

## 3

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# Extraposition of Restrictive Relative Clauses

### 3.1 Introduction

The term *extraposition* is used ambiguously in the literature on syntactic theory. It is used in a pre-theoretical sense to refer to the non-adjacency between two parts of a constituent and in a theoretical sense to refer to a specific type of movement (typically rightward movement). It is usually conceived as a very general phenomenon that affects both relative clauses and a wide range of constituents (e.g. conjuncts, result clauses, appositions, comparative clauses, prepositional phrases, and complement clauses) (see De Vries 2002: 236–7 for an overview).

This chapter focuses on the extraposition of RRCs. In this context, the term *extraposition* is used in a pre-theoretical sense to refer to an RRC that does not appear adjacent to the antecedent, instead being separated from it by material that belongs to the matrix clause, as depicted in (234).

(234) [...[antecedent]...RRC]

An example of this construction is given in (235). Example a, which exhibits adjacency between the antecedent and the RRC, displays the regular word order. Example b, which exhibits non-adjacency between the antecedent and the RRC, demonstrates an extraposed RRC. In the contexts of extraposition, there are elements that intervene between the antecedent and the relative clause (e.g. the verb, the preposition, and the adverb in (235b)). These elements are henceforth referred to as *intervening material* and are underlined for ease of reading.

- (235) a. A man [<sub>RRC</sub> that I met last year] came in yesterday.  
b. A man came in yesterday [<sub>RRC</sub> that I met last year]. (adapted from Givón 2001: 208)

In the traditional account of RRC-extraposition, the RRC is analyzed as involving rightward movement of the relative clause to a right-adjoined position (Reinhart 1980; Baltin 1984; among others). However, within more recent developments in

generative grammar, rightward movement is excluded altogether (Kayne 1994) or at least from core syntax (Chomsky 1995, 2000).

These developments in generative grammar have obviously energized the debate on the syntax of RRC-extrapolation. The challenge is not an easy one, especially for the proponents of Kayne's antisymmetric framework; it is necessary to determine a syntactic analysis of extrapolation that excluded not only rightward movement but also rightward adjunction.

In this context, various solutions are put forward in the literature. For instance, Kayne (1994) proposes that extrapolation involves leftward movement of the antecedent and stranding of the relative clause, and De Vries (1999, 2002) proposes an analysis of extrapolation in terms of coordination. Notably, these two analyses have the advantage of being compatible with the head raising analysis of RRCs.

At the same time, other solutions are offered in the literature, which cannot be accommodated in the traditional Y/T-model of grammar. This is the case for the analysis suggested by Fox and Nissenbaum (1999) and Fox (2002). Eliminating the distinction between covert and overt operations, they claim that RRC-extrapolation should be analyzed as involving covert quantifier raising (QR) of the antecedent, followed by late merging of the RRC.

Despite the wide range of analyses already available in the literature, extrapolation is still a rather poorly understood phenomenon. However, this is not to say that little has been written about it. In contrast, over the last years, several studies have gradually added details to the picture, but most of these studies primarily focus on Germanic languages, especially English, German, and Dutch. Unfortunately, little has been said about RRC-extrapolation in Romance languages, and as a consequence, the theoretical impact of cross-linguistic variation remains largely unexplored.

The major goal of the present chapter is to contribute to a better understanding of the syntax of RRC-extrapolation by discussing new empirical evidence from earlier stages of Portuguese and CEP, as well as data from other languages. Specifically, the chapter aims to: (1) establish clear properties that distinguish RRC-extrapolation in CEP and earlier stages of Portuguese; (2) correlate the variation documented in the diachronic dimension with that found in the cross-linguistic dimension; and (3) demonstrate that the variation found in RRC-extrapolation is not compatible with a uniform account of the phenomenon.

This chapter is structured as follows. Section 3.2 presents the most relevant competing analyses of RRC-extrapolation and introduces the distinction between unitary and non-unitary approaches to the phenomenon. Section 3.3 is a state-of-the-art survey of what is known about RRC-extrapolation in CEP. In §3.4, a comparative approach is adopted, showing that different languages and different stages of the same language may contrast with respect to the properties of RRC-extrapolation. This leads to the postulation of two different strategies of

RRC-extraposition: the specifying coordination (plus ellipsis) (De Vries 2002) and the VP-internal stranding (Kayne 1994) strategies. Sections 3.5 and 3.6 demonstrate how the contrastive properties of RRC-extraposition in CEP and earlier stages of Portuguese are derived from the dual approach advocated here. Then §3.7 focuses on the contrasts found in the diachronic and cross-linguistic dimension, and §3.8 concludes the chapter.

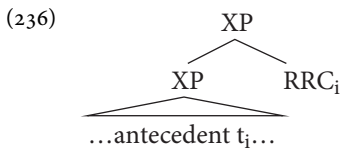
### 3.2 Competing analyses

Generally speaking, the existing approaches to RRC-extraposition can be divided into three different groups (see De Vries 2002, for an overview): extraposition as right-hand adjunction (Culicover and Rochemont 1990); extraposition as VP-internal stranding (Kayne 1994); and extraposition as specifying coordination (Koster 2000; De Vries 2002).

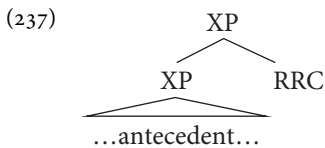
#### 3.2.1 Rightward adjunction analyses

The basis of the rightward adjunction analysis is that the extraposed RRC is right-adjoined to some maximal projection. Within this approach, some variants can be identified, according to the exact point of the derivation where the rightward adjunction takes place.

The rightward movement analyses (see Reinhart 1980; Baltin 1984; among others) assume that the RRC is base-generated next to the antecedent. Then, the RRC undergoes rightward movement and right-adjoins to some maximal projection, as schematically represented in (236).

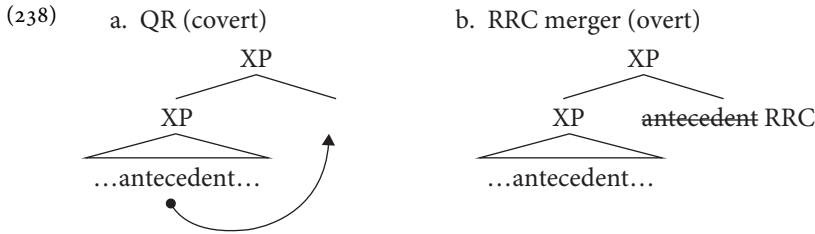


The rightward adjunction analyses (see Culicover and Rochemont 1990, among others) propose that there is no syntactic link between the antecedent and the extraposed RRC. The latter is base-generated in some right-adjoined position, as shown in (237).



The rightward adjunction (after covert movement) analyses (see Fox and Nissenbaum 1999, Fox 2002) advance a radical alternative to the standard assumptions of

overt/covert movement, suggesting that covert operations such as QR can precede overt operations. First, the antecedent undergoes covert movement QR to a rightward position (see (238a)). Then, the RRC is right-adjoined to the antecedent in the post-QR position (see (238b)). Phonology will determine that the antecedent is pronounced in its pre-QR position.

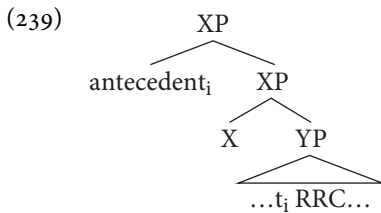


### 3.2.2 Stranding analyses

The rightward adjunction analyses are challenged by theoretical developments of generative grammar, such as Kayne’s (1994) antisymmetric framework. Under this approach, all syntactic representations are asymmetrical in nature, and the linear order is determined by hierarchical relations.<sup>1</sup> As a result, rightward adjunction (and rightward movement) is excluded from the theory of grammar.

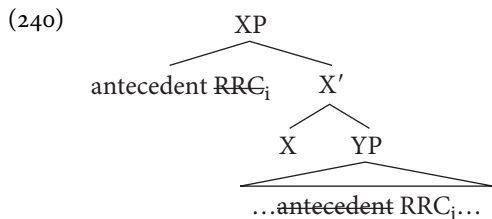
As has happened with other phenomena traditionally analyzed as involving rightward positioning (e.g. rightward adjuncts, heavy NP shift, and post-verbal subjects), new proposals of RRC-extrapolation compatible with Kayne’s theory emerged in the literature.

One of the possibilities explored is that RRC-extrapolation involves leftward movement and stranding (Kayne 1994). In this paradigm, the antecedent and the RRCs are generated together. Then, the antecedent undergoes leftward movement, stranding the RRC in its base position, as represented in (239).



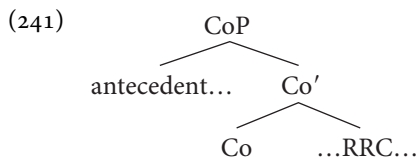
Another possibility is the leftward movement (plus deletion) analysis (Wilder 1995), in which the entire noun phrase containing the RRC undergoes leftward movement, leaving a copy behind. Then, there is a deletion of the RRC in the higher copy and a deletion of the antecedent in the lower one (i.e. scattered deletion), as shown in (240).

<sup>1</sup> This is formulated as the LCA in Kayne (1994: 5–6). See §1.3.1.3 for additional details.



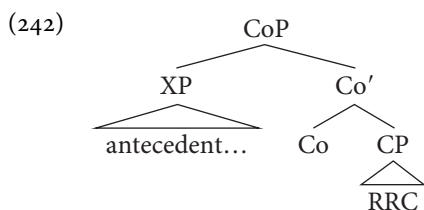
### 3.2.3 Coordination analyses

Coordination analyses (see Koster 2000, De Vries 2002) crucially rely on the assumption that extraposition involves the same structure as coordination. Assuming the structure of coordination in Munn (1993) and Kayne (1994) (see also Johannessen 1998), these analyses propose that the antecedent is merged within the specifier of an abstract head, whereas the extraposed RRC is merged in the complement position of the head, as schematically represented in (241).<sup>2</sup>



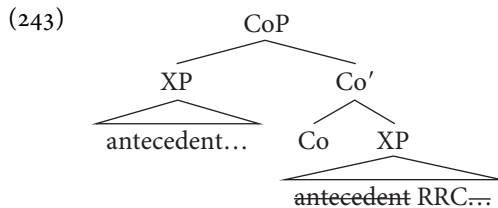
In (241), the second conjunct specifies (i.e. adds information about) the anchor, hence the term *specifying coordination*.

At least two variants of this approach can be identified. According to Koster (2000), the second conjunct contains only the RRC, which is attached at the relevant line of projection, as sketched in (242).



<sup>2</sup> The structure in (241) involves a semantically specialized abstract head; it constitutes an asymmetric relationship of specification between the two conjuncts. Koster (2000) symbolically represents this relator by a colon; De Vries (2002) employs an ampersand plus a colon (&:). In this book, I simply use the more general notation  $\underline{Co}$  for coordinating head (see Ch. 1 n. 24). Additionally, note that the use of the parentheses with ellipsis in the complement position of the structure in (241) aims to capture the possible presence of additional material in some specific analyses.

According to De Vries (2002), the second conjunct has the same categorial status as the first conjunct. It repeats the material contained in the first conjunct, adding the extraposed RRC in its canonical position. Then, the repeated material is phonologically deleted, as shown in (243).



In summary, although this overview of the analyses of extraposition is extremely brief and incomplete, it shows that the emergence of different analyses of extraposition is, at least to some extent, motivated by theory-internal concerns. I return to the stranding and coordination analyses of RRC-extraposition in greater detail in §§3.5.1 and 3.6.1 respectively.

### 3.2.4 Unitary vs. non-unitary approaches

There are additional sources of variation in the approaches to extraposition available in the literature. Aside from the variation regarding the specific syntactic structure adopted, analyses may also contrast with respect to their general applicability. In this respect, two different lines of research can be identified: unitary and non-unitary approaches.

Unitary approaches claim that a single syntactic structure can cover a wide range of construction types involving extraposition (within a language and/or across languages). This is, for instance, the case of the coordination analysis proposed by Koster (2000) and De Vries (1999, 2002). These authors claim that extraposition is not a sub-strategy of relative clauses but is instead a very general phenomenon that applies to a wide range of constructions. Specifically, De Vries (2002) proposes that every construction that may be divided into a first and a second part (*duplex constructions*) allows for the extraposition of the second part (e.g. conjuncts, relative clauses, result clauses, appositions, comparative clauses, PP complements of N, complement clauses of N, and PP complements of A). The same is true of simplex phrases, such as complement clauses of V and heavy NPs. De Vries (2002) proposes that all of these construction types may involve extraposition and that in all these cases, extraposition can be dealt with in terms of specifying coordination.

By contrast, non-unitary approaches claim that more than one syntactic type is necessary to account for the extraposition involved in the different construction types. There are many variants of non-unitary approaches in the literature. Some approaches emphasize the contrast between adjunct and complement extraposition. This is, for instance, the case of the analysis put forth by Fox and Nissenbaum (1999) and Fox (2002), who propose that complement extraposition involves the rightward movement of the complement, whereas relative clause extraposition involves post-QR merging of the relative clause.

Other analyses claim that extraposition is not a unitary phenomenon, even if only relative clauses are considered. This is the case of Smits (1988), who highlights the cross-linguistic variation found in this domain:

The ways in which extraposition seems conditioned is certainly surprising. For, intuitively at least, it is hardly probable for a specific rule of the grammar [...] to be subject to some condition in one language, with that same condition having no relevance whatsoever in another, otherwise closely related language, and vice versa, without any apparent reason. The incoherence of the sprawling array of conditions [...] alone suggests, perhaps, that extraposition of RCs is only apparently a monolithic phenomenon. That is to say, it suggests that only some proportion of cases we find is the result of the rule of extraposition [...] which moves clauses from their NPs to the right end of the clause. (Smits 1988: 183)

To account for the different properties of relative clause extraposition, Smits (1988) proposes a non-uniform approach to the phenomenon, in which extraposed RRCs are derived from rightward movement (being nevertheless subject to specific conditions in different languages), whereas appositive relative clauses (ARCs) are detached from the antecedent and base-generated in a rightward position.

Perhaps more surprisingly, non-uniform approaches have also been proposed to account for even more specific constructions, such as RRC-extraposition. On the basis of comparative evidence from German and English, Inaba (2005) claims that, in spite of superficial similarities, RRC-extraposition in these languages exhibits a remarkable contrast that has been ignored in previous research; RRC-extraposition is a syntactic operation in English, whereas it involves phonological movement in German.

In short, two opposing views dominate the analysis and discussion on the syntax of extraposition. On the one hand, unitary approaches claim that the concept of extraposition corresponds to an explanatory pattern in the sense that it can be accounted for by a single syntactic structure. In contrast, non-unitary approaches claim that the concept of extraposition may have descriptive adequacy (in unifying apparently related constructions) but lacks explanatory force because it does not correspond to a single construction type. It was also shown that non-unitary approaches may differ with respect to: (1) the range of syntactic construction types covered; and (2) their universal or language-specific scope.

### 3.3 Portuguese: Previous scholarship

Examples of RRC-extraposition have been reported in a number of languages: English (Ziv and Cole 1974; Quirk, Greenbaum, Leech, and Svartvik 1985; Givón 2001); Dutch (Koster 2000; De Vries 2002); German (Haider 1996, 1997; Kiss 2005); Italian (Cardinaletti 1987); and Spanish (Brucart 1999). See also Smits (1988) for an overview.

However, as far as CEP is concerned, only sparse allusions to RRC-extraposition are found in the literature (Brito and Duarte 2003; Barbosa, Duarte, and Kato 2005; Barbosa 2009; Smits 1988).

On the basis of the contrast in (244), Brito and Duarte (2003: 661) claim that “RRCs cannot be easily extraposed in CEP.” However, they do not specify what they mean by the use of the adverb *easily*, nor do they provide any example of RRC-extraposition in CEP, presenting only the ungrammaticality of (244c).

- (244) a. Uma pessoa que tu conheces telefonou.  
a person that you know phoned  
'A person that you know phoned.'
- b. Telefonou uma pessoa que tu conheces.  
phoned a person that you know
- c. \*Uma pessoa telefonou que tu conheces.  
a person phoned that you know (Brito and Duarte 2003: 661)

Furthermore, while discussing the position of the subject in CEP, Barbosa, Duarte, and Kato (2005) and Barbosa (2009) allude to RRC-extraposition, showing the impossibility of RRC-extraposition from an indefinite subject in a pre-verbal position, as in (245).

- (245) \*Um homem apareceu que deseja falar contigo.  
a man showed.up that wants talk.INF with.you  
'A man showed up that wants to talk to you.' (Barbosa 2009: 47)

This restriction is claimed to correlate with the Null Subject Parameter. The authors contend that Null Subject Languages (NSLs) such as CEP do not allow extraposition from pre-verbal indefinite subjects, whereas non-NSLs such as English and French allow it. Barbosa, Duarte, and Kato (2005) and Barbosa (2009) take this contrast to result from the different positions occupied by the subject in NSLs and in non-NSLs. In the former, the subjects are left-dislocated, whereas in the latter, they are in [Spec, IP]. I return to this analysis in §3.4.2, where I show that the correlation between the possibility of extraposition from pre-verbal subjects and the Null Subject Parameter



simply does not hold. Indeed, in earlier stages of its history, Portuguese was a Null Subject Language and allowed for the extraposition of indefinite subjects from pre-verbal positions.

In his overview of relative clauses in Germanic and Romance languages, Smits (1988: 407) also refers to some properties of RRC-extraposition in CEP. Considering RRC-extraposition and ARC-extraposition together, he proposes the descriptive principles in (246).

- (246) Principles of relative clause extraposition in CEP
- (i) Extraposition of relative clauses belonging to the subject is impossible both for restrictives and appositives.
  - (ii) Extraposition of relative clauses belonging to objects is possible for restrictives only.
  - (iii) Definiteness properties of the restrictive antecedent do not influence the possibilities of extraposition. (Smits 1988: 407)

As will become clear in §3.4.1, these principles are simply not correct and must be revised.

Finally, other references can be found in the literature, but they only concern extraposition of ARCs (Brito 2004; Peres and Mória 1995). This issue is addressed, though in a slightly different context, in §§4.4.2 and 4.5.2).

As for earlier stages of Portuguese, the RRC-extraposition is almost totally neglected in the grammars and studies on the history of Portuguese. However, there are a few exceptions (see Dias 1933/1970; Mattos e Silva 1989; A. Costa 2004).

Dias (1933/1970: 329) mentions that an RRC can be separated from its antecedent if no ambiguity arises. He illustrates this possibility with the examples in (247)–(249).

- (247) aquelle se chamará bom prelado que tiver letras,  
that SE.CL call.FUT good prelate that have.SBJV letters,  
reputação, e virtudes  
reputation and virtues  
'People will identify a good prelate as the one who has education, a good reputation, and virtues.' (16th c., from Dias 1933/1970: 329)

- (248) que naquele coração não ha vestigio de justiça, onde  
that in.that heart not has trace of justice where  
a avareza tem feyto sua morada  
the meanness has done its home  
'[In a sermon, Pope St Leo says] that there is no trace of justice in the heart where the meanness is deeply rooted.' (16th c., from Dias 1933/1970: 329)

- (249) Esse, é meu amigo, que moe no meu moinho.  
that is my friend that mills in.the my mill  
'The one who mills (something) in my mill is my friend.' (old saying, from  
Dias 1933/1970: 329)

Mattos e Silva (1989) also reports the possibility of RRC-extraposition in sentences such as (250)–(251).

- (250) en aquela hora morrera en que el vira estando longe  
in that hour die.PPRF.3SG in that he see.PPRF be.GER away  
dele que lhi saira a alma do corpo.  
from.him that him-CL fall.out.PPRF.3SG the soul of.the body  
'[and the father realized that] his son had died in that hour in which he had  
seen (being away from him) that his soul had fallen out of his body' (14th c.,  
from Mattos e Silva 1989: 766)

- (251) naquela hora o seu filho ficara sen féver en que  
in.that hour the his son stay.PPRF without fever in that  
hi o nosso Salvador e nosso meestre Jesu Cristo  
there the our Savior and our master J. C.  
dissera que era são  
say.PPRF that was.3SG healed  
his son had stopped having fever at the moment that our Savior and  
Master Jesus Christ had said that he was healed' (14th c., from Mattos  
e Silva 1989: 766)

Discussing the syntactic properties of relative constructions in fourteenth- to fifteenth-century Portuguese, A. Costa (2004) alludes to the possibility of RRC-extraposition in sentences such as (252).

- (252) E mando que se outra mada parecer que eu mândasse  
and order.1SG that if another will appear.SBJV that I order.SBJV  
fazer ante desta que quebre e não ualha  
make.INF before this that be.annulled.SBJV and not be.valid.SBJV  
'And, if another will appear that I order to be made before this one, I order it  
to be annulled and not valid.' (14th c., from A. Costa 2004: 414)

Additional references to non-adjacency phenomena, namely those concerning the so-called *relatif de liaison* or *connecting relative*, can be found in the literature (Dias 1933/1970: 269; Said Ali 1931/1971: 107; A. Costa 2004: 418–19). However, because these constructions clearly do not involve RRCs, their discussion is postponed until Chapter 4 (§§4.4.2 and 4.5.2).

In short, this survey of previous research plainly demonstrates that much of the syntax of RRC-extraposition in Portuguese still awaits a proper

description. Section 3.4 intends to contribute to filling this gap by offering a description of RRC-extrapolation in CEP and in earlier stages of Portuguese. Although much of the discussion focuses on the contrast between CEP and earlier stages of Portuguese, evidence from other languages also plays an important role in keeping with a comparative and universalist approach to the phenomenon.

### 3.4 Properties in contrast

In this section, I identify three main properties of RRC-extrapolation and show how CEP (§3.4.1), other languages (§3.4.2), and earlier stages of Portuguese (§3.4.3) behave with respect to them.

#### 3.4.1 Contemporary European Portuguese

In CEP, RRCs can be extrapolated, as illustrated in (253)–(254).

(253) Ainda por cima, dá-se conta de que as obras não têm licença camarária  
'As if it wasn't enough, he/she realizes there is no council license for the building work.'

e faz diligências na Câmara das Caldas da Rainha que  
and makes actions at.the Town.Hall of.the C. d. R. that  
levam ao seu embargo  
lead to.the its embargo

'and takes some steps at Caldas da Rainha Town Hall that lead to its embargo'  
(CETEMP)

(254) Houve alguém no meio da noite que decidiu agarrar uma  
had someone in.the middle of.the night that decided grab-INF a  
cana que supostamente seria do Aranha.

pole that supposedly be.COND of.the A.

'There was someone in the middle of the night who grabbed a pole that supposedly belonged to Aranha.' (from the website *O Sítio do Pescador*)

However, RRC-extrapolation in CEP is limited by a number of restrictions, namely: (1) definiteness effect (see §3.4.1.1); (2) extrapolation from pre-verbal positions (see §3.4.1.2); and (3) extrapolation from PPs (see §3.4.1.3).

3.4.1.1 *The definiteness effect* In CEP, RRC-extrapolation exhibits a definiteness effect reminiscent of that found in existential constructions with the verb *haver*

'to have' (Duarte and Oliveira 2003: 224 n. 32). Applied to the RRC-extraposition, the definiteness effect is a restriction against the occurrence of "definite" noun phrases as antecedents of extraposed RRCs. This restriction is illustrated by the contrasts in (255)–(256), involving (respectively) a subject and a direct object as the antecedent. As these examples show, RRC-extraposition is fine with indefinite antecedents (see a examples) but impossible with definite ones (see b examples).

Subject:

- (255) a. Chegou um rapaz ontem que te quer conhecer.  
arrived a boy yesterday that you.CL wants meet.INF  
'A boy arrived yesterday that wants to meet you.'
- b. \*Chegou o rapaz ontem que te quer conhecer.  
arrived the boy yesterday that you.CL wants meet.INF  
'The boy arrived yesterday that wants to meet you.'

Object:

- (256) a. Encontrei um rapaz no cinema que perguntou por ti.  
met.1SG a boy at.the cinema that asked for you  
'I met a boy at the cinema that asked for you.'
- b. \*Encontrei o rapaz no cinema que perguntou por ti.  
met.1SG the boy at.the cinema that asked for you  
'I met the boy at the cinema that asked for you.'

Importantly, if no extraposition is involved, both definite and indefinite antecedents are allowed in these contexts, as illustrated in (257)–(258).

- (257) Chegou ontem um/o rapaz que te quer conhecer.  
arrived yesterday a/the boy that you.CL wants meet.INF
- (258) Encontrei no cinema um/o rapaz que perguntou por ti.  
met.1SG at.the cinema a/the boy that asked for you

However, RRC-extraposition is not limited to indefinites in a narrow, grammatical sense (i.e. noun phrases with an overt indefinite article). The X-position in (259) may be filled, for example, by *um livro* 'a book' or *três livros* 'three books' but not by *o livro* 'the book' or *aqueles livros* 'those books' (see (259)–(260)).

- (259) Foi/foram publicado(s) X recentemente que vale a pena ler.  
was/were published X recently that is.worth read.INF  
'X that is/are worth reading was/were recently published.'

(260)

$$X = \left\{ \begin{array}{l} \textit{um livro} \textit{ 'a book'} \\ \textit{tr\^es livros} \textit{ 'three books'} \\ \textit{alguns livros} \textit{ 'some books'} \\ \textit{muitos livros} \textit{ 'many books'} \\ \textit{livros} \textit{ 'books'} \end{array} \right\} *X = \left\{ \begin{array}{l} \textit{o livro} \textit{ 'the book'} \\ \textit{aqueles livros} \textit{ 'those books'} \\ \textit{todos os livros} \textit{ 'all the books'} \\ \textit{cada livro} \textit{ 'each book'} \end{array} \right\}$$

Notably, the noun phrases that can fill the X-position in (259) can be grouped together under the class of *weak noun phrases* (as opposed to *strong noun phrases*), in the sense of Milsark (1974).<sup>3</sup> Therefore, the descriptive generalization that captures the relation between RRC-extraposition and the definiteness effect can be formulated as in (261).

(261) *The definiteness effect and RRC-extraposition*

In CEP, RRC-extraposition can only take place from weak noun phrases.

### 3.4.1.2 Pre-verbal positions

#### A. Pre-verbal subjects

Extrapolated RRCs can take post-verbal subjects as their antecedents, as illustrated in (262a) and (263a). However, if the subject is construed pre-verbally, the sentence is ungrammatical, as shown in (262b) and (263b).

- (262) a. Ontem explodiu uma bomba em Israel que causou 5 mortos.  
 yesterday exploded a bomb in I. that caused 5 deaths  
 'Yesterday a bomb exploded in Israel that caused 5 deaths.'
- b. \*Ontem uma bomba explodiu em Israel que causou 5 mortos.  
 Yesterday a bomb exploded in I. that caused 5 deaths
- (263) a. Chegou um senhor ontem que fez muitas perguntas sobre ti.  
 arrived a man yesterday that made many questions about you  
 'A man arrived yesterday who asked many questions about you.'
- b. \*Um senhor chegou ontem que fez muitas perguntas sobre ti.  
 a man arrived yesterday that made many questions about you

<sup>3</sup> Milsark (1974) distinguishes between weak determiners (e.g. *a, some, many, several, and few*), which can occur in *there*-insertion contexts, and strong determiners (e.g. *the, every, each, most, all*), which cannot appear in these contexts (see examples (i) and (ii)). He further claims that weak determiners are not quantifiers but cardinality words, whereas strong determiners are quantificational.

(i) There is/are a/some/many/three fly/flies in my soup.  
 (ii) \*There is/are the/every/all/most fly/flies in my soup.

In the context of RRC-extraposition, the verbs typically found with post-verbal subjects are unaccusatives, as in (262)–(263): *explodir* ‘to explode’ in (262) is an internally caused unaccusative verb; *chegar* ‘to arrive’ in (263) is an unaccusative verb of inherently directed motion (Duarte 2003). Other unaccusative-related constructions, such as passive sentences, are also compatible with RRC-extraposition, as illustrated in (264). Note again that if the subject is construed pre-verbally, the sentence is ungrammatical (see (264b)):

- (264) a. Foi capturado um indivíduo esta noite que é responsável pelo.  
was captured a man this night that is responsible by.the  
assalto ao banco.  
robbery A.PREP.the bank  
‘A man who is responsible for the bank robbery was captured tonight.’
- b. \*Um indivíduo foi capturado esta noite que é responsável pelo.  
a man was captured this night that is responsible by.the  
assalto ao banco.  
robbery A.PREP.the bank

However, RRC-extraposition from the subject is not limited to the spectrum of constructions related to unaccusativity. The subject of unergative verbs may also occur in this context (see (265a)–(268a)). It is nevertheless worth noting that not all unergatives can smoothly surface with an extraposed RRC without a propitious context.

- (265) a. Telefonou um rapaz ontem que queria informações sobre a tua  
phoned a boy yesterday that wanted details about the your  
casa.  
house  
‘A boy phoned yesterday who wanted details about your house.’
- b. \*Um rapaz telefonou ontem que queria informações sobre a  
a boy phoned yesterday that wanted details about the  
tua casa.  
your house.
- (266) a. Dormiu uma rapariga ontem em minha casa que está a  
slept a girl yesterday at my house that is A.PREP  
tirar o mesmo curso que tu.  
do.INF the same degree that you  
‘A girl who is doing the same degree as you slept at my house yesterday.’
- b. \*Uma rapariga dormiu ontem em minha casa que está a  
a girl slept yesterday at my house that is A.PREP  
tirar o mesmo curso que tu.  
do.INF the same degree that you

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- (267) a. Trabalha um senhor na minha empresa que nunca viu o mar.  
works a man in.the my company that never saw the sea  
'A man works in my company who has never seen the sea.'  
b. \*Um senhor trabalha na minha empresa que nunca viu o mar.  
a man works in.the my company that never saw the sea
- (268) a. Tossiu um bebé na sala de recobro que deve estar a  
coughed a baby in.the room of recovery that must be.INF A.PREP  
precisar de ajuda.  
need.INF of help  
'A baby who must be in need of help coughed in the recovery room.'  
b. \*Um bebé tossiu na sala de recobro que deve estar a  
a baby coughed in.the room of recovery that must be.INF A.PREP  
precisar de ajuda.  
need.INF of help

Extraposition from the subject is also possible when verbs with oblique complements are involved, as in (269)–(270).

- (269) a. Vivem alguns portugueses em Paris que nunca foram à  
live some Portuguese.people in P. that never went to.the  
Torre Eiffel.  
T. E.  
'Some Portuguese people live in Paris who have never been to the Eiffel Tower.'  
b. \*Alguns portugueses vivem em Paris que nunca foram à  
some Portuguese.people live in P. that never went to.the  
Torre Eiffel.  
T. E.
- (270) a. Entrou um homem na sala que deve ser o orador  
entered a man in.the room that might be.INF the speaker  
convidado.  
invited  
'A man who might be the invited speaker entered the room.'  
b. \*Um homem entrou na sala que deve ser o orador.  
a man entered in.the room that might be.INF the speaker  
invited  
convidado.

In contrast, RRC-extraposition from a post-verbal subject does not seem to be allowed with non-monoargumental verbs taking a direct object as complement.

As illustrated in (271)–(272), RRC-extraposition cannot take place if a direct object intervenes between the antecedent and the RRC.<sup>4</sup>

(271) \*Ontem quando entrei no parque de estacionamento,  
 yesterday when entered.1SG in.the parking lot  
 roubavam três rapazes um carro que são amigos do meu filho.  
 stole.3PL three boys a car that are friends of.the my son  
 ‘Yesterday when I entered the parking lot, there were three boys that are my  
 son’s friends stealing a car.’

(272) \*Quando cheguei ao aeroporto, vendiam três rapazes o  
 when arrived.1SG at.the airport sold three boys the  
Borda D’Água que não tinham mais de cinco anos.  
 B. D. that not had more DE.PREP five years  
 ‘When I arrived at the airport, there were three boys that were less than five  
 years old selling the *Borda D’Água* [an almanac].’

#### B. Discourse dedicated positions in the left periphery

In CEP, extraposed RRCs can take a wh-constituent (see (273)–(274)), a preposed emphatic/evaluative phrase (in the sense of Raposo 1995 and Ambar 1999) (see (275)) and a preposed focus<sup>5</sup> (see (276)–(280)) as an antecedent.

<sup>4</sup> In CEP, non-monoargumental verbs only allow for the VSO order in particular syntactic or semantic environments (see Martins forthcoming). Importantly, the VSO order is available in the syntactic environment displayed in (271) and (272), where a root sentence containing the verb in the imperfect is articulated with an adverbial clause that locates the situation described by the VSO sentence in the speaker’s perceptual field (Martins forthcoming). The possibility of the VSO order in this syntactic environment is illustrated in (i) and (ii).

(i) Ontem quando entrei no parque de estacionamento,  
 yesterday when entered.1SG in.the parking lot  
 roubavam três rapazes um carro.  
 stole three boys a car  
 ‘Yesterday when I entered the parking lot, there were three boys stealing a car.’

(ii) Quando cheguei ao aeroporto, vendiam três rapazes o  
 when arrived.1SG at.the airport sold three boys the  
 Borda D’Água.  
 B. D.  
 ‘When I arrived at the airport, there were three boys selling the *Borda D’Água* [an almanac].’

<sup>5</sup> In line with the approach to focus adopted in this book (see §1.3.3.1), the term *preposed focus* (or *fronted focus*) is used here to refer to a constituent that undergoes emphatic/contrastive focus movement to the left periphery of the sentence, as in the following example, repeated from (85).

COM ESTAS PALAVRAS me despeço.  
 with these words me.CL say.goodbye.1SG  
 ‘It is with these words that I say goodbye.’

The fact that the preposed constituent in examples (276)–(280) has an emphatic/contrastive focus status (and not, for instance, a topic status) can be confirmed by some of the syntactic and interpretational tests provided by Costa and Martins (2011): (1) the cleft-like interpretation, which is made visible in the relevant paraphrase (see (278)); (2) the proclisis configuration (see *o* ‘him.CL’ in (278)); and (3) sensitivity to



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Wh-constituent:

- (273) Quantas pessoas apareceram que não foram convidadas?  
how.many people showed.up that not were invited  
'How many people showed up who were not invited?'
- (274) Quantas pessoas é que tu conheces que não viram este jogo?  
how.many people is that you know that not saw this game  
'How many people do you know that did not see this game?'

Emphatic/evaluative phrase:

- (275) Muito whisky o João bebeu que estava fora do prazo!  
a.lot.of whisky the J. drank that was out of.the expiry.date  
'João drank a lot of whisky that was expired!'

Preposed focus:<sup>6</sup>

- (276) Poucas pessoas conheço que fazem interpolação, mas todas elas  
few people know.1SG that make interpolation but all they  
produzem coisas deste tipo.  
produce things of.this type  
'I know few people who produce interpolation [structures], but all of them  
produce things like this.'
- (277) Nem uma única pessoa apareceu que estivesse interessada em  
not a single person showed.up that be.SBJV interested in  
colaborar.  
collaborate.INF  
'Not even a single person showed up that was interested in collaborating.'

referential properties of fronted constituents (see the negative words in (277), (279)). Finally, a preposed focus may contain a focus operator (such as *só* 'only' in (280)), which cannot easily be associated with a topicalized constituent. For a more detailed application of the relevant tests, see §1.3.3.1.

<sup>6</sup> Although the examples in (276)–(280) display RRC-extraposition in main clauses, it is worth noting that RRC-extraposition from a preposed focus is also found in dependent clauses, as in (i) and (ii).

- (i) É certo que novos horizontes se vão abrir que lhe  
is certain that new horizons SE.CL go open.INF that him.CL  
permitirão expandir o negócio...  
allow.FUT expand.INF the business  
'It is certain that new horizons will open up to him that will allow him to expand the business...'
- (ii) Acho que nem uma única pessoa apareceu que estivesse  
think.1SG that not a single person showed.up that be.SBJV  
interessada em colaborar.  
interested in collaborate.INF  
'I think that not even a single girl showed up that was interested in collaborating.'

- (278) Uma estranha doença o atingiu que lhe retirou toda a alegria.  
a strange disease him.CL hit that him.CL took all the joy  
'It was a strange disease (that hit him) that deprived him of all joy.'
- (279) Nada fiz que pusesse em causa a tua decisão.  
Nothing made.1SG that put.SBJV in question the your decision  
'I have done nothing that would call your decision into question.'
- (280) Só um homem havia na terra que sabia tudo.  
only a man had in.the earth that knew everything  
'There was only one man in the earth that knew everything.'

However, RRC-extraposition is incompatible with topicalization;<sup>7</sup> see the contrasts in (281) and (282).<sup>8</sup>

- (281) a. Pessoas que não tinham bilhete, apareceram às centenas!  
people that not had ticket showed.up by hundreds  
'People who did not have a ticket showed up by the hundreds!'  
b. \*Pessoas, apareceram às centenas que não tinham bilhete!  
people showed.up by hundreds that not had ticket
- (282) a. Pessoas que praticam yoga, também conheço.  
people that practice yoga also know.1SG  
'I also know people who practice yoga.'  
b. \*Pessoas, também conheço que praticam yoga.  
people also know.1SG that practice yoga (Ernestina Carrilho, p.c.)

*3.4.1.3 Prepositional phrases* In CEP, it is not possible to extrapose an RRC from the object of a preposition in sentences such as (283)–(287).<sup>9</sup> In these examples, the PP containing the antecedent is either an adjunct (see (283)–(284)), a complement of

<sup>7</sup> As mentioned in §1.3.3.4, the term *topicalization* is used in this book to refer to topic-comment structures where the topic is syntactically connected with an empty category inside the comment (see Duarte 1987 and subsequent work).

<sup>8</sup> Based on the contrast between RRC-extraposition from preposed foci and topics (Cardoso 2010), Costa and Martins (2011) adopt relative clause extraposition as a test for distinguishing topicalization from contrastive focus fronting in CEP (see §1.3.3.1).

<sup>9</sup> An anonymous reviewer remarks that he/she accepts RRC-extraposition from PP complements in CEP. However, for me and the informants I consulted, the configurations of RRC-extraposition in (283)–(287) are ungrammatical. Given these contrasting judgments, it would be important to test experimentally the well-formedness of sentences involving RRC-extraposition from PPs, controlling the eventual ambiguity between the restrictive/appositive reading. This experiment is, however, left for future research.

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the verb (see (285)–(286)), or a complement of the noun (see (287)).<sup>10</sup> As shown in the b examples, the sentences are fine with the normal (non-extraposited) order.

PP adjunct:

- (283) a. \*Vi essa notícia numa revista ontem que estava em cima  
saw.1SG that news in.a magazine yesterday that was in top  
da mesa.  
of.the table  
'Yesterday, I saw that news in a magazine that was lying on the table.'
- b. Ontem vi essa notícia numa revista que estava em cima  
yesterday saw.1SG that news in.a magazine that was in top  
da mesa.  
of.the table
- (284) a. \*O Pedro morreu num atentado ontem que causou mais de 100  
the P. died in.a attack yesterday that caused more than 100  
mortos.  
deaths  
'Yesterday, Pedro died in an attack that caused more than 100 deaths.'
- b. O Pedro morreu ontem num atentado que causou mais de 100  
the P. died yesterday in.a attack that caused more than 100  
mortos.  
deaths

PP complement of V:

- (285) a. \*Falei com um deputado ontem que subscreveu essa  
spoke.1SG with a member yesterday that endorsed that  
proposta.  
proposal  
'Yesterday, I spoke to a member of the Parliament that endorsed that  
proposal.'
- b. Falei ontem com um deputado que subscreveu essa proposta.  
spoke.3SG yesterday with a member that endorsed that proposal

<sup>10</sup> Note that (287) involves extraposition from a PP within a DP.

- (286) a. \*Agradecei a algumas pessoas ontem que foram fundamentais  
 thanked-1SG to some people yesterday that were crucial  
 para a realização deste projeto.  
 to the execution of.this project  
 ‘Yesterday, I thanked some people that were crucial to this project.’
- b. Agradecei ontem a algumas pessoas que foram fundamentais  
 thanked.1SG yesterday to some people that were crucial  
 para a realização deste projeto.  
 to the execution of.this project

PP complement of N:

- (287) a. \*Vi as filhas de um rapaz ontem que joga no Benfica  
 saw.1SG the daughters of a guy yesterday that plays in.the B.  
 ‘Yesterday, I saw the daughters of a guy that plays for Benfica.’
- b. Vi ontem as filhas de um rapaz que joga no Benfica.  
 saw.1SG yesterday the daughters of a guy that plays in.the B.

3.4.1.4 *Summary* In this section, I have shown that RRC-extraposition is subject to specific restrictions in CEP, which are summarized in Table 3.1 (the use of a plus (+) denotes that RRC-extraposition can occur in the relevant context; a minus (–) indicates that it cannot).

### 3.4.2 *Cross-linguistic evidence*

Interestingly, in a brief survey of the behavior of extraposition in different languages, it becomes clear that the restrictions that hold for RRC-extraposition in CEP do not universally apply. Some of the relevant cross-linguistic contrasts are presented in §§3.4.2.1–3.

TABLE 3.1 Extraposition of restrictive relatives: Contemporary European Portuguese

Empirical issue	CEP
A. Extraposition from strong noun phrases	–
B. Extraposition from pre-verbal positions	
subjects	–
wh-constituents	+
emphatic/evaluative phrases	+
preposed foci	+
topics	–
C. Extraposition from PPs	–

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3.4.2.1 *The definiteness effect* Not all languages exhibit the definiteness effect found in CEP. Extraposition from strong noun phrases is not possible in Italian, French, and Spanish, but it is possible, for example, in English,<sup>11</sup> Dutch, and German.

Italian:

- (288) \*Ho regalato quel libro a Carlo che mi avevi  
have.1SG given that book to C. that me.CL had  
consigliato tu.  
recommend you  
'I gave Carlos that book that you recommended me.' (Cardinaletti 1987: 44  
n. 4)

French:

- (289) \*La radio a été volée, que tu m'as donné.  
the radio has been stolen that you to.me-CL.have given  
'The radio that you gave me was stolen.' (Smits 1988: 332)

Spanish:

- (290) \*Escribió la columna en la prensa la semana pasada.  
wrote.3SG the column in the press the week last  
en la que se quejaba amargamente de su situación.  
in the that SE.CL complained.3SG bitterly of his situation  
'Last week he wrote in the press the column in which he complained bitterly  
about his situation.' (Brucart 1999: 465)
- (291) \*De repente, apareció el individuo en la reunión  
suddenly showed.up the man in the meeting  
que parecía sacado de una película de terror.  
that seemed taken from a movie of horror  
'Suddenly the man who seemed to be taken from a horror movie showed  
up.' (Brucart 1999: 465)

English:

- (292) The woman came in yesterday that I told you about. (Givón 2001: 206)
- (293) Those students will pass this course who complete all of their assignments on  
time. (Baltin 2006: 243)

<sup>11</sup> Note, however, that, according to Diesing (1992: 144 n. 23), there is variability in speakers' grammaticality judgments of extraposed RRCs with definite noun phrases as antecedent. See also Ziv and Cole (1974: 781) and Baltin (2006: 243).

- (294) That loaf was stale that you sold me. (Quirk, Greenbaum, Leech, and Svartvik 1985: 1397)
- (295) She rapidly spotted the book right on my desk that I had been desperately searching for all the morning. (Quirk, Greenbaum, Leech, and Svartvik 1985: 1398)

Dutch:

- (296) Ik heb de man gezien die zijn tas verloor.  
I have the man seen who his bag lost  
'I have seen the man who lost his bag.' (De Vries 2002: 65)

German:

- (297) als sie endlich selbst über die Musikt erzählen darf,  
when she finally herself about the music tell may  
die sie macht  
that she makes  
'when she finally is allowed to speak herself about the music that she makes'  
(from Strunk 2007: 51)

### 3.4.2.2 *Pre-verbal positions*

#### A. Pre-verbal subjects

Barbosa, Duarte, and Kato (2005) and Barbosa (2009) report that RRC-extraposition from a pre-verbal subject position is possible in some languages (e.g. English and French). However, it is impossible in Spanish, Catalan, and Italian (as well as CEP) (see (298)–(299)). According to these authors, this cross-linguistic contrast correlates with the Null Subject Parameter (see §3.3).<sup>12</sup>

- (298) a. A man arrived that wants to talk to you. [English]  
b. Un homme est arrivé qui veut te parler. [French] (both Barbosa 2009: 43)
- (299) a. \*Un hombre apareció que dice que quiere hablar contigo. [Spanish]  
b. \*Un home va venir que volia parlar amb tu. [Catalan]  
c. \*Un uomo è arrivato che vuole parlarti. [Italian] (all Barbosa 2009: 43)

Dutch and German pattern with English and French with respect to this property, as illustrated in (300)–(301).

- (300) Iemand heft me een boek gegeven die ik niet ken  
someone has me a book given who I not know  
'Someone gave me a book who I do not know.' (De Vries 2002: 244)

<sup>12</sup> In §3.5.2.2, I show that the correlation between the Null Subject Parameter and the possibility of RRC-extraposition is simply not correct and must be revised.

German:

- (301) weil eine Frau gehustet hat, die mit einem Porsche kam  
since a woman coughed has who with a P. came  
'since a woman coughed who came with a Porsche' (Meinunger 2000: 208)

### B. Discourse dedicated positions in the left periphery

As with CEP, some Germanic languages allow RRC-extraposition from a wh-constituent (see (302) from English and (303) from Dutch), an emphatic/evaluative phrase (see (304) from English and (305) from Dutch), and a preposed focus (see (306) from English and (307) from Dutch).

Wh-constituent:

- (302) a. Who do you know that you can really trust?  
b. Which argument do you know that Sandy thought was unconvincing?  
(Kiss 2003: 110)
- (303) Hoeveel kinderen ken jij die niet van snoepjes houden?  
how.many children know you that not of sweets like  
'How many children do you know that do not like sweets?' (Smits 1988: 195)

Emphatic/evaluative phrase:

- (304) People lose their eyesight when they don't take support of the STD's and much more things can happen that are far worse than losing your eyesight.  
(from a blog on infectious diseases)
- (305) Heel veel mensen hebben een verre reis geboekt die daar eigenlijk  
very many people have a far trip booked who there actually  
niet het geld voor hebben.  
not the money for have  
'A lot of people booked a long journey who in fact didn't have enough money for it.' (Mark de Vries, p.c.)

Preposed focus:<sup>13</sup>

- (306) %Not even one painting did I see which would please Laura. (Smits 1988: 195)
- (307) Alleen die bloemen kon hij benoemen, die zijn moeder hem  
only those flowers could he identify that his mother him  
vroeger had aangewezen.  
formerly had pointed.out  
'Only those flowers could he identify, that his mother had once pointed out to him.' (Smits 1988: 380)

<sup>13</sup> Smits (1988) uses the symbol '%' to indicate that it is a highly formal and marked construction.

Beatrice Santorini (p.c.) reports to me that RRC-extraposition from emphatic/evaluative phrases and preposed foci is also attested in the diachrony of English. By way of illustration, see (308)–(310).

Emphatic/evaluative phrase:

(308) Many more such worthie iniunctions and honourable ordinances I obserued, which are hardly worth pen and inke the describing (17th c., *PPCEME*)

Preposed focus:

(309) Two or three things I recollected when it was too late, that I might have told you (19th c., *PPCMBE*)

(310) One thing I had almost forgot which the mention of the girls brought into my minde (17th c., *PPCEME*)

However, just like CEP, English does not allow RRC-extraposition from topics (see (311c)).

- (311) a. I like micro brews that are located around the Bay Area.  
b. Micro brews that are located around the Bay Area, I like.  
c. \*Micro brews, I like that are located around the Bay Area. (Kiss 2003: 110)

The same seems to be true of Dutch, as illustrated in example (312) (involving hanging topic left dislocation).<sup>14</sup>

(312) \*Die meisjes, ik ken ze niet die uit Lissabon komen.  
Those girls I know them not that from L. come  
lit. 'Those girls, I don't know them, that are from Lisbon.' (Mark de Vries, p.c.)

3.4.2.3 *Prepositional phrases* The restriction on RRC-extraposition from PPs does not equally apply to all languages. It is reported in the literature that extraposed RRCs can take the object of a preposition as the antecedent, for example, in English, Dutch, and German.

English:

(313) John is going to talk [to someone] tomorrow who he had a lot of faith in. (Kayne 1994: 126)

<sup>14</sup> There is a possible terminological confusion here. Recall that there is a difference between the traditional notion of topicalization and the topic position in a cartographic sense (see §1.3.3.4). Earlier claims (Smits 1988; De Vries 2002; among others) that RRC-extraposition can take place from a topic position (say, [Spec, CP]) must not be understood as extraposition from an aboutness topic. Rather, it concerns the extraposition from a constituent in first position. As shown in the main text, such constituents are always affected by focus in some way or another (e.g. *wh* and contrastive foci). Therefore, it may be better to speak of focalization rather than topicalization in these cases.



Dutch:

- (314) Ik heb [op een plek] gelopen waar jij ook bent geweest.  
I have on a spot walked where you also have been  
'I have walked on a spot where you also have been.' (De Vries 2002: 244)

German:

- (315) weil er auf eine Frau gewartet hat, die einen Porsche fährt  
since he for a woman waited has who a P. drives  
'since he has been waiting for a woman who drives a Porsche' (Meinunger  
2000: 208)

De Vries (2002: 246) also reports that RRC-extraposition in Dutch may take place from a PP within a DP.

Dutch:

- (316) Ik heb [de papieren van *de man*] gecontroleerd die een rode jas droeg  
I have the papers of the man checked who a red coat wore  
'I have checked the papers of the man who wore a red coat.'

*3.4.2.4 Summary* Although this overview has several limitations in terms of cross-linguistic coverage (because it primarily draws on data reported in the literature), it offers important empirical evidence showing that languages do not behave uniformly with respect to RRC-extraposition.

One important conclusion that emerges from the data reported in §§3.4.1 and 3.4.2 is that CEP contrasts sharply with some Germanic languages (e.g. English and Dutch) as far as the properties of RRC-extraposition are concerned. An overview of the contrasting properties is provided in Table 3.2 (the use of a plus indicates that RRC-extraposition can occur in the relevant context; a minus indicates that it cannot).

Another interesting conclusion is that Romance languages do not behave in a uniform manner. On the basis of the limited data that I collected from the literature, it is possible to identify the contrasts displayed in Table 3.3.

Strikingly, French exhibits a peculiar behavior. It contrasts with other Romance languages in allowing extraposition from a pre-verbal position (see Table 3.3), but it also contrasts with Germanic languages in not allowing extraposition from strong noun phrases. This seems to be a rather puzzling set of restrictions, but from this, it emerges (at least for now) that not all Romance languages behave equally and that there may be other factors that additionally contribute to the contrasts presented in Table 3.3.

TABLE 3.2 Extraposition of restrictive relatives: Cross-linguistic contrasts

Empirical issue	CEP	English	Dutch
A. Extraposition from strong noun phrases	–	+	+
B. Extraposition from pre-verbal positions	subjects	–	+
	wh-constituents	+	+
	emphatic/evaluative phrases	+	+
	preposed foci	+	+
	topics	–	–
C. Extraposition from PPs	–	+	+

TABLE 3.3 Extraposition of restrictive relatives: Romance languages

Empirical issue	CEP	Italian	Spanish	French
A. Extraposition from strong noun phrases	–	–	–	–
B. Extraposition from pre-verbal subjects	–	–	–	+

### 3.4.3 Earlier stages of Portuguese

In this section, I show that CEP and earlier stages of Portuguese behave differently with respect to RRC-extraposition. The historical data from Portuguese that support this view are presented in §3.4.3.1–3.

3.4.3.1 *The definiteness effect* Earlier stages of Portuguese pattern with CEP in allowing extraposition from weak noun phrases, as illustrated in (317)–(318).

Subject:

- (317) Junto das casas [...] sta hũa llata ante a porta que  
 near to.the houses is a ±grapevine before the door that  
 dara.FUT hūs anos pollos outros çinquo allmudes de vinho.  
 give some years by.the others five a. of wine  
 ‘Near the houses there is a grapevine before the door that on average will  
 give five *allmudes* [medieval agrarian measure] of wine.’ (16th c., Martins  
 2001: 309)

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Object:

- (318) e mado. huno casale ad Monasterium in quo morat  
and leave.1SG a hamlet to monastery in which lives  
Michael de souto  
M. d. S.  
'and I leave a hamlet to the monastery in which Michael de Souto lives' (13th  
c., Martins 2001: 105)

However, unlike CEP, earlier periods of Portuguese allow for extraposed RRCs with strong noun phrases as antecedents, as illustrated in (319)–(322).<sup>15</sup>

Subject:

- (319) As chagas erã muytas de que se uertia muyta sangue  
the sores were many from that SE.CL shed a.lot.of blood  
'There were many sores from which a lot of blood was being shed.' (14th c.,  
Brocardo 2006: 45)
- (320) mas aquella dia sem falha aveo que foram i todos  
but that day without fail came that went there all  
'but the day in which everyone went there came without fail' (13th c.  
[transmitted by a 15th-c. MS], Martins, Pereira, and Cardoso 2014–15)
- (321) de tal homẽ como aquel será que esta spada ha de trazer  
of such man as that be.FUT that this sword has DE.PREP carry.INF  
'of such a man as the one who will carry this sword will be' (13th c.  
[transmitted by a 15th-c. MS], Martins, Pereira, and Cardoso 2014–15)

Object:

- (322) «Vede lo escudo aqui que demandades.»  
see.2PL the shield here that look.for.2PL  
'See here the shield that you are looking for.' (13th c. [transmitted by a 15th-c.  
MS], Martins, Pereira, and Cardoso 2014–15)

### 3.4.3.2 *Pre-verbal positions*

#### A. Pre-verbal subjects

Earlier stages of Portuguese and CEP behave alike in allowing RRC-extraposition from post-verbal subjects (see e.g. (317)). However, in contrast to CEP, earlier

<sup>15</sup> Brucart (1999) reports that extraposition from strong noun phrases is also possible in earlier stages of Spanish:

Aquel decimos ser mejor médico, que mejor cura y más enfermos sana.  
that say.1PL be.INF better doctor that better heals and more patients cures  
'We say that the better doctor is the one who heals (the diseases) better and cures more patients.' (16th c.,  
from Brucart 1999: 466)

stages of Portuguese allowed for extraposed RRCs with pre-verbal subjects as antecedents, as illustrated in (323)–(328) (examples (323)–(325) are repeated for ease of exposition).

(323) se Algê A eles veer que diga que llj eu  
if someone to them come.FUT.SBJV that says.SBJV that him.CL I  
Alguna cousa diuía  
some thing owed  
if someone who says that I owed him something comes towards them' (13th c., *DCMP*)

(324) E mando que se outra mãda pareçer que eu mãdasse  
and order.1SG that if another will appear.SBJV that I order.SBJV  
fazer ante dessta que quebre e nõ ualha.  
make.INF before this that break.SBJV and not be.valid.SBJV  
'And, if another will appear that I have ordered to be made before this one,  
I order it to be annulled and not valid.' (14th c., Martins 2001: 464)

(325) que cayam. e cayades na pea que filhos e  
that fall.SBJV.3PL and fall.SBJV.2PL in.the punishment that children and  
netos deuẽ a caer. que contra béenço de padre  
grandchildren should A.PREP fall.INF that against blessing of father  
uérem  
come.FUT.SBJV  
'[and I order] that they and you receive the punishment that the children and  
grandchildren who go against their father's blessing should receive.' (13th c.,  
*DCMP*)

(326) se alguu for asy de mia parte como d' estraya que a  
if someone be.SBJV either of my side as of strange that to  
uos queyra cõtrastar seya maldito  
you.CL want.SBJV go.against.INF be.SBJV damn  
'if there is someone either from my side or from a strange side that wants to  
go against you, (I want him) damned' (13th c., Maia 1986: 73–4)

(327) Como Galuam se salvou e como a donzella disse que algũus  
how G. SE.CL escaped and how the damsel said that some  
a crieriam que a nom creiam.  
her.CL believed that her.CL not believed  
'How Galuam escaped and how the damsel said that some (people) believed  
her that (actually) did not believe her.' (13th c. [transmitted by a 15th-c. MS],  
Martins, Pereira, and Cardoso 2014–15)

- (328) ca de muitos que ja i seerom nunca i tal foi  
because of many that already there were never there such was  
que i nom fosse morto  
that there not be.SBJV killed  
'because among the many people who have been there, there was no one who  
has not been killed' (13th c. [transmitted by a 15th-c. MS], Martins, Pereira,  
and Cardoso 2014–15)

### B. Discourse dedicated positions in the left periphery

Earlier stages of Portuguese pattern with CEP in allowing extraposition from a wh-constituent (see (329)–(330)), a preposed emphatic/evaluative phrase (see (331)), and a preposed focus (see (332)–(335)).

Wh-constituent:

- (329) Que caso pod'esse ser / em que tanto sopesais?  
what case can.that be.INF in that so.much think.2PL  
'What case can that be that you think so much about?' (16th c., Camões 1999)
- (330) Já sei que [...] me perguntará qual Mestre conheço eu  
already know.1SG that me.CL ask.FUT which master know I  
que tenha toda esta erudição.  
that have.SBJV all this erudition  
'I already know that you will ask me which master I know that has all this  
erudition.' (18th c., TYC)

Emphatic/evaluative phrase:

- (331) Muitos letrados sei eu (disse Solino) que não são moços  
many lettered know I said S. that not are young  
'I know many lettered men (said Solino) who are not young.' (17th c., TYC)

Preposed focus:

- (332) El-rey<sub>i</sub> jurou [...] que ja coisa lhe<sub>i</sub> nom pederia  
the.king swore that from.that.on thing him.CL not ask.COND.3SG  
que ele<sub>i</sub> podesse haver que lha nom desse  
that he can.SBJV have.INF that him.CL.it-CL not give.SBJV  
'The king swore that he would give anything in his power that he [Hipocras]  
asked for' (13th c. [transmitted by a 16th-c. MS], Martins, Pereira, and  
Cardoso 2013–15)

- (333) *nêhûua arte nem multidoem de covas lhe prestar podia  
no art nor lot of lairs him.CL be.useful.INF could  
que logo nom fossem tomadas.  
that immediately not be.SBJV taken  
'there was no art or lairs useful to him that were not immediately taken' (15th  
c., Macchi 1975: 5)*
- (334) *nada nos acontece que não tenha já acontecido.  
nothing us.CL happen that not have.SBJV already happened  
'nothing happens to us that has not already happened' (17th c., TYC)*
- (335) *Todos falam da economia, e pouca gente tenho visto que  
all speak of.the economy and few people have.1SG seen that  
tenha uma idéia distinta desta ciência  
have.SBJV a idea clear of.this science  
'Everyone talks about the economy, but I have seen few people who have a  
clear idea about this science.' (18th c., TYC)*

By contrast, if a topic is involved, RRC-extraposition does not seem to be possible in earlier stages of Portuguese, at least in the corpus inspected thus far.<sup>16</sup>

### C. Scrambled objects

Aside from the contexts demonstrated thus far, there is another important source of RRC-extraposition in the history of Portuguese that is not available in CEP: IP-scrambling.<sup>17</sup>

IP-scrambling is an optional syntactic process whereby a constituent scrambles past the verb. This is illustrated in the contrast provided in (336). In (336a), the OV order involves a scrambled object (marked in boldface), whereas in (336b), the VO order involves a non-scrambled object surfacing in its base position.

- (336) a. *sse pela uêtuja uos alguê a dita vÿa enbargar  
if by.the chance you.CL someone the mentioned vineyard block.FUT.SBJV  
'and if by chance someone blocks the vineyard from you'*

<sup>16</sup> I found only one example that could be taken as involving RRC-extraposition from topic:

*Esta barca onde vai agora / que assim está apercebida?  
this boat where goes now QUE this.way is equipped (16th c., Camões 1999)*

Note, however, that this example may instead involve a coordinate clause, introduced by the coordinating conjunction *que*, meaning 'since, as'; in this case it would correspond to the paraphrase: 'Where does this boat go, as it is so well equipped?' In this respect, it is also worth pointing out that Martins (2002) suggests that topicalization (as opposed to focalization) may not be a grammatical option in earlier stages of Portuguese.

<sup>17</sup> Following common practice, I distinguish two types of scrambling in this study: *short scrambling* (i.e. scrambling to VP) and *middle scrambling* (i.e. scrambling to IP). There is another type of scrambling (*long distance scrambling*, involving movement across a CP boundary), which is not addressed here (see Takano 1998 and references therein).

- b. sse pela uêtujra uos alguẽ enbargar a dita vỹa  
if by.the chance you.CL someone block.FUT.SBJV the mentioned vineyard  
(13th c., from Martins 2002: 234)

According to Martins (2002), IP-scrambling consists of the movement of various types of constituents to multiple specifier positions available in the IP domain. This movement has a prosodic/discourse motivation; it allows the scrambled constituent to escape the default focus stress (and the information focus interpretation). Martins (2002) claims that the prosodic/discourse approach to scrambling explains why it imposes no restrictions on the categorial status of the scrambled constituent. By way of illustration, consider examples (337)–(339), where the scrambled constituent is (respectively) a PP, an adjectival phrase, and a past participle. The scrambled element is highlighted in bold for ease of reading.

- (337) de quẽ lhe **ssobre elle** embargo poser  
from whoever him.CL over it obstruction put.FUT.SBJV  
‘[protecting him] from whoever tries to block it [the land] from him’ (16th c.,  
from Martins 2002: 244)
- (338) todollos adubyos que lhes **conpridoiros e neçsareos** forem  
all.the fertilizers that them.CL due and necessary be.SBJV  
‘all sorts of fertilizers that the land may need’ (15th c., from Martins 2002: 245)
- (339) com os lauradores que as **ssemeadas** teuerẽ  
with the farmers that them.CL cultivated have-FUT.BJV.3PL  
‘with the farmers who have the lands cultivated’ (15th c., from Martins  
2002: 245)

Crucially, IP-scrambling in earlier stages of Portuguese can generate RRC-extrapolation, as illustrated in (340)–(341).

- (340) que llj eu **Alguna coisa** diuía que nõ seia escripto  
that him.CL I some thing owed that not be.SBJV written  
en Esta mãda  
in this will  
‘(And if there arrives someone who says) that I owed him something which is  
not written in this will...’ (13th c., *DCMP*)
- (341) E pera **todallas cousas e cada hũa delas** ffaser que  
and to all.the things and each one of.them make.INF that  
uerdadeyro e lĩjdemo procurador pode e deue ffer  
real and legitimate proxy can and should make.INF  
‘And to make all the things and each one of them that a real and legitimate  
proxy can and should make...’ (14th c., Martins 2001: 406)

The scrambling of *Alguna coisa* lit. ‘something’ in (340) is confirmed by the relative position of this constituent with respect to the verb and the clitic. According to

Martins (2002), clitics in clauses with interpolation set the border between left-dislocated/focused constituents and scrambled constituents. Hence, in (340), because *Alguma cousa* ‘something’ is interpolated (i.e. occurs between the proclitic and the verb), it is necessarily a scrambled constituent.

3.4.3.3 *Prepositional phrases* Unlike CEP, earlier stages of Portuguese allow for RRC-extraposition from the object of a preposition, as illustrated in (342)–(347) (examples (345)–(346) are repeated from (250)–(251), respectively).

(342) e logo lhj abriu [de todo] mão que sseu era  
and immediately him.CL opened of everything hand that his was  
‘and immediately he gave him (= lit. opened hand of) everything that he had’  
(14th c., from Martins 2001: 198)

(343) E filha [de hũa camara] per força hu jazia com grande  
and took.her.CL from a room by force where was with large  
companha de donas e de donzellas.  
group of ladies and of damsels  
‘And he took her by force from a room where she was with a large group of  
ladies and damsels.’ (13th c. [transmitted by a 15th-c. MS], Martins, Pereira,  
and Cardoso 2014–15)

(344) e deitouisse [sob hũu carualho] por folgar que staua  
and lay.down.3SG-SE.CL under a oak to rest.INF that was  
ante a porta da ermida.  
in.front.of the door of.the chapel  
‘and he lay down under an oak that was in front of the chapel door’ (13th c.  
[transmitted by a 15th-c. MS], Martins, Pereira, and Cardoso 2014–15)

(345) que [en aquela hora] morrera en que el vira estando longe  
that in that hour die.PPRF.3SG in that he see.PPRF be.GER away  
dele que lhi saira a alma do corpo  
from.him that him.CL fall.out.PPRF.3SG the soul of.the body  
‘[and he realized that] he had died in the hour in which he had seen (being  
away from him) that his soul had fallen out of his body’ (14th c., from  
Mattos e Silva 1989: 766)

(346) [naquela hora] o seu filho ficara sen féver en que hi  
in.that hour the his son stayed without fever in that there  
o nosso Salvador e nosso meestre Jesu Cristo dissera que  
the our Savior and our master J. C. said that  
era são.  
was.3SG healed  
‘his son had stopped having fever in that hour that our Savior and Master Jesus  
Christ had said that he was healed’ (14th c., from Mattos e Silva 1989: 766)



- (347) que [de mui poucos] sabemos que bebesses vinho.  
 that of very few know.1PL that drink.SBJV.3PL wine  
 ‘[the sobriety and moderation of our kings is so praised] that we know of very few who drink wine’ (17th c., TYC)

3.4.3.4 *Summary* In this section, I have shown that earlier stages of Portuguese are less restrictive than CEP with respect to RRC-extrapolation. Table 3.4 summarizes the relevant contrasting properties.

On the basis of a cross-linguistic comparison, another relevant conclusion that can be drawn from this study is that earlier stages of Portuguese are (to a large extent) Germanic-like, unlike CEP, as shown in Table 3.5.

**TABLE 3.4 Extrapolation of restrictive relatives: Different stages of Portuguese**

Empirical issue	CEP	Earlier stages of Portuguese
A. Extrapolation from strong noun phrases	–	+
B. Extrapolation from pre-verbal positions	subjects	–
	wh-constituents	+
	emphatic/evaluative phrases	+
	preposed foci	+
	topics	–
C. Extrapolation from PPs	–	+

**TABLE 3.5 Extrapolation of restrictive relatives: Cross-linguistic overview**

Empirical issue	CEP	Earlier stages of Portuguese	English	Dutch
A. Extrapolation from strong noun phrases	–	+	+	+
B. Extrapolation from pre-verbal positions	subjects	–	+	+
	wh-constituents	+	+	+
	emphatic/evaluative phrases	+	+	+
	preposed foci	+	+	+
	topics	–	–	–
C. Extrapolation from PPs	–	+	+	+

The contrasts outlined in Table 3.5 are not accidental and clearly call for an explanation. In Section 3.4.2.2A, the hypothesis is raised that some of these contrasts may correlate with the Null Subject Parameter. However, such a hypothesis must be discarded in the face of the data discussed in §3.4.3. The reasoning goes as follows: Portuguese has always been a Null Subject Language over the course of its history; hence, the fact that earlier periods of Portuguese (unlike CEP) allowed for extraposition out of pre-verbal subjects shows that the contrasting properties cannot be explained via the Null Subject Parameter. I return to this issue in §3.5.2.2.

Alternatively, in §§3.5–6 I suggest that the cross-linguistic contrasts outlined in Table 3.5 can be straightforwardly explained by a dual approach to RRC-extraposition. In particular, I contend that the diachronic (and cross-linguistic) data considered thus far provide strong empirical evidence in favor of the hypothesis that different stages of the same language (and languages in general) may resort to different strategies of RRC-extraposition.

### 3.5 A proposal for Contemporary European Portuguese

In this section, I propose that the properties of RRC-extraposition in CEP can be accounted for in terms of the stranding analysis proposed by Kayne (1994). Section 3.5.1 establishes the basic tenets of the stranding analysis of extraposition. It also introduces the key to the present proposal: RRC-extraposition in CEP always involves leftward movement of the antecedent, either via movement to the left periphery (see §3.5.1.1) or via short scrambling (see §3.5.1.2). A closer inspection of the constituents that appear in the intervening position is provided in §3.5.1.3. Section 3.5.2 demonstrates how this theoretical apparatus accounts for the contrasting properties of RRC-extraposition outlined in §3.4.1. In §3.5.3, I examine nine arguments that have been adduced in the literature against the stranding analysis, showing that they do not offer any insurmountable obstacle to the approach proposed here. Finally, §3.5.4 presents concluding remarks.

#### 3.5.1 *The stranding analysis*

Following Kayne (1994) and Bianchi (1999), I assume that RRCs are generated by the *raising analysis*, as depicted in (348) (for more details on the raising analysis see §1.3.2.4B).

- (348) a.  $[_{DP} [_D \text{the}] [_{CP} \text{book}_i [_{C'} \text{that} [I \text{read } t_i ]]]]$  (*that-relatives*)  
 b.  $[_{DP} [_D \text{the}] [_{CP} \text{book}_i [\text{which } t_i]_j [_{C'} C [I \text{read } t_j]]]]$  (*wh-relatives*) (Kayne 1994)

Moreover, I adopt Kayne's (1994) view that RRC-extraposition is the result of VP-internal stranding. Under this approach, the antecedent is base-generated inside the

RRC and undergoes leftward movement, stranding the RRC in situ, as schematically represented in (349).

- (349) Chegou [um rapaz]<sub>i</sub> ontem [t<sub>i</sub> que eu gostaria de conhecer t<sub>i</sub>].  
arrived a boy yesterday that I like.COND DE.PREP meet.INF  
'A boy arrived yesterday that I would like to meet.'

The key assumption of this proposal is the following: extraposed RRCs in CEP always involve the A'-movement of the antecedent, either via movement to the left periphery (when the antecedent is in a pre-verbal position) or via short scrambling<sup>18</sup> (when the antecedent is in a post-verbal position).

I examine these two possibilities in greater detail in §§3.5.1.1 and 3.5.1.2 respectively. As the reader will notice, the first section requires more detail (and space) than the latter. This is because the idea that the antecedent of an extraposed RRC undergoes movement to the left periphery is quite uncontroversial. By contrast, the claim that it undergoes short scrambling deserves a closer inspection and requires more complex explanatory devices. The question concerning the constituency of the dislocated constituent is reserved until §3.5.2.1.

*3.5.1.1 Extraposition derived by movement to the left periphery* In §3.3.2.2B, I demonstrated that extraposed RRCs can take a wh-constituent, a preposed emphatic/evaluative phrase and a preposed focus as an antecedent. I repeat an example of each case here to illustrate the pattern.

Wh-constituent:

- (350) Quantas pessoas apareceram que não foram convidadas?  
how.many people showed.up that not were invited  
'How many people showed up who were not invited?'

Emphatic/evaluative phrase:

- (351) Muito whisky o João bebeu que estava fora do prazo!  
a.lot.of whisky the J. drank that was out of.the expiry.date  
'João drank a lot of whisky that was expired!'

Preposed focus:

- (352) Poucas pessoas conheço que fazem interpolação, mas todas elas  
few people know.1SG that make interpolation but all they  
produzem coisas deste tipo.  
produce things of.this type  
'I know few people who produce interpolation [structures], but all of them produce things like this.'

<sup>18</sup> In this book, the term *short scrambling* refers to the scrambling to VP. See n. 17 for additional details.

In the literature on CEP, *wh*-constituents, emphatic/evaluative phrases and preposed foci have been argued to undergo leftward movement.

*Wh*-constituents are argued to move to the left periphery of the sentence, for instance, in Ambar (1992); Ambar, Obenauer, Pereira, Tapazdi, and Veloso (1998); Ambar and Veloso (2001). Assuming a split CP system, Ambar and Veloso (2001) propose that there is a projection in the left periphery of the sentence, which has strong N and V features. The raising of the *wh*-constituent is triggered by the need to check the N features, whereas the raising of the verb is triggered by the need to check the V features. Under this approach, a sentence like (350) (excluding the extraposed RRC) would be as in (353).

- (353) (TOP) [<sub>WhP</sub> quantas pessoas<sub>i</sub> [<sub>Wh'</sub> apareceram<sub>j</sub> [<sub>FP</sub> [F't<sub>v</sub> [<sub>IP</sub> t<sub>i</sub> t<sub>j</sub>]]]]]  
 how.many people showed.up

Emphatic/evaluative phrases are also taken to undergo leftward movement (Ambar 1999; Raposo 1995; among others). In the syntactic representation of the sentence, Ambar (1999) proposes that there is a projection called *EvaluativeP* sitting above IP but below CP, where Evaluative-like elements are licensed (see (354)).

- (354) [<sub>CP</sub> ... [<sub>EvaluativeP</sub> ... [<sub>TopicFocusP</sub> ... [<sub>IP</sub> ... ]]]]

Under this approach, the features of *EvaluativeP* must be checked against evaluative features of lexical items. This explains why emphatic/evaluative phrases like *muito whisky* 'a lot of whisky' in (351) raise to [<sub>Spec</sub>, *EvaluativeP*].

Finally, Martins (forthcoming) argues, in line with Hernanz and Brucart (1987), Rizzi (1997), Cinque (1999), and related cartographic work, that preposed foci derive from movement. Under this analysis, *poucas pessoas* 'few people' in (352) is base-generated in a VP-internal position (as the complement of V) and undergoes movement to the left periphery. It is worth noting that the exact landing site of the preposed constituents is not crucial here. The stranding approach to RRC-extraposition is equally compatible with the existence of a functional projection in the CP domain dedicated to preposed foci or with analyses advocating a non-split CP domain.

For current purposes, what is crucial is that *wh*-constituents, emphatic/evaluative phrases and preposed foci are base-generated not in the left periphery but instead in a VP-internal position. In other words, the relevant conclusion is that these constituents undergo leftward movement.

Turning now to the contexts of RRC-extraposition, I submit that the RRC and its antecedent (in this case, a *wh*-constituent, an emphatic/evaluative phrase or a preposed focus) are base-generated within the RRC along the lines of the raising analysis. Then, these constituents undergo leftward movement, stranding the RRC in situ, as sketched in (355).

- (355) a. ...wh-constituents<sub>i</sub> [t<sub>i</sub> RRC]  
b. ...emphatic/evaluative phrases<sub>i</sub>... [t<sub>i</sub> RRC]  
c. ...preposed foci<sub>i</sub>... [t<sub>i</sub> RRC]

I provide further details of the analysis in §3.5.2.2. For now, I will show how RRC-extraposition from post-verbal positions can be accounted for under the stranding approach to extraposition.

*3.5.1.2 Extraposition derived from short scrambling* This section aims to demonstrate that RRC-extraposition from post-verbal positions can be accounted for in terms of short scrambling. I begin by arguing that subjects in [Spec, VP], just like objects and subjects of unaccusative verbs, can scramble in CEP. I provide three arguments in favor of this hypothesis: (1) adverb positioning; (2) semantic effects; and (3) the trigger for scrambling (see §3.5.1.2A). Then, on the basis of the first two arguments, I show that RRC-extraposition also involves short scrambling (§3.5.1.2B). The trigger for scrambling in sentences involving RRC-extraposition is discussed in §3.5.1.2B(c). Finally, §3.5.1.3 demonstrates how to derive the occurrence of different constituents in the intervening position.

#### A. Excursus on subject and object scrambling

J. Costa (1998, 2004a) reports that CEP has a scrambling rule that allows objects to move from their base position and adjoin to the VP. He also claims that the position of the scrambled object is indicated by its position relative to monosyllabic adverbs, such as *bem* 'well', which mark the left edge of the VP. The idea is that objects to the right of monosyllabic adverbs are in their base position, whereas objects to the left of these adverbs are scrambled, as sketched in (356).<sup>19</sup>

- (356) a. [<sub>IP</sub> V [<sub>VP</sub> Adv [<sub>VP</sub> t<sub>V</sub> O ]]] [non-scrambled object]  
b. [<sub>IP</sub> V [<sub>VP</sub> O [<sub>VP</sub> Adv [<sub>VP</sub> t<sub>V</sub> t<sub>O</sub>]]]] [scrambled object]

This is illustrated in (357), from J. Costa (2004a: 40). In (357a), the adverb-object order indicates that the object is not scrambled, whereas in (357b), the object-adverb order indicates that the object is scrambled.

<sup>19</sup> In the present analysis, I assume (in line with J. Costa 1996, 1998, 2004a) that verbs move out of VP in CEP. Costa rejects Pollock's (1989, 1994) analysis for French, according to which verbs may either stay inside VP or move up to Agr, depending on the occurrence of morphologically ambiguous forms (between a nominal and verbal interpretation). Such ambiguity simply does not arise with verbal forms, such as *falou* 'spoke' in (358), which is unambiguously a verbal form in the third person singular.

- (357) a. O Paulo fala **bem** francês. [non-scrambled object]  
 the P. speaks well French  
 ‘Paulo speaks French well.’  
 b. O Paulo fala francês **bem**. [scrambled object]  
 the P. speaks French well

Costa also shows that objects are not the only constituents that may undergo scrambling. Indeed, subjects of unaccusatives can also scramble, as illustrated in (358), from J. Costa (2004a: 64). Here the adverb *depressa* ‘fast’ marks the left edge of the VP.

- (358) a. Chegou **depressa** o Paulo. [non-scrambled subject]  
 arrived fast the P.  
 ‘Paulo arrived fast.’  
 b. Chegou o Paulo **depressa** [scrambled subject]  
 arrived the P. fast

My claim is that the possibility of scrambling can be extended to subjects in [Spec, VP]. To my knowledge, this issue has not been previously addressed in the literature on CEP, but similar proposals have been discussed for other languages (e.g. Dutch/German and English).<sup>20</sup> Hence, before proceeding with the analysis, I examine three arguments that support this view.

(a) **Distribution of adverbs**

A base-generated subject in [Spec, VP] may surface in a post-verbal position, to the left of the monosyllabic adverb *bem* ‘well’, as illustrated in (359). Considering that (1) the monosyllabic adverb *bem* ‘well’ marks the left-edge of VP and (2) the post-verbal subject is VP-internal (J. Costa 1998, 2004a), then it follows that the subjects of unergative verbs can also scramble.

- (359) A: a. Ninguém jogou nada.  
 nobody played nothing  
 ‘No one played anything.’  
 B: b. Jogou o Sporting **bem** até aos últimos dez minutos.  
 played the S. well until the last ten minutes  
 ‘Sporting played well until the last ten minutes. (Then Benfica reacted and scored two goals.)’

(b) **Semantic effects**

When indefinite noun phrases are involved, the scrambled and non-scrambled orders can be semantically distinguished. More precisely, unscrambled indefinite

<sup>20</sup> Concretely, I refer to Broekhuis (2007) and Takano (1998). Broekhuis (2007) proposes that scrambling of objects and NP-movement of the subject in Dutch/German essentially involve the same operation, which he terms *subject/object shift*. Takano (1998) claims that English displays the short scrambling of accusative and nominative phrases.

objects may have a cardinal reading, whereas scrambled objects necessarily have a presuppositional reading (in the sense of Diesing 1992). Consider, for instance, the contrast in (360). The unscrambled object in (360a) preferably has a cardinal, non-presuppositional reading. Under this interpretation, João can actually speak only one language. This contrasts with the scrambled order in (360b). Here, the indefinite object can only have a presuppositional reading, being paraphrased as a partitive ('one of the languages').

- (360) a. O João **fala** bem uma língua.  
the J. speaks well one language  
'João speaks one language well.'
- b. O João fala uma língua **bem**.  
the J. speaks one language well  
'João speaks one language well (the other languages he speaks very badly).'

Turning now to the subject of unaccusative and unergative verbs, examples (361)–(362) show that the subject may either precede or follow the adverb *bem* 'well'. However, just as in the case of object scrambling, different semantic effects arise. In (361a) the unscrambled subject preferably has a cardinal reading. Under this interpretation, only two more palm trees grew. This contrasts with the scrambled order in (361b), which necessarily involves a presuppositional reading. Under this interpretation, more than two palm trees were growing. The same reasoning applies to (362). Note that this is a welcome result; if scrambling is involved in (360b)–(362), the same semantic effects are expected to arise.<sup>21</sup>

Unaccusative verb:

- (361) a. Cresceram **bem** mais duas palmeiras.  
grew well more two palm.trees  
'Two more palm trees grew well.'
- b. Cresceram mais duas palmeiras **bem**.  
grew more two palm.trees well  
'Two more palm trees grew well (the others didn't grow well).'

Unergative verb:

- (362) a. Correram **bem** oito atletas.  
ran well eight athletes  
'Eight athletes ran well.'
- b. Correram oito atletas **bem**.  
ran eight athletes well  
'Eight athletes ran well (the other athletes did not run that well).'

<sup>21</sup> For similar semantic effects in object/subject shifts in German/Dutch, see Broekhuis (2007).

(c) Discourse and prosody

It has been proposed in the literature that scrambling is movement to [Spec, AgrOP] driven by the requirement of accusative feature-checking (De Hoop 1992; among others). Under this assumption, subject scrambling would be unexpected because the noun phrase in [Spec, VP] does not have an accusative feature to be checked by the complex V-AgrO. Fortunately, this problem does not arise; J. Costa (1998, 2004a) shows that scrambling in CEP is not a case-driven movement.<sup>22</sup> One of the arguments he provides in favor of this idea is precisely the possibility of subject scrambling (involving the subject of unaccusatives, as in (358)).

Alternatively, J. Costa (1998, 2004a) argues in favor of a prosodically/discourse-driven approach to scrambling, according to which scrambling is used to create appropriate (information) focus configurations. The basic idea is that the assignment of narrow information focus drives the constituent expressing new information to the rightmost position of the sentence, where it receives the sentence nuclear stress.<sup>23</sup> Scrambling is then used to create appropriate focus configurations by allowing some constituents to escape the position where sentence nuclear stress is assigned (see Reinhart 1995).

This approach accounts for the word order contrasts observed in (363)–(364). In (363) the adverb *bem* ‘well’ is expected to occur in the rightmost position because it is the new information requested in the question. Hence, the scrambled order in (363b) is derived: the object undergoes scrambling, being defocused, and the adverb *bem* ‘well’ receives the default stress.

- (363) A: a. Como é que o Paulo fala francês?  
 how is that the P. speaks French  
 ‘How does Paulo speak French?’  
 B: b. O Paulo fala francês **bem**. [scrambled object]  
 the P. speaks French well  
 ‘Paulo speaks French well.’  
 c. #O Paulo fala **bem** francês. [non-scrambled object]  
 the P. speaks well French (J. Costa 2004a: 68)

By contrast, if the object is questioned (as in (364)), it must stay in the rightmost position and get the default stress. Therefore, the non-scrambled order in (364c) is derived.

- (364) A: a. O que é que o Paulo fala bem?  
 the what is that the P. speaks well  
 ‘What does Paulo speak well?’

<sup>22</sup> Also, Broekhuis (2007) does not assume Case as the trigger for scrambling in Dutch/German (contra De Hoop 1992).

<sup>23</sup> The Nuclear Stress Rule assigns prominence to the rightmost/lowest constituent of the sentence, as proposed in Zubizarreta (1998, 1999). See §1.3.3.2 for additional details.



- B: b. #O Paulo fala francês bem. [scrambled object]  
the P. speaks French well  
c. O Paulo fala bem francês. [non-scrambled object]  
the P. speaks well French (J. Costa 2004a: 68)

Similar word order contrasts are found with the subject of unaccusative and unergative verbs. In (365), it is expected that the subject of the unergative verb *dançar* 'to dance' be the focus of the sentence because it is the new information requested in the question; hence, the felicitous answer is (365b), where the subject occurs in the rightmost sentential position.

Unergative verb:

- (365) A: a. Quem é que dançou bem?  
who is that danced well  
'Who danced well?'  
B: b. Dançaram bem dois concorrentes.  
Danced well two contestants  
'Two contestants danced well (but I cannot remember their names).'
- c. #Dançaram dois concorrentes bem.  
danced two contestants well

In contrast, in (366) the adverb is the new information requested in the question. Hence, the felicitous answer is (366c), where the subject undergoes scrambling and the adverb surfaces in the rightmost position.

- (366) A: a. Como é que dançaram os concorrentes?  
how is that danced the contestants  
'How did the contestants dance?'  
B: b. #Dançaram bem dois concorrentes.  
danced well two contestants  
'Two contestants danced well.'
- c. Dançaram dois concorrentes bem.  
danced two contestants well  
'Two contestants danced well (the others danced very badly).'

The same word order contrasts are found with the subject of the unaccusative verb *chegar* 'to arrive' in (367)–(368).

Unaccusative:

- (367) A: a. Que avião aterrou bem?  
What plane landed well  
'What plane landed well?'

- B: b. Aterrou **bem** o Boeing 767.  
landed well the B.  
'The Boeing 767 landed well.'
- c. #Aterrou o Boeing 767 **bem**.  
landed the B. well
- (368) A: a. Como aterraram os aviões?  
how landed the planes  
'How did the planes land?'
- B: b. #Aterrou **bem** o Boeing 767.  
landed well the B.  
'The Boeing 767 landed well.'
- c. Aterrou o Boeing 767 **bem**.  
landed the B. well  
'The Boeing 767 landed well (the other planes did not land that well).'

Remarkably, in the examples (366c) and (368c) two constituents are assigned narrow information focus: the adverb (which is the new information requested in the question) and the scrambled subject (which appears to the left of the adverb).<sup>24</sup>

At first sight, the idea that a constituent interpreted as focus may undergo scrambling is surprising, under the assumption that scrambling serves to remove unfocused material from the focus domain. However, this hypothesis receives some typological support from the so-called *focus-scrambling* in Dutch, which involves contrastive focus on a scrambled constituent (J. Costa 2004a: 69).<sup>25</sup>

Moreover, in CEP the configuration under scrutiny is found in other discourse contexts, such as broad information focus sentences (see (369)).

- (369) Context: Maria was expected to have a risky childbirth because she was going to have triplets.
- A: a. Como correu o parto da Maria?  
how went the labor of.the M.  
'How did the childbirth go?'

<sup>24</sup> Following J. Costa (2004a: 86), I assume that in a sentence with more than one focus, the leftmost focused constituent bears heavy stress. Then, all constituents following the heavy stress are interpreted as focus. Applying this rule to (366c) and (368c), I assume that the post-verbal subject bears heavy stress and the adverb to its right is interpreted as focus.

<sup>25</sup> As an illustration of focus-scrambling in Dutch, consider the following example, taken from J. Costa (2004a: 69).

Jan zei dat ik DE KRANT gisteren las, (en het boek vandaag)  
J. said that I the newspaper yesterday read, and the book today  
'Jan said that it was the newspapers that I read yesterday (and not the books today).'

- B: b. Mais ou menos. Nasceram dois bebés bem.  
more or less were.born two babies well  
'Well and not so well. The birth of the first two babies went well (it was the birth of the third baby that was more complicated).'
- c. #Mais ou menos. Nasceram bem dois bebés.  
more or less were.born well two babies  
'Well and not so well. The birth of the two babies went well.'

Despite the fact that the focus extends to the entire sentence in (369b) (*Nasceram dois bebés bem*), the constituent *dois bebés* 'two babies' is scrambled, as can be confirmed by its occurrence to the left of the adverb *bem* 'well'.

The question then arises of why a constituent undergoes scrambling within a focus domain. I would like to submit that in the context of double-focus or broad information focus, the constituent in the rightmost position receives more discourse prominence than the other constituents. Thus, scrambling can be used to create specific discourse effects (namely, to place the most prominent constituent in the rightmost position within the clause-internal space).

Let us examine exactly how this works in a sentence like (369b). The constituent *dois bebés* 'two babies' is contained in a sentence with broad information focus. Nevertheless, *dois bebés* 'two babies' conveys less prominent information than *bem* 'well'. There are two reasons for why this occurs. First, it is expected that during childbirth a baby is born. Second, *bem* 'well' is a direct response to *como* 'how' in (369a). Being less prominent, *dois bebés* 'two babies' undergoes short scrambling, leaving the adverb *bem* 'well' in the rightmost position.

In contrast, (369c) does not constitute an appropriate answer to the question. This can be explained by assuming that a constituent in the rightmost position tends to convey non-discourse-dependent (or non-presuppositional) information. Such a requirement is not fulfilled in (369c) because a less prominent constituent, expressing the fact that two babies were born, appears in the rightmost sentential position.<sup>26</sup>

## B. Deriving relative clause extraposition from short scrambling

In (a)–(c), I provide three arguments that support the view that RRC-extraposition from post-verbal positions involves short scrambling.

### (a) Distribution of adverbs

The antecedent of an extraposed RRC may appear to the left of the monosyllabic adverb *bem* 'well', as illustrated in (370b). Under the assumption that the monosyllabic

<sup>26</sup> It should be noted that the constituent *dois bebés* 'two babies' in (369c) could only be interpreted as referring not to Maria's babies but to other babies (out of many that were born, for instance, on the same day in the hospital). This is because the constituent in the rightmost position tends to convey non-discourse-dependent (or non-presuppositional) information.

adverb *bem* ‘well’ marks the left edge of the VP, the position of *uma candidatura* ‘one application’ indicates that this constituent has undergone short scrambling.

- (370) A: a. Não analisaste com atenção nenhuma candidatura.  
‘You did not analyze any of the applications carefully.’  
B: b. Analisei uma candidatura **bem** que foi proposta pela  
analyzed.1SG one application well that was submitted by.the  
Universidade de Lisboa.  
University of L.  
‘I analyzed one application that was submitted by the University of Lisbon  
well (= thoroughly) (the others I actually did not analyze very carefully).’

**(b) Semantic effects**

When the antecedent of a non-extraposed RRC is indefinite, it may have a cardinal reading. However, when extraposition is involved, the antecedent necessarily has a pre-suppositional reading. This is illustrated in (371). The non-extraposed version in (371a) is compatible with the reading that there is only one homeless person in my neighborhood, whereas the extraposed version in (371b) necessarily presupposes that there is more than one homeless person in my neighborhood. The same reasoning applies to (372). The similar behavior of the antecedent of RRCs and scrambled indefinite constituents (see §3.5.1.2A(b)) suggests that in both cases, the indefinite noun phrase is scrambled.

- (371) a. Há no meu bairro um sem-abrigo que não pede dinheiro.  
has in.the my neighborhood one homeless that not asks money  
‘There is one homeless person in my neighborhood that does not ask for money.’  
b. Há um sem-abrigo no meu bairro que não pede dinheiro.  
has a homeless in.the my neighborhood that not asks money  
√ *Reading 1*: (presuppositional) *There is more than one homeless person in my neighborhood (but only one does not ask for money).*  
\* *Reading 2*: (cardinal) *There is only one homeless person in my neighborhood (and he does not ask for money).*
- (372) a. Apareceu no meu gabinete um aluno que precisava de ajuda.  
showed.up in.the my office a student that needed DE.PREP help  
‘One student showed up in my office that needed help.’  
b. Apareceu um aluno no meu gabinete que precisava  
showed.up a student in.the my office that needed  
de ajuda  
DE.PREP help  
√ *Reading 1*: (presuppositional) *More than one student showed up in my office (but only one needed help).*  
\* *Reading 2*: (cardinal) *Only one student showed up in my office (and he needed help).*

(c) Discourse and prosody

In CEP, RRC-extraposition from post-verbal positions arises in two different discourse contexts: (1) sentences displaying narrow information focus; and (2) sentences displaying broad information focus.

The first possibility is illustrated in (373). The extraposed RRC conveys the new information requested in the question; thus the antecedent of the RRC is scrambled (surfacing to the left of the monosyllabic adverb *bem* ‘well’) and the RRC stays in the rightmost sentential position.

- (373) A: a. Que exercícios é que o João faz bem?  
what exercises is that the J. does well  
‘What exercises does João do well?’  
B: b. O João faz um exercício bem que envolve raciocínio  
the J. does a exercise well that involves reasoning  
matemático  
mathematical  
‘João does an exercise well that involves mathematical reasoning (but I can’t recall how he does the other exercises).’

If the antecedent is not scrambled, there is adjacency between the antecedent and the RRC. An appropriate discourse context is given in (374b), where the object (i.e. the antecedent and the RRC) provides the new information requested in the question. As the adverb *bem* ‘well’ is repeated from the question, it surfaces to the left of the object. In contrast, (374c) is not a felicitous answer to the question because the antecedent, being part of the new information requested in the question, must appear to the right of the adverb *bem* ‘well’.

- (374) A: a. O que é que o João faz bem?  
the that is that the J. does well  
‘What does João do well?’  
B: b. O João faz bem um exercício que envolve raciocínio  
the J. does well a exercise that involves reasoning  
matemático.  
mathematical  
‘João does an exercise that involves mathematical reasoning well.’  
c. #O João faz um exercício bem que envolve raciocínio  
the J. does a exercise well that involves reasoning  
matemático.  
mathematical  
‘João does an exercise well that involves mathematical reasoning (but I can’t recall how he does the other exercises).’

The discourse effects described for RRC-extraposition from the object smoothly accommodate the contexts in which extraposition takes place from subjects of both unaccusative (see (375)) and unergative verbs (see (376)).

- (375) A: a. Neste jardim, que árvores é que crescem depressa?  
in.this garden what trees is that grow.3PL fast  
'In this garden, what trees grow fast?'
- B: b. Cresce uma árvore **depressa** que é um híbrido de duas  
grows a tree fast that is a hybrid of two  
espécies da paulónia.  
species of.the Paulownia  
'A tree that is a hybrid of two species of Paulownia grows fast  
(the other trees grow slowly).'
- (376) A: a. Que atletas é que nadam bem?  
what athletes is that swim well  
'What athletes swim well?'
- B: b. Nadam três atletas **bem** que pertencem ao Benfica  
swim three athletes well that belong to B.  
'Three athletes that belong to Benfica swim well (the other athletes do  
not swim well).'

RRC-extraposition may also appear in broad information focus sentences, such as (377c). Here the focus extends to the entire sentence, but the antecedent of the RRC is scrambled, as can be confirmed by its occurrence to the left of the adverb *bem* 'well'. As is clear from the discussion in §3.5.1.2A(c), I assume that there is no conflict between focus and scrambling; scrambling of the antecedent occurs in the focus domain to assign discourse prominence to the RRC in the rightmost sentential position.

- (377) A: a. O que é que aconteceu?  
the what is that happened  
'What happened?'
- B: b. Estou muito feliz.  
am.1SG very happy  
'I am very happy.'
- c. O João fez um exercício **bem** que vale 50% da nota final.  
the J. did a exercise well that is.worth 50% of.the grade final  
'João did an exercise that is worth 50% of the final grade well.'

From the considerations thus far, it follows that RRC-extraposition cannot be defined as a purely syntactic phenomenon. The discourse-based approach proposed here

suggests that RRC-extraposition from post-verbal positions arises when the antecedent and the RRC have different discourse status.

3.5.1.3 *Deriving the intervening material* Thus far, I have provided evidence for the idea that RRC-extraposition in CEP may take a scrambled constituent as an antecedent (see §1.3.1.3). In this section, I submit that such a syntactic configuration is derived as follows: (1) the antecedent is generated together with the RRC; then (2) the antecedent undergoes short scrambling and adjoins to the VP after raising, stranding the RRC in situ. This is sketched in (378); in example a, the antecedent and the RRC are generated together in the subject position ([Spec, VP]),<sup>27</sup> and in example b, these elements are generated in the complement position of V.

- (378) a. [<sub>IP</sub> V [<sub>VP</sub> S [<sub>VP</sub> intervening material [<sub>VP</sub> t<sub>S</sub> RRC t<sub>V</sub> ]]]]  
 b. [<sub>IP</sub> V [<sub>VP</sub> DO [<sub>VP</sub> intervening material [<sub>VP</sub> t<sub>V</sub> t<sub>DO</sub> RRC]]]]

(378a) schematically represents an extraposed RRC with the subject of an unergative verb as an antecedent (corresponding to a sentence as (376b)). Example (378b) represents an extraposed RRC with a direct object (or the subject of an unaccusative verb) as an antecedent (corresponding, respectively, to a sentence as (373b) or (375b)).

Now, I must identify the elements that can (and cannot) occur as intervening material and demonstrate how the analysis proposed here can accommodate the various possibilities.

#### A. Deriving the occurrence of adverbs and PPs in the intervening position

When short scrambling is involved, only adverbs and PPs can intervene between the antecedent and the extraposed RRC. This is illustrated in (379)–(382).<sup>28</sup>

Subject:

- (379) Chegou um rapaz ontem que te quer conhecer.  
 arrived a boy yesterday that you.CL wants meet.INF  
 ‘A boy arrived yesterday that wants to meet you.’
- (380) Ontem explodiu uma bomba em Israel que causou 5 mortos.  
 yesterday exploded a bomb in I. that caused 5 deaths  
 ‘Yesterday a bomb exploded in Israel that caused 5 deaths.’

Object:

- (381) Encontrei uma rapariga ontem que perguntou por ti.  
 met.1SG a girl yesterday that asked for you  
 ‘I met a girl yesterday that asked for you.’

<sup>27</sup> In this portion of the discussion I abstract away from the assumption that there are two verb phrases in the clause, a vP and a VP (Larson 1988, 1990), and for ease of exposition, I represent the double VP-shell as a single VP-shell. The double VP-shell is introduced only while discussing the syntax of double complement constructions.

<sup>28</sup> Note that more than one adjunct may co-occur as intervening material, as in (266).

- (382) Comprei uma boneca na feira de artesanato que é feita de  
bought.1SG a doll at.the fair of craft that is made of  
pasta de papel.  
paste of paper  
'I bought a doll at the craft fair that is made of paper paste.'

These intervening elements can either be modifiers (as in (379)–(382)) or arguments of the verb (as in (383)–(384)).

Indirect object:

- (383) Dei um livro à Maria que foi escrito por mim.  
gave.1SG a book to.the M. that was written by me  
'I gave Maria a book that was written by me.'

Prepositional argument:

- (384) Deixei um recado em cima da mesa que é para a Rita.  
left.1SG a message on top of.the table that is for the R.  
'I left a message on the top of the table that is for Rita.'

The derivation of contexts involving modifiers and arguments as intervening material is treated separately in (a) and (b).

#### (a) Modifiers in the intervening position

Let me begin by examining the occurrence of adverbs in the intervening position. Currently, there is no consensus in the literature regarding the syntactic representation of adverbs. Broadly speaking, two major lines of research can be identified: the adjunction analyses and the functional specifier analyses. The adjunction analyses claim that adverbs are adjoined to some projection (VP, TP, ...) (Ernst 2002; J. Costa 1998, 2004a, 2004b; among others). The functional specifier analyses assume that adverbs occupy non-argumental specifier positions and are licensed in a Spec-head configuration with respect to a head containing semantic features related to, for example, mood, tense, and aspect (see Cinque 1999; Alexiadou 1997). Partially related to this issue, the analyses available in the literature may also manifest divergence with respect to the distribution of adverbs. Some linguists claim that adverbs are freely distributed within a sentence (see e.g. Emonds 1976), whereas others point out that the distribution of adverbs is very restricted (see e.g. Cinque 1999).

For reasons of overall coherence (namely, with respect to J. Costa's 1998, 2004a approach to short scrambling and to the tests used here to identify scrambled constituents), I assume a left-adjunction analysis of the adverbs that surface in the intervening position. Nevertheless, I leave the hypothesis open that the approach developed here may also be compatible with a functional specifier analysis of adverbs.



Turning now to the analysis proper, consider (385), which shows that an adverb in CEP may either precede or follow a verb.

- (385) a. O João **ontem** leu o livro.  
the J. yesterday read the book  
'João read the book yesterday.'  
b. O João leu **ontem** o livro.  
the J. read yesterday the book (J. Costa 2004a: 6)

Following J. Costa (2004a), I maintain the assumption that the adverb *ontem* 'yesterday' in (385) is left-adjoined to different projections. In (385a), the adverb is left-adjoined to TP (see (386a)), and in (385b), it is left-adjoined to VP (see (386b)).<sup>29</sup>

- (386) a. [<sub>AGRSP</sub> O João [<sub>TP</sub> ontem [<sub>TP</sub> leu [<sub>VP</sub> t<sub>V</sub> o livro]]]]  
b. [<sub>AGRSP</sub> O João [<sub>TP</sub> leu [<sub>VP</sub> ontem [<sub>VP</sub> t<sub>V</sub> o livro]]]] (J. Costa 2004a: 7)

I also assume, along with J. Costa 2004b, that adverbs only adjoin to the left. With this background in mind, I submit that if RRC-extrapolation involves an adverb in the intervening position, the adverb is left-adjoined to VP, as in (386b). Then, the object/subject scrambles over the adverb, deriving the antecedent–adverb–RRC order represented in (387).

- (387) a. [<sub>IP</sub> V [<sub>VP</sub> DO [<sub>VP</sub> adverb [<sub>VP</sub> t<sub>V</sub> t<sub>DO</sub> RRC]]]]  
b. [<sub>IP</sub> V [<sub>VP</sub> S [<sub>VP</sub> adverb [<sub>VP</sub> t<sub>S</sub> RRC t<sub>V</sub>]]]]

In more concrete terms, what this means is that the source structure of an extraposed RRC taking an object as antecedent is as depicted in (388a). Then, if the antecedent of the RRC undergoes short scrambling (stranding the RRC in situ), the extraposed order in (388b) is derived.

- (388) a. O João comprou ontem um portátil que custou 1000€.  
the J. bought yesterday a laptop that cost €1,000  
'Yesterday, João bought a laptop that cost €1,000.'  
b. O João comprou um portátil ontem que custou 1000€.  
the J. bought a laptop yesterday that cost €1,000

Let me consider now the occurrence of modifying PPs in the intervening position. There is an ongoing debate in the literature about the way in which modifying PPs integrate into the structure of the clause. Broadly speaking, the syntactic analyses of

<sup>29</sup> Recall that CEP displays V-to-I movement, which derives the order Verb–Adverb/Object in (386b) (see also §3.5.1.2A, n. 19).

modifying PPs can be divided in three major groups: adjunction analyses, Larsonian analyses, and specifier analyses.

Adjunction analyses assume that modifying PPs are adjoined to VP. Two variants of this approach can be identified: modifying PPs can be taken to involve right-hand adjunction (Chomsky 1981) or left-hand adjunction (Barbiers 1995). Larsonian analyses neutralize the structural distinction between arguments and modifiers, claiming that modifying PPs are base-generated below the arguments of the verb as complements of V (Larson 1988, 1990; Chomsky 1995: 333). Specifier analyses claim that modifying PPs (and arguments) are all merged in specifier positions in a strict order, with the verb in the innermost position; a different order of constituents may be derived by successively moving larger and larger constituents containing the VP into higher Specs (Cinque 2006).

The analyses proposed in the literature may also differ in the way that they account for the complements/modifying PPs order. Some approaches claim that there is a unique (and universal) order of merge between these constituents (Cinque 2006), whereas others claim that these constituents do not enter the derivation in a strict order (Jackendoff 1990).

In this study, I assume (in line with Barbiers 1995) that modifying PPs that surface in the intervening position are left-adjoined to the VP (just like intervening adverbs). Therefore, the derivation proceeds in the same way as described for adverbs: the antecedent raises leftward past the intervening PP and adjoins to VP, stranding the RRC in situ. This is presented in (389a,b), where the extraposed RRCs have, respectively, an object and a subject as an antecedent.

- (389) a. [<sub>IP</sub> V [<sub>VP</sub> DO [<sub>VP</sub> modifying PP [<sub>VP</sub> t<sub>V</sub> t<sub>DO</sub> RRC]]]]  
 b. [<sub>IP</sub> V [<sub>VP</sub> S [<sub>VP</sub> modifying PP [<sub>VP</sub> t<sub>S</sub> RRC t<sub>V</sub>]]]]

Therefore, the source structure of an extraposed RRC with a subject as an antecedent corresponds to a sentence like (390a), where the modifying PP is left-adjoined to VP, and the subject is in its base position. Then, if the antecedent of the RRC undergoes short scrambling, stranding the RRC in situ, the extraposed order in (390b) is derived.

- (390) a. Ontem explodiu em Israel uma bomba que causou 5 mortos.  
 yesterday exploded in I. a bomb that caused 5 deaths  
 ‘Yesterday a bomb exploded in Israel that caused 5 deaths.’  
 b. Ontem explodiu uma bomba em Israel que causou 5 mortos.  
 yesterday exploded a bomb in I. that caused 5 deaths

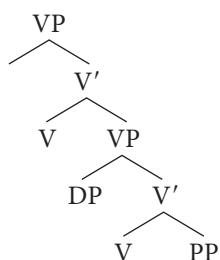
#### (b) Complements in the intervening position

In double complement constructions, the PP may appear in the intervening position, as illustrated in (391) (repeated from (383)).

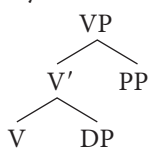
- (391) Dei um livro à Maria que foi escrito por mim.  
 gave-1SG a book to.the M. that was written by me  
 'I gave Maria a book that was written by me.'

Although double complement constructions have received much attention in the generative literature, their exact status remains controversial (see Kayne 1984; Larson 1988; Pesetsky 1995; Philips 1996; among others). Indeed, one point of disagreement concerns the choice between the shell structure represented in (392a) and the layered structure represented in (392b).

- (392) a. shell structure



- b. layered structure



As noted in Philips (1996) and J. Costa (2004a), part of the debate results from the fact that the tests applied to these constructions yield contradictory results. For instance, (393) provides evidence for an analysis as in (392a) under the assumption that Licensing of Polarity Items requires *c*-command. In turn, (394c) provides evidence for a layered structure as in (392b), because *give candy* is a constituent in (392b) but not in (392a).

- (393) a. John gave nothing to any of the children on his birthday.  
 b. \*John gave anything to none of the children on his birthday. (J. Costa 2004a: 144)

- (394) John intended to give candy to children on his birthday.  
 a. ... and [give candy to children on his birthday] he did  
 b. ... and [give candy to children] he did on his birthday  
 c. ... and [give candy] he did to children on his birthday (J. Costa 2004a: 144)

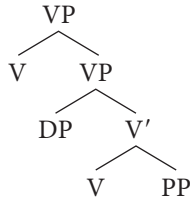
J. Costa (2004a) additionally shows that binding facts suggest that the PP–DP order cannot be derived from the base DP–PP order through scrambling of the PP to the left of the DP. This is due to the fact that the PP can bind an anaphor contained in the DP (see (395)), which suggests that it occupies an A-position.

- (395) A: a. A quem é que deste os livros?  
 to whom is that gave.2SG the books  
 'To whom did you give the books?'

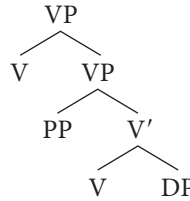
B: b. Dei [F A CADA AUTOR] o seu livro.  
 gave-1SG to each author the his book  
 ‘I gave his book to each author.’ (J. Costa 2004a: 143)

Based in part on the facts mentioned above, J. Costa (2004a) (in line with Philips 1996) suggests that both the DP–PP and PP–DP orders can be base-generated in CEP. To keep the discussion simple, I will abstract away from the technical implementation of the analysis (see J. Costa 2004a for additional details), and I will simply refer to the two final structures;<sup>30</sup> see (396a)–(396b).

(396) a. DP–PP order



b. PP–DP order



Crucially, Costa argues that the fact that both word orders are base-generated does not entail that they should be optional. According to his proposal, the structure in (396b) is only generated if necessary for satisfying binding requirements or any other constraint forcing the PP–DP order, such as heaviness.<sup>31</sup>

As its point of departure, the analysis that I propose here adopts J. Costa’s (2004a) claim that the PP–DP order can be base-generated in CEP.<sup>32</sup> It also takes from J. Costa (2004a) the idea that heaviness factors may legitimize this configuration. With these assumptions in mind, let me briefly consider how a sentence like (397) (containing an extraposed RRC and a PP-complement in the intervening position) can be derived.

(397) Dei um livro à Maria que foi escrito por mim.  
 gave.1SG a book to.the M. that was written by me  
 ‘I gave Maria a book that was written by me.’

<sup>30</sup> Importantly, the structures in (396a) and (396b) are apparently similar to the VP-shell structure represented in (392). However, (396a) and (396b) are derived by building a right-branching phrase marker from left to right (Philips 1996).

<sup>31</sup> Without going into further detail, please note that under this approach, the constituency problem in (394c) is derived by the possibility of targeting a step of the V–DP–PP derivation in which V and DP form a VP, an option that is available under the right-branching structures (see J. Costa 2004a: 148).

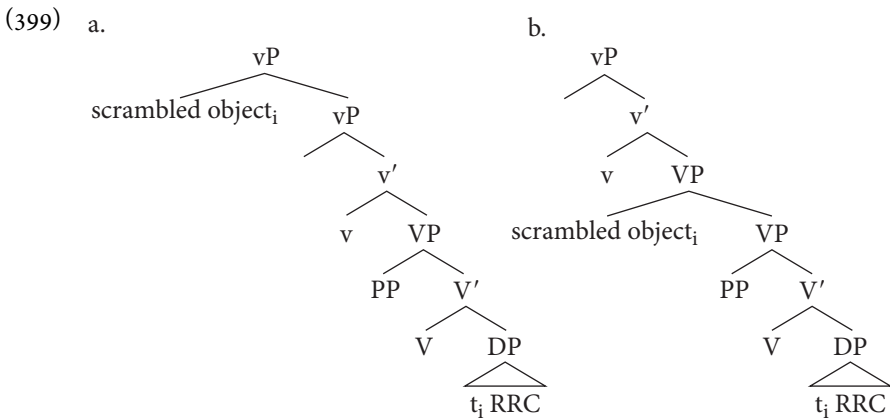
<sup>32</sup> Note that the present approach is also compatible with an analysis that postulates the DP–PP base-order. In this case, the PP–DP order would be derived from scrambling of the PP to the left of the DP, followed by scrambling of the antecedent to the left of the PP.

First, I assume that (397) is derived from the PP–DP base-order (as in (398)). This is due to heaviness effects: the DP *um livro que foi escrito por mim* ‘a book that was written by me’ is heavier/longer than the PP *à Maria* ‘to Maria’ and therefore surfaces in the rightmost sentential position.<sup>33</sup>

- (398) Dei à Maria um livro que foi escrito por mim.  
 gave.1SG to.the M. a book that was written by me  
 ‘I gave Maria a book that was written by me.’

Then, *um livro* ‘a book’ can be adjacent to the RRC (as in (398)) or may undergo short scrambling, assigning discourse prominence to the RRC that is stranded in the rightmost sentential position. In the later case, *um livro* ‘a book’ moves leftward past the position of the intervening PP and adjoins to VP, stranding the RRC in situ. This derives the pattern of RRC-extrapolation displayed in (397).

The idea that there are two verb phrases in a clause (the so-called double VP-shell approach proposed by Larson 1988, 1990) provides two possible landing sites for the scrambled object: left-hand adjunction to the higher vP or to the lower VP, as sketched in (399a) and (399b), respectively.



One possible way to identify the exact landing site of the scrambled object could be to examine its relative position with respect to a post-verbal subject in [Spec, vP]. However, as I discuss in §3.5.1.3B, in sentences involving RRC-extrapolation, the subject and the object cannot independently co-occur in a post-verbal position. Therefore, this test must be discarded for present purposes.

<sup>33</sup> Also note that, as already mentioned, there are different constraints that may lead to the PP–DP base-generation order. In (397) it results from heaviness, whereas in (395) it results from binding requirements.

Another possibility is to assume that adverb placement can be used to identify the exact position of a constituent within a double VP-shell. Unfortunately, because J. Costa (1998, 2004a, 2004b) assumes a single VP-shell in his studies of adverbs in CEP, adverbs cannot be used as a reliable test for this specific purpose, at least until more research is developed in this domain.

Finally, let me consider the validity of another test: the so-called *Fronting/Preposing* (J. Costa 2004a: 49, 147) or *VP-topicalization* (see Kato and Raposo 2007; Bastos 2001). This construction involves two instances of the same verb in a single sentence: an infinitival form in the preposed constituent and a finite form in the normal position of the verb in CEP (see (400)).<sup>34</sup>

- (400) Visitar os amigos, a Maria visita todos os anos.  
visit.INF the friends the M. visits every the years  
'Visit her friends, Maria does it every year.' (Kato and Raposo 2007: 211)

An extraposed RRC involving a double complement construction can surface in the preposed constituent, as illustrated in (401).

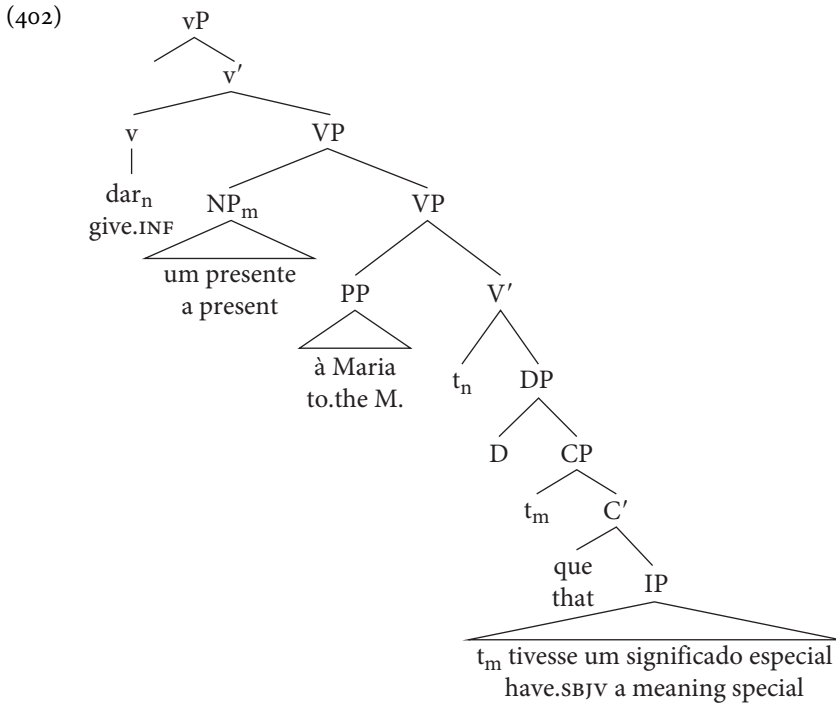
- (401) Eu queria dar um presente à Maria que tivesse um  
I wanted give.INF a present to.the M. that have.SBJV a  
significado especial e [dar um presente à Maria que  
meaning special and give.INF a present to.the M. that  
tivesse um significado especial] eu dei.  
have-SBJV a meaning special I gave  
'I wanted to give a present that had a special meaning to Maria and give a  
present that had a special meaning to Maria I did.'

Let me assume, along the lines of Kato and Raposo (2007), that this construction: (1) involves VP-topicalization and that (2) the topicalized constituent contains a copy of the V (which moves to I) that is spelled out in its default infinitive form.<sup>35</sup> Under these assumptions, the order of constituents within the topicalized constituent in

<sup>34</sup> It is worth noting that there is no consensus in the literature as to the analysis of the construction in (400). Matos (1992: 195–6) claims that the preposed constituent is merged in situ, whereas Kato and Raposo (2007) suggest that it undergoes movement to the left periphery. Moreover, Matos claims that the preposed constituent is a clausal constituent adjoined to the matrix clause, whereas Kato and Raposo claim that it is a topicalized VP. For a non-uniform approach to the phenomenon of VP-topicalization, see also Bastos (2001).

<sup>35</sup> Kato and Raposo (2007) assume that the verb form that appears in the numeration is the infinitive, which after the addition of the inflection loses the final *r*. Therefore, when the verb is spelled out inside the VP, it surfaces in the default infinitive form, as no inflection was added to it at this point of the derivation. In contrast, when the verb is spelled out in I, it surfaces in a finite form because the addition of the inflection has already taken place.

(401) (i.e. the *verb-scrambled object* order) can only be derived by assuming that: (1) the verb is spelled in the light *v*; and (2) the antecedent of the relative clause is left-adjoined to the lower VP, as sketched in (402). As can be easily concluded, if the antecedent of the RRC were adjoined to the higher *vP*, it would precede the verb *dar* ‘give’.



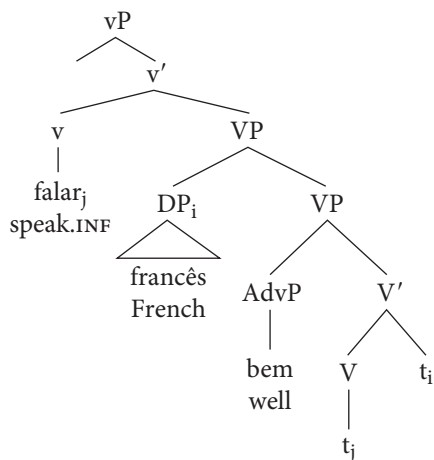
Note that the same line of reasoning applies to the instances of VP-topicalization that involve the monosyllabic adverb *bem* ‘well’ and a scrambled object, as in (403).

- (403) a. Falar francês bem, o João fala. [scrambled object]  
 speak.INF French well the J. speaks  
 ‘Speak French well, João does it.’  
 b. Falar bem francês, o João fala. [non-scrambled object]  
 speak.INF well French the J. speaks

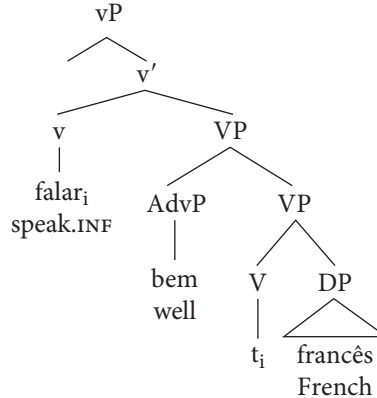
The V–O–Adv order in (403a) and the V–Adv–O order in (403b) emerge from a configuration in which the verb is spelled out in the light *v*, and the scrambled object and/or the monosyllabic adverb *bem* ‘well’ are left-adjoined to the lower VP, as sketched in (404a–b). Note that if the adverb (and the scrambled object) were left-adjoined to *vP*, they would precede the verb *falar* ‘speak’.

(404)

a. V-DO-Adv order



b. V-Adv-DO order



In summary, VP-topicalization suggests that scrambled constituents in CEP may be left-adjoined to the lower VP. However, note that other contexts independently reveal scrambled objects to be left-adjoined to the higher vP. This is the case of the sentences displaying the VOS order, as in (405). Under the assumption that the post-verbal subjects are in [Spec, vP] (J. Costa 1998, 2004a), it is clear that the scrambled object in (405) is left-adjoined to the higher vP.

(405) *Comeu a sopa o Paulo.*  
 ate the soup the P.  
 'Paulo ate the soup.'

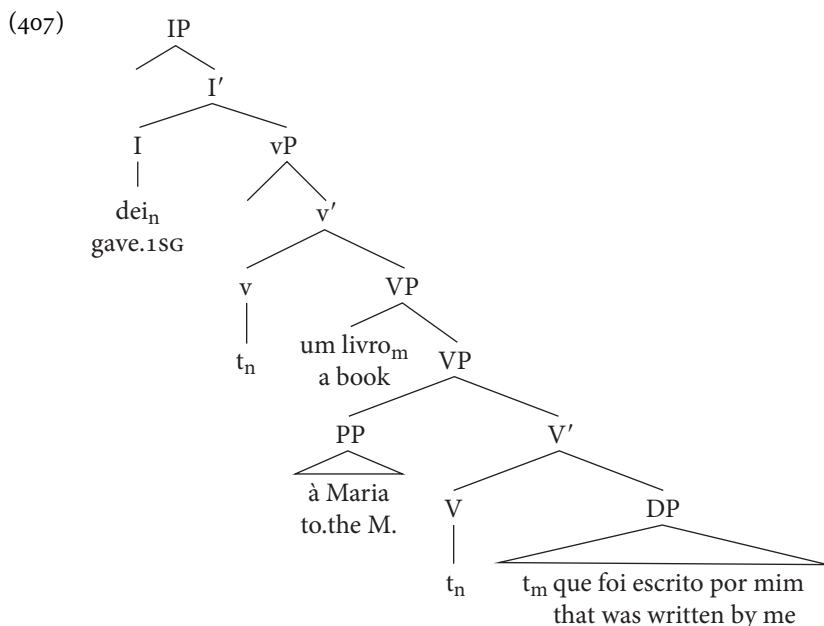
The same is true of the cases of RRC-extrapolation involving the subject of an unergative verb as an antecedent, as in (406), repeated from (265). In this case, the adverb *ontem* 'yesterday' is left-adjoined to the higher vP, and the subject in [Spec, vP] undergoes scrambling to a vP-adjoined position.

(406) *Telefonou um rapaz ontem que queria informações*  
 phoned a boy yesterday that wanted details  
*sobre a tua casa.*  
 about the your house  
 'A boy phoned yesterday who wanted details about your house.'

Cumulatively, I conclude that scrambled constituents in CEP may be adjoined to the higher vP, for example in VOS contexts and in the contexts involving scrambling of the subject of unergative verbs. However, they can also be left-adjoined to the lower VP, as is the case for scrambled objects in double object constructions.



Therefore, I propose that the (simplified) structure of an extraposed RRC with a PP complement as intervening material is as in (407).



### B. Blocking other constituents in the intervening position

This section is devoted to explaining why the subject and the direct object cannot surface in the intervening position in CEP. Given that facts regarding the word order have an important bearing on the syntax of RRC-extraposition, I first make a few remarks about the word order in CEP (in particular, with respect to subject inversion) and then demonstrate how the syntactic constraints that independently hold for CEP can explain the impossibility of the subject and the direct object surfacing in the intervening position.

In CEP, sentences with broad information focus exhibit a restriction on subject inversion that is related to the type of verb involved (see Martins forthcoming). Although subject inversion is possible with unaccusative, unergative, and indirect transitive verbs (see (408b–d)), it is impossible with direct transitive and ditransitive verbs (see (408e–f)).<sup>36</sup>

<sup>36</sup> A similar pattern has been observed in other constructions cross-linguistically (see Alexiadou and Anagnostopoulou 2001 for an overview). It is found, for instance, in expletive constructions in French and English, which are well formed with intransitive verbs but not with direct transitive verbs (see (i) and (ii), respectively), and in stylistic inversion in French, which is also well formed with intransitive verbs but not with transitives (see (iii)). Examples (i)–(iii) are from Alexiadou and Anagnostopoulou (2001: 195–6).

- (i) a. Il est arrivé un homme  
 EXPL is arrived a man  
 ‘There has arrived a man.’

- (408) [A]: a. O que aconteceu?  
the what happened  
'What happened?'
- [B]: b. Chegou uma carta anónima. [unaccusative verb]  
arrived a letter anonymous  
'An anonymous letter arrived.'
- c. Telefonou a Maria. [unergative verb]  
phoned the M.  
'Maria phoned.'
- d. Apareceram dois polícias em nossa casa. [indirect transitive verbs]  
showed.up two cops at our home  
'Two cops showed up at our home.'
- e. \*Comprou o João uma casa. [direct transitive verb]  
bought the J. a house  
'João bought a house.'
- f. \*Ofereceu o João um anel de noivado à  
offered the J. a ring of engagement to.the  
Ana. [ditransitive verb]  
A.  
'João offered an engagement ring to Ana.'

Under J. Costa's (2004a) analysis of CEP, post-verbal subjects in simple declarative affirmative sentences arise in the following way: the verb moves up to I and stops there. The subject does not precede it because it has never moved from its base position.

On the basis of Costa's analysis, the contrasts found in the paradigm (408) can be captured by the generalization in (409).<sup>37</sup>

- b. \*Il a lu un élève le livre  
EXPL has read a student the book  
'There has read a student the book.'
- (ii) a. There arrived a man.  
b. \*There finished somebody the assignment.
- (iii) a. Je me demande quand partira Marie  
I myself.CL ask when leave.FUT M.  
'I wonder when Marie will leave.'
- b. \*Je me demande quand achèteront les consommateurs les pommes.  
I myself.CL ask when buy.FUT the consumers the apples  
'I wonder when the consumers will buy the apples.'

<sup>37</sup> An explanation for this restriction is beyond the scope of the book. Nevertheless, it is worth mentioning that an analysis such as Alexiadou and Anagnostopoulou's (2001) may explain the restrictions under scrutiny. According to these authors, there is a general ban against having the subject and the direct object in a VP-internal position. This is explained by postulating that a head cannot have more than one unchecked Case feature in LF. Without going into the details of their analysis, the derivation of the

(409) Restriction on subject inversion in CEP (I)

The subject and the direct object cannot stay in a VP-internal position; one of them must vacate the VP.

However, the restriction in (409) does not hold for all syntactic and discourse contexts. Abstracting away from the sentences that involve V-to-C movement,<sup>38</sup> the subject and the direct object may co-occur inside the VP in sentences displaying narrow information focus. Two possible word orders may be found: (1) the VOS word order is found when the subject is assigned narrow focus (as in (410)); and (2) the VSO word order arises when both the subject and the direct object are assigned narrow information focus (as in (411b)).

(410) Subject is focused.<sup>39</sup>

[A]: a. Quem é que partiu a janela?  
who is that broke the window  
'Who broke the window?'

[B]: b. #Partiu o Paulo a janela.  
broke the P. the window  
'Paulo broke the window.'

c. Partiu (a janela) o Paulo  
broke the window the P. (J. Costa 2004a: 80)

(411) Subject and direct object are focused:

[A]: a. Ninguém partiu nada.  
nobody broke nothing  
'Nobody broke anything.'

[B]: b. Partiu o Paulo a janela.  
broke the P. the window  
'Paulo broke the window.'

ungrammatical V [<sub>VP</sub> S O] generically proceeds as follows: (1) V raises overtly to I; (2) after Spell Out, v raises to I forming a complex head (I<sup>max</sup>); and (3) T<sup>max</sup> inherits the Case features of I (traditionally the nominative Case) and the Case features of v (traditionally the accusative Case), and as a consequence, the derivation crashes.

<sup>38</sup> According to Martins (forthcoming), there are some factors that may contribute to making the VSO order available in broad information focus sentences, e.g. paratactic factual concessive constructions, which express the speaker's disapproval of (or disappointment with) the unpredictability of an event or situation (see example). However, as Martins notes, these constructions seem to involve V-to-C movement.

Convidei eu a Maria para jantar e ela não apareceu.  
invited I the M. for dinner and she not appeared  
'I invited Mary for dinner but she didn't come./Although I invited Mary for dinner, she didn't come.'

<sup>39</sup> According to my judgment, sentence (410c) cannot occur with the direct object to the right of the verb, and only the subject is possible as an answer to (410a). Nevertheless, assuming that other speakers may share J. Costa's (2004a) judgments, I will pursue the argument as though the VOS order in CEP were possible in the context given in (410), leaving the investigation of this issue open for future research.

- c. #Partiu a janela o Paulo  
 broke the window the P. (J. Costa 2004a: 80)

Assuming (along with J. Costa 2004a) that in narrow information focus sentences, the post-verbal subject stays in its base position,<sup>40</sup> the restriction in (409) can be reformulated as in (412).

- (412) Restriction on subject inversion in CEP (II)

In sentences with broad information focus, the subject and the direct object cannot remain in a VP-internal position; one of them must vacate the VP.

With this in mind, let me return now to the syntax of RRC-extraposition. The facts about CEP word order in inversion contexts predict the availability of RRC-extraposition in sentences displaying narrow information focus, with the subject or the direct object as intervening material, as in (413).

- (413) a. [DO  $\bar{S}$  t<sub>DO</sub> RRC]  
 b. [V S  $\underline{DO}$  t<sub>s</sub> RRC]

In subsections (a) and (b), I will show why this prediction is not borne out.

**(a) Subject in the intervening position**

The analysis developed thus far predicts the occurrence of the subject in the intervening position in sentences displaying narrow information focus, when an extraposed RRC takes a direct object as an antecedent, as sketched in (414).

- (414) [IP V [VP DO [VP  $\bar{S}$  [VP t<sub>v</sub> t<sub>DO</sub> RRC]]]]

However, sentences involving the structure in (414) are ungrammatical in CEP, as illustrated in (415).

- (415) \*Trouxe um bolo a Rita que tinha compota de morango.  
 brought a cake the R. that had jam of strawberry  
 ‘Rita brought a cake that had strawberry jam.’

Recall from the discussion above (around (412)) that the VOS order in CEP arises in narrow information focus sentences, where only the subject is focused. The object is not interpreted as information focus because it is previously referred to in the discourse. Therefore, (415) is not a possible configuration in CEP because the focused subject must surface in the rightmost sentential position in order to receive the default stress.

<sup>40</sup> According to J. Costa (2004a), the VOS order (in (410c)) is derived by short scrambling the object past the subject, whereas in the VSO order (in (411b)), the subject and the object remain in their base position inside the VP.

**(b) Direct object in the intervening position**

In CEP, sentences with narrow information focus can display VSO order (see e.g. (411b)). However, an extraposed RRC taking a subject as an antecedent cannot surface with a direct object in the intervening position, according to the scheme in (416).

(416) \*[V S DO t<sub>S</sub> RRC]

The impossibility of (416) is straightforwardly derived from the stranding analysis of RRC-extraposition proposed here. Under a single VP-shell, the subject is base-generated in [Spec, VP] and the direct object in the complement position of V. Then, an RRC stranded in the subject position can never follow a direct object in the complement position of V.

*3.5.2 Deriving the relevant properties*

Having taken this excursus into the derivation of RRC-extraposition (via movement to the left periphery or short scrambling), I will now return to the properties of RRC-extraposition in CEP outlined in §3.4.1: (1) definiteness effect; (2) restriction on extraposition from pre-verbal positions; and (3) restriction on extraposition from PPs. In §§3.5.2.1–3, I show how the theoretical apparatus presented in §3.5.1 derives these properties.

*3.5.2.1 The definiteness effect* As already mentioned in §3.4.1.1, extraposed RRCs in CEP can take weak noun phrases as their antecedent but not strong noun phrases. This property can be explained by considering Bowers' (1988) proposal that strong and weak noun phrases differ in their structure. Strong determiners are of category D, whereas weak determiners are adjectives and attach within NP, as illustrated in (417).

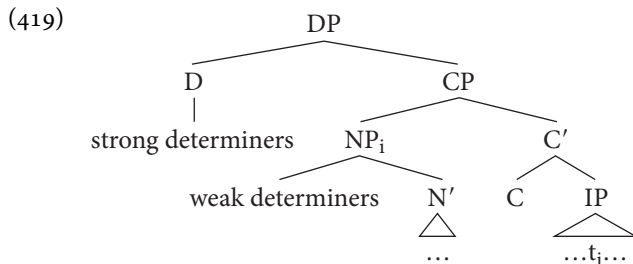
- (417) a. [<sub>DP</sub> each [<sub>NP</sub> picture of manatees]]  
b. [<sub>NP</sub> [<sub>AP</sub> many] [<sub>N'</sub> pictures of manatees]]

This proposal is based on the contrasting behavior of strong and weak noun phrases in extraction configurations. For instance, in (418) extraction can take place from a PP embedded in a weak noun phrase (see (418a)) but not from a PP within a strong noun phrase (see (418b)). According to Bowers (1988), the presence of an additional layer (i.e. a DP layer) in the strong noun phrase in (418b) blocks the extraction out of the PP.

- (418) a. Who did you buy a/three/many picture(s) of?  
b. \*Who did you buy the/those/each/every/those picture(s) of?  
(Bowers 1988: 49)

Extending Bowers' proposal to the raising analysis of relative clauses, I assume (in line with Kayne 1994 and Lee 2007) that strong determiners are located in the

external determiner, whereas weak determiners are within NP. This explains in a straightforward manner why extraposed RRCs can take only weak noun phrases as antecedents. Weak noun phrases can be moved leftward as a constituent, whereas strong noun phrases cannot because there is no constituent that includes the strong determiner and the noun phrase but excludes the RRC, as shown in (419).



The view that strong and weak determiners occupy different structural positions is supported by two additional arguments: (1) indefiniteness effect of the relative trace; and (2) licensing of the strong determiner (Bianchi 1999).

#### A. Indefiniteness effect of the relative trace

In the raising analysis, the relative clause is the complement of a determiner generated outside the relative CP. Assuming that strong determiners are of D category, the grammaticality of (420) can be explained by the fact that the weak noun phrase inside the relative CP (*três baloiços* ‘three swings’) satisfies the indefiniteness effect of the existential construction (see Browning 1987 and Bianchi 1999, among others). Hence, the strong determiner *o* ‘the’ cannot be generated within the raising head, as can be confirmed by the contrast in (421).

(420) Os três baloiços que havia em tua casa eram muito confortáveis  
 the three swings that were in your house were very comfortable  
 ‘The three swings that there were in your house were very comfortable.’

(421) a. Havia três baloiços em tua casa.  
 were three swings in your house  
 ‘There were three swings in your house.’  
 b. \*Havia os três baloiços em tua casa.  
 were the three swings in your house

#### B. Licensing of the strong determiner

There are some contexts in which the definite determiner *o(s)/a(s)* ‘the.M(PL)/the.FEM(PL)’ seems to be licensed by the presence of an RRC (see (422)).<sup>41</sup>

<sup>41</sup> The example in (422a) is constructed from Bianchi (1994: 40), whereas (422b–d) are built from Schmitt (2000: 311–12).

- (422) a. A Lisboa \*(que eu conheço)  
the L. that I know  
'The Lisbon that I know.'
- b. A Maria comprou uma casa com as janelas \*(que queria)  
the M. bought a house with the windows that wanted  
'Maria bought the house with the windows that she wanted.'
- c. A Maria pesa os 50 quilos \*(que a Rita gostaria de pesar).  
the M. weighs the 50 kilos that the R. love.COND DE.PREP weigh.INF  
'Maria weighs the 50 kilos that Rita would love to weigh.'
- d. Comprei o tipo de pão \*(que tu preferes)  
bought.1SG the type of bread that you prefer  
'I bought the type of bread that you prefer.'

The close connection between the RRC and the definite determiner in (422) has been used by the proponents of the raising analysis to support the claim that the determiner selects the relative CP (in the configuration [<sub>DP</sub> D CP]) (Vergnaud 1974, among others).<sup>42</sup> The fact that such a relation typically holds between the strong determiner and the RRC might suggest that a weak determiner does not select the relative CP. Thus, it is not merged in a position external to the relative CP but within the internal NP.

*3.5.2.2 Pre-verbal positions* In CEP, extraposed RRCs can take post-verbal subjects as antecedents but not pre-verbal subjects. Additionally, extraposed RRCs can take wh-constituents, emphatic/evaluative phrases, and preposed foci as antecedents but not topics. Barbosa (2009) provides an explanation for this contrast in terms of a prosodic account of extraposition. First, I discuss Barbosa's (2009) proposal, showing that it is incompatible with the analysis adopted here. Then I offer an alternative explanation for the phenomenon that rests upon the semantic interpretation of the antecedent.

As mentioned in Chapter 1 n. 46, there are currently two competing proposals for the syntactic analysis of pre-verbal subjects in CEP. J. Costa (2001, 2004a) and Costa and Duarte (2002) claim that pre-verbal subjects A-move to [Spec, IP], whereas Barbosa (1995, 2000, 2009) claims that subjects are base-generated in a

<sup>42</sup> Obviously, the ability to license a determiner is not limited to relative clauses (e.g. *a Lisboa dos anos 60* 'the Lisbon of the 60s') (see Jackendoff 1977). Note, however, that Kayne's approach to relative clauses also extends to other restrictive modifiers (Bianchi 1999: 280 n. 17).

left-dislocated position (as adjuncts to CP/IP). The two hypotheses are sketched in (423a–b), respectively.

- (423) a.  $[_{IP} S V [_{VP} t_S t_V]]$   
 b.  $[_{IP/CP} S [_{IP/CP} V [_{VP} pro t_V]]]$

One of Barbosa’s arguments in favor of the left-dislocated position of subjects in CEP (and in Romance NSLs in general) is precisely the impossibility of extraposition from pre-verbal indefinite subjects. Assuming Truckenbrodt’s (1995) prosodic approach to extraposition, Barbosa claims that relative clause extraposition is sensitive to Intonational Phrase (IntP) boundaries. More precisely, for extraposition to be possible, no IntP boundary may intervene between the antecedent and the rest of the clause. Because dislocated elements are (at least initially) mapped onto an IntP domain that is separated from the IntP domain onto which the rest of the clause is mapped, the impossibility of relative clause extraposition in CEP is straightforwardly derived (see (424), from Barbosa 2009: 44).

- (424) a. Syntax:  
 $[um\ homem\ que\ quer\ falar\ contigo]_k\ [_{IP}\ pro_k\ apareceu]$   
 a man that wants talk.INF with.you showed.up  
 ‘A man showed up that wants to talk to you.’
- b. Prosodic Structure:  
 $[um\ homem\ que\ quer\ falar\ contigo]_{IntP}\ apareceu]_{IntP}$   
 a man that wants talk.INF with.you showed.up

In contrast, because the pre-verbal subject is in [Spec, IP] in Romance non-NSLs (and English), no IntP boundary intervenes between the pre-verbal subject and the rest of the clause. Consequently, extraposition is allowed.

As for the cases in which non-referential QPs and focalized DPs appear in a pre-verbal position in CEP, Barbosa claims that these constituents are not left-dislocated but rather fronted by A-bar movement. In this case, no IntP boundary intervenes between the fronted constituent and the rest of the clause, and extraposition is allowed.

As can be easily concluded, Barbosa’s account of RRC-extraposition is not compatible with the stranding analysis of RRC-extraposition proposed here because the subject is base-generated in a left-dislocated position. To be compatible with the analysis presented here, this account must be “massaged” to provide for the base-generation of the subject in a VP-internal position.

Additionally, note that Barbosa’s analysis makes the wrong prediction with respect to the availability of RRC-extraposition in NSLs. Barbosa claims that there is a correlation between the possibility of extraposition from pre-verbal subject positions and the Null Subject Parameter. Specifically, she claims that NSLs do not allow



extraposition from pre-verbal subjects, whereas non-NSLs allow for it. Again, this is simply not correct. Over the course of its history, Portuguese has always been a Null Subject Language, but in earlier periods of its history it allowed extraposition from pre-verbal subjects, as illustrated in (425) (repeated from (323)).<sup>43</sup>

- (425) se Algê     A eles veer                    que diga     que llj     eu  
if someone to them come.FUT.SBJV that says-SBJV that him.CL I  
Alguna cousa diuía  
some thing owed  
'if someone who says that I owed him something comes towards them' (13th c.,  
DCMP)

Alternatively, I would like to suggest that the explanation for the restriction on extraposition from pre-verbal subjects rests upon the semantic interpretation of the antecedent. More precisely, I claim that RRC-extraposition in CEP obeys the *Interpretative Principle* given in (426).

- (426) Interpretative Principle  
The antecedent of an extraposed RRC must occur in a position non-ambiguously interpreted as non-topic (in Kuroda's 2005 sense).<sup>44</sup>

The fact that the restriction on extraposition from pre-verbal positions is semantically motivated should not come as a surprise because several authors have already observed that word order in CEP reflects both information structure and the contrast

<sup>43</sup> Interestingly, Fiéis and Lobo (2010) show that earlier stages of Portuguese are also problematic for Barbosa's hypothesis concerning the position of the subject in absolute gerund clauses. Barbosa claims that NSLs and non-NSLs contrast with respect to the possibility of having pre-verbal subjects in absolute gerund clauses: non-NSLs are subject initial (*Your brother having called...*), whereas NSLs are V/Aux initial (*Aparecendo a Maria...* lit. 'showing up Maria...'). Fiéis and Lobo (2010) demonstrate that this correlation is simply not correct. In earlier stages of its history, Portuguese is an NSL and allows for pre-verbal subjects in absolute gerund clauses, as illustrated in the following example, from Fiéis and Lobo (2010: 422).

Joham Rodriguez estando no lugar, veo sobr'elle o concelho de Ledesma  
J. R. be.GER in.the place came over.him the ±group of L.  
'Joham Rodriguez being in the place, the group of Ledesma attacked him.'

One hypothesis that is worth exploring in future research is that the Null Subject Parameter does not necessarily correlate with specific subject positions. I tentatively hypothesize that NSLs might display different positions for pre-verbal subjects and that this may be subject to cross-linguistic and diachronic variation. Hence, I conjecture that earlier stages of Portuguese and CEP may differ in the structural position occupied by pre-verbal subjects. However, further research is necessary in this domain to warrant the validity of these suggestions.

<sup>44</sup> In this context, the term *topic* is not used as a syntactic concept (i.e. as referring to a constituent that is placed at the sentential left periphery) nor as a discourse-theoretical concept (i.e. as referring to a constituent that expresses old information in the organization of the discourse) but as a semantic concept. In this sense, it is understood as a constituent that expresses an *aboutness relation* (Kuroda 2005). For more details, I refer the reader to §1.3.3.3.

between categorical andthetic judgments (in the sense of Kuroda 1965, 1972, 2005).<sup>45</sup>

Let me now explore in detail how the Interpretative Principle in (426) explains the restriction on extraposition from pre-verbal subjects and topics.

### A. Pre-verbal subjects

Assuming the distinction between categorical andthetic judgments originally proposed by Kuroda (1965), Martins (forthcoming) provides evidence for the idea that [Spec, IP] is an ambiguous position in CEP. It can be filled by topic elements (i.e. the subject of predication in sentences expressing categorical judgments), but it can also be filled by non-topic elements (i.e. the subject of a sentence expressing thetic/descriptive judgments). For details and examples, see §1.3.3.3.

This explains why extraposed RRCs cannot take a pre-verbal subject as an antecedent. According to the Interpretative Principle in (426), the antecedent of an extraposed RRC must occur in a position non-ambiguously interpreted as non-topic. Given that [Spec, IP] does not satisfy this requirement, a constituent occurring in this position cannot be the antecedent of an extraposed RRC.

In contrast, as already shown in §1.3.3.3, post-verbal subjects occupy positions non-ambiguously interpreted as non-topic. Hence, a scrambled subject left-adjoined to VP satisfies the Interpretative Principle in (426) and, therefore, can be taken as the antecedent of an extraposed RRC.

### B. Discourse dedicated positions in the left periphery

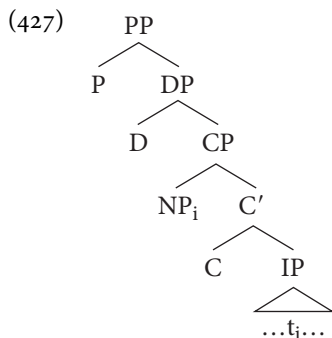
The Interpretative Principle in (426) can also explain why RRC-extraposition cannot take place from topics. Assuming a split-CP approach (Rizzi 1997), according to which there are different functional projections especially dedicated to single discourse functions (e.g. TopP and FocP; see §1.3.1.4), the position occupied by a topic constituent is non-ambiguously interpreted as topic. Therefore, RRC-extraposition is ruled out by the Interpretative Principle in (426).

Conversely, the position occupied by *wh*-constituents, emphatic/evaluative phrases and preposed foci is non-ambiguously interpreted as non-topic. Therefore, the possibility for extraposition from these constituents is straightforwardly derived.

*3.5.2.3 Prepositional phrases* In CEP, RRC-extraposition is not permitted if the antecedent is the object of a preposition. This restriction is straightforwardly derived

<sup>45</sup> Based on the Brentano–Marty theory of judgments, Kuroda distinguishes two types of judgment: categorical/predicational vs. thetic/descriptive. A categorical/predicational judgment is a cognitive act of attributing a predicate to a subject, whereas a thetic/descriptive judgment is grounded, in its basic form, on perception. For further details see §1.3.3.3.

under the standard assumption that movement only applies to constituents. As sketched in (427), the preposition, the determiner, and the noun phrase in [Spec, CP] do not form a constituent (excluding the RRC). As a result, they cannot undergo leftward movement, stranding the RRC in situ.



3.5.2.4 *Summary* The results of Section 3.5.2 are summarized in Table 3.6. A plus indicates that the stranding analysis can straightforwardly derive the restriction or derive it with reference to independent principles; a minus would indicate that it cannot.

I conclude that the stranding analysis accounts for the restrictions on RRC-extrapolation in CEP. However, it is worth noting that this analysis has received much criticism in the literature (Büring and Hartmann 1997; Koster 2000; De Vries 2002; among others). In §3.5.3, I review some of the arguments that have been put forth in the literature against the stranding analysis and show that they do not offer any insurmountable obstacle to the approach proposed here because they do not apply to CEP.

TABLE 3.6 Contemporary European Portuguese: Evaluation of the stranding analysis

Empirical issue	Stranding analysis
A. No extrapolation from strong noun phrases	+
B. Extrapolation from pre-verbal positions	no pre-verbal subjects + wh-constituents + emphatic/evaluative phrases + preposed foci + no topics +
C. No extrapolation from PPs	+

### 3.5.3 Problems

A number of arguments have been adduced in the literature against the stranding analysis of RRC-extraposition, namely: (1) extraposition from strong noun phrases; (2) extraposition from PPs; (3) ungrammaticality of the source structure; (4) constraints on the surface position of extraposed RRCs; (5) extraposition from subjects; (6) emptiness of the VP; (7) mirror effects; (8) VP-topicalization; (9) extraposition from split antecedents. These arguments are listed in A–I and are discussed in turn.

#### A. Extraposition from strong noun phrases

One of the most frequently adduced arguments against the stranding analysis is that it cannot derive extraposed RRCs taking a definite article+head as an antecedent. For instance, Koster (2000) shows that an extraposed RRC can take a definite article +head as an antecedent in Dutch, as illustrated in (428) (see also (296)).

- (428) Hij heeft [de vrouw]<sub>i</sub> gezien t<sub>i</sub> die het boek geschreven heeft.  
he has the woman seen who the book written has  
'He has seen the woman who has written the book.' (Koster 2000: 5)

Koster argues that sentences like (428) undermine the stranding analysis: *de* and *vrouw* do not form a constituent to the exclusion of the RRC and, as a result, cannot undergo leftward movement, stranding the RRC in situ. However, note that this does not constitute a problem for the analysis adopted here. CEP, unlike Dutch, does not allow for extraposed RRCs with a definite article+head as an antecedent, as shown in §3.4.1.1. In actual fact, the unavailability of sentences like (428) in CEP supports an analysis of RRC-extraposition in CEP in terms of stranding.

#### B. Extraposition from prepositional phrases

A similar obstacle for the stranding analysis regards extraposition from PPs. Koster (2000) points out that extraposition from NPs within PPs is entirely grammatical in Dutch. See (429); also (314) and (316).

- (429) Hij heeft [met een vrouw] gesproken die alles wist  
he has with a woman talked who everything knew  
'He has talked with a woman who knew everything.' (Koster 2000: 23)

Koster (2000) and De Vries (2002) claim that the stranding analysis cannot derive (429); *met een vrouw* 'with a woman' is not a constituent and consequently cannot be moved leftwards. Alternatively, assuming that the PP and the head can be generated separately, the movement of *een vrouw* 'a woman' to a position inside the PP would involve movement to a non c-commanding position. Again, this problem does not arise in CEP because RRC-extraposition cannot take place from prepositional phrases positions, as shown in §3.4.1.3.

### C. Ungrammaticality of the source structure

Another obstacle to the stranding analysis concerns the ungrammaticality of the source structure in languages like Dutch. Recall that under the stranding analysis, the antecedent and the RRC are base-generated together. According to Koster (2000), such an analysis does not even have initial plausibility because the presumed source structure in (430), displaying the SVO order, is ungrammatical in Dutch.

- (430) \*Hij heeft gezien de vrouw die het boek geschreven heeft.  
he has seen the woman who the book written has  
'He has seen the woman who has written the book.' (Koster 2000: 7)

Sentence (430) is ungrammatical because in an SOV language like Dutch, NP objects do not generally follow the verb. Note that in the extraposed version, the forbidden sequence \*V-NP would still be involved, as illustrated in (431).

- (431) Hij heeft [NP de vrouw]<sub>i</sub> gezien [NP [NP t<sub>i</sub>] [CP die het boek.  
he has the woman seen who the book  
geschreven heeft]]  
written has (Koster 2000: 7)

Of course, this problem does not arise in an SVO language like CEP, where NP objects usually follow the verb. Therefore, sentences where the head plus its RRC are construed post-verbally are entirely grammatical, as illustrated in (432a). Given that the sequence V-NP is not forbidden, an RRC is likely to be stranded in a post-verbal position, as illustrated in (432b).

- (432) a. Encontrei ontem uma rapariga que perguntou por ti.  
met.1SG yesterday a girl that asked for you  
'Yesterday I met a girl that asked for you.'  
b. Encontrei uma rapariga<sub>i</sub> ontem t<sub>i</sub> que perguntou por ti.  
met.1SG a girl yesterday that asked for you

### D. Constraints on the surface position of extraposed RRCs

Another problem concerns the clause-final position of extraposed RRCs. It has been argued in the literature that if the RRC-extraposition is derived from stranding, it becomes a mystery why an extraposed RRC cannot surface in an intermediate position. Koster (2000) and De Vries (2002) demonstrate that if the antecedent is preposed in Dutch, the relative clause cannot be left behind at the normal object position; see (433), adapted from De Vries (2002: 254).

- (433) \*Een man heb ik die een rode koffer draagt gesignaleerd.  
a man have I who a red suitcase carries noticed  
'I have noticed a man who carries a red suitcase.'

De Vries (2002) argues that if extraposition were stranding, nothing should exclude the schematic derivation of (433) given in (434).

- (434) a. V [NP RC] →  
b. [NP RC]<sub>i</sub> V t<sub>i</sub> →  
c. NP Aux S [t<sub>NP</sub> RC]<sub>i</sub> V t<sub>i</sub> (De Vries 2002: 255)

Although it can be a problem for Dutch, such an objection is not applicable to CEP. In this language, if the antecedent is focalized, the extraposed RRC can be left behind at the normal object position, as illustrated in (435).

- (435) Nada mais disse que valesse a pena até ao final  
nothing more said.3SG that be.worthwhile.SBJV until to.the end  
da conferência.  
of.the conference  
'He did not say anything else that was worthwhile until the end of the conference.'

The same is true of contexts involving a wh-constituent as the antecedent of an RRC. As shown in (436), an extraposed RRC can be left behind at a non-final position.

- (436) Quantas pessoas apareceram que não foram convidadas naquela  
how.many people showed.up that not were invited in.that  
festa horrível que organizámos em minha casa!  
party horrible that organized.1PL at my house  
'How many people showed up that were not invited to that horrible  
party that we organized at my house!'

In sentences (435)–(436), there is a clear pause between the extraposed RRC and the constituent in the clause-final position. This pause, which appears to be crucial to the acceptability of these sentences, seems to suggest that an extraposed RRC may surface in a non-final position if the constituent following the RRC is mapped into an independent intonational phrase. This guarantees that the extraposed RRC receives prosodic stress and is interpreted with prosodic and discourse prominence.

Although various aspects of the interaction between extraposition and prosody remain open for future research, it is clear that the (prosodic) constraints on the surface position of extraposed RRC do not undermine the syntactic analysis of RRC-extraposition in CEP in terms of stranding.

### E. Extraposition from subjects

Another problematic aspect discussed by Koster (2000) is the possibility of having extraposition from subjects in Dutch, as illustrated in (437).

- (437) Een vrouw heeft het boek geschreven die alles wist.  
a woman has the book written who everything knew  
'A woman who knew everything has written the book.' (Koster 2000: 8)

It is generally assumed that Dutch verbs are spelled out in V (apart from  $V_2$  position of the finite verb in main clauses). Therefore, under the stranding analysis, the source structure of (437) would have the head plus its RRC to the right of the VP as a subject, which is not a legitimate base position for the subject in any language.

However, this problem does not arise in CEP. Suppose that subjects are base-generated VP-internally, as suggested by Koopman and Sportiche (1991). Furthermore, consider that CEP displays V-to-I movement. Under these two assumptions, it is clear that an extraposed RRC taking a subject as an antecedent can be stranded in its base position. As depicted in (438), the RRC can be stranded in [Spec, VP] (under a single VP-shell), preceding the trace of V (which moved to I).

(438) [<sub>IP</sub> V [<sub>VP</sub> S [<sub>VP</sub> adverb [<sub>VP</sub> t<sub>S</sub> RRC [<sub>V'</sub> t<sub>V</sub>]]]]]

### F. Emptiness of the VP

De Vries (2002) argues that the stranding analysis is implausible because it requires that all the material must vacate the VP or an even higher projection. Focusing on extraposition from non-objects, he claims that everything would be generated within the VP, and the VP would always be emptied, as represented, for instance, in (439).<sup>46</sup>

(439) S Aux...O V AdvP [<sub>VP</sub> [t<sub>S</sub> RRC] t<sub>V</sub> t<sub>O</sub> ]

However, the emptiness of the VP does not constitute a problem for RRC-extraposition in CEP given that most of the operations are independently motivated. First, there is independent V-to-T movement. Therefore, the main verb and, concomitantly, pre-verbal subjects always vacate the VP. Moreover, there is a restriction against having both the subject and the object in a VP-internal position; one of them must vacate the VP (see (412)).

### G. Mirror effects

De Vries (2002) shows that if two RRCs are extraposed in Dutch, a mirror effect emerges: an RRC extraposed from the object must precede an RRC extraposed from the subject. This is illustrated in (440), from De Vries (2002: 248).

(440) a. Een zekere misdadiger heeft de kluis gekraakt die tweehonderd  
 a certain criminal has the safe cracked that two.hundred  
 diamanten bevatte, die ook meneer X heeft vermoord.  
 diamonds contained, who also mister X has killed  
 lit. 'A certain criminal has cracked the safe that contained two hundred  
 diamonds, who also has killed Mister X.'

<sup>46</sup> Additionally note that the derivation in (439) would still be a problem because it leads to the wrong word order in Dutch.

- b. \*Een zekere misdadiger heeft de kluis gekraakt die ook  
a certain criminal has the safe cracked that also  
meneer X heeft vermoord, die tweehonderd diamanten bevatte.  
mister X has killed that two.hundred diamonds contained

He argues that this is a problem for the raising analysis because crossing dependencies are expected (see (441)), contrary to fact.

(441) S...O...[t<sub>S</sub> RRC]...[t<sub>O</sub> RRC]

Unfortunately, this test does not yield conclusive results in CEP. A sentence that could virtually instantiate the mirror effect under discussion could be one involving an RRC extraposed from a wh-constituent and an RRC extraposed from the object. However, such sentences are excluded, independently of the relative order of the two extraposed RRCs, as shown in (442).

- (442) a. \*[Quantas pessoas]<sub>i</sub> requisitaram [livros]<sub>j</sub> ontem t<sub>j</sub> que são  
how.many people checked.out books yesterday that are  
recomendados pelo Ministério t<sub>i</sub> que são sócias da biblioteca?  
recommended by.the ministry that are members.of.the library  
'How many people checked out books yesterday that are recommended  
by the ministry that are library members?'
- b. \*[Quantas pessoas]<sub>i</sub> requisitaram [livros]<sub>j</sub> ontem t<sub>i</sub> que são sócias  
how.many people checked.out books yesterday that are members  
biblioteca t<sub>j</sub> que são recomendados pelo Ministério?  
library that are recommended by.the ministry

Another possible candidate for such a test would be a sentence involving an RRC extraposed from a preposed focus and an RRC extraposed from the object. Again, the two possible orders excluded:

- (443) a. \*[Poucas pessoas]<sub>i</sub> conseguiram comprar [casas]<sub>j</sub> no leilão de  
few people managed buy.INF houses at.the auction of  
ontem t<sub>j</sub> que fossem baratas t<sub>i</sub> que ficassem satisfeitas.  
yesterday that be.SBJV cheap that be.SBJV satisfied  
lit. 'Few people managed to buy houses at the auction yesterday that are  
cheap that are happy.'
- b. \*[Poucas pessoas]<sub>i</sub> conseguiram comprar [casas]<sub>j</sub> no leilão de  
few people managed buy.INF houses at.the auction of  
ontem t<sub>i</sub> que ficassem satisfeitas t<sub>j</sub> que fossem baratas.  
yesterday that be.SBJV satisfied that be.SBJV cheap



Importantly, sentences (442)–(443) become grammatical if one of the extraposed RRCs is removed. The explanation behind the ungrammaticality of (442)–(443) may rely on two independent factors. First, it may be due to the effect of processing factors; as De Vries (2002: 248) notes, sentences with two extraposed RRCs are extremely hard to comprehend. Second, it may be explained by the same restriction that prevents the occurrence of the subject and the object in a post-verbal position in sentences displaying broad information focus (see (412)). Note that in (442)–(443), after the extraction of the antecedents, the subject and the object positions are still filled with an RRC. Therefore, it is likely that the restriction against the occurrence of a subject and an object in a post-verbal position becomes active in these contexts as well.

### H. VP-topicalization

Koster (2000) and De Vries (2002) claim that if an extraposed RRC is stranded within the VP, the verb should be allowed to topicalize along with the extraposed RRC. However, VP-topicalization along these lines is simply not allowed in Dutch, as is illustrated in (444).

- (444) \*[gezien die een rode jas draagt] heb ik de man  
seen who a red coat wears have I the man  
'I have seen the man who wears a red coat.' (De Vries 2002: 256)

In CEP, a post-verbal antecedent and its RRC are within the VP. Therefore, both elements are expected to surface in the topicalized constituent in a construction like (445) (repeated from (400)).<sup>47</sup> This prediction is borne out, as illustrated in (446).

- (445) Visitar os amigos, a Maria visita todos os anos.  
visit.INF the friends the M. visits every the years  
'Visit her friends, Maria does it every year.'
- (446) Encontrar uma pessoa na escola que esteja interessada em  
find.INF a person in.the school that be.SBJV interested in  
ir para Angola, não acredito que encontres.  
go.INF to A. not believe.1SG that find.2SG  
'Find a person in the school that is interested in going to Angola, I do not believe you will do it.'

As for sentences involving extraposition from a pre-verbal constituent, there are three options in CEP: the antecedent may be a preposed focus, an emphatic/evaluative phrase, or a *wh*-constituent (see §3.4.1.2). However, when these elements are extracted from the VP, VP-topicalization is simply not allowed, as shown in (447)–(449).

<sup>47</sup> I assume, along the lines of Kato and Raposo (2007), that the structure in (413) involves VP-topicalization (see §3.5.1.3A(b)).

- (447) a. Nada de jeito ele viu na sua recente ida a Paris.  
nothing worthwhile he saw in.the his recent visit to P.  
'He did not see anything worthwhile in his recent visit to Paris.' (Raposo  
1995: 456)
- b. \*Ver na sua recente ida a Paris, nada de jeito ele viu.  
see.INF in.the his recent visit to P. nothing worthwhile he saw
- (448) a. Muito whisky bebi ontem à noite!  
a.lot.of whisky drank.1SG yesterday at.the night  
'I drank a lot of whisky last night!'
- b. Beber ontem à noite, muito whisky bebi!  
drink.INF yesterday at.the night a.lot.of whisky drank-1SG
- (449) a. Quantas pessoas conheceste em Inglaterra?  
how.many people met.2SG in England  
'How many people did you meet in England?'
- b. \*Conhecer em Inglaterra, quantas pessoas conheceste?  
meet-INF in England how.many people met.2SG

Consequently, it comes as no surprise that extraposed RRCs taking a preposed focus, an emphatic/evaluative phrase, or a *wh*-constituent as an antecedent are not allowed in a topicalized VP; see (450)–(452).

- (450) a. Poucas pessoas conheço que vão ao ginásio.  
few people know.1SG that go to.the gym  
'I know few people who go to the gym.'
- b. \*Conhecer que vão ao ginásio, poucas pessoas conheço.  
know.INF that go to.the gym few people know.1SG
- (451) a. Muito whisky bebi ontem que estava fora do prazo!  
a.lot.of whisky drank.1SG yesterday that was out of.the expiry.date  
'I drank a lot of whisky yesterday that was expired!'
- b. \*Beber ontem que estava fora do prazo, muito  
drink.INF yesterday that was out of.the expiry.date a.lot.of  
whisky bebi!  
whisky drank
- (452) a. Quantas pessoas conheces que vão ao ginásio?  
how.many people know.2SG that go to.the gym  
'How many people do you know that go to the gym?'
- b. \*Conhecer que vão ao ginásio, quantas pessoas conheces?  
know.INF that go to.the gym how.many people know.2SG

It seems fair to conclude that the impossibility of having an extraposed RRC within a topicalized constituent (see (450b)–(452b)) does not undermine the stranding analysis; examples (447)–(449) independently show that VP-topicalization is incompatible with the extraction of a preposed focus, an emphatic/evaluative phrase, or a wh-constituent.

### I. Extraposition from split antecedents

De Vries (2002) claims that English and Dutch allow for split antecedents, as illustrated in (453). In this example, the relative pronoun triggers plural agreement on the verb in the relative clause (which shows that (453) is not simply a Right Node Raising construction).

- (453) Ik heb een vrouw<sub>i</sub> gezien en jij hebt een man<sub>j</sub> bespied  
I have a woman seen and you have a man spied.on  
die<sub>i+j</sub> beide een rode jas droegen.  
who both a red coat wore.PL  
'I saw a woman and you have spied on a man who wore a red coat.' (De Vries 2002: 264)

According to De Vries (2002), the stranding analysis cannot derive sentences like (453) because the head and its relative clause are always generated together. Hence, the plural relative pronoun and verb in (453) cannot be derived.

Fortunately, this problem does not even arise in CEP because RRCs with a split antecedent are completely excluded:

- (454) \*Eu comprei um computador ontem e o meu marido  
I bought a computer yesterday and the my husband  
ofereceu-me uma impressora hoje que estavam em promoção no  
offered-me.CL a printer today that were at discount at.the  
centro comercial.  
center shopping  
'I bought a computer yesterday and my husband offered me a printer today;  
both the computer and the printer were at a discount at the shopping center.'

*3.5.3.1 Summary* In this section, I examined nine problems that have been adduced in the literature against the stranding analysis. Because most of the problems were identified in the literature on Dutch (especially by Koster 2000 and De Vries 2002), it was possible to systematically compare the behavior of Dutch and CEP with respect to the same phenomena. The results are summarized in Table 3.7. Here, the stranding theory is evaluated in the following way: a plus indicates that the stranding analysis can derive the property straightforwardly or with reference to independent

**TABLE 3.7 Dutch and Contemporary European Portuguese: Global evaluation of the stranding analysis**

	Dutch	CEP
A. Extraposition from strong noun phrases	–	*
B. Extraposition from PPs	–	*
C. Ungrammaticality of the source structure	–	*
D. Constraints on the surface position of extraposed RRCs	–	+
E. Extraposition from subjects	–	+
F. Emptiness of the VP	–	+
G. Mirror effect	–	*
H. VP-topicalization	–	+
I. Extraposition from split antecedents	–	*

principles, a minus indicates that it cannot, and an asterisk indicates that the property does not hold for a specific language.

I conclude that the stranding analysis can account for the properties of RRC-extraposition in CEP but not in Dutch. The differences in RRC-extraposition exhibited in both languages reinforce the conclusion that I drew on the basis of the empirical data discussed in §3.4.2, that is, that RRC-extraposition is not a uniform phenomenon, being subject to cross-linguistic variation.

### 3.5.4 Conclusion

This section focused on the syntactic nature of RRC-extraposition in CEP. I showed that an analysis in terms of stranding can account for the properties of RRC-extraposition in CEP. Specifically, I proposed that RRC-extraposition in CEP involves A'-movement of the antecedent, either via short scrambling (when the antecedent is in a post-verbal position) or via movement to the left periphery (when the antecedent is in a pre-verbal position).

I attempted to keep the technical details of the analysis to a minimum. However, because the theory proposed here has an important impact on different domains of the clause structure (e.g. on the VP and the CP domains), its implementation required some technical discussion, especially with regard to short scrambling. The fact that word order in CEP is constrained by discourse/semantic/prosodic effects also added somewhat complex explanatory devices to the picture.

Nevertheless, it is worth noting that the analysis behind this theoretical apparatus actually amounts to a simple idea: RRC-extraposition in CEP results from leftward movement of the antecedent and stranding of the RRC. Note further that the complex restrictions/principles that seem to interfere with this phenomenon have

been independently proposed in the literature to account for other phenomena (e.g. the different word-order patterns found in CEP).

### 3.6 A proposal for earlier stages of Portuguese

In this section, I submit that RRC-extrapolation in earlier stages of Portuguese involves the same syntactic structure as coordination. Section 3.6.1 establishes the basic tenets of this analysis, introducing Koster's (2000) and De Vries' (2002) approaches to extrapolation. Section 3.6.2 depicts how the *specifying coordination plus ellipsis* analysis proposed by De Vries (2002) can account for the properties of RRC-extrapolation in earlier stages of Portuguese outlined in §3.4.3. Finally, in §3.6.3, I address some problems of this analysis, providing solutions capable of overcoming some of its drawbacks.

#### 3.6.1 *The specifying coordination analysis*

3.6.1.1 *Koster (2000)* Koster proposes that in general, phrase structure takes two forms: primary phrase structure and parallel structure. Syntactically, both forms display the same configuration, consisting of a specifier, a head, and a complement. However, they are licensed in different ways. As Koster puts it:

Primary phrase structure has a functional part and a lexical part embedded in it. All lexical elements must be licensed in some functional position to their left, a consequence of universal head-initial structure (Kayne 1994). The elements of parallel structure are not directly licensed in this way, but at the most indirectly, by linking them to elements of the primary phrase structure. (Koster 2000: 16)

Coordination has been seen as a form of parallel structure. However, Koster claims that parallel structure should be conceived as a broader phenomenon, encompassing coordination, extrapolation, specifications found in equatives, and possibly other phenomena such as appositions and right dislocations.

Assuming Munn's (1993) and Kayne's (1994) analysis of coordination (see also Johannessen 1998), Koster claims that parallel structure is syntactically represented as in (455). The primary phrase structure element is in the specifier position, and the parallel conjunct is in the complement position of a Boolean head.

(455) [XP<sub>1</sub> [Boolean head XP<sub>2</sub>]]

Although the parallel construal has the uniform syntactic configuration in (455), it encompasses structures with different semantics, depending on the nature of the Boolean head involved. In standard coordination, the Boolean head corresponds to coordinators such as *and* and *or*. In extrapolation (and in equatives), the parallel construction involves an empty head (as in the asyndetic coordination in the

traditional grammar). Koster (2000) represents this empty head as a colon head (':') and claims that it functions as an abstract Boolean operator, leading to the addition of properties, that is, to the introduction of a specifying addition.

To support the idea that standard coordination and extraposition involve a similar syntactic representation, Koster (2000) demonstrates that they behave alike with respect to a number of properties.

First, in standard coordination two conjuncts may be non-adjacent in Dutch, as illustrated in (456a).

- (456) a. Zij heeft Marie gezien en mij.  
she has M. seen and me  
'She saw Mary and me.'
- b. Zij heeft Marie en mij gezien  
she has M. and me seen (Koster 2000: 16)

Example (456a) cannot be derived from (456b) through rightward movement because it would constitute a violation of Ross's Coordinate Structure Constraint. Alternatively, Koster proposes that both sentences involve a parallel construal and that the difference between them may be attributed to the properties of pied-piping.<sup>48</sup> In this view, the coordinated phrases in (456) involve the abstract representation given in (457). According to Koster, the first XP checks the features of *and* (or [*and* XP]). This mechanism expresses the fact that an XP of a given type in the complement position typically requires an XP of the same type in the specifier position.

- (457) [XP [*and* XP]]

If the specifier position is filled by the checking phrase only, the adjacency between the two conjuncts is derived, as in (456b). In this example, both conjuncts are noun phrases, and the noun phrase in the specifier position (*Jan*) checks the features of *en* (or [*en Marie*]); see (458).

- (458) Hij heeft [[<sub>NP</sub> Jan] [*en* [<sub>NP</sub> Marie]]] gezien.  
he has J. and M. seen  
'He saw John and Mary.' (Koster 2000: 18)

However, as in the cases of standard pied-piping, the checking phrase can be contained in a larger constituent (e.g. a VP or AgrOP). This happens in sentences involving non-adjacency of conjuncts, as in (456a). In this case, the checking phrase

<sup>48</sup> Note that Koster (2000) proposes an extension of the concept of pied-piping that is not standardly assumed in the literature on the topic, given that this phenomenon is traditionally associated with movement.

(*Jan*) and the elements to be checked (*en* or *en Marie*) are the same. The difference is that in (456a), the specifier position is filled both by the checking phrase and by a larger constituent containing it, as depicted in (459).

- (459) Hij heeft [<sub>AgrOP</sub> [<sub>AgrOP</sub> [<sub>NP</sub> *Jan*] [<sub>AgrO</sub> [<sub>VP</sub> *gezien*]]] [<sub>en</sub> [<sub>NP</sub>  
 he has J. seen and  
*Marie*]]]  
 M. (Koster 2000: 18)

As in the standard cases of pied-piping, the extension of the checking phrase has a limit: it cannot go beyond clausal boundaries. This explains the Right Roof Constraint on this construction. As illustrated by the ungrammaticality of (460), the checking phrase (*Jan*) cannot be contained in a subject clause CP that does not contain the elements to be checked (*en Marie*).

- (460) \*[<sub>CP</sub> dat hij Jan gezien heeft] is duidelijk en Marie  
 that he J. seen has is clear and M.  
 ‘It is clear that he saw Jan and Marie.’ (Koster 2000: 18)

Koster also demonstrates that all forms of parallel construal have the properties of Ross’s Coordinate Structure Constraint. Among other things, this entails that the first conjunct cannot be moved without the second, as is illustrated in (461).

- (461) \**Jan heb ik<sub>i</sub> [t<sub>i</sub> en Marie] gezien.*  
 J. have I and M. seen  
 ‘I saw Jan and Marie.’ (Koster 2000: 19)

In light of these facts,<sup>49</sup> Koster proposes that extraposition does not have the properties of movement, but those of parallel construal. Let me examine in detail how this approach works in the case of RRC-extraposition.

According to Koster, relative clauses are analyzed in terms of parallel construal. This structure is schematically represented in (462), where the relative clause is taken to provide a further specification of the head placed in the specifier of the colon.<sup>50</sup>

- (462) [<sub>NP</sub> [<sub>NP</sub> een vrouw] [: [<sub>CP</sub> die alles wist]]]  
 a woman who everything knew  
 ‘a woman who knew everything’ (Koster 2000: 22)

The extraposition of relative clauses is then derived from the property of pied-piping. If only the head occurs in the specifier position, there is adjacency between the head

<sup>49</sup> Koster (2000) also discusses evidence from specifications found in equatives, which I do not address here.

<sup>50</sup> As for the contrast between RRCs and ARCs, Koster (2000) claims that the colon indicates set interaction in the case of RRCs and set union in the case of ARCs. He also suggests that RRCs and ARCs can be distinguished by the level of attachment of the specifying conjunct (NP or DP).

and the relative clause (see (463a)). If the specifier is filled by a larger constituent containing the head, the extraposed order is derived (see (463b)).

- (463) a. Ik heb [<sub>NP</sub> [<sub>NP</sub> een vrouw] [: [<sub>CP</sub> die alles wist]]] gezien.  
 I have a woman who everything knew seen  
 ‘I saw a woman who knew everything.’  
 b. Ik heb [[<sub>AgrOP</sub> [<sub>NP</sub> een vrouw]] gezien] [: [<sub>CP</sub> die alles wist]]  
 I have a woman seen who everything knew  
 (Koster 2000: 23)

In (463b), the checking head (*een vrouw* ‘a woman’) is included in AgrOP, but more inclusive phrases can occupy the specifier position of a parallel construal. For instance, if the antecedent of an extraposed RRC is in [Spec, IP], the entire IP surfaces in the specifier position, but if the antecedent is a topic, the minimal CP surfaces in this position, as illustrated in (464).

- (464) a. [<sub>IP</sub> [<sub>IP</sub> [Een vrouw] heeft hem gezien] [: [ die alles wist]]]  
 a woman has him seen who everything knew  
 ‘He saw a woman who knew everything.’  
 b. [<sub>TopP</sub> [<sub>TopP</sub> [Een vrouw] heeft hij t gezien] [: [ die alles wist]]]  
 a woman has he seen who everything knew  
 (Koster 2000: 23)

As in the cases of standard coordination, the extension of the checking phrase has a limit: it cannot go beyond the minimal CP containing the relative clause (see (460)). This explains the ungrammaticality of (465).

- (465) \* [<sub>CP</sub> Dat hij een vrouw gezien heeft] is duidelijk die alles wist  
 that he a woman seen has is clear who everything knew  
 ‘It is clear that he saw a woman who knew everything.’ (Koster 2000: 23)

Moreover, the Coordinate Structure Constraint also applies to relative clause-extraposition, which is confirmed by the impossibility of having the first part of the construction moved away from the relative clause in sentences like (466).

- (466) \*Een vrouw<sub>i</sub> heeft hij [t<sub>i</sub> die alles wist] gezien  
 a woman has he who everything knew seen  
 ‘He saw a woman who knew everything.’ (Koster 2000: 23)

Koster’s (2000) account is conceptually attractive because it unifies a variety of apparently unrelated constructions under the label of *parallel construal*. However, it faces substantial empirical and theoretical difficulties, which I briefly comment on.

From an empirical point of view, the biggest problem is that Koster’s approach overgenerates in a number of ways. If the constituent that surfaces in the specifier



position may belong to any category (within the minimal CP domain), extraposition should take place from any constituent, and this is simply not true. As discussed in Section 3.4, in some languages, there are important restrictions on RRC-extraposition. For instance, in CEP, RRC-extraposition cannot take place from strong noun phrases or from the object of prepositions. As can be easily concluded, Koster's (2000) analysis leaves these restrictions unexplained.

Second, the syntactic structure proposed by Koster allows the specifier and the complement positions of a parallel construal to be filled by unequal categories. For example, an extraposed RRC taking an object as an antecedent would have an AgrOP in the specifier position and an RRC in the complement position. As De Vries (2002, 2009) notes, the problem is that in this case, the constituents are neither of the same category nor functionally equivalent, which is not allowed in standard coordination (e.g. \*He looks great and at me).

Another empirical problem with Koster's analysis concerns the assumption that the categorial status of the constituent in the specifier position depends on the structural position of the antecedent. Such assumption works in a language like Dutch, where it is generally assumed that the verb is spelled out in V (apart from the V<sub>2</sub> position of the finite verb main clauses) but raises some problems for languages displaying V-to-I movement.

Consider, for instance, a sentence containing an RRC extraposed from an object, as in (467) (repeated from (381)) from CEP.

- (467) Encontrei uma rapariga ontem que perguntou por ti.  
 met.1SG a girl yesterday that asked for you  
 'I met a girl yesterday that asked for you.'

Under the assumption that the checking phrase in the first conjunct extends until the structural position occupied by the antecedent, the specifier position in (467) would be filled by the VP, and the complement position would be filled by the RRC, as depicted in (468).<sup>51</sup>

- (468) [<sub>IP</sub> encontrei<sub>i</sub> [[<sub>VP</sub> uma rapariga<sub>j</sub> [<sub>VP</sub> ontem t<sub>i</sub> t<sub>j</sub>]] [: que perguntou  
 met.1SG a girl yesterday that asked  
 por ti]]]  
 for you

This structure is problematic because V-to-I movement violates the Coordinate Structure Constraint, which prevents movement from one conjunct in a coordinate

<sup>51</sup> In accordance with the analysis proposed in §3.5.1.2, I assume that in the structural representation given in (468), the direct object is scrambled (i.e. left-adjoined to VP). Note, however, that this is not crucial here: the same line of reasoning would hold if the object were in its base position.

structure unless movement also occurs from the other conjunct (Ross 1967). Therefore, if RRC-extraposition were derived by the parallel structure proposed by Koster, a sentence like (467) would be ungrammatical, contrary to fact.<sup>52</sup>

From a theoretical point of view, Koster's proposal is also problematic for not being compatible with the raising analysis of relative clauses (because it assumes that the head and the RRC are generated separately). Therefore, among other things, it cannot account for the reconstruction effects discussed in Chapter 1 (see §1.3.2.4B), which suggest that the head of the RRC is generated in an RRC-internal position, as witnessed in (469).

(469) Bill liked the [stories about himself<sub>i</sub>] which John<sub>i</sub> told.

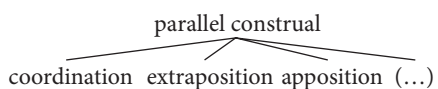
Capitalizing on Koster's (2000) proposal, De Vries (2002) proposes a different account of extraposition, which overcomes some of the drawbacks of Koster's proposal. Section 3.6.1.2 is devoted to the presentation and discussion of De Vries' (2002) analysis.

3.6.1.2 *De Vries (2002)* Building on ideas from Koster (2000), De Vries (2002) proposes the *specifying coordination plus ellipsis analysis* of extraposition. There are at least three major differences between the two proposals.

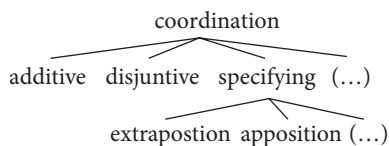
First, De Vries (2002) explicitly analyzes extraposition as coordination. Whereas Koster (2000) resorts to the concept of parallel construal and claims that coordination and extraposition are particular subcases of parallel construal, De Vries (2002) assumes the concept of coordination as the encompassing notion. The conceptual divergence between the two proposals is depicted in (470a–b).

(470)

a. Koster (2000)



b. De Vries (2002)



De Vries (2002) claims that coordination is a syntactic construction with varying semantics. Aside from the traditional types of coordination (such as additive and disjunctive), there is another type called *specifying coordination* that is involved, for instance, in extraposition, apposition, and other constructions (such as parenthesis and left- and right-dislocation; see De Vries 2009 for a general overview). In all these

<sup>52</sup> Here, I abstract away from the movement of the subject to [Spec, IP], which would also violate the Coordinate Structure Constraint. See De Vries (2002, 2009) for similar problems in Dutch.



only constituents in the second conjunct. For more details see De Vries (2002, 2009) and G. de Vries (1992).

The third difference between the two proposals concerns the (non)-autonomous syntactic status of extraposition. According to Koster, extraposed and non-extraposed orders involve the same grammatical configuration. As already shown in §3.6.1.1, standard coordination and relative clauses involving adjacency (between conjuncts and between the head and the relative clause, respectively) are analyzed in terms of parallel construal, consisting of a specifier-head-complement configuration. In this view, extraposition does not involve a different grammatical structure, being simply derived from the property of pied-piping (i.e. the possibility of having a larger constituent in the specifier position containing the checking phrase). In contrast, under the specifying coordination plus ellipsis account, the extraposed and the non-extraposed configurations involve a different derivational story. In this case, the specifying coordination configuration is present in sentences involving extraposition but not in sentences involving the normal (i.e. non-extraposed) order.

Now, after this brief comparison between the two proposals, let me determine if De Vries' approach is capable of overcoming the drawbacks of Koster's analysis. First, consider the violation of the Coordinate Structure Constraint caused by V-to-I movement. Under the specifying coordination plus ellipsis analysis, the violation of the Coordinate Structure Constraint does not arise because there is a representation of the verb inside the second conjunct as well. Therefore, the verb is moved in an across-the-board fashion,<sup>54</sup> as shown in the schematic representation in (473).

(473) [IP V [CoP [VP O [VP *adverb* t<sub>V</sub> t<sub>O</sub>]] [Co [VP  $\Theta$  RRC [VP ~~*adverb*~~ t<sub>V</sub> t<sub>O</sub>]]]]]

Another advantage of De Vries' approach is that it eliminates unbalanced coordination. Recall that under Koster's approach, the specifier and the complement positions of the parallel construal can be filled by unequal categories. Under De Vries' analysis, this problem does not arise because both conjuncts are of the same category (e.g. a VP, as in (473)).

Finally, from a theoretical point of view, De Vries' analysis has the advantage of being compatible with the raising analysis of RRCs because the head is syntactically present in the second conjunct.

However, there is one non-trivial problem that remains unsolved in De Vries' proposal. As in Koster's analysis, the specifying coordination plus ellipsis analysis overgenerates in a number of ways: it predicts that RRC-extraposition from any

<sup>54</sup> As is well known, across-the-board extraction is not subject to the Coordinate Structure Constraint. Rules apply in an across-the-board fashion if they affect all conjuncts in a coordinate structure at the same time. This is what happens in (473): V-to-I movement extracts the V out of both conjuncts.

constituent should be allowed. However, though this may be true of languages like Dutch, it is simply not correct for languages like CEP, where RRC-extraposition cannot take place, for instance, from strong noun phrases and objects of prepositions (see §3.4.1).

The non-uniform view on RRC offers a straightforward explanation for the fact that different stages of the same language (and different languages) may differ on the properties of RRC-extraposition. More precisely, the fact that the specifying coordination plus ellipsis analysis cannot explain the restrictions on RRC-extraposition found in CEP is a welcome result. It corroborates the hypothesis that RRC-extraposition in CEP is derived from stranding, whereas RRC-extraposition in earlier stages of Portuguese is derived from specifying coordination plus ellipsis.

To provide further support for this claim, I show in §3.6.2 how the specifying coordination plus ellipsis analysis can account for the properties of RRC-extraposition in earlier stages of Portuguese.

### 3.6.2 *Deriving the relevant properties*

Section 3.4 shows that CEP and earlier stages of Portuguese behave differently with respect to the following properties: (1) the definiteness effect; (2) restriction on extraposition from pre-verbal positions; and (3) restriction on extraposition from PPs.

My claim is that the different restrictions to RRC-extraposition found in the diachronic (and cross-linguistic) dimension can be explained under a dual approach to the phenomenon. The rationale behind this proposal is that RRC-extraposition is not a unitary phenomenon; it may involve stranding or specifying coordination plus ellipsis. Languages and different stages of the same language differ with respect to the type of extraposition they display. Considering in particular the case of Portuguese, the hypothesis is that RRC-extraposition is generated by stranding in CEP and by specifying coordination plus ellipsis in earlier stages of Portuguese.

In §3.5, I demonstrated that the properties of RRC-extraposition in CEP can be accounted for in terms of stranding. Now I show how the contrasting properties of RRC-extraposition in earlier stages of Portuguese can be derived from the specifying coordination plus ellipsis analysis.

**3.6.2.1 *The definiteness effect*** In earlier stages of Portuguese, extraposed RRCs can take strong noun phrases as their antecedent. This property can be straightforwardly derived under the specifying coordination plus ellipsis analysis because there is no movement relationship between the visible antecedent and the extraposed RRC. As illustrated in (474), the strong noun phrase *aquella dia* ‘that day’ in the first conjunct is a constituent: it is detached from the relative clause and base-generated in the first conjunct of the coordinate structure. In contrast, the strong noun phrase *aquella dia* ‘that day’ in the second conjunct is not a constituent (because there is no constituent

that includes the determiner and the noun and excludes the RRC). However, this is not a problem because it is the DP (containing the antecedent and the RRC) that undergoes leftward movement. Given that deletion may target non-constituents, the repeated material in the second conjunct is deleted, and RRC-extrapolation is derived.

- (474) [CoP [TP [DP *aquella dia*]<sub>i</sub> *sem falha* *aveo t<sub>i</sub>*]  
 but that day without fail came  
 [Co [TP [DP ~~*aquella dia*~~ *que foram i todos*]<sub>i</sub> ~~*sem falha*~~ *aveo t<sub>i</sub>*]]]  
 that day that went there all without fail came  
 ‘but the day everyone went there came without fail’

### 3.6.2.2. Pre-verbal positions

#### A. Pre-verbal subjects

In earlier stages of Portuguese, extraposed RRCs may take pre-verbal subjects as an antecedent. This can be derived by resorting to IP-level coordination; see (475).

- (475) [CoP [IP S V DO] Co [IP S RRC V-DO]]

From a comparative perspective, the fact that CEP does not allow RRC-extrapolation from pre-verbal subjects is surprising. As shown in §3.5.2.2, the explanation for the pattern of ungrammaticality in CEP depends upon the Interpretative Principle in (476) (repeated from (426)). RRC-extrapolation from [Spec, IP] is not allowed because such a position is ambiguously filled by topic and non-topic elements.

- (476) Interpretative Principle

The antecedent of an extraposed RRC must occur in a position non-ambiguously interpreted as non-topic (in Kuroda’s 2005 sense).

Apparently, nothing prevents RRC-extrapolation in earlier stages of Portuguese from being subject to the same semantic restrictions as CEP. However, as shown in §3.4.3, there is strong empirical evidence suggesting that earlier stages of Portuguese (and other languages) allow for it.

Somewhat tentatively, I would like to suggest that CEP and earlier stages of Portuguese may resort to different strategies to resolve the ambiguity referred to in (476). Whereas in CEP the ambiguity associated with [Spec, IP] is resolved syntactically and prosodically (through subject inversion), in earlier stages of Portuguese, it may be resolved only prosodically. In this case, a constituent in [Spec, IP] can be unambiguously interpreted as non-topic if it is prosodically marked by a pitch accent.<sup>55</sup>

<sup>55</sup> I assume that the kind of prosodic prominence that serves to mark focused constituents is the pitch accent (see Avesani and Vayra 2003, among others).

TABLE 3.8 Extraposition from the left periphery in earlier stages of Portuguese

Empirical issue		Earlier stages of Portuguese
Extraposition	wh-constituents	+
from left	emphatic/evaluative phrases	+
periphery	preposed foci	+
	topics	-

This hypothesis may suggest that there is a language split as far as the codification of semantic information is concerned. Some languages codify the topic/non-topic status of the subject prosodically and syntactically (as may be the case of CEP), whereas other languages (and different stages of the same language) may codify it only prosodically (as seems to be the case for earlier stages of Portuguese).

### B. Discourse dedicated positions in the left periphery

The behavior of RRC-extraposition from other pre-verbal positions is summarized in Table 3.8.

Extraposed RRCs taking a wh-constituent, an emphatic/evaluative phrase, or a preposed focus as an antecedent can be derived without further ado by resorting to coordination of a CP-level projection (see (477)). For ease of representation, the functional projections dedicated to the discourse values previously mentioned (e.g. FocP, EvaluativeP) are represented by FP.

- (477) [<sub>CoP</sub> [<sub>FP</sub> *wh-constituent/emphatic phrase/preposed focus* S V]  
 Co [<sub>FP</sub> *wh-constituent/emphatic phrase/preposed focus* RRC S V]]

Comparing (477) and (475), it becomes clear that in (477) the coordinate structure involves a higher level of projection than in the case of RRC-extraposition from the subject.

The impossibility of extraposition from topics follows from the Interpretative Principle in (476). Although extraposition generated by specifying coordination plus ellipsis is not syntactically constrained (because the second conjunct can be freely attached at any structure level, within the minimal CP domain), the semantic principle in (476) prevents extraposed RRCs from taking topics as an antecedent. Notice that under a split-CP approach, the position occupied by topicalized constituents is non-ambiguously interpreted as topic.

### C. Scrambled objects

In earlier stages of Portuguese, RRC-extraposition can occur from scrambled constituents in [Spec, IP] (see §3.4.3.2C). This can be accounted for by resorting to coordination at the IP level, as schematically represented in (478).

- (478) [<sub>CoP</sub> [<sub>IP</sub> *scrambled constituent* S V] [Co [<sub>IP</sub> ~~*scrambled constituent*~~ RRC S V ]]]

The reason why RRC-extraposition from scrambled constituents in [Spec, TP] is not available any more in CEP is independently explained by the loss of TP-scrambling in the history of Portuguese. According to Martins (2002), the loss of TP-scrambling is a result of a change in the properties of the AgrS functional head. AgrS ceased to allow multiple specifiers, that is, it lost the option for being associated with an Attract-all-F EPP feature. Therefore TP-scrambling disappeared because a structural position for scrambled elements ceased to be available in the TP space. In this view, it is easy to see why RRC-extraposition cannot be derived from TP-scrambling in CEP; a structural position for scrambled constituents is not available anymore in the TP space.

3.6.2.3 *Prepositional phrases* In earlier stages of Portuguese, extraposed RRCs can take the object of a preposition as their antecedent. As illustrated in (479), the PP *de mui poucos* ‘of very few’ in the first conjunct is a constituent because it is detached from the relative clause and base-generated in the first conjunct of the coordinate structure. In contrast, *de mui poucos* ‘of very few’ in the second conjunct is not a constituent. However, this is not a problem because it is the PP (containing the RRC) that undergoes leftward movement. Then, the repeated material in the second conjunct is deleted, leading to RRC-extraposition.

- (479) [CP que [CoP [IP [PP de mui poucos]<sub>i</sub> sabemos t<sub>i</sub>]  
 that of very few know.1PL  
 [Co [IP [PP ~~de mui poucos~~ que bebesssem vinho]<sub>i</sub> ~~sabemos~~ t<sub>i</sub>]]]  
 of very few that drink.SBJV wine know.1PL

3.6.2.4 *Summary* Section 3.6.2 shows how the properties of RRC-extraposition in earlier stages of Portuguese can be derived from the specifying coordination plus ellipsis analysis proposed by De Vries (2002). The results are summarized in Table 3.9. The specifying coordination plus ellipsis analysis is evaluated thus: a plus indicates that the analysis can derive the property straightforwardly or with reference to independent principles; a minus indicates that it cannot.

On the basis of these results, I conclude that the specifying coordination plus ellipsis analysis accounts for the properties of RRC-extraposition identified in §3.4.3. It goes without saying that if RRC-extraposition in earlier stages of Portuguese was generated by stranding, not all these properties would be derived.

Despite the success of the specifying coordination plus ellipsis analysis in deriving the properties of RRC-extraposition in earlier stages of Portuguese, it is worth noting that such an approach also uncovers some problems, for instance, with respect to scope relations. In §3.6.3, I discuss one scope relation that can be documented in historical Portuguese: the licensing of subjunctive mood in extraposed RRCs.



**TABLE 3.9 Earlier stages of Portuguese: Evaluation of the specifying coordination plus ellipsis analysis**

Empirical issue	Specifying coordination plus ellipsis	
A. Extraposition from strong noun phrases	+	
B. Pre-verbal positions	pre-verbal subjects	+
	wh-constituents	+
	emphatic/evaluative phrases	+
	preposed foci	+
	no topics	+
C. Extraposition from PPs	+	

### 3.6.3 Problems

The specifying coordination plus ellipsis analysis faces some problems in explaining the scope relations that can be established between the matrix and the extraposed RRC. Given the limitations of historical inquiry, I confine the discussion to one scope relation that is documented in the written sources: the licensing of subjective mood in extraposed RRCs.<sup>56</sup>

The choice of mood in RRCs is not determined lexically as in the case of verbal complementation. Subjunctive RRCs are typically licensed in a set of intensional environments created, for example, by strong intensional predicates, negation, future tense, interrogatives, conditionals, or imperatives (Quer 1998). Moreover, it is standardly assumed that some of these contexts, such as intensional predicates or negation, only license subjunctive RRCs in their complement or c-command domain (Quer 1998). Therefore, it can be assumed that in an RRC like (480), the subjunctive mood is licensed by the c-commanding negative marker *não* ‘not’.

(480) Não abro anexos que possam ter vírus.  
 not open.1SG attachments that might.SBJV have.INF virus  
 ‘I do not open attachments that might have a virus.’

Crucially, subjunctive mood is also licensed in extraposed RRCs. See (481), from CEP.

<sup>56</sup> I thank Jairo Nunes (p.c.) for drawing my attention to these facts.

- (481) Não apareceu uma única pessoa ontem que tivesse o  
not showed.up a single person yesterday that had.SBJV the  
perfil adequado.  
profile appropriate  
'Not even a single person showed up yesterday that had the appropriate  
profile.'

The subjunctive mood can be easily accounted for under the assumption that extraposed RRCs in CEP are derived from stranding. In this case, a subjunctive RRC is licensed because an RRC stranded in a VP-internal position is in the c-command domain of the negation. However, the situation is not as straightforward in the case of extraposed subjunctive RRCs derived from specifying coordination plus ellipsis, as in (482).

- (482) ca nom ha coisa no mundo que tanto deseje  
because not has thing in.the world that as.much want.SBJV.1SG  
como honra de cavallaria  
as honor of cavalry  
'because there is nothing in the word that I want so much as the honor of  
cavalry' (13th c. [transmitted by a 15th-c. MS], Martins, Pereira, and Cardoso  
2014–15)

However, it is not uncontroversial that in (482) the extraposed RRC in the second conjunct is in the scope of the negation. Recall that, according to De Vries (2002), the categorial status of conjuncts depends on the position of the antecedent. Under this assumption, a sentence like (482) involves coordination at the VP-level of projection, as depicted in the simplified structure given in (483).

- (483) [CP ca nom ha [CoP [VP coisa no mundo]  
because not has thing in.the world  
[Co [VP coisa que tanto deseje como a honra  
thing that as.much want.SBJV.1SG as the honor  
de cavallaria ~~no mundo~~]]]]  
of cavalry in.the world

Assuming that second conjuncts are *invisible* for the higher context in terms of c-command (see De Vries 2005, 2007), the subjunctive extraposed RRC is not in the c-command domain of the negative marker *nom* 'not'.<sup>57</sup> As a result, sentences such as (482) should not be allowed, contrary to fact.

<sup>57</sup> A similar problem arises in (483) for the interpretation of the word *coisa* 'thing'. *Couisa* is a contextually negative word, i.e. a word that receives a negative meaning from a negative word in the relevant context (see Martins 2008). Again, it is not clear how the negative meaning of *coisa* arises in the coordinate structure in (483).

There are at least two possible ways to circumvent the problem. The first one is to assume that when RRC-extrapolation is involved, conjuncts are always CP-level projections (or IP, if CP is not projected).<sup>58</sup> In this case, the negation is contained within the second conjunct, and the RRC is in its *c*-command domain, as sketched in (484).

- (484) [<sub>CoP</sub> [<sub>CP</sub> ca nom ha cousa no mundo] [Co [<sub>CP</sub> ~~ca~~ ~~nom~~ ~~ha~~  
 because not has thing in.the world because not has  
~~cousa~~ que tanto deseje como a honra de cavallaria ~~no mundo~~]]]  
 thing that as.much want.SBJV.1SG as the honor of cavalry in.the world

Another hypothesis that is worth pursuing builds on the competing-grammars hypothesis put forward by Kroch (1989, 1994). As I will show in §3.7.1, it might be assumed that earlier stages of Portuguese have two variants in competition to generate RRC-extrapolation: the specifying coordination plus ellipsis structure and the stranding structure. Abstracting away from other scenarios (to be addressed in §3.7.1.2), I argue that the stranding structure might take over in the cases that cannot be derived from the specifying coordination structure, as is the case of the *c*-command-based relations established between a licenser (higher than CoP in a corresponding specifying coordination structure) and an extrapolated RRC. If this hypothesis is correct, then the subjunctive mood of the extrapolated RRC in (482) would be licensed by the negative marker in a stranding configuration.

### 3.6.4 Summary

Section 3.6 discusses the syntactic nature of RRC-extrapolation in earlier stages of Portuguese. Based on De Vries (2002), I claim that RRC-extrapolation in earlier stages of Portuguese involves a special type of coordination, called *specifying coordination*. Under this approach, a constituent containing the visible antecedent is related by coordination to a constituent containing the extrapolated RRC. Repeated material is phonologically deleted, as schematically represented in (485).

- (485) ... [<sub>CoP</sub> [<sub>XP<sub>1</sub></sub> antecedent YP] [Co [<sub>XP<sub>2</sub></sub> [~~antecedent~~ RRC] YP]]]

RRC-extrapolation generated by (485) is an extremely flexible operation, which allows, among other things, extrapolation from any constituent. Concretely, the

<sup>58</sup> The idea that conjuncts are generally root CPs is proposed by Wilder (1994) for normal coordination. Under this approach, the apparent coordination of small conjuncts is derived by ellipsis (i.e. by the deletion of PF material). Wilder rejects the idea that coordination can be applied at any level of the syntactic structure and claims that this is simply an effect of ellipsis in non-initial conjuncts.

structure in (485) explains why earlier stages of Portuguese, as opposed to CEP, allow extraposition from strong noun phrases, pre-verbal subjects, and PPs. As mentioned in §3.5.2, the constrained nature of RRC-extraposition in CEP can be partially derived from the restrictions on movement inherent to the stranding analysis.

As a final point, let me mention that the study of RRC-extraposition in earlier stages of Portuguese faces obvious difficulties, given the limited nature of the written sources and the impossibility of manipulating data. This fact was particularly evident in the impossibility of testing different scope relations between the matrix and the extraposed RRC. For this reason, the cross-linguistic comparison developed in §3.4.2 is crucial in showing that earlier stages of Portuguese pattern like Germanic languages in the properties of RRC-extraposition. Therefore, comparative research can provide an interesting and fruitful method to overcome the limitations of historical data. In particular, studying the behavior of RRC-extraposition in Contemporary Germanic languages provides the means to understand better the syntax of RRC-extraposition in earlier stages of Portuguese.

### 3.7 Comparative perspective

The present section is devoted to comparative remarks on the syntax of RRC-extraposition. Section 3.7.1 is dedicated to the diachronic path of RRC-extraposition in the history of Portuguese. Section 3.7.2 demonstrates how this approach can contribute to the understanding of cross-linguistic variation.

#### 3.7.1 *Diachronic path*

In this section I show that the dual approach to the syntax of extraposition provides an important tool to explain the contrasting behavior of RRC-extraposition in CEP and earlier stages of Portuguese. The analysis is developed mainly within the model proposed by Lightfoot (see Lightfoot 1991, 1999, and subsequent work), but it also benefits from insights of the synchronic grammatical competition approach proposed by Kroch (1989, 1994, 2001) (see §1.3.4).

*3.7.1.1 Hypothesis I* The basic idea underlying Lightfoot's model of language change is that syntactic changes involves reanalysis: a language learner, on the basis of primary linguistic data, abduces a grammar that differs in one or more respects from that of the previous generation (Lightfoot 1979, 1991). The change is driven by a gradual shift in usage frequencies. If frequencies of some crucial forms drop below a certain threshold of learnability, grammar changes.

Adopting this model as background, I hypothesize that the diachronic path of RRC-extraposition involves the steps described in Table 3.10, which are discussed in turn.

**(a) Step 0**

In earlier stages of Portuguese, RRC-extraposition is derived from the specifying coordination plus ellipsis structure (De Vries 2002). Under this approach, the visible antecedent occurs in the first conjunct of a coordinate structure. The second conjunct repeats the material contained in the first conjunct, adding an RRC generated by head raising (Kayne 1994) in its canonical position. Then the repeated material is phonologically deleted (see (486)).

(486) [CoP [XP<sub>1</sub> antecedent YP] [Co [XP<sub>2</sub> [~~antecedent~~ RRC] YP]]]

Under the structure in (486), extraposed RRCs can take any constituent as their antecedent (including noun phrases within PPs and strong noun phrases) because no movement chain is established between the visible antecedent and the RRC-internal position (see §3.6.2).

**(b) Step 1**

After the sixteenth century there is a change in the diachrony of Portuguese that has major repercussions on the clausal architecture: the loss of middle scrambling (or IP-scrambling). Martins (2002) reports that earlier stages of Portuguese display middle scrambling, which consists of the movement of various types of constituents (e.g. DPs, PPs, APs, and AdvPs) to multiple specifier positions selected by the functional head I (AgrS in her terms). After the sixteenth century, I ceases to allow multiple specifiers, that is, it loses the option of being associated to an Attract-all-F EPP feature (see Martins 2002). As a consequence, a structural position for scrambled elements is no longer available in the IP space.

This change has an important impact on the syntax of RRC-extraposition because the configuration involving a scrambled antecedent in [Spec, IP] ceases to be an option. For the sake of illustration, such a configuration is repeated here in examples (487) and (488); the structural representation of (488) is provided in (489).

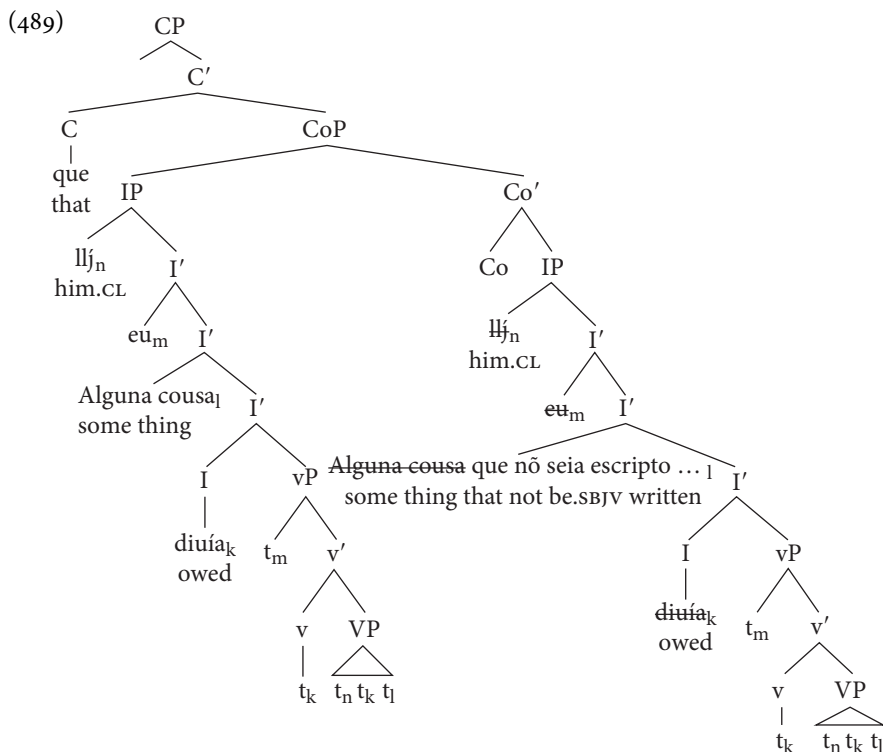
(487) E pera todas cousas e cada hũa delas ffaser que  
 and to all.the things and each one of.them make.INF that  
 uerdadeyro e lıjdemo procurador pode e deue ffaser  
 real and legitimate proxy can and should make.INF  
 ‘And to make all the things and each one of them that a real and legitimate  
 proxy can and should make’ (14th c., Martins 2001: 406)

**TABLE 3.10 Extraposition of restrictive relatives: Diachronic path**

Steps	Description	Result	Date (ca.)
0.	RRC-extraposition derived from the specifying coordination (plus ellipsis) structure		until 16th c.
1.	Loss of IP-scrambling (and PP-scrambling)	Decrease in frequency of the cue for the specifying coordination structure: [XP <sub>1</sub> antecedent] YP [XP <sub>2</sub> RRC]: XP <sub>1</sub> = embedded noun phrase OR strong noun phrase	after 16th c.
2.	a. Reanalysis of RRC-extraposition from the specifying coordination plus ellipsis structure to the stranding structure $[CoP [XP_1 [DP antecedent]_i YP t_i] Co [XP_2 [DP antecedent RRC]_i \bar{Y}P t_i]] \rightarrow [XP [antecedent]_i YP [DP t_i RRC]]$ b. Reanalysis of PP-extraposition from the specifying coordination plus ellipsis structure to the stranding structure	Decrease in frequency of configurations derived from the specifying coordination plus ellipsis structure	
3.	Loss of conjunct extraposition	Decrease in frequency of configurations derived from the specifying coordination plus ellipsis structure	

*Note:* The gray-shade indicates that the line contains a description of an independent change that took place in the history of Portuguese.

- (488) que *llj* eu *Alguna coisa* *diuía* que *nõ* *seia* *escrito*  
 that *him.CL* *I* *some thing* *owed* that *not* *be.SBJV* *written*  
 en *Esta mãda*  
 in *this will*  
 ‘(And if there arrives someone who says) that I owed him something which is not written in this will’ (13th c., *DCMP*)



With the loss of IP-scrambling, there is a decrease in frequency of extraposition contexts in general. As a result, Portuguese began displaying short scrambling only, which consisted of the movement of noun phrases (either subjects or direct objects) to a VP-adjoined position (see §3.5.1.2). In this environment, the linear distance between the antecedent and the extraposed RRC decreases, and more importantly, PPs cease to occur in a scrambled position.<sup>59</sup>

<sup>59</sup> This hypothesis is independently supported by Martins (2002, 2011), who shows that PPs are scrambled in earlier stages of Portuguese. J. Costa (2004a), in turn, suggests that short scrambling does not target PPs in CEP. Evidence for this comes from the fact that PPs cannot surface to the left of monosyllabic adverb *bem* ‘well’, which marks the left edge of the VP (see following example).

(c) Step 2a

Given the loss of an important trigger of the specifying coordination plus ellipsis structure, children converge on a new grammar that derives RRC-extraposition from a stranding structure (see Kayne 1994).

Under Lightfoot's (1991, 1999) insights, the scenario just sketched entails that positive evidence triggering the acquisition of a specifying coordination plus ellipsis structure ceased to be available to learners. Concretely, I hypothesize that such evidence was found in the contexts in which extraposed RRCs take a strong noun phrase or the object of a preposition as antecedent (see §3.6.2). The cue for grammars with the specifying coordination plus ellipsis analysis might then be an abstract structure such as (490), with a strong noun phrase or the object of a preposition in the antecedent position.

(490) [strong noun phrase/object of a preposition] XP [RRC]

In earlier stages of Portuguese, children knew that the (visible) antecedent was generated in a position external to the relative clause because no movement chain could be established between the visible antecedent and a position inside the extraposed RRC.

If this hypothesis is correct, then the scenario that emerges is that in earlier stages of Portuguese the cue (490) occurred robustly in the primary linguistic data. Then, with the loss of IP-scrambling (and PP-scrambling) the expression of the cue decreased. Given that language learners heard contexts of extraposition less frequently than required, they reanalyzed RRC-extraposition from a specifying coordination plus ellipsis structure to a stranding structure. A tentative schematic representation of this process is given in (491).

(491) a. [<sub>CoP</sub> [<sub>XP<sub>1</sub></sub> [<sub>DP antecedent</sub>]<sub>i</sub> YP t<sub>i</sub>] Co [<sub>XP<sub>2</sub></sub> [<sub>DP antecedent</sub> RRC]<sub>i</sub> YP t<sub>i</sub>]] →  
 b. [<sub>XP</sub> [<sub>antecedent</sub>]<sub>i</sub> YP [<sub>DP t<sub>i</sub></sub> RRC]]

The two conjoined XPs (see XP<sub>1</sub> and XP<sub>2</sub> in (491a)) are reanalyzed as a single XP (see (491b)). In this structure, the visible antecedent is taken to originate in an RRC-internal position and no deletion mechanism applies.

- a. O Paulo olha bem para aqueles quadros.  
 the P. looks well at those pictures  
 'Paulo looks well at those pictures.'
- b. \*O Paulo olha para aqueles quadros bem  
 the P. looks at those pictures well (J. Costa 2004: 39–40)

In addition, J. Costa (2004: 142–53) pursues the argument in favor of the base-generation of both the V-DO-IO and V-IO-DO orders in CEP. On the basis of binding effects of ditransitives, he assumes that the IO is in an A-position in both word order patterns (see §3.5.1.3A(b)). Hence I will assume that this hypothesis is correct, though I have no explanation for why PP-scrambling ceased to be an option in CEP.



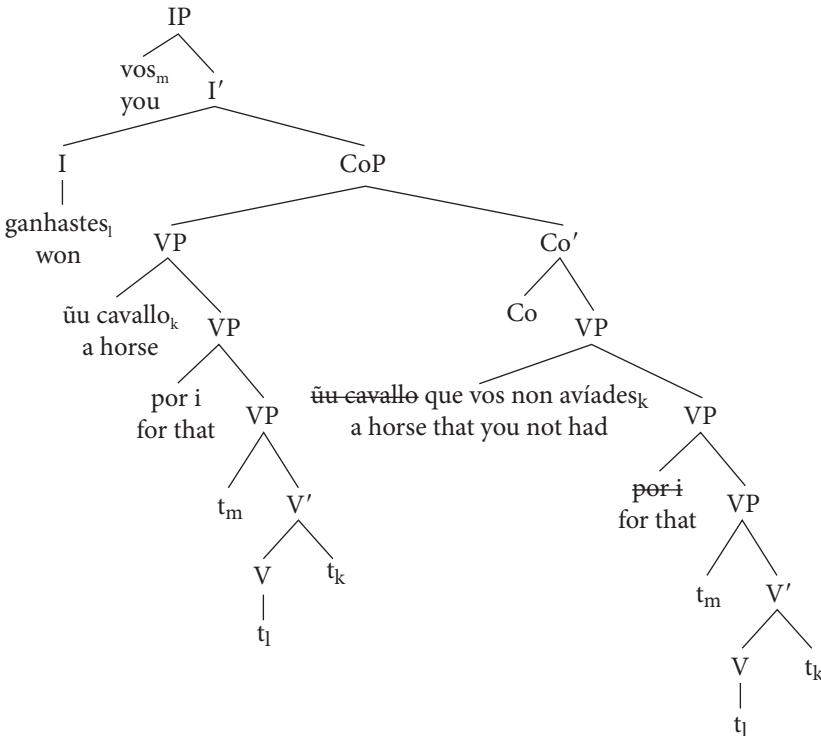
Given that the RRC is derived from raising (and has a spelled-out head noun), RRC-extraposition can straightforwardly be derived from a stranding structure: the head noun undergoes leftward movement (in this case out of the external DP) stranding the RRC in its base position.

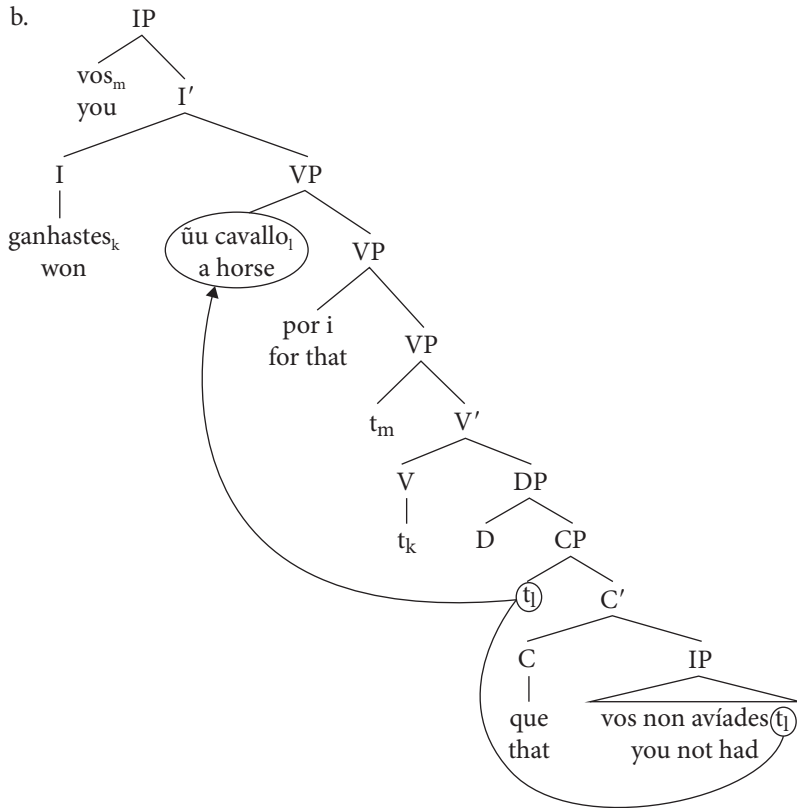
For the sake of illustration, consider the example (492) and the representations in (493a–b), which display the same extraposed RRC in step 0 and step 2 respectively. Importantly, in both structures the antecedent (plus the RRC in (493a)) undergoes short scrambling, but it is only in (493b) that short scrambling directly originates RRC-extraposition.

- (492) ca vos ganhastes ũu cavallo por i que vos nom  
 because you.2PL won a horse by that that you.2PL not  
 aviades  
 had  
 ‘because of that you won a horse that you did not have’

(493)

a.





(d) Step 2b

If RRC-extrapolation is reanalyzed from a specifying coordination plus ellipsis structure to a stranding structure, extrapolation of other constituents should also have been affected by this change. At least for the extrapolation of PPs, this prediction might be correct. (Additional evidence from *o qual*-ARCs is discussed in Chapter 4.)

There is no systematic study on PP-extrapolation in CEP. For this reason, I restrict the discussion to the extrapolation of PP complements of the noun. According to Brito's (2003: 337) analysis of noun phrases in CEP, the noun cannot undergo leftward movement leaving its PP-complement behind, as shown in (494)–(495).<sup>60</sup>

<sup>60</sup> Martins (2004) shows that when a contrastive reading is obtained, noun phrase discontinuity may comprise an extraposed PP as in the following example (overleaf), from CEP. Note, however, that the PP here is not a complement of the noun. For this reason it will not be addressed in the present discussion.

20 contos paguei eu de multa por conduzir sem cinto  
 20 c. paid I of fine for drive.INF without belt  
 'I paid a fine of 20 contos [the currency] for driving without wearing seat belt.' (Martins 2004: 502)

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- (494) \*Várias fugas, vimos de refugiados.  
several escapes saw.1PL of refugees  
'We saw several escapes of refugees.' (Brito 2003: 337)
- (495) \*Muitas destruições tem havido de cidades.<sup>61</sup>  
many destructions has been of cities  
'There have been many destructions of cities.' (Brito 2003: 337)

In earlier stages of Portuguese, the situation seems to be radically different. PP-extrapolation is freer, being allowed in a wide range of syntactic environments. Take, for instance, the examples in (496)–(497), which display non-adjacency between the noun and its PP-complement. In (496) the post-verbal subject *Joseph* (in [Spec, VP]) breaks the adjacency between the noun *doo* 'sorrow' and its PP-complement *da morte de Jesu Cristo* 'of the death of Jesus Christ',<sup>62</sup> whereas in (497), repeated from (121), both the verb and the subject intervene between the noun *noticia* 'notitia' and its PP-complement *de fiadores* 'of guarantors'.

- (496) Muito houve gram doo Joseph da morte de Jesu Cristo.  
very had deep sorrow J. of.the death of J. C.  
'J. had deep mourning over the death of Jesus Christ.' (13th c. [transmitted by a 16th-c. MS], Martins, Pereira, and Cardoso 2013–14)
- (497) Noticia fecit pelagio romeu de fiadores  
notitia made P. R. of guarantors  
'Pelagio Romeu made a notitia of guarantors.' (12th c., from Martins 2004: 501)

Although more research is necessary to explain the restrictions on PP-extrapolation in CEP, the contrast between (494)–(495) and (496)–(497) suggest that PP-extrapolation is less restrictive in earlier stages of Portuguese. Therefore, it may well be the case that the restrictions found in CEP result from the fact that PP-extrapolation is also reanalyzed from a specifying coordination structure to a stranding structure.

(e) Step 3

The change affecting the syntax of extrapolation might also explain the loss of conjunct extrapolation in the history of Portuguese.

*Conjunct extrapolation* refers to coordinate structures in which the last conjunct (plus the coordinator) is not adjacent to the previous conjunct(s). As in Dutch (see

<sup>61</sup> The sentence is grammatical only with an exclamative intonation and a very marked pause before *de cidades* 'of cities'.

<sup>62</sup> Note that (496) involves three split parts because *muito* 'very' undergoes additional leftward movement to the CP domain, but I will set this step aside because it is not crucial for the argument.

(498)<sup>63</sup> and Latin (see (499)–(500)), earlier stages of Portuguese allow for extraposition of the second conjunct of a coordinate phrase, as shown in (501)–(506).

Dutch:

- (498) Zij heeft Marie gezien en mij.  
she has M. seen and me  
'She saw Mary and me.' (Koster 2000: 16)

Latin:

- (499) quae frigus defendant et solem  
which cold keep.off and sun  
'to keep off the cold and the sun' (2nd c. BC, from Devine and Stephens 2006: 586)
- (500) Aqua restabat et terra.  
water remained and earth  
'There remained water and earth.' (1st c. BC, from Devine and Stephens 2006: 589)

Earlier stages of Portuguese:

- (501) e sse os #iij anos o dyto campo nõ chantardes ou  
and if the three years the mentioned land not plant.FUT.SBJV.2PL or  
a dyta ujnha  
the mentioned vineyard  
'and if you do not plant the aforementioned land or the aforementioned vineyard during the three years...' (13th c., Martins 2001: 373)
- (502) E por séér mays firme esta carta seelamos dos nossos séélos  
and to be.INF more firm this letter stamp.1PL of.the our stamps  
e outra tal.  
and other such  
'And, to be irrevocable, we stamp this letter and a duplicate of it.' (13th c., Martins 2001: 350)
- (503) que he setuada na egreja de sã Johane da praça ã que  
that is located in.the church of S. J. d. P. in that  
o dicto diego afomso Jaz êterrado e seus filhos  
the mentioned D. A. lies buried and his sons  
'that is located in the church of S. Johane da Praça, in which the aforementioned Diego Afomso and his sons lie buried' (15th c., from A. Costa 2004: 415)

<sup>63</sup> The example (498) is repeated from (456a) for ease of exposition.

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- (504) E estes bẽes E quinhom acõteço aa dita lionor  
and these belongings and part went to mentioned L.  
uaasquez madre da dicta viollante em seu drecto e  
V. mother of.the mentioned V. in her right and  
meatade da dita terça  
half of.the mentioned third  
'And these belongings, part, and half of the aforementioned third part went  
to the aforementioned Lionor Vaasquez, mother of the aforementioned  
Viollante, by her own right' (15th c., from A. Costa 2003: 10)
- (505) E quando el vio Lançarot ir e a donzella  
and when he saw L. go.INF and the damsel  
'And when he saw Lançarot and the damsel coming... ' (13th c. [transmitted  
by a 15th-c. MS], Martins, Pereira, and Cardoso 2014–15)
- (506) Tamanho o ódio foi e a má vontade  
such the hate was and the bad will  
'Such was the hate and the malice' (16th c., Pimpão 2000: 19)

In contrast, extraposition of the last conjunct of a coordinate phrase (plus the coordinator) is ungrammatical in CEP, as illustrated in (507b)–(509b).

- (507) a. O Pedro e a Maria chegaram.  
the P. and the M. arrived  
'Pedro and Maria arrived.'
- b. \*O Pedro chegou e a Maria.  
the P. arrived and the M. (Colaço 2006: 79)
- (508) a. O medo e a ansiedade espalharam-se.  
the fear and the anxiety spread-SE.CL  
'The fear and the anxiety spread.'
- b. \*O medo espalhou-se e a ansiedade.  
the fear spread.SE-CL and the anxiety
- (509) a. Eu vi o João e a Maria no cinema.  
I saw the J. and the M. at.the cinema  
'I saw João and Maria at the cinema.'
- b. \*Eu vi o João no cinema e a Maria.  
I saw the J. at.the cinema and the M.

Assuming that conjunct extraposition in Dutch and earlier stages of Portuguese is derived from specifying coordination plus ellipsis (see the schematic representation in (510)), the loss of conjunct extraposition in the diachrony of Portuguese might be

explained by the impossibility of moving only one of the conjuncts, as in (511). Such extraction would violate the Coordinate Structure Constraint<sup>64</sup> and, more precisely, the Conjunct Constraint (see Grosu 1973), which bars the movement of whole conjuncts of coordinate structures.<sup>65</sup>

- (510) quando el vio [CoP [VP [DP Lançarot] ir ]]  
 when he saw L. come.INF  
 Co [VP [CoP [DP<sub>1</sub> Lançarot] Co [DP<sub>2</sub> a donzella]] ð]  
 L. the damsel come.INF  
 ‘when he saw Lançarot and the damsel coming’

- (511) \*[XP<sub>1</sub> ]<sub>i</sub> YP [CoP t<sub>i</sub> Co [XP<sub>2</sub> ]]

3.7.1.2 *Hypothesis II* The second hypothesis that I would like to formulate here is an attempt to articulate the diachronic path sketched in §3.7.1.1 with the theory of competing grammars originally proposed by Kroch (1989, 1994). I will not provide an exhaustive explanation of the change under this new scenario, but I will simply outline how the diachronic path of RRC-extrapolation can be generically thought of in terms of the competing grammars theory.

Under this view, the starting point would involve two variants in competition to generate RRC-extrapolation in earlier stages of Portuguese: the specifying coordination plus ellipsis structure and the stranding structure.

The stranding structure would be available for: (1) the cases in which it leads to the same overt results as the specifying coordination plus ellipsis structure; and (2) the cases that cannot be derived from the specifying coordination structure. As I mentioned in §3.6.3, type (2) can be illustrated by configurations involving c-command-based relations between a licenser (higher than CoP in a corresponding specifying coordination structure) and an extraposed RRC. Consider, for instance, the sentence in (512) (repeated from (482)), which has an extraposed subjunctive clause licensed by the negative marker *nom* ‘not’.

- (512) ca nom ha cousa no mundo que tanto deseje  
 because not has thing in.the world that as.much want.SBJV.1SG  
 como honra de cavallaria  
 as honor of cavalry  
 ‘because there is nothing in the world that I want so much as the honor of cavalry’ (13th c. [transmitted by a 15th-c. MS], Martins, Pereira, and Cardoso 2014–15)

<sup>64</sup> For an alternative analysis of conjunct extraposition, see De Vries (2002: 279).

<sup>65</sup> For a different interpretation of the Coordinate Structure Constraint, see Zhang (2007).

Under De Vries' (2002) approach, the extraposition in (512) involves the coordination at the VP-level of projection, as represented in (513) (repeated from (483)). However, under this configuration, the negative marker *nom* 'not' does not c-command subjunctive RRC. Assuming that second conjuncts are invisible for the higher context (De Vries 2005), the subjunctive mood is not licensed, and therefore sentences like (482) should not be allowed, contrary to fact.

(513) [CP ca nom ha [CoP[VP cousa no mundo]  
 because not has thing in.the world  
 [Co [VP ~~cousa~~ que tanto deseje como a honra  
 thing that as.much want.SBJV.1SG as the honor  
 de cavallaria ~~no mundo~~]]]]  
 of cavalry in.the world

The problem can be circumvented by assuming that the stranding structure takes over in the cases that cannot be derived from the specifying coordination structure, as in (512). In that case the subjunctive RRC could be licensed in a stranding structure because an RRC stranded in a VP-internal position is in the c-command domain of the negation. Note further that the CEP counterpart of (512) is grammatical, as predicted by the analysis of CEP extraposition in terms of stranding.

Conversely, the specifying coordination plus ellipsis structure would be used in the cases that cannot be derived from stranding. As shown in §3.6.2, such configurations involve extraposed RRCs taking a strong noun phrase or a noun phrase embedded within a PP as their antecedent. These cases cannot be derived from stranding because movement only applies to constituents. For more details about the derivation, see §§3.6.2.1 and 3.6.2.3, respectively.

With the loss of IP-scrambling (and PP-scrambling), the frequency of extraposition derived from the specifying coordination plus ellipsis structure declines. As a result, the stranding structure gains advantage over the specifying coordination structure and ends up winning the competition.

Under this view, the change affecting RRC-extraposition in the diachrony of Portuguese can be thought of in terms of the loss of RRC-extraposition derived from specifying coordination plus ellipsis. No reanalysis is required because the stranding structure is already available in the grammar.

*3.7.1.3 Hypothesis III* There is another line of research that I will not pursue in this book, but that might be worth exploring in the future: the ellipsis types available in the diachrony of Portuguese. A possible conjecture would be that earlier stages of Portuguese and CEP differ with respect to the types and properties of ellipsis they allow: whereas earlier stages of Portuguese allow for a broad range of ellipsis types (including the ones that derive extraposition under the specifying coordination plus

ellipsis structure), in CEP ellipsis is severely constrained. Further research on ellipsis phenomena in earlier stages of Portuguese is, however, necessary to test the validity of this hypothesis.

### 3.7.2 Cross-linguistic contrasts

Throughout this chapter, I have provided cross-linguistic evidence showing that languages vary in respect of the properties of RRC-extrapolation they exhibit. Although the overview offered in §3.4.2 has several limitations in terms of cross-linguistic coverage, it provides sufficient evidence to conclude that CEP contrasts with other languages (e.g. English and Dutch) with respect to the properties of RRC-extrapolation. The main findings are summarized in Table 3.11 (repeated from Table 3.2 for ease of exposition).

To account for these contrasts, I propose that RRC-extrapolation can be derived from two different structures: specifying coordination plus ellipsis and stranding. Building on the diachronic path proposed for extrapolation in the diachrony of Portuguese (see §3.7.1.1) and the insights of the competing grammars theory (see §3.7.1.2), I submit that the two structures generating (RRC-)extrapolation are not instantiated in all languages, it being possible to identify two types of language (see (514)).

(514) Type I. Languages that do not allow for extrapolation derived from specifying coordination plus ellipsis (e.g. CEP and possibly Italian, Spanish, and French).

Type II. Languages that allow for extrapolation derived from specifying coordination plus ellipsis (e.g. English and Dutch).

Type-I languages do not have extrapolation derived from specifying coordination plus ellipsis and generate RRC-extrapolation by stranding, whereas Type-II languages allow for extrapolation derived from specifying coordination plus ellipsis.

TABLE 3.11 Extrapolation of restrictive relatives: Cross-linguistic contrasts

Empirical issue		CEP	English	Dutch
A. Extrapolation from strong noun phrases		–	+	+
B. Extrapolation from pre-verbal positions	subjects	–	+	+
	wh-constituents	+	+	+
	emphatic/evaluative phrases	+	+	+
	preposed foci	+	+	+
	topics	–	–	–
C. Extrapolation from PPs		–	+	+



This explains why (RRC-)extraposition is much less constrained in Type-II languages than in Type-I.

Interestingly, the formulation in (514) leaves open the possibility of Type-II languages also making use of the stranding structure to derive RRC-extraposition. This is an interesting result because it reveals a close connection between cross-linguistic variation and diachronic change. Under the synchronic grammatical competition hypothesis outlined in §3.7.1.2, the starting point involves precisely two different structures in competition to generate (RRC-)extraposition in earlier stages of Portuguese: the specifying coordination plus ellipsis structure and the stranding structure. This corresponds to the scenario proposed for Type-II languages (e.g. Dutch and English). Moreover, similarly to historical Portuguese (after the sixteenth century), which ceases to have extraposition derived from specifying coordination plus ellipsis, contemporary Type-I languages lack this coordinate-style configuration.

For the sake of illustration, let me show how this hypothetical scenario could be implemented in a Type-II language such as Dutch. Koster (2000) and De Vries (2002), among others, criticize the stranding approach to (RRC-)extraposition (see Kayne 1994) showing that it cannot derive the properties of extraposition in Dutch. But an analysis in terms of specifying coordination, as suggested by these authors, also faces some problems. For instance, how does one block head noun extraction via movement operations that are independently available in the grammar? If Dutch noun phrases can be scrambled and fronted in Dutch, why is the antecedent of an RRC an exception?

The dual approach to the syntax of RRC-extraposition posited in this chapter actually suggests that specifying coordination plus ellipsis and stranding might both be involved in Dutch (RRC-)extraposition. The stranding structure could be available for those cases where it leads to the same overt results as the specifying coordination plus ellipsis structure, whereas the specifying coordination plus ellipsis structure would take over in the cases that cannot be derived from stranding (e.g. RRC-extraposition from a strong noun phrase or an object of a preposition).

This hypothesis has the advantage of deriving from stranding the contexts of (RRC-)extraposition that involve movement. Consider, for instance, the examples in (515), from Dutch. The head plus the RRC can occur together in the middle field (515a) but these elements may also surface in a discontinuous manner (515b–c). Under the hypothesis that Dutch is head-initial, sentences such as (515b–c) can be derived from stranding by assuming that the head undergoes leftward movement, stranding the RRC in the object's base position (see Zwart 2011).

- (515) a. Tasman heeft verschillende eilanden die niet bewoond  
T. has different islands which not inhabited  
waren ontdekt.  
were discovered  
'Tasman discovered several islands that were inhabited.'

- b. Tasman heeft verschillende eilanden ontdekt die niet  
T. has different islands discovered which not  
bewoond waren.  
Inhabited were
- c. Verschillende eilanden heeft Tasman ontdekt die niet  
different islands has T. discovered which not  
bewoond waren.  
inhabited were

(Zwart 2011: 271–2)

An argument that has been used against the stranding analysis is that extraction of the head noun ceases to be possible after movement of the head noun plus the RRC to the middle field. See, for instance, (516a), where the extraction of the head *verschillende eilanden* ‘different islands’ yields ungrammaticality. Only the entire noun phrase can be fronted, as shown in (516b).

- (516) a. \*Verschillende eilanden heeft Tasman die niet  
different islands has T. which not  
bewoond waren ontdekt.  
inhabited were discovered
- b. Verschillende eilanden die niet bewoond waren  
different islands which not inhabited were  
heeft Tasman ontdekt.  
has T. discovered (Zwart 2011: 271–2)

However, the ungrammaticality of (516a) does not necessarily entail that stranding cannot be involved in (RRC-)extraposition. It might simply mean that there are independent principles and operations available in the grammar that block the extraction of the head noun from the middle field. A similar line of reasoning holds for CEP. The fact that an extraposed RRC cannot take a pre-verbal subject in [Spec, IP] as its antecedent does not entail that stranding cannot derive (RRC-) extraposition in CEP. It simply reveals that an independent principle available in the grammar blocks this configuration.

Another interesting conclusion drawn in §3.4.2 is that Romance languages do not behave in a uniform way with respect to RRC-extraposition. The main findings of this comparison are summarized in Table 3.12, repeated from Table 3.3 for ease of exposition.

French exhibits a peculiar behavior: it contrasts with other Romance languages in allowing extraposition from a pre-verbal position, but it also contrasts with some Germanic languages (like English and Dutch) in not allowing extraposition from strong noun phrases. I propose that these facts can be accounted for by assuming that languages may differ in the way they resolve the ambiguity of a constituent in [Spec, IP], expressed in (517) (repeated from (426)).

**TABLE 3.12** Extraposition of restrictive relatives: Romance languages

Empirical issue	CEP	Italian	Spanish	French
A. Extraposition from strong noun phrases	–	–	–	–
B. Extraposition from pre-verbal subjects	–	–	–	+

(517) Interpretative Principle

The antecedent of an extraposed RRC must occur in a position non-ambiguously interpreted as non-topic (in Kuroda’s 2005 sense).

Whereas in CEP (and possibly in Spanish and Italian), the ambiguity associated with [Spec, IP] is resolved syntactically and prosodically (through subject inversion), in French and in earlier stages of Portuguese, it may be resolved only prosodically. In this case, a constituent in [Spec, IP] can be unambiguously interpreted as non-topic if it is prosodically marked by pitch accent. Ultimately, this amounts to saying that the cross-linguistic variation in RRC-extraposition from pre-verbal subjects is determined by how the different languages mark the topic/non-topic status of the subject.

Of course, further comparison between languages in this domain is necessary to understand if these hypotheses are correct.

### 3.8 Conclusion

As I announced in §3.1, the main goal of this chapter is to contribute to a better understanding of the syntax of RRC-extraposition. This is achieved by discussing new empirical evidence from CEP and earlier stages of Portuguese, which is systematically compared to data from other languages.

From a descriptive point of view, I identify three contrasting properties of RRC-extraposition: (1) the definiteness effect; (2) extraposition from pre-verbal positions; and (3) extraposition from PPs. Additionally, I provide empirical evidence suggesting that languages may be subject to diachronic and cross-linguistic variation in respect of the type of RRC-extraposition that they display. More precisely, I have shown that: (1) earlier stages of Portuguese contrast sharply with CEP with respect to the properties of RRC-extraposition; (2) RRC-extraposition in earlier stages of Portuguese is, to a large extent, Germanic-like, unlike CEP.

Exploring the theoretical impact of these findings, I submit that the variation found in the syntax of RRC-extraposition is not compatible with a uniform approach to the phenomenon. Therefore, I argue for a dual approach to RRC-extraposition, whereby

RRC-extrapolation may involve two different structures: (1) specifying coordination plus ellipsis (De Vries 2002); and (2) VP-internal stranding (Kayne 1994).

In order to explain the variation found across languages and different stages of the same language, I argue that grammars may diverge in respect to the possibility of deriving extrapolation from specifying coordination plus ellipsis.

Diachronically, I submit that earlier stages of Portuguese have RRC-extrapolation derived from specifying coordination plus ellipsis (and possibly stranding as well). The loss of IP-scrambling and PP-scrambling gives rise to differences in the relative frequency of the two competing structures, which ultimately resulted in the loss of extrapolation derived from specifying coordination plus ellipsis.

Cross-linguistically, I suggest that there are at two types of language: Type-I languages that do not allow for extrapolation derived from specifying coordination plus ellipsis, as CEP (and possibly Italian, Spanish, and French), and Type-II languages that allow for it, as do English and Dutch. I additionally hypothesize that Type-II languages also make use of the stranding structure to derive RRC-extrapolation.

Ultimately, the approach advocated in this chapter reveals that competing theoretical analyses need not be either true or false universally, but can help to explain the variation found among languages that are separated over space and time.