On the Portuguese inflected infinitive[*]

ANA MARIA MADEIRA

1 Introduction

The aim of this paper is to examine some of the contexts in which inflected infinitives occur in Portuguese and present an account of their properties. I will suggest that these properties are a consequence of both the general checking requirements of functional elements and the specific properties of infinitival clauses, and that the variation found can be derived from independent differences in the structure of the clauses in which inflected infinitives are found.

The best-known analysis of the Portuguese inflected infinitive formulated within a Government-Binding framework is the one proposed in Raposo (1987a). After introducing the facts in section 2, I will briefly consider Raposo's analysis in section 3. Complement and subject clauses are discussed in section 4. In section 5, some facts regarding clitic placement in inflected infinitival clauses are presented which will lead to a reformulation of part of the analysis. Finally, in section 6 I will discuss adjunct clauses.

2 Overview of the data

The inflected infinitive found in Portuguese and Galician differs from its non-inflected counterpart in two respects: it displays agreement morphology and it may take a lexical subject which is assigned Nominative Case. The relevant paradigm is represented in (1), where the agreement endings are shown in bold.

(1)   (para) eu falar**ø**   '(for) I to-speak-1sg'
        (para) tu falar**es**   '(for) you to-speak-2sg'
        (para) ela falar**ø**   '(for) she to-speak-3sg'
        (para) nós falar**mos**   '(for) we to-speak-1pl'
        (para) vocês falar**em**   '(for) you to-speak-2pl'
        (para) elas falar**em**   '(for) they to-speak-3pl'

Embedded inflected infinitival clauses appear in a number of contexts. A list of the contexts in which these clauses are typically found is given below:

A.   as complements to declarative/epistemic predicates
(2)   Pensam/afirmam   ter   a   polícia mentido.
        think-3pl/claim-3pl   to-have-3sg the   police lied

B.   as complements to factive predicates
(3)   Lamento   eles terem   perdido   os   documentos.
        regret-1sg they to-have-3pl lost   the   documents
        'I regret that they have lost the documents.'

C.   as subject clauses
(4)   É   possível   eles terem   perdido   o   comboio.
        is   possible   they to-have-3pl missed   the   train
        'It is possible that they have missed the train.'

D.   as adjunct clauses introduced by a preposition
(5)   Eu espero até tu   acabares   o   livro.
        I   wait   until you to-finish-2sg   the   book.

E.   as complements to perception verbs
(6)   A Maria viu as   amigas   a   chorarem.
        the Maria saw the   friends   to   cry-3pl
        'Maria saw her friends crying.'

F.   as complements to causative predicates
(7)   Eu fiz   os   alunos escreverem   a   carta.
        I   made   the pupils   to-write-3pl   the   letter
        'I made the pupils write the letter.'

G.   *as complements to object control predicates*
(8)   Eu persuadi   os   rapazes   a   virem   mais   cedo.
      I   persuaded   the   boys   to to-come-3pl more   early
      'I persuaded the boys to come earlier.'

H.   *as complements to transitive subject control predicates*
(9)   Prometemos   à   Maria   comprarmos-lhe   um   presente.
      promised-1pl to+the   Maria   to-buy-1pl her-dat a   present
      'We promised Maria to buy her a present.'

Typically inflected infinitives in these contexts alternate with their non-inflected counterpart. Contrast (10) with (9) above:

(10) Prometemos   à   Maria   comprar-lhe   um   presente.
      promised-1pl to+the   Maria   to-buy her-dat a   present
      'We promised Maria to buy her a present.'

There are however at least three embedded contexts in which only non-inflected infinitival clauses are allowed, namely as complements to volitional and other intransitive subject control predicates (see (11)), as interrogative clauses (see (12)) and as relative clauses (see (13)).

(11) a *O Governo   quer   o   relatório   ser   publicado.
         the government wants   the report   to-be-3sg   published.
      b O   Governo   quer   publicar   o   relatório.
         the government wants   to-publish the report

(12) Não sabemos   a   quem   dar/*darmos   o   livro.
      not know-1pl to   whom   to-give/ to-give-1pl the   book
      'We don't know whom to give the book to.'

(13) Nem têm   uma caneta com   que   escrever/*escreverem.
      nor have-3pl a   pen   with   which   to-write/ to-write-3pl
      'They don't even have a pen with which to write.'

In this paper I want to concentrate on the inflected infinitival clauses shown in (A-D) above, leaving the cases in (E-H) for future work.

The first case I consider is that found in the complement position of declarative and epistemic verbs[1]. As shown in (14), subject-auxiliary inversion appears to be obligatory in the inflected infinitival complements of these verbs.

(14) a *Pensam/afirmam   a   polícia ter   apanhado os   assaltantes.
        think-3pl/claim-3pl the   police to-have-3sg caught   the burglars.
        'They think/claim that the police have caught the burglars.'
     b Pensam/afirmam   ter   a   polícia apanhado os   assaltantes.
        think-3pl/claim-3pl to-have-3sg the   police caught   the burglars.

Furthermore, the occurrence of lexical verbs appears to be disallowed without the presence of an auxiliary[2]. Cf. (15):

(15) a *Pensam/afirmam   a   polícia apanhar   os   assaltantes.
        think-3pl/claim-3pl the   police to-catch-3sg   the burglars
        'They think/claim that the police will catch the burglars.'
     b *Pensam/afirmam   apanhar   a   polícia os   assaltantes.
        think-3pl/claim-3pl to-catch-3sg the   police the burglars

Subject-auxiliary inversion is optional in complements to factive verbs[3], as shown in (16a). Lexical verbs without an auxiliary are allowed in these complements, but only if no inversion takes place, as shown in (16b).

---

[1]Declarative verbs include verbs such as *afirmar* 'to claim', *confessar* 'to confess', *declarar* 'to declare', *dizer* 'to say' and *revelar* 'to reveal'. Examples of epistemic verbs are *achar* 'to reckon', *crer* 'to believe', *imaginar* 'to imagine', *pensar* 'to think' and *supor* 'to suppose'.

[2]Ambar (1993) argues that this is not strictly correct. Lexical verbs are possible in inflected infinitival complements to declarative and epistemic verbs, provided they are associated with a generic reading. Notice the contrast between (i), where *comprar* 'to buy' denotes a single event, and (ii), where it denotes an habitual event:
  (i)   *O João   afirmou   comprarem   eles   o   jornal.
         João   declared   buy+Agr   they   the   newspaper
  (ii)   O João afirmou   comprarem   eles   o jornal   todas as sextas-feiras.
         João   declared   buy+Agr   they   the newspaper every   Friday
I won't deal with these cases in this paper.

[3]Typical factive verbs are *aprovar* 'to approve', *criticar* 'to criticise', *detestar* 'to hate' and *lamentar* 'to regret'.

(16) a Lamento eles terem/terem eles   perdido os   documentos.
         regret-1sg they to-have-3pl/to-have-3pl they lost   the   documents
         'I regret that they have lost the documents.'
      b Lamento eles perderem/*perderem eles os   documentos.
         regret-1sg they to-lose-3pl/to-lose-3pl   they the   documents
         'I regret/believe that they lost the documents.'

Subject clauses are shown in (17). As you can see, they behave just like factive complements[4].

(17) a Surpreende-me   eles terem/terem eles   perdido o comboio
         surprises me   they to-have-3pl/to-have-3pl they missed   the train
         'It surprises me that they have missed the train.'
      b Surpreende-me   eles perderem/*perderem eles   o   comboio.
         surprises me   they to-miss-3pl/to-miss-3pl they   the   train

With adjunct clauses we find the reverse situation from that found in complements to declarative and epistemic verbs, i.e. subject-auxiliary inversion is disallowed. The relevant examples are shown in (18).

(18) a Eu   espero até   tu teres/*teres tu   acabado o livro.
         I   wait   until you to-have-2sg/to-have-2sg you   finished   the book
         'I'll wait until you have finished the book.'
      b Eu   espero até   tu acabares/*acabares tu   o   livro.
         I   wait   until you to-finish-2sg/to-finish-2sg you   the   book.

In summary, we find two possible word orders in inflected infinitival clauses: we find SVO with both lexical verbs and auxiliaries, and VSO with auxiliaries only. The facts are schematised in (19):

(19)   Aux/*V SU   SU Aux/V

          factive/subject cl   +   +
          non-factive cl   +   -
          adjunct cl.   -   +

---

[4]In this paper I will be dealing exclusively with factive subject clauses. As far as I can tell, the data appears to be identical in factive and non-factive subject clauses, but the analysis presented below is intended for factive subjects only.
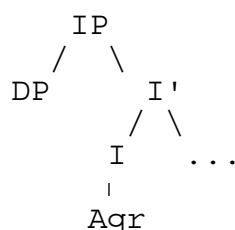
Descriptively, there are at least two questions which any analysis of this data must try to answer. The first question refers to subject-auxiliary inversion: why is it obligatory in non-factive complements, optional in factive complements and subject clauses, and impossible in adjunct clauses? The second question is: why is inversion generally impossible with lexical verbs? Before turning to these questions, let us see how Raposo (1987a) proposes to account for the facts just described.

3 Raposo's (1987a) analysis

The main assumption behind Raposo's analysis is that in non-tensed clauses Agr may assign Nominative Case only if it is itself Case-marked. Furthermore, Raposo assumes that inflected infinitival clauses where no inversion takes place are IPs, while those displaying inversion are CPs. Let us see how these two assumptions are put to work to account for the particular cases that we are considering.
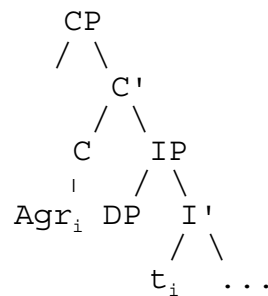
For the cases without inversion, Agr, being the head of the clause, may be assigned Case from outside by a governing head. This head is V in the Case of factive complements, P in the case of adjunct clauses and matrix Agr in the case of subject clauses. If the subject clause is extraposed, as is typically the case, Case is assigned to an expletive null pronominal in canonical subject position and transmitted to the head of the extraposed IP. This is represented in (20).

(20) Factive complements, subject clauses and adjunct clauses:

```
        IP
       /  \
     DP     I'
           / \
          I   ...
          |
         Agr
```

In clauses displaying inversion, on the other hand, Agr must raise to C, the head of the clause, so it can receive Case from the matrix V. The implication is that complements to declarative and epistemic verbs are always CPs, whilst factive complements may be CPs or IPs. Raposo doesn't consider the possibility of subject-auxiliary inversion in subject clauses, but this analysis could easily be extended to account for it. The analysis is shown in (21).

(21)   Complements to declarative/epistemic predicates and factive complements (and subject clauses?):

```
        CP
       / \
          C'
         / \
        C   IP
        ı   / \
      Agrᵢ DP  I'
             / \
            tᵢ  ...
```

Raposo's assumption that Agr must be Case-marked in order to be able to assign Nominative Case makes a number of incorrect predictions. On the one hand, it leads us to expect that inflected infinitival clauses can be found in all Case-positions where infinitival clauses may appear. However, this is not so, as shown by (11-13) above: they are not allowed to occur as complements to volitional predicates and intransitive subject control predicates in general, nor are they allowed to appear as embedded infinitival interrogatives and relatives.

Raposo invokes a selectional argument in order to account for the case of complements to volitional predicates, which he takes to be CPs. According to him, Agr may only raise to C either if C contains a Tense operator (this is the case of complements to declarative and epistemic verbs) or if the matrix predicate admits a nominal complement, as Agr in C nominalises the clause (this is the case of factive complements displaying inversion). Volitional predicates do not select for a Tense operator in C, nor, Raposo argues, do they select for nominal complements. Hence, Agr may not raise to C, and inflected infinitives are impossible.

However, it doesn't seem to be correct that volitional (and other intransitive subject control) predicates do not take nominal complements, as shown in (22). So, following Raposo's assumptions, inflected infinitives should be allowed.

(22)   a   Querem   a   tua   ajuda.
           want-3pl the your   help
           'They want your help.'
       b   Recusámos a   proposta.
           refused-1pl the proposal

As for the impossibility of occurrence of inflected infinitives in embedded infinitival interrogative and relative clauses, Raposo accounts for it in terms of the Doubly-Filled COMP Filter. However, it is generally assumed (see e.g. Pesetsky 1992) that Doubly-

Filled COMP Filter phenomena are found when C is filled by a complementiser but not when it is filled by movement. If this is the case, then some other explanation must be found to account for the ungrammaticality of (12-13) above.

Another prediction that Raposo's assumption on the Case-requirements of Agr makes is that inflected infinitival clauses should not be allowed to occur in non-Case-positions. However, once again, this doesn't seem to be correct, as you can see in (23), where we have an inflected infinitival clause as a root exclamative:

(23)   Poderes   tu   ajudar-me!
       to-be-able-2sg   you to-help me-acc
       'If only you could help me!'

Raposo ignores this type of cases, assuming that inflected infinitival clauses may only be found in embedded contexts[5].

4 Complement and subject clauses

4.0 In this section I will present my first hypothesis for complement and subject clauses. Following Pesetsky's (1992) proposal for clausal complements and adjuncts, I will assume that all inflected infinitival clauses are CPs.

4.1 Complements to declarative and epistemic verbs

Recall that the two main questions raised with respect to complements to declarative and epistemic verbs are: 1) why is subject-auxiliary inversion obligatory?; and 2) why are lexical verbs disallowed altogether without the presence of an auxiliary? The relevant examples are repeated here:

(24)   a   *Pensam/afirmam   a   polícia ter   apanhado os assaltantes.
           think-3pl/claim-3pl   the   police to-have-3sg   caught   the burglars.
       b   Pensam/afirmam   ter   a   polícia apanhado os assaltantes.
           think-3pl/claim-3pl   to-have-3sg   the   police caught   the burglars.

(25)   a   *Pensam/afirmam   a   polícia apanhar   os   assaltantes.

---
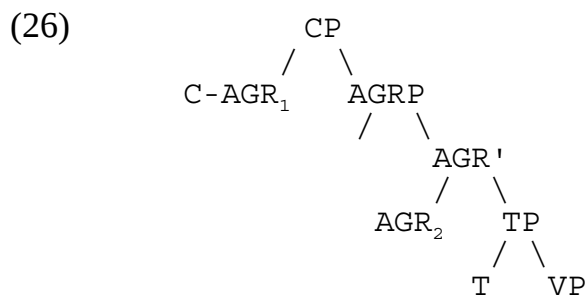
[5]In this paper I will leave aside the question as to why inflected infinitives are disallowed in the contexts mentioned in the text (as complements to intransitive subject control predicates and in embedded infinitival interrogatives and relatives), and allowed in root exclamatives.

	think-3pl/claim-3pl	the	police	to-catch-3sg		the	burglars
b	*Pensam/afirmam	apanhar	a	polícia os		assaltantes.
	think-3pl/claim-3pl	to-catch-3sg the	police	the	burglars

I will assume the standard view that subject-auxiliary inversion in this case is derived from raising of the auxiliary into C. In this point my analysis coincides with Raposo's. I will depart from Raposo's analysis, though, in assuming that such movement is not triggered by Case requirements.

An alternative approach to this problem takes Aux-to-C movement to be triggered by some element in C which attracts the auxiliary. I will briefly mention two analyses which follow this approach: Galves (1992), which takes this element in C to be Agr, and Pesetsky (1992) which takes it to be a null affixal complementiser.

Galves (1992) argues for the following structure for inflected infinitival clauses:

(26)
```
              CP
            /    \
      C-AGR₁     AGRP
               /    \
                    AGR'
                   /    \
               AGR₂     TP
                       /  \
                      T    VP
```

According to her, the option of having inflected infinitives in a language is a consequence of the fact that Agr may be generated in C rather than in I. This Agr-in-C must be licensed by being in the government domain of either a temporal operator (as in factive complements, which Galves assumes to be adjoined to VP, and in subject clauses) or a preposition (as in adjunct clauses). In the case of complements to epistemic and declarative verbs, Galves adopts Raposo's assumption that an abstract Tense feature is selected in the C-position of these complements. Crucial to her analysis is Roberts' (1991) theory of Case-assignment, according to which Agr may assign Nominative Case under Spec-head agreement but T can only assign Case under government (defined in terms of c-command). Since in this case T, and not Agr, is the head of C, the subject must remain in Spec of IP to receive Case under government from T. Only auxiliaries may raise to C, as the presence of Tense in C is somehow incompatible with lexical verbs.

Rouveret (1980) suggests that the possibility of occurrence of inflected infinitives in complements to epistemic and declarative verbs can be derived from the same factors as the possibility of complementiser deletion in these complements in

English. Pesetsky (1992) proposes a possible implementation of this idea for Italian Aux-to-Comp.

According to him, both infinitival and finite complements to *believe*-type verbs which lack an overt complementiser are introduced by an affixal null complementiser which raises to the matrix V at S-structure to satisfy Lasnik's Filter, the filter which requires an affixal element to be attached by S-structure.

Given Baker's (1988) Government Transparency Corollary (Pesetsky's modified version is in (27)), the matrix V can then govern and assign Case to the embedded subject position. This accounts for the possibility of extraction from subject position and for Exceptional Case Marking in English (see (28)).

(27) *Government Transparency Corollary (trace version)*
A category which has an item incorporated into it governs everything which the trace of the incorporated item governs.

(28) a Who$_i$ do you think t$_i$ left
      b Mary believed him to have read the book.
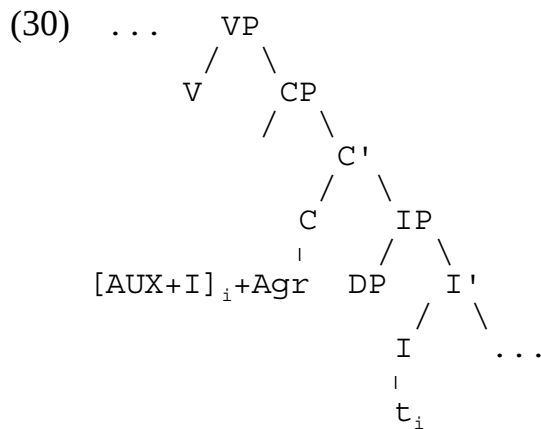
Pesetsky then goes on to propose that languages like Italian display a different strategy to satisfy the requirements of the affixal null complementiser in infinitival complements to *believe*-type verbs; namely, infinitival I raises to C to pick up the null complementiser. This derives the so-called Aux-to-Comp phenomena (see (29)).

(29) Mario afferma non esser lui in grado di affrontare la situazione.
      'Mario asserts not-to-be he/him able to face the situation'

On the assumption that what we get in complements to declarative and epistemic verbs in Portuguese is basically the same Aux-to-Comp (with the auxiliary carrying overt agreement morphology), we could conceivably extend this account to the Portuguese case.

However, if one adopts a principle such as the Principle of Greed of Chomsky (1992), which states that elements can only move to satisfy their own requirements, it is hard to see why I (or the auxiliary in I) would ever move into C to pick up the null complementiser.

Let us assume, as a first hypothesis, that the C-position of infinitival complements to declarative and epistemic verbs may host inflectional features, namely Agr-features, as Galves proposes. The auxiliary must raise to C in order to have its agreement features checked. This is represented in (30).

```
(30)  ...    VP
            / \
          V    CP
              / \
                C'
               / \
              C    IP
              |   / \
     [AUX+I] ᵢ+Agr  DP   I'
                        / \
                       I    ...
                       |
                       tᵢ
```

How can Agr be allowed to occur in C? Raposo (1987b), discussing the nominal properties of the infinitive morpheme *-r*, argues that there is a link between the content of C and the content of T (see also Stowell (1981), among others): in declarative embedded finite clauses, C must be filled by the complementiser *que* 'that', whilst in the corresponding infinitival clauses C may not be overtly filled by a complementiser. See (31):

(31) a Creio que/*∅ leu o livro.
          'I think that he read the book.'
      b Creio ∅/*que ter lido o livro.
          'I believe to have read the book.'

Raposo then goes on to suggest that, in infinitival clauses, the content of C is determined by the nominal infinitive morpheme; hence, the infinitival C is associated with nominal properties.

Adopting this view , I will assume that this nominal C can host nominal elements such as Agr. This would also explain why the pattern in (32) is never found, with a lexical V raising to C.

(32) *... V ... [$_{CP}$ [$_C$ V] [$_{IP}$ DP [$_I$ t$_i$] ...

The infinitival C, being associated with nominal properties, would be incompatible with lexical verbs but not with auxiliaries, on the assumption that these are 'pure bearers of Agr features' (R. Manzini (in progress)).[6]

---

[6]A better alternative, which I won't explore in this paper, might be to try to account for the contrast between lexical/auxiliary verbs in terms of Pollock's (1989) transparency/opacity parameter.

How is Nominative Case licensed on the lexical subject? Let us assume that Nominative Case can be licensed without movement of the subject to Spec of CP. According to the version of the Government Transparency Corollary in (16) above, Agr in C can govern and Case-license the lexical subject in Spec of IP following incorporation of I into C.

4.2 Factive complement and subject clauses

The questions we need to answer regarding inflected infinitival factive complement and subject clauses are: 1) why is subject-auxiliary inversion optional?; and 2) why are lexical verbs allowed (in contexts with no inversion only) without the presence of an auxiliary? The relevant examples are repeated below:
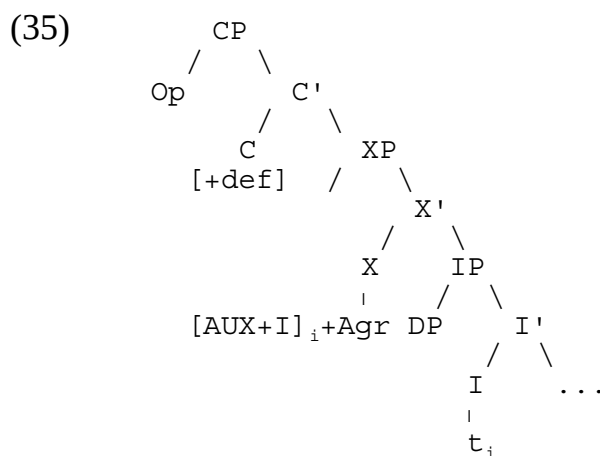
(33) a Lamento   eles terem/terem eles   perdido   os documentos.
        regret-1sg   they to-have-3pl/to-have-3pl they   lost   the documents
        'I regret that they have lost the documents.'
     b Lamento   eles perderem/*perderem eles   os   documentos.
        regret-1sg   they to-lose-3pl/to-lose-3pl they   the   documents
        'I regret/believe that they lost the documents.'

(34) a Surpreende-me   eles terem/terem eles   perdido   o comboio
        surprises me   they to-have-3pl/to-have-3pl they missed   the train
        'It is probable that they have missed the train.'
     b Surpreende-me   eles perderem/*perderem eles   o   comboio.
        surprises me   they to-miss-3pl/to-miss-3pl they   the   train

In allowing subject-auxiliary inversion, these clauses behave just like complements to declarative and epistemic verbs. The simplest assumption is that the same mechanism is at work, namely that the auxiliary raises to a higher nominal head in order to have its agreement features checked.

Many analyses have been proposed in recent years to account for the properties of factive complements. Here I assume Melvold's (1986) and Roussou's (1992) analysis for factive complements, namely that they are characterised by the presence of a iota operator in Spec of CP which is licensed by a C-head bearing the feature [+definite] and binds the event position (in the sense of Higginbotham (1985)) of the

factive complement. This is intended to represent the fact that clausal complements of factive predicates denote an individual event[7].

How do we reconcile the assumption that factive C is an operator position, and therefore not compatible with L-related features (in the sense of Chomsky (1992)) such as Agr, with the assumption that subject-auxiliary inversion in factive clauses is a consequence of the same process as in non-factive complements, i.e. Aux-raising for feature checking? What I would like to suggest is that this case corresponds to a structure as in (35), where there is an intervening head between C and I.

(35)
```
             CP
           /    \
        Op        C'
                /    \
              C        XP
           [+def]    /    \
                            X'
                          /    \
                        X        IP
                        |      /    \
               [AUX+I]ᵢ+Agr  DP      I'
                                   /    \
                                  I      ...
                                  |
                                  tᵢ
```

I won't attempt here to label this node or to identify it with any of the known functional nodes.[8] For the purposes of this paper I will simply assume that X is an L-related head with exactly the same kind of properties as those argued for non-factive C, i.e. it is compatible with nominal elements only and it is the position to which the auxiliary raises in order to have its agreement features checked[9].

---

[7]It is not crucial to my analysis whether there actually is a factive operator in Spec of CP or not. An analysis along the lines of Hegarty (1992), which assumes that no operator is present in Spec of CP, would also be compatible with the analysis presented in the text. What is essential is to assume the presence of some operator feature in C (whether it is a [+definite] feature, as Melvold (1986) and Roussou (1992) argue, or a familiarity feature as in Hegarty (1992) and Roussou (1994)), which turns C into a non-L-related position, and hence a position where the agreement features of the infinitive could not be checked.

[8]See for example Pesetsky (1992) and Watanabe (1992) for proposals to the effect that factive complements may contain an intermediate projection between CP and IP (although they assign different properties to this projection from those assumed in the text).

[9]The specifier position of an L-related head being an L-related position, this explains why no embedded topicalisation is found in factive clauses.

Evidence in support of this structure comes from factive clauses which are introduced by a definite determiner. I will assume, following R. Manzini (in progress) and J. Uriagereka (personal communication), that the definite determiner is a spell-out of the [+definite] feature of the factive C.[10] In these cases, subject-auxiliary inversion is also possible, as shown in (36).

(36)　Lamento　　o　　terem　　　eles partido　a　　jarra.
　　　　regret-1sg　　the　to-have-3pl　they broken　　the　vase
　　　　'I regret it that they have broken the vase.'

This seems to confirm the view that the head into which the auxiliary moves is embedded under the higher factive C (being above IP, as indicated by the inversion)[11]. See (37).

---

[10]This would account for the ungrammaticality in (i), with a finite clause introduced by the definite determiner:
　　(i)　　*Lamento　　o　　que　eles　tenham partido　　　a jarra.
　　　　　　regret-1sg　　the　that　they　have-SUBJ-3pl broken　　　the vase
If the determiner is indeed a spell-out of the [+def] feature of the factive C, then it cannot appear in clauses containing an overt complementiser, as is the case of finite clauses.
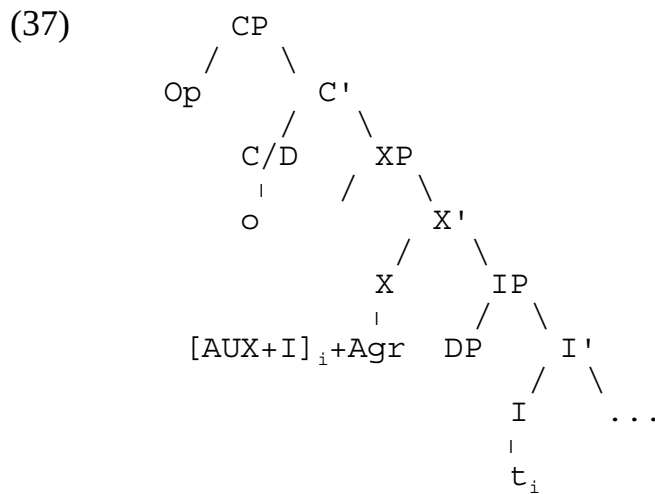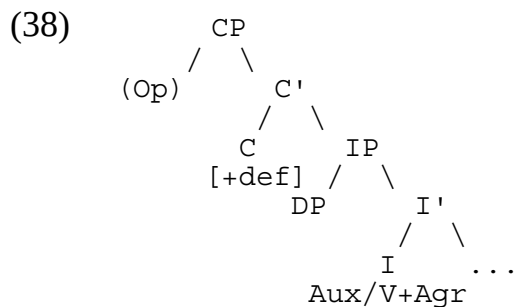
[11]There is a potential problem in assuming an identical structure for factive clauses which are introduced by a definite determiner and those which aren't, namely that it doesn't predict the fact that they behave differently with respect to extraction. Factive clauses introduced by a definite determiner constitute strong islands for movement, whilst those not introduced by a determiner are weak islands. See (i) and (ii):
　　(i)　　*Quem$_i$　　é　　que　tu lamentas　o　　terem　　　insultado t$_i$
　　　　　　who　　　　is　that　you regret　　the　to-have-3pl　insulted
　　(ii)　　?Quem$_i$　　é　　que　tu lamentas　terem　　　insultado t$_i$
　　　　　　who　　　　is　that　you regret　to-have-3pl　insulted
One possibility would be to assume, following Roussou (1994), that the factive C can either be specified for a [+def] feature which blocks argument extraction, or for a [+F] feature (i.e. Hegarty's (1992) familiarity feature) which doesn't. The former would be the case of infinitival clauses which are introduced by the definite determiner, the latter the case of those which aren't. See Roussou (1994) for details of how to implement such a proposal.

```
(37)            CP
             /      \
          Op          C'
                    /    \
                 C/D      XP
                  |      /   \
                  o            X'
                            /    \
                          X       IP
                          |      /   \
                 [AUX+I] +Agr   DP      I'
                        i            /    \
                                   I       ...
                                   |
                                   t
                                    i
```

Let us now consider the other alternative found in factive clauses, i.e. the case where no inversion takes place. Let us assume for the moment that in this case the intermediate XP is not projected. The highest position compatible with Agr is I, so that is as far as the infinitive raises in order to have its Agr features checked. Lexical verbs are allowed in this case, as there is no incompatibility between I and lexical V. The Case features of the subject in Spec of IP are checked in a straightforward way, i.e. under Spec-head agreement. This corresponds to the structure in (38).

```
(38)            CP
             /     \
        (Op)         C'
                   /    \
                 C        IP
              [+def]    /    \
                      DP       I'
                            /    \
                          I       ...
                      Aux/V+Agr
```
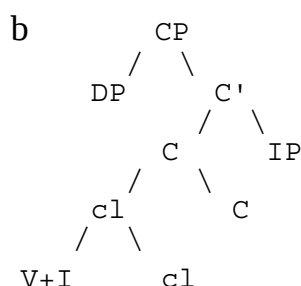
5 Clitics in inflected infinitival clauses

5.0 So far, we have looked at complement and subject clauses. I have argued that the inversion facts found in these clauses can be accounted for by assuming that Agr can be generated in C. Cases without inversion were accounted for in terms of Agr-in-I. In this section I will consider some data regarding clitic placement in inflected infinitival clauses which will lead us to reformulate the analysis proposed in the previous section. This data will then constitute the basis for the analysis of adjunct clauses in section 6.

5.1 Background assumptions
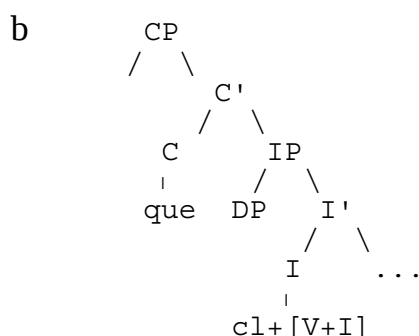
I have argued in previous work on pronominal clitics based on Kayne (1991) in favour of a theory of clitic placement which derives enclisis from movement of the clitic into the highest available empty functional head, with the verbal complex ultimately left-adjoining to the clitic. Since enclisis is typically found in Portuguese in root clauses, where the inflectional heads are filled, I assume that this empty functional head must be pretty high up in the clause, being presumably C. Cf. (39):

(39)　a　O　　Paulo　deu-me　　　um　livro.
　　　　　the　Paulo　gave-3sg　me　　a　　book.
　　　　　'Paulo gave me a book.'

```
    b           CP
            /  \
        DP      C'
              /  \
            C      IP
          /  \
       cl        C
      /  \
   V+I      cl
```
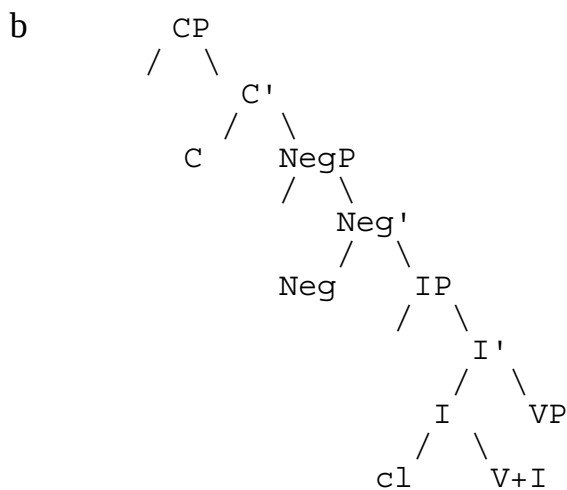
Proclisis, on the other hand, is assumed to result from left-adjunction of the clitic to the functional head to which the verbal complex has raised. Proclisis is in a sense taken to be a last-resort situation, as it is only found in clauses where no empty functional head is available for clitic movement, as is typically the case of embedded tensed clauses. Cf. (40):

(40)　a　O　　Pedro　diz　que　o　　João　a　　viu.
　　　　　the　Pedro　says　that　the　João　her　saw
　　　　　'Pedro says that João saw her.'

```
    b        CP
          /  \
              C'
            /  \
          C      IP
          ˈ    /  \
        que  DP     I'
                  /  \
                 I     ...
                 ˈ
            cl+[V+I]
```

This is also the case of negative clauses, where movement of the clitic to C is blocked by an intervening head. Here I assume Zanuttini's (1991) view that in languages with preverbal negative markers NegP is structurally higher than IP. In this case the head Neg, intervening between C and I, blocks movement of the clitic to C. Hence the clitic has to adjoin to the verbal complex in I. Cf. (41):

(41) a O   Paulo não me   deu   um   livro.
         the Paulo not me   gave-3sg a   book
         'Paulo didn't give me a book.'

```
      b           CP
               /   \
                   C'
                  / \
                C    NegP
                    /  \
                    Neg'
                   /  \
                Neg    IP
                      /  \
                      I'
                     /  \
                    I    VP
                   / \
                 cl    V+I
```

5.2 Clauses with subject-auxiliary inversion

In inflected infinitival complements to declarative and epistemic verbs, enclisis is obligatory, as shown in (42).

(42) Ela   pensa   terem-na/*a terem   os   rapazes   visto.
      she   thinks to-have-3pl her/her to-have-3pl the   boys   seen
      'She thinks that the boys saw her.'

This can be accounted for in a fairly straightforward way. If Agr in these clauses is generated in C, I can be assumed to be empty. The clitic can therefore move there, being picked up by Aux on its way to C.
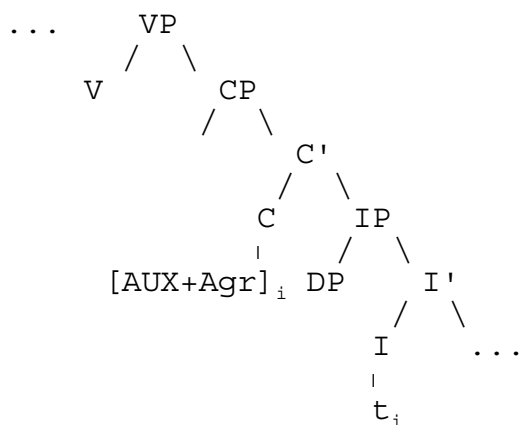
However, this leads us to expect that in inflected infinitival negative clauses we would still find enclisis, on the assumption that Neg is higher than I and therefore, if the auxiliary-clitic unit is formed in I rather than in C, the presence of Neg shouldn't block clitic movement. But we find obligatory proclisis, as shown in (43).

(43) Ela   pensa não *terem-na/a terem   os   rapazes visto.
     she   thinks not to-have-3pl her/her to-have-3pl the   boys   seen
     'She thinks that the boys didn't see her.'

So it looks as if the clitic in (42) has adjoined to C, and not to I, as in finite root clauses. However, if we are going to maintain the assumption that enclisis is derived from movement of the clitic into an empty functional head, then we have to say that C is empty in the inflected infinitival clause in (42), contrarily to the hypothesis developed in subsection 4.1, which was that Agr is in C and the auxiliary raises to have its agreement features checked.

So I will assume instead that Agr is in I (it is the standard AgrS). I will take up a suggestion by R. Manzini to the effect that Agr must be checked by some other head. In finite clauses it is checked by T. In infinitival clauses, in the absence of T, it raises to be checked in C. Everything else can be accounted for as before: only auxiliaries are compatible with the infinitival, nominal C, and Nominative Case on the lexical subject in Spec of IP is licensed by the trace of Agr in I. This is represented in (44).

(44)   Complements to declarative/epistemic predicates (revised):

```
...      VP
        / \
     V     CP
          / \
            C'
           / \
          C   IP
          |  / \
  [AUX+Agr]ᵢ DP   I'
               / \
              I   ...
              |
              tᵢ
```

This account extends to the obligatory enclisis found in factive complement and subject clauses displaying inversion, where Agr raises to the empty X-head to satisfy its checking requirements. Cf. (45):

(45) a (?) Ela lamenta tê-los/*os ter   ele perdido.
              she regrets to-have-3sg them/them to-have-3sg he   lost
              'She regrets that he has lost them.'

    b   (?)   Surpreende-me   terem-na/*a terem   eles visto.
                 surprises me   to-have-3sg her/her to-have-3sg   they seen
                 'It surprises me that they have seen her.'

5.3 Clauses without subject-auxiliary inversion

In factive clauses without inversion proclisis is possible (cf. 46)). This constitutes support for the structure assigned to them above, on the assumption that proclisis is associated with Agr in I and a filled C.

(46)   a   ??   Lamento eles a   terem   visto.
                 regret-isg they her   to-have-3pl seen
                 'I regret that they have seen her.'
       b   ??   Surpreende-me   eles a   terem   visto.
                 surprises me   they her   to-have-3pl seen
                 'It surprises me that they have seen her.'

However, as the question marks show, most speakers seem to find (46) very marginal or even unacceptable; enclisis (as in (47)) is clearly the preferred option.

(47)   a   Lamento   eles terem-na   visto.
           regret-1sg   they to-have-3pl her   seen
       b   Surpreende-me   eles terem-na   visto.
           surprises me   they to-have-3pl her   seen
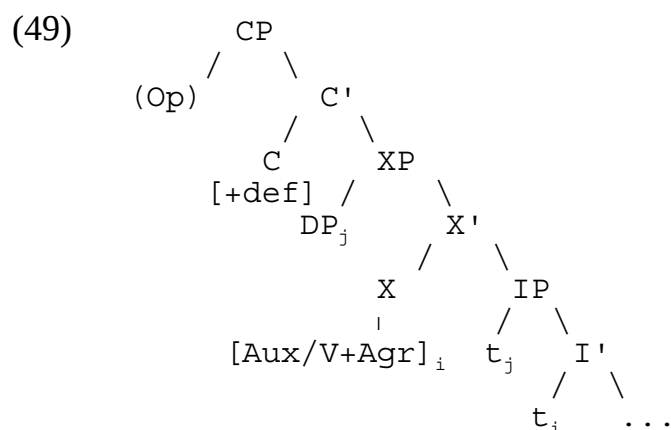
Assuming that enclisis is indication of the availability of an empty functional head to which the clitic can adjoin, preference for enclisis would seem to indicate that the analysis suggested in (38) above (under which both C and I are filled) is not correct.

      Further evidence against that analysis is provided by the contrast found between factive clauses and adjunct clauses. Adjunct clauses display the word order typical of embedded clauses introduced by a complementiser, that is, no subject-auxiliary inversion and obligatory proclisis. Cf. (48):

(48)   Não descansou   até   eles *contarem-lhe/lhe contarem   tudo.
       not   rested-3sg   until   they to-tell-3pl her/her to-tell-3pl   all
       'She didn't rest until they had told her everything.'

If we assume that absence of inversion is an indication that Agr can be checked in I, then we have no way of accounting for the contrast between factive and adjunct clauses.

So let us assume that the structure of factive clauses without inversion (and with obligatory enclisis) is as shown in (49), with an intermediate XP.

```
(49)            CP
             /     \
        (Op)        C'
               /     \
             C         XP
          [+def]    /     \
              DP_j        X'
                     /      \
                   X         IP
                   |        /  \
              [Aux/V+Agr]_i  t_j   I'
                                  /   \
                                t_i    ...
```

The analysis then goes as for the cases with inversion: Agr must raise from I to C to be checked.[12] Enclisis is then accounted for as in the cases with subject-auxiliary inversion: the clitic adjoins to the empty X and is adjoined to by the verbal complex.
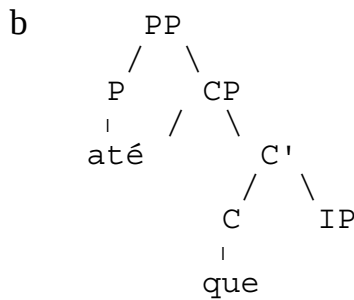
6 Adjunct clauses

Turning now to adjunct clauses. How do we capture the fact that they behave like finite embedded clauses, with no inversion and obligatory proclisis?

What I want to argue is that infinitival adjunct clauses have an identical structure to finite adjunct clauses introduced by a preposition (cf. (50a)), i.e. they have a structure as in (50b), but with the C-position being filled by a prepositional complementiser which may be overt or not.

---

[12]Notice that in this case lexical verbs are allowed to raise to X (and subjects to its specifier position). This means that the position adopted in subsection 4.2, i.e. that X cannot host lexical Vs by virtue of its nominal properties, can no longer be maintained. Two important questions arise here: 1) why is inversion optional in factive complements (and subject clauses)? and 2) how can we capture the fact that the possibility of raising of lexical V to C/X and the possibility of (overt) raising of the subject to its Spec are undoubtedly related? At the moment I have no interesting proposal to make regarding these problems.

(50) a Não descansou até que eles lhe contassem tudo.
        not rested-3sg until that they her told-3pl all
        'She didn't rest until they told her everything.'

```
b         PP
         /  \
        P    CP
        |   /  \
       até     C'
              /  \
             C    IP
             |
            que
```

Let us look at some evidence for this. In Portuguese, certain prepositions such as *por* 'for' and *de* 'of' may or must contract with the head determiner of the DP which follows them. See (51).
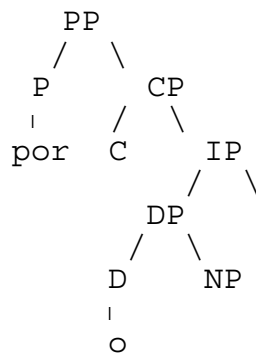
(51) a por + o = pelo
         for the
    b de + o = do
         of the

Rizzi (1990) notices that this process of contraction appears to be subject to certain locality conditions, namely, according to him, to Subjacency - so it can take place across one barrier but not two. However, if a preposition introduces an adjunct clause, it cannot contract with the determiner of the clausal subject. See (52).

(52) a Estou contente *por o/pelo João.
        am happy for the/for+the João
    b Não houve aula por o/* pelo professor estar doente.
        not there was class for the/for+the teacher to-be-3sg ill.
        'There was no class because the teacher was ill.'

This follows if we assume the structure in (53), with the subject in Spec of IP - contraction cannot take place across CP and IP. So this seems to confirm that infinitival adjunct clauses have the same structure as finite adjunct clauses.

(53)
```
            PP
           /  \
          P    CP
          |   /  \
         por C    IP
                 /  \
               DP
              /  \
             D    NP
             |
             o
```
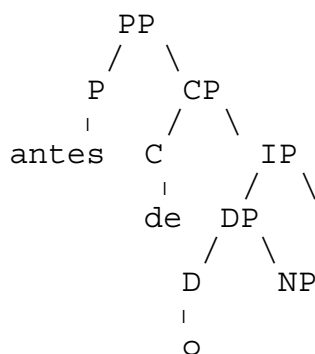
Complex prepositions such as *antes de* 'before of' may also introduce infinitival adjunct clauses. Benucci (1992) notes that in this case contraction of the second preposition with the determiner of the subject DP is possible. See (54).

(54) Vamos fazer o   jantar antes de o/do   João chegar.
      go-1pl make   the dinner before of the/of+the João to-arrive-3sg
   'Let's cook dinner before João arrives.'

I would like to propose that in this case the element *de* 'of' is in C - hence it may contract with the determiner across IP. This is represented in (55).

(55)
```
            PP
           /  \
          P    CP
          |   /  \
        antes C    IP
              |   /  \
             de  DP
                /  \
               D    NP
               |
               o
```
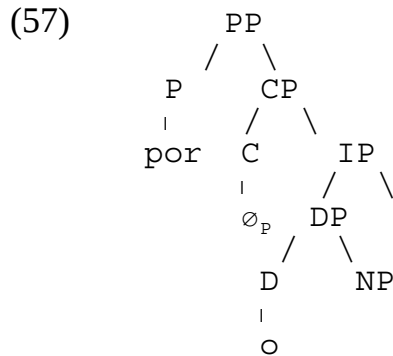
Further evidence in favour of the claim that the second prepositional element is in C comes from the fact that the finite counterpart of the adjunct clause in (54) would have the complementiser replacing the second prepositional element. See (56).
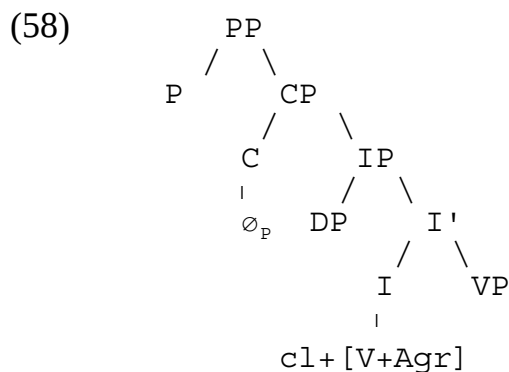
(56) Vamos fazer o   jantar antes que/*antes de que o   João   chegue.
      go-1pl make   the dinner before that/before of that the João   arrives

I would like to propose that the structure in (55) applies both to infinitival adjuncts introduced by a complex preposition and to those introduced by a single overt

preposition. In the latter case, the C-position is occupied by a null preposition, or a null prepositional complementiser. The structure of (52b) is represented in (57).

(57)
```
            PP
           /  \
          P    CP
          |   /  \
        por  C    IP
             |   /  \
            ∅_P  DP
                /  \
               D    NP
               |
               o
```

Since C in inflected infinitival adjunct clauses is filled by a null or overt preposition, Agr must be generated in I. Hence proclisis is obligatory: the clitic must left-adjoin to Aux/V in I, as there are no empty functional heads in the clause. This is represented in (58).

(58)
```
            PP
           /  \
          P     CP
               /  \
              C    IP
              |   /  \
            ∅_P  DP    I'
                      /  \
                     I    VP
                     |
               cl+[V+Agr]
```

I assume that in this case Agr can be checked in I, presumably licensed (in some way to be defined) by the prepositional complementiser in C.

7 Conclusion

I have argued in this paper that subject-auxiliary inversion in inflected infinitival clauses is a consequence of Agr-to-C movement. Such a movement is forced by the checking requirements of Agr, and it is made possible by the nominal properties of the infinitival C. This nominal C is incompatible with lexical verbs, and therefore inversion with lexical verbs is generally impossible. The cases where no inversion is found were accounted for by assuming an intermediate projection between CP and

IP in factive clauses and assuming that Agr can be checked in I in clauses headed by a null or overt prepositional complementiser.

References

Ambar, M. M. 1993. 'A COMP feature and some of its effects', paper presented at the Going Romance 1993 conference, University of Utrecht.

Baker, M. 1988. *Incorporation: A Theory of Grammatical Function Changing.* Chicago University Press, Chicago.

Benucci, F. (1992) 'Prepositional Particles and the Portuguese Inflected Infinitive', *University of Venice Working Papers in Linguistics* 92.I.8.

Chomsky, N. 1989. 'Some Notes on Economy of Derivation and Representation', *MIT Working Papers in Linguistics* 10.

Chomsky, N. 1992. 'A Minimalist Program for Linguistic Theory', *MIT Occasional Papers in Linguistics* 1.

Galves, C. 1991. 'Inflected Infinitive and Agr Licensing', ms., UNICAMP.

Hegarty, M. 1992. 'Familiar Complements and Their Complementizers', ms., University of Pennsylvania.

Higginbotham, J. 1985. 'On Semantics', *Linguistic Inquiry* 16, 547-593.

Kayne, R. 1981. 'On Certain Differences between French and English', *Linguistic Inquiry* 12, 349-371.

Kayne, R. 1991. 'Romance Clitics, Verb Movement, and PRO', *Linguistic Inquiry* 22, 647-686.

Kiparsky, P. and C. Kiparsky 1970. 'Fact', in M. Bierwisch and K. E. Heidolph (eds.), *Progress in Linguistics*, Mouton, The Hague, 143-173.

Madeira, A. 1994. 'Clitic-Second in European Portuguese', to appear in *Probus*.

Manzini, M. R. in progress. *Syntactic Dependencies.*

Mateus, M. H. et al 1989. *Gramática da Língua Portuguesa.* Editorial Caminho, Lisboa.

Melvold, J. 1991. 'Factivity and Definiteness', *MIT Working Papers in Linguistics* 15, 97-117.

Pesetsky, D. 1992. *Zero Syntax.* Ms., MIT.

Pollock, J.-Y. 1989. 'Verb Movement, Universal Grammar and the Structure of IP.' *Linguistic Inquiry* 20, 365-424.

Raposo, E. 1987a. 'Case Theory and Infl-to-Comp: The Inflected Infinitive in European Portuguese', *Linguistic Inquiry* 18, 85-109.

Raposo, E. 1987b. 'Romance Infinitival Clauses and Case Theory', in C. Neidle and R. A. Núñez Cedeño (eds.), *Studies in Romance Languages*, Foris, Dordrecht, 237-249.

Rizzi, L. 1982. *Issues in Italian Syntax*. Foris, Dordrecht.

Rizzi, L. 1990. *Spiegazione e Teoria Grammaticale*. Unipress, Padova.

Roberts, I. 1991. *Verbs and Diachronic Syntax (A Comparative History of English and French)*. Kluwer Academic Publishers, Dordrecht.

Roussou, A. 1992. 'Factive Complements and Wh-Movement in Modern Greek', *UCL Working Papers in Linguistics* 4, 123-147.

Roussou, A. 1994. *The Syntax of Complementisers*. PhD dissertation, UCL.

Rouveret, A. 1980. 'Sur la Notion de Proposition Finie: Gouvernement et Inversion', *Langages* 60, 75-107.

Stowell, T. 1981. *Origins of Phrase Structure*. PhD dissertation, MIT.

Watanabe, A. 1992. 'Larsonian CP Recursion, Factive Complements, and Selection', *Proceedings of NELS* 23.

Zanuttini, R. 1991. *Syntactic Properties of Sentential Negation: A Comparative Study of Romance Languages*. PhD dissertation, University of Pennsylvania.

Zubizarreta, M. L. 1982. 'Theoretical Implications of Subject Extraction in Portuguese', *The Linguistic Review* 2, 79-96.