purely syntactic process and the interpretation of dependent forms is always arrived at through the syntactic structure (of which binding is an example, both in the nominal and the verbal domain) then inflectional morphology that only surfaces to mark embedding is likely to be lost from the system.
7.2.1. The Conjunctive and the -áhk- marker in Blackfoot.

In Blackfoot embedded clauses the verb carries a special morpheme distinguishing embedded verbs from verbs in a main clause. There are two dependent moods, subjunctive and conjunctive (Uhlenbeck 1938, Frantz 1991). The conjunctive is used in temporal, causal and suppositional clauses and clauses which in English start with ‘that’ (Uhlenbeck 1938). The subjunctive is only used in conditional sentences with ‘if’, ‘when’ or ‘whenever’ (Uhlenbeck 1938, Frantz 1991).

Frantz (1991) describes the conjunctive by the presence of hs and a suffix yi. The suffix yi is last in the verb and it is preceded by any agreement suffixes. Third person is marked by a prefix ot ~ w.25

63. Áyo’kaawa nitá́’to’toohsi
á-lo’kaa-wa nit-á-it-o’too-hs-yi
dur-sleep(AI)-3s 1-inchoat-there-arrive(AI)-conj-conj
‘He was asleep when I got there’ (Frantz 1991: 111)

Example (63) contains an embedded temporal clause ‘when I got there’. In Blackfoot, the verb in this clause is marked with the conjunctive suffixes hs and yi. In table (3) I show

---

24 This thesis is concerned only with the conjunctive mood in Blackfoot due to the kind of data that I collected so I will not discuss the Blackfoot subjunctive any further. These two forms share the same syntactic distribution of what in Romance is called subjunctive. Blackfoot distinguishes more clause types than Romance so conjunctive and subjunctive are both dependent moods but they occur in different types of embedded clauses. But the reader should not be misled by the names of these dependent moods. What it is important is that the conjunctive shares the syntactic environment of the Spanish subjunctive, i.e., it is a dependent form of the verb.

25 The Blackfoot date come from Taylor (1969), Frantz (1991) and my own fieldwork. These two authors use a different orthography and Taylor (1969) does not provide any interlinearization of morphemes. The data are presented as they appear in the source. For my own data I follow Frantz’s orthography.
the complete conjunctive paradigm according to person and number for animate transitive verbs.26

Table 3. The Conjunctive Paradigm for transitive animate verbs in Blackfoot

<table>
<thead>
<tr>
<th>Obj→</th>
<th>Subj</th>
<th>1s</th>
<th>1p</th>
<th>2s</th>
<th>2p</th>
<th>2l</th>
<th>3s/3p</th>
<th>4s/4p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1s</td>
<td></td>
<td>kit-o:hsi</td>
<td>kit-o:hsaoayi</td>
<td>nit-a:his</td>
<td>nit-a:his</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1p</td>
<td></td>
<td>kit-o:hsinnaani</td>
<td>kit-o:hsinnaa</td>
<td>nit-a:hsinnaani</td>
<td>nit-a:hsinnaani</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2s</td>
<td></td>
<td>kit-okssi</td>
<td>kit-okssinnaani</td>
<td></td>
<td></td>
<td>kit-a:hsisi</td>
<td>kit-a:hsisi</td>
<td></td>
</tr>
<tr>
<td>2p</td>
<td></td>
<td>kit-okkoohsi</td>
<td>kit-okkssinnaani</td>
<td></td>
<td></td>
<td>kit-a:hsaoayi</td>
<td>kit-a:hsaoayi</td>
<td></td>
</tr>
<tr>
<td>2l</td>
<td></td>
<td></td>
<td></td>
<td>nit-okoohsi</td>
<td>nit-otssinnaani</td>
<td>kit-okkoohsi</td>
<td>kit-otssaoayi</td>
<td>otssi</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>nit-okoohsi</td>
<td>nit-otssinnaani</td>
<td></td>
<td></td>
<td>kit-okkoohsi</td>
<td>kit-otssaoayi</td>
<td>otssi</td>
</tr>
<tr>
<td>3s/3p</td>
<td></td>
<td>nit-yssi</td>
<td>nit-yssinnaani</td>
<td>kit-yssi</td>
<td>kit-yssoayi</td>
<td>ot-okssi</td>
<td>ot-ahsi</td>
<td></td>
</tr>
<tr>
<td>4s/4p</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ot-yssi</td>
</tr>
</tbody>
</table>

(26) See Frantz (1991) for the complete paradigm for other verb types.

Table (3) illustrates the complexity of the conjunctive paradigm in Blackfoot. The verb in the conjunctive must be inflected for person, number and gender. In the case of transitive verbs, agreement is marked for both subject and object of the verb.

In purpose clauses the conjunctive verb also includes the prefix -ááhk-. Taylor (1969) describes the prefix -ááhk- as a preverb with modal meaning, whose function is to turn an
independent clause into a dependent one. Imperatives, conditionals, dubitatives, purpose clauses and resultatives are some examples in which -ááhk- is used.

64.  
a. áxkito?totaxko?siyaa?wa  
‘Let them go fetch the meat’

b. nákuxtaotokahka  
‘So that I have fuel’

(Taylor 1969: 304)

The examples in (64) contain the prefix -ááhk- (áxk in Taylor’s orthography). Sentence (64a) is an imperative in third person plural, and (64b) is a purpose clause. Note that these examples show that -ááhk- can be used independently of the conjunctive as neither of the examples has the conjunctive suffixes. Consider now the data in (65).

65.  
a. Nitáánistawa mááhsyoyssí  
nit-wa:nist-a:-wa m-ááhk-loyi-hsi  
1p-say-dir-3p 3p-might-eat-conj  
‘I told him to eat’

(Frantz 1991: 142)

b. Nohkówa íksstaawa nááhksyssí.  
n-ohko-wa Iksstaa-wa n-ááhk-wa:hkayi-hsi  
1p-son-3p want-3p 1p-might-go.home-conj  
‘My son wants me to go home’

(Frantz 1991: 143)
The data in (65) show both the prefix -ááhk- and the conjunctive suffixes. These data suggest that the embedded verb in Blackfoot can bear two different morphemes. The morpheme -ááhk-, which Taylor (1969) calls a preverb, is prefixed to the root. The other morpheme is the conjunctive suffix. Of the two morphemes, the prefix -ááhk- remains invariable across person, number and gender of the subject whereas the conjunctive marker inflects according to gender, number and person (see Table (3)).

In New Blackfoot, a term used by Kaneko (1999) to refer to the Blackfoot dialect spoken by speakers in their forties through sixties, the morphological marking of the embedded verb has changed. The conjunctive marker has disappeared and -ááhk- is the only morpheme on the embedded verb distinguishing it from the verb in the main clause. The person, number and gender marking on the embedded verb is now the same as that of a verb in a main clause (e.g. –wa for 3rd person singular animate in (66a) and (66b))

66.

a. Nitáwaaniwa ámo nínaa nááhkiksikka’wa.
nit-a-waani-wa ámo nínaa n-ááh-iksikka’yi-wa
lp-DUR-say-3p this man 1p-EMB-walk-3p
‘I’m telling this man to walk’

b. Nitáwaaniwa ámo nínaa nááhksimmiwa.
nit-a-waani-wa ámo nínaa n-ááh-kimmi-wa
lp-DUR-say-3p this man 1p-EMB-laugh-3p
‘I’m telling this man to laugh’

c. Awaaniwaksiks nasahkomapi nááhk-titipoyo.
a-wan-y-aawa-aksiks na-sahkomap-yi n-ááhktitipoyo-0
DUR-ask-3p-PRO-AnimP to-boy-INA 1p-EMB-tit-talk-3p
‘They asked the boy to talk’
In (66) the embedded verb is distinguished from the verb in the main clause only by the marker -ááhk- and there is no conjunctive inflection in any of the examples. This suggests that the morphological realization of the embedded verb in New Blackfoot has changed. Specifically, the conjunctive marker has been lost and the preverb morpheme -ááhk- seems to be the only morpheme that distinguishes embedded verbs from main verbs. Recall from table (3) that the conjunctive morphemes inflect for person, number and gender whereas the data in (64) through (66) illustrate that the preverb morpheme -ááhk- does not. In other words, the embedded verb in New Blackfoot is different from the embedded verb in Old Blackfoot in that it does not contain the inflectional conjunctive suffixes. In New Blackfoot the verb in embedded clauses is morphologically different from a matrix verb by the presence of the invariable prefix -ááhk-. As I showed above, this preverbal prefix used to be optional in embedded clauses and could co-occur with the conjunctive markers. Now, the language has seems to be losing its complex conjunctive paradigm that agreed in person, number and gender of subjects and objects in the case of transitive verbs, and has turned an optional and, more importantly, invariable morpheme into the new embedding marker. The system now has only one set of agreement morphemes that is the same for both matrix and embedded clauses and one single prefix that attaches to verb roots to overtly mark dependent verbs. In other words, the system has become more economical and more optimal by relying on an overt morpheme that only marks subordination but which does not inflect for gender, person or number.
7.3. **Summary**

If languages are constrained by economy conditions one would expect that systems strive for efficiency with least effort. In the case under discussion, the most economical way to mark embedding is not to mark it at all, and just rely on the syntactic position for its interpretation as dependent. The second most economical way would be to use a morpheme that overtly categorizes a verb form as embedded but which does not inflect at all. That is to say, a morpheme with a purely syntactic function not sensitive to features such a person, gender or number. A third strategy a language could employ is to develop a dependent mood, with agreement morphemes much like the subjunctive in Spanish or the conjunctive in Blackfoot. Looking at it from an optimal, economical perspective the third strategy is the least economical. Languages with inflectional morphology on embedded verbs also show inflectional morphemes in matrix clauses (Palmer 1986). Basically, the system would possess different agreement paradigms for main and embedded verbs. If, as I argue in this thesis, embedding is merely a syntactic process, the ‘extra’ morphology distinguishing embedded verbs from main verbs is not contributing to the interpretation of the sentence. When looking cross-linguistically, languages do prefer to use uninflected forms for embedded clauses (Palmer 1986). Or rather, one of the most common ways to mark dependent clauses across languages is the use of non-finite forms (Palmer 1986). Blackfoot has developed in a way that is congruent with cross-linguistic tendencies. Although the embedded verb in New Blackfoot is still finite, in that it bears person marking, the subordination marker is invariable and it never inflects for gender, number or person.
8. IMPLICATIONS

In this section I discuss the proposals put forth in this thesis in connection to linguistic theory more broadly and the cross-linguistic evidence that embedded clauses should lack tense in natural language. In §8.1 I discuss the parallels established between the nominal domain and other domains. §8.2 is a discussion of predictions on language change and §8.3 discusses whether the Spanish subjunctive was ever tensed or not.

8.1. Parallels across Domains

Forms that occur in embedded clauses usually derive their interpretation via some sort of co-reference or indexation with a higher, c-commanding antecedent. In the nominal domain, binding has been argued to be responsible for the distribution of anaphors and pronouns and NPs in general (Chomsky 1981). In the case of anaphors, which must always be bound, this entails that they cannot occur in a clause by themselves. They always need an NP or a pronoun that can act as their antecedent so that the anaphor can be interpreted. The behavior of anaphors in the nominal domain parallels the behavior of embedded verbs, in that both are always interpreted in reference to some other constituent higher up in the syntactic structure. Arguing that tense behaves differently in matrix and embedded clauses mirrors the situation in the nominal domain where lexical items specified [-V,+N] abide by different syntactic principles (i.e., anaphors are subject to Principle A, pronouns are subject to Principle B and R-expressions are subject to Principle C). In the case of tense, embedded tenses are anaphoric whereas matrix tenses are not and are able to have a temporal interpretation of their own, much like R-
expressions in the nominal domain. Researchers have already established the parallel between the syntax of the nominal and other domains (Wehrli 1992, Partee 1984). Syntactic mechanisms or linguistic principles that cross-cut syntactic categories are suggestive of a very uniform theory, which is always a welcome result in any discipline. For example, Demirdache and Uribe-Etxebarria (2005) argue that temporal modification parallels nominal modification in that both noun modifiers and temporal modifiers restrict the reference of its sister, an NP in the nominal domain and a temporal/Zeit-P in the temporal domain. Another parallel distinction is that between the nominal and the verbal domain with respect to the feature number. In the nominal domain number distinctions often encode plural number of individuals or objects, whereas plural marking in the verbal domain encodes multiple events or multiple participants (Corbett 2000). The proposal in this thesis further expands on the similarities across domains by establishing a new parallel between the nominal domain and the tense domain in relation to binding. Binding is a syntactic relationship dependent on structural configurations such as c-command and dependencies, both of which are category-neutral. It is not surprising that natural language should take advantage of such a pervasive mechanism for the interpretation of different syntactic categories.

8.2. Economy and Language Change

The fact that languages show a tendency to comply with economy constraints of various sorts, and that the temporal interpretation of embedded verbs is always anaphoric or dependent on a matrix tense predicts that languages should prefer tenseless forms over tensed forms in embedded clauses. The notion that language abides by economy
conditions entails that language should not make use of semantically vacuous or empty means, be it syntactic, morphological, phonetic or semantic processes. In the case under discussion, this means that overt tense morphology in subordinate clauses is not economical since the same result (i.e., temporal interpretation) can be obtained without it. Moreover, as I argued in §7.1, syntactic structure is independent of morphology and syntax comes first in that morphemes are usually the overt reflex of syntactic relations. No language has been known to lack syntactic organization but languages do differ in the extent to which they employ overt morphology to denote syntactic relations. Therefore, syntactic configurations are free and inherent to natural language whereas morphological marking is costly and arguably optional. It follows that optimally language should make use of the already existing syntactic relations instead of creating a system that overtly distinguishes syntactic structures. This is the extreme scenario where a language does not have any overt morphology; isolating languages are such an example (Croft 2003). Languages lie in a continuum of purely isolating languages at one end, where syntactic configurations are responsible for semantic interpretations and purely agglutinative languages at the other end, in which each syntactic relation is borne by a separate morpheme (Croft 2003). A discussion of why languages do develop overt morphology and do not only make use of syntactic configurations for interpretation is outside the scope of this thesis. However, languages do seem to develop in such a way that intricate morphological marking is eventually lost, which is consistent with the proposal in this thesis. Dixon (1994) proposes that language change occurs in cycles as in (67).
Note that the proposal in this thesis explains the move from agglutinative to fusional and from fusional to isolating. Both of these changes involve loss of inflectional morphemes. A word in an agglutinative language consists of separate morphemes but the morphemes have clear boundaries such that the word can be neatly segmented into its morphological components (Dixon 1994). A word in a fusional language is made up of portmanteau morphemes, or morphemes that bear multiple meanings (e.g. person, number and tense carried by a single morpheme) (Dixon 1994). Last, as explained above, in an isolating language each word consists of one morpheme. From this description we can see that agglutinative languages use the most morphemes so the transition to a fusional system is accounted for by assuming that languages are subject to the economy conditions discussed above. In the same vein, the change from fusional to isolating is also a change that involves a reduction in the number of morphemes per word in a language. This is also a direct result of economy constraints if we assume the strong version of the proposal in this thesis that language should only use structure configurations to arrive at semantic interpretations. Needless to say, when we look at languages across the world we
see that language do not always behave as expected. Therefore, the proposal that languages should tend towards relying on syntactic structure over developing overt morphological systems needs to be weakened. If only syntax is responsible for the interpretation of a proposition, the question remains why languages develop systems that seem redundant or not optimal in the way discussed in this thesis. It seems to be the case that there exist other forces driving language change that may not be instantiated by economy conditions. One might also argue, however, that economy plays a role at different levels so what might seem to be non-economical at one level may actually be economical at some other level.27

8.3. Language Change in Spanish

Another issue that this thesis raises is the question of what has changed in the Spanish grammar in the dialects discussed that allows the unrestricted distribution of the present subjunctive. I have argued that this is possible because the form under discussion lacks tense. The remaining question is whether the subjunctive forms ever had tense or not.

Old Spanish used to have a future subjunctive, which has been replaced by the present subjunctive (Haverkate 2002). The future subjunctive was used in dependent clauses with future meaning (Herrero Ruiz de Loizaga 1992), which suggests that the subjunctive paradigm was in fact tensed. Another piece of evidence that the subjunctive had tense is the fact that it occurred in adjunct temporal clauses, which, I showed in §5.2, always get

27 For example, a language may develop a system where objects are overtly marked different from subjects. This would seem to run counter to the proposal developed in this thesis, in that overt morphology is less economical than no morphology at all. However, marking objects to distinguish them from subjects may speed up processing in that ambiguity would never arise. Therefore, what looks like non-economical at the morphological level turns out to be economical at the level of processing. This issue, however, necessitates further research.
an independent temporal interpretation. Arguing that the system used to have tense but
now it does not is further evidence that languages should evolve such that tense is lost in
embedded clauses. Assuming that the argument in this thesis is correct so that embedded
verbs derive their temporal interpretation by establishing a binding relation with the
event-time argument of the matrix clause then the replacement of all subjunctive forms
by the present subjunctive is the expected outcome.28 The fact that the verb forms bear
tense morphology does not mean that their temporal interpretation is independent. As I
have argued above, morphology is basically the overt realization of syntactic positions.
Functional heads can be realized overtly through morphological marking, but they need
not. Since the temporal interpretation of embedded forms was derived in the same way as
is today (i.e., through binding), the system has moved towards a more economical and
optimal way by relying on syntactic relations that come for free. The morphology in the
present subjunctive is encoding person and number and the functional category of mood.
In other words, the functional head T is not realized morphologically in the subjunctive,
only Mood is.

If the only functional head that is morphologically realized in the subjunctive is Mood
then it follows that the subjunctive form has developed to overtly distinguish between
main and embedded clauses. In other words, the present subjunctive has become a
subordination marker that signals that the subjunctive verb form must occur embedded
under a matrix clause.

This analysis also predicts that tense should also be eventually lost in the dialects
where the subjunctive is still subject to concordantia temporum. This prediction is borne

28 The argument here is not about the present subjunctive being preferred over any of the other forms. The
argument I am pursuing is the fact that all the other subjunctive forms have been or are being replaced by
only one form in complement clauses.
out by data from other dialects where many instances of violations of concordantia temporum have already been attested (Obaid 1967). The main difference across dialects in the use of the present/past subjunctive forms stems most probably from differences in the extent to which the change has taken place in each dialect. Therefore, I predict that the subjunctive will become tenseless across all Spanish dialects.
9. CONCLUSION

In this section I conclude and discuss issues for further research. In §9.1 I provide a summary of the thesis and in §9.2 I discuss three issues for further research: tense neutralization, the role of the morphology of the Spanish subjunctive and free variation between present and past subjunctive in the Spanish dialects discussed in this thesis.

9.1 Summary

In this thesis I have argued that (i) Reichenbach’s relation of association can be expressed in terms of Binding Theory in the syntax, (ii) Tense is subject to different binding principles depending on its syntactic realization so that T in main clauses must be free (i.e., subject to Principle B) but in embedded clauses T must be bound (i.e., subject to Principle A), (iii) the Argentinean Spanish present subjunctive is a tenseless form which behaves syntactically very similar to an infinitive and (iv) finiteness can be defined in terms of binding.

The analysis in this thesis accounts for the distribution of the Spanish subjunctive in Argentinean Spanish, which presents a problem for previous accounts of subjunctives in Spanish. The research in this thesis also provides an explanation for the distribution of non-finite forms cross-linguistically by using independent syntactic processes that are well-attested in natural language and syntactic theory.

As a result of the work in this thesis a new parallel has been established between the nominal and the temporal domain by proposing that both domains are subject to Binding
Theory. Moreover, as a broader implication of my analysis, I have proposed that languages should prefer to rely on syntactic configurations over the development of overt morphological marking, which accounts for the transition from agglutinative and fusional languages to isolating systems as proposed by the language cycle in Dixon (1994). Last, but not least, I have discussed language change in Spanish and I have argued that the Spanish subjunctive used to be a tensed form in the dialects where it violates *concordantia temporum*, but now it has developed into a subordination marker, with only the inflectional head Mood being realized morphologically but not T.

The work herein sheds light on the way syntax determines interpretation and how human language makes use of syntactic structure to arrive at the meaning of a sentence, in this case its temporal interpretation.

9.2 Issues for Further Research

The proposal in this thesis opens up numerous paths for future research. Comrie (1985) discusses languages that display what he refers to as tense neutralization. This is a phenomenon in which in a sequence of identical tenses within a sentence, only the first verb shows the expected tense with all subsequent verbs being in a single tense category, irrespective of the tense of the first verb. One of these languages is Bahimeno, in which the neutralized verb forms have the form of the present tense. The data in (68) illustrate this, where the first verb is in the remote past tense and all following verbs in the present tense.
After we ate sago until we were satisfied, we got up again, we ascended, immediately we went up the stream bed and arrived at the ridge, we walked along the ridge to the right.

(Comrie 1985: 103)

These data and the phenomenon of tense neutralization in general raises the possibility that binding may be responsible for the temporal interpretation of the neutralized verbs. The difference with the proposal in this thesis is that tense neutralization also takes place across clause boundaries since, as (68) illustrates, most of these clauses are main clauses. A fact about tense neutralization that seems to support the idea that binding is also involved in the assignment of the temporal interpretation of the neutralized verbs is that in order for tense neutralization to take place all the verbs must have the same time reference, sharing the same tense is not enough. Comrie (1985) argues that the time reference of a tense-neutralized verb is that established by the immediately preceding sentence-internal context. This transfer of time reference to the next verb in the sequence also points to some sort of chain, which could be established through binding (i.e., dependencies). If binding is shown to be responsible for the temporal interpretation of the neutralized verbs as well, it will be a very welcome result in that the theory will cover a broader range of empirical data.
Another fruitful area of future research is to analyze what the function is of the morphology of the different forms in the Spanish subjunctive. Although I pursue in this thesis that the Argentinean Spanish present subjunctive is tenseless, there still remains to be explained the different meanings associated with the other forms, namely the past subjunctive, the present perfect and the past perfect subjunctive. One possibility is that they carry a modal meaning. This is suggested by the use of the past subjunctive in unreal present conditionals, and of the past perfect in unreal past conditionals, both of which refer to possible worlds and not actual worlds, which is the realm of modality (Palmer 1986). Further research will shed light on the precise meaning of the Spanish subjunctive morphology, but if the claim in this thesis proves to be right, tense is not part of the meaning of subjunctives in Argentinean Spanish.

Last, but not least, it would be useful to carry out a sociolinguistic study on free variation of the present versus past subjunctive in the dialects discussed in this thesis. The question is whether or not both forms (present and past) are always available for all speakers or whether there are constraints of some sort that determine the variation across speakers. The results of the study could potentially inform about the way language change develops across generations.
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