I dedicate this thesis to the memory of my advisor Teun Hoekstra
Word Order Variation
Word Order Variation

A constraint-based approach

Proefschrift

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Curriculum Vitae

João Costa was born on November 4, 1972 in Lisbon, Portugal. He did his undergraduate studies in General Linguistics at the Faculdade de Letras da Universidade de Lisboa, where he graduated in 1994. The last year of his undergraduate studies was spent at the University of Groningen, as an Erasmus student. Between September 1, 1994 and September 1, 1998, he has been appointed as an AIO (Assistent-in-Opleiding) at the department of General Linguistics at the University of Leiden. During that period, he developed the research for this dissertation. He is currently teaching Portuguese Syntax and Semantics at the University of Lisbon. He is married with Ana Costa and the father of one son, Zé Pedro.
1 Introduction

1. Introduction

One of the goals of Generative Syntax is to explain what children are doing when they acquire a particular language. An assumption shared by generative linguists is that there is a biological basis for language: Universal Grammar (UG). Generative theories of language try to describe and explain the properties of UG. Any theory of UG must be general enough to cover general properties of language and specific enough to describe the most evident cross-linguistic fact: languages differ.

One of the most obvious aspects in which languages differ is in the order of the elements that constitute the sentences. Looking at the distribution of subject, main verb and object only, at least the following four word order patterns may be found:

(1) a. SVO  
    b. VSO  
    c. SOV  
    d. VOS

SVO is the word order found for instance in English (2a); VSO found in Welsh (2b); SOV is represented by Dutch (2c), and VOS is the word order in Malagasy (2d):
(2) a.  *English:*  
John broke the window.

b.  *Welsh:*  
Gwelodd y bechgyn y draig.  
Saw the boys the dragon  
’The boys saw the dragon’

c.  *Dutch:*  
Jan heeft de krant gelezen.  
Jan has the newspaper read  
’Jan read the newspaper.’

d.  *Malagasy:*  
Nahita an-dRabe Rakoto  
Saw ACC-Rabe Rakoto  
’Rakoto saw Rabe’

A theory of UG has to be able to account for these patterns of cross-linguistic word order variation.

The same empirical problem arises language-externally. Within a single language, word order variation occurs. For instance, while the canonical word order of English is SVO (3), this word order must be changed if the object is questioned (4):

(3)  John broke the window.

(4)  What did John break?

This type of language-internal word order variation is contextually determined. It is possible to formulate context-sensitive rules deriving the change in word order.

Word order variation is more difficult to describe when the same set of words may appear in different positions in simple declarative sentences. Adverbs are known for their potential to surface in different positions in one sentence. This is illustrated in (5):


b.  John probably went to Paris.

c.  John went probably to Paris.

d.  John went to Paris, probably.
The optional placement of adverbs is true cross-linguistically. (6) reproduces (5) in Portuguese:

    probably Paulo went to Paris

Language-internal variation may be of a still different type. All words in a declarative sentence may change their relative order. This type of variation may be found in Portuguese. From the logically possible six permutations between subject, main verb and object, only one is ungrammatical:

(7) a. O Paulo partiu a janela.
    Paulo broke the window
b. Partiu o Paulo a janela.
c. Partiu a janela o Paulo.
d. A janela, o Paulo partiu.
e. A janela partiu o Paulo.
f. *O Paulo a janela partiu.

Unlike the case of adverbs, this type of language-internal word order variation may not be found in other languages. For instance, English only permits SVO and OSV, given the same set of elements:

(6) a. John broke the window.
b. The window, John broke.
c. *John the window broke.
e. *Broke John the window.
f. *Broke the window John.

A theory of grammar has to be able to account for these patterns of variation.

The topic of this dissertation is word order variation. A common problem raised by the data discussed above is how to interpret optionality. The general problems optionality raises for the formulation of hypotheses concerning word order are the following:
A.  *Language-internal variation:*

- Some categories, such as adverbs, distribute quite freely. Is it possible to formulate a restricted theory of adverb placement or is their distribution truly optional?

- Does word order variation within one language reflect true optionality in the grammar of that language or is it possible to formulate a theory of grammar predicting the visible optionality?

B.  *Cross-linguistic variation:*

- Word order of sentence constituents is less rigid in some languages than in other languages. Why is optionality of word order not universally available?

- Unmarked word order patterns vary. To what extent is this type of variation truly optional? Why isn’t there universally just one option for the unmarked case?

Optionality is problematic for the formulation of a theory of grammar. If a grammar is a learnable set of rules/principles/constraints on the structure of linguistic categories, it has to be deterministic. If a rule has the format ‘do X or Y or Z in context W’ there is no way for the learner to know what to do. Linguistic experience will not suffice, if this type of rule applies within a single language (as in the case of adverbs discussed or in the case of Portuguese word orders).

This problem of optionality has been emphasized in the Minimalist Program of Chomsky (1993), who proposes to eliminate optionality from the grammar. According to this program of research, if a syntactic operation has to take place, then it must take place. If the operation is not obligatory, there is no reason to assume it. In this sense, the cases presented above are all problematic, since they all involve optional surface manifestations of a similar set of words.

In this dissertation, I intend to address some of the cases of optionality in syntax. In this introduction, I will list the main questions to be addressed throughout the dissertation (section2); present the main
proposal (section 2); introduce the theoretical framework adopted (section 3), and present the structure of the dissertation (section 4).

2. Questions and Proposal.

The issue of optionality and word order variation raises the following questions:

- Is it possible to analyze the phenomena of word order variation discussed above without having optionality as a primitive notion of the theory?

- Is it possible to formulate a universal theory of word order variation?

- Why is word order more flexible in some languages than in others?

The first question is empirical and theoretical at the same time. The data described above must be analyzed. However, the descriptive analysis should not result in a statement to the effect that variation simply exists. Given the problems optionality raises for the theory, it is desirable to derive optionality from other primitives of the theory.

The second and third questions are questions of generality of the theory. The analysis to be developed throughout the dissertation has to be broad enough as to cover the similarities between languages, and specific enough to predict the differences.

The main proposal of this dissertation is the following:

<table>
<thead>
<tr>
<th>Word order variation does not reflect optionality in the grammar.</th>
</tr>
</thead>
<tbody>
<tr>
<td>It arises as a consequence of a tension between syntactic principles and discourse requirements.</td>
</tr>
<tr>
<td>Lack of variation is the consequence of compliance to syntactic principles only.</td>
</tr>
</tbody>
</table>

In other words, I will propose that optionality is only apparent. To achieve this goal, it is necessary to reduce optionality to its minimum, showing that free variation is conditioned by discourse contexts, and
eliminating optional application of rules from the grammar.

This type of analysis is not new. Claims that word order variation is not free have been put forward several times in the generative literature (for recent approaches, see Reinhart 1995, Zubizarreta 1995, Grimshaw and Samek-Lodovici 1995, 1996).

The claim that optionality relates to a tension between syntactic and discourse-related principles is formalized in the work of Grimshaw and Samek-Lodovici (1995,1996) developed within the framework of Optimality Theory. I will extend their analysis to the empirical domains mentioned above.

I will propose an analysis within Optimality Theory, because this is the only theoretical framework available that explicitly offers a formalism for expressing tensions between different principles.

In the next section, I will present the basic assumptions of Optimality Theory.

3. **Theoretical Background: Optimality Theory.**

3.1. **Optimality Theory: constraint interaction.**

Optimality Theory (OT) is a theory of constraint interaction in Generative Grammar. It was first proposed in Prince and Smolensky’s (1993) work.

According to Optimality Theory, a grammar consists of:

a) A Generator function \((Gen)\).

b) A set of constraints \((Con)\).

c) Language-particular ranking of constraints.

The role played by Gen is the following: from an underlying input, it generates a (universal) set of output structures to be evaluated on a parallel fashion by an Evaluator \((Eval)\).

The outputs generated by Gen are evaluated by a set of constraints \((Con)\). In Optimality Theory, constraints are universal and violable. In other words, there are no language-specific constraints nor language-
specific formats or settings of constraints.

Constraints are not freely violated. Violability is a consequence of the fact that constraints may impose contradictory requirements on outputs. Satisfying one constraint may imply violating another constraint and vice-versa.

From these assumptions, it follows that Optimality Theory is only interesting as a theory for the study of cases of conflicting constraints. If there is no conflict, the violability of constraints is not forced. In such a case, there is no evidence for a formalization in Optimality-theoretical terms.

If constraints are universal, the locus of cross-linguistic variation cannot be the type or format of constraint regulating each language. In Optimality Theory, it is assumed that particular grammars are rankings of constraints.

Let us consider the following abstract example, adapted from Prince and Smolensky (1993) and McCarthy and Prince (1994):

Suppose there is an input constituted by the underlying phonological representation in (7):

\[(7) \quad \text{Input: } /\text{api}/\]

From this input, Gen generates the outputs in (8):

\[(8) \quad \begin{align*}
\text{a. } & \text{papi} \\
\text{b. } & \text{api}
\end{align*}\]

Assume also that the constraints defined in (9) evaluate outputs:

\[(9) \quad \begin{align*}
\text{a. } & \text{ONSET: syllables have onsets} \quad (P\&S \ 1993) \\
\text{b. } & \text{FAITH: inputs and outputs are identical} \quad (McC\&P \ 1994)
\end{align*}\]

Given the input in (7), these two constraints are in conflict. (9a) requires syllables to have onsets, (9b) forces the output of (7) not to have an onset. Satisfying one of these constraints implies violating the other one.

If violability were not permitted in the theory, this conflict could not be solved. As mentioned above, language-particular grammars are rankings of constraints. Taking into consideration the two constraints in
Chapter 1

(9), two grammars are predicted. They are given in (10), where the symbol >> means ‘is ranked higher than’. If the two constraints were not in conflict, they would not be crucially ranked. This would be indicated by comma separation of constraints (e.g. ONSET, FAITH).

(10) a. **Ranking A:**
    ONSET >> FAITH

b. **Ranking B:**
    FAITH >> ONSET

The predictions of the two grammars are different. The evaluation of the two candidates in the set of potential outputs by these different grammars will be the same. However, given the rankings above, the candidate selected as grammatical (the optimal candidate) will be different. The evaluation of candidates is represented in Tableaux. The tableaux used should be read in the following way:

(11) a. The top row contains the constraints ordered from left to right in accordance with the ranking of each language.
b. The first column contains the candidates to be evaluated.
c. # indicates the grammatical or optimal candidate.
d. * marks each constraint violation.
e. ! marks the point at which violations are fatal, that is, the moment at which a given candidate becomes worse than the other candidates under evaluation.
f. The shadowed parts of the tableaux indicate that at the moment those constraints evaluate the candidates, decisions have been made.

Let me now present the tableaux representing the evaluation of the candidates in (8) for the potential case under discussion.

**Ranking A:**

<table>
<thead>
<tr>
<th>(T1) Input /api/</th>
<th>ONSET</th>
<th>FAITH</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.## papi</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>b. api</td>
<td>*!</td>
<td></td>
</tr>
</tbody>
</table>
Ranking B:

(T2) Input: /api/

<table>
<thead>
<tr>
<th></th>
<th>FAITH</th>
<th>ONSET</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. papi</td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>b. #api</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

In both tableaux, it is visible that satisfying one constraint implies violating the other one. In (T1), the optimal candidate is the one with an onset, although it violates FAITH. Violation of FAITH does not yield ungrammaticality, since the competing candidate violates a higher-ranked constraint. In (T2), because of the reverse ranking, the candidate without an onset is selected, in spite of the violation of ONSET.

This example shows that violability is not free. It is a consequence of the conflict between constraints. If FAITH did not exist, the best candidate would always be the one satisfying ONSET and vice-versa. The two constraints are crucially ranked with respect to each other because they are in conflict.

As it is presented, Optimality Theory is a theory about constraint interaction. It makes predictions about the way principles interact, and about the way languages differ. There are two crucial aspects for any linguistic analysis which do not hinge on OT itself: the definition of constraints and the structural representation of the output candidates.

The fact that the theory does not say anything about the format of constraints or the possible output candidates is often pointed out as a weakness of the framework. This is however not necessarily true. If the domain of OT is restricted to the formalization of tensions between independently defined principles, and to the explanation of cross-linguistic variation in terms of constraint ranking, it crucially does not present itself as a theory about constraints. It is just a theory about constraint interaction.

It is thus necessary to define constraints elsewhere. The type of constraint at play will be relevant for the structural representation of output candidates.

---

1 This does not mean that OT does not make any predictions regarding potential constraints. For instance, FAITHFULNESS constraints (McCarthy and Prince 1994) follow from the format of the model.
Chapter 1

In this dissertation, I will assume the work done in syntactic theory in the Government and Binding (GB) and Principles and Parameters (P&P) (Chomsky 1981,1986) approaches for the definition of constraints. The work developed in these models has as its basic goal the formalization of syntactic principles, rules and operations. However, little or nothing is claimed about potential tensions and dependencies between them. Within these models, it is thus possible to find the tools to define and formalize constraints and to explain the structural representation of candidates. This will enable me to motivate the constraints outside Optimality Theory, rather than having constraints that are just describing surface-true phenomena.

To make the two types of approach compatible, I will need to make two assumptions: first, I have to assume that principles, as they are defined in GB and P&P are violable. Second, I assume that principles are not parametrizable, but universally true. Cross-linguistic variation does not arise from parametrization of principles, but from constraint ranking.

Simplifying matters, I use GB and P&P for defining constraints and justifying the structure of candidates, and OT for formalizing dependencies between constraints and explaining cross-linguistic variation.

Compatibility between approaches is also explored in other studies within OT-syntax. Grimshaw (1997) resorts to constraints like STAY (economy) and EPP, which are motivated outside Optimality Theory. Pesetsky (1994) argues that OT applies to the outputs of syntactic derivations that proceed in accordance with the principles of the Minimalist Program (Chomsky 1995). Choi (1996) combines OT with some of the assumptions of Lexical-Functional Grammar.

Since the resort to work developed within GB and P&P is crucial for the implementation of my proposal and for developing the OT analysis, I will briefly mention some types of analyses of word order variation within those models in the next section.

3.2. Word Order variation: previous approaches.

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2 See Broekhuis and Dekkers (1996) for a model combining OT with the Minimalist Program based on Pesetsky’s work.
In GB and P&P, there are mostly two types of tools to account for language-internal and cross-linguistic variations of word order. These include approaches based on head-movement, and approaches based on distribution of arguments.

An example of the type of approach based on head-movement is Emonds’ (1978) and Pollock’ (1989) proposals for accounting for orderings adverb-verb cross-linguistically. These authors suggest that word order contrasts of the type illustrated in (12) can be accounted for by assuming that verbs move to an inflectional node in French, but not in English:

(12) a. French:
Jean embrasse souvent Marie.
John kisses often Mary
b. English:
John often kisses Mary.

Similar types of analyses have been proposed for accounting for language-internal word order variation. For instance, Pollock (1989) suggests that the optional ordering of infinitives with respect to adverbs in French depends on landing sites of the verb. In (13a), the verb would be moved higher than in (13b):

(13) a. Parler souvent l’italien…
to speak often Italian
b. Souvent parler l’italien…
often to speak Italian

In this dissertation, I will assume head-movement as a potential explanation for structural differences between word orders. However, I would like to indicate that I am not going to make any claims regarding the formalization of the constraint determining this type of movement. I will just assume it without justifying the reasons for movement.

Approaches to word order variation based on the distribution of arguments include Koopman and Sportiche’s (1991) and Diesing (1992) proposals regarding VP-internal subjects. Koopman and Sportiche have suggested that the base-position of subjects is Spec,VP, where they may receive theta-role from V’ under sisterhood. Diesing uses this idea to explain the two possible positions of subjects in German illustrated in
Chapter 1

(14):

(14) a. ...weil Ameisen ja doch einen Postbeamten gebissen haben.
    since ants indeed a postman bitten have

   b. ...weil ja doch Ameisen einen Postbeamten gebissen haben.
    since indeed ants a postman bitten have

The difference between the two sentences will be that in (14a) the subject
is VP-internal, while in (14b), the subject has raised to Spec,IP to receive
nominative Case.

In the definition of constraints and representation of candidates, I
will assume the basic tools of this type of analysis: that the distribution of
arguments is determined by requirement such as thematic-role
assignment, Case, etc. For clarity of exposition, the necessary tools will
only be introduced when required.

One issue I would like to clarify in the discussion of how to
combine OT with GB and P&P is my position with respect to a
representational or a derivational view of the grammar. Optimality
Theory is a representational model. Its emergence in phonology offers an
alternative to the rule-ordering model that crucially resorts to serial
derivation. Recent approaches to syntax (Chomsky 1993) are derivational
in nature. Since some of the constraints I am going to adopt are defined
within those approaches, I must clarify that I am basically following the
claim made in OT that there is no derivation from the input to the
output. Instead, the output is a representation of the information
specified in the input. Hence, I use the term syntactic movement, this
term should be interpreted in representational terms: I do not mean to
say that actual movement is involved, but rather creation of an
interinterpretable chain (see Brody 1995a, among others). Under this
conception, chains are syntactic objects inserted as such in the structures,
expressing relations between discontinuous positions.

From the presentation of OT above, it follows that OT may not be used for analysis without a framework defining constraints and serving as the basis for representation of candidates.

In this sense, this dissertation consists of two parts:

In the first part (chapters 2-4), I will describe the problems to be analyzed, and propose analyses of surface the surface word orders which will constitute the candidates to be analyzed in the optimality-theoretical fashion. This work will enable me to:

a) spell out assumptions regarding the structure of candidates;
b) make options regarding the identification of constraints at play;
c) define the constraints;
d) clearly state the cases in which there is conflict.

In the second part (chapters 5-7), I will use Optimality Theory to formalize the tensions between the principles identified before, accounting for the cross-linguistic differences on the selection of the candidates represented in accordance with the structures discussed in the first part.

In chapter 2, I will study the distribution of adverbs. The goal of this chapter is twofold: first, it needs to be clarified to what extent adverbs can be used as a diagnostic for determining positions in the study of word order variation. Second, an analysis is formulated predicting the free distribution of this category, reducing optionality to a minimum. The main empirical domain of study in this chapter will be the behavior of monosyllabic adverbs. It will be argued that their restricted distribution allows them to be used as a diagnostic for detecting the position of verbs and complements. It will be argued that these adverbs provide evidence for verb and object movement out of VP in English. I will claim that object-movement is Case-driven. The study of the behavior of monosyllabic adverbs will lead me to argue that right-adjunction should be abandoned as an option for the syntax of adverbs. Empirical arguments in favor of the ban on right-adjunction will be presented. I will propose an analysis deriving the apparent right-adjunction effects based on the model of mapping between syntactic structure and semantic interpretation of Barbiers (1995). Sentences in which the syntax of adverbs is not respected, provided that there is prosodic markedness involved, will be presented as the first piece of evidence for a conflict between syntax and prosody.
Chapter 1

This chapter establishes the potential positions for adverbs, verbs and complements in the output candidates, and defines what constraints determine the distribution of adverbs and the need for objects to move out of VP.

In chapter 3, I will investigate the distribution of arguments in European Portuguese. First, I will use the results of the chapter on adverbs in order to determine the structural position of arguments. It will be argued that subjects in Portuguese may either move to Spec,IP or stay in Spec,VP. I will also claim that Portuguese displays scrambling of complements of a type similar to Germanic scrambling: objects may either remain VP-internal or adjoin to the left of VP. I will show that arguments do not freely distribute over these positions. There are specific contexts associated with each word order. A proposal in terms of links between syntactic positions and the discourse notions topic and focus will be made. The results of this chapter are important to make explicit the structural representation of all possible word orders in the set of output candidates. Assuming the OT premise that the candidate set is universal, the question arises as to why not all languages display as flexible a word order as Portuguese. A definition of the constraint on focus in prosodic terms will be advanced. I will argue that it is the satisfaction of this constraint that makes focused material stay in low (rightmost) positions. Instead of reducing optionality in syntax as done for adverbs, it is proposed, in this chapter, that the word order variation exhibited in Portuguese is not truly optional, but discourse-conditioned. The conflict between syntactic constraints and discourse-based constraints is thus made explicit.

The notion of focus is quite crucial to derive the results of chapter 3. This term is used in various ways in work on generative syntax. To avoid misinterpretations, and to clarify the definition of the constraint on focus, chapter 4 argues for a representation of information focus in prosodic terms. In this chapter, the results of chapter 3 are contrasted with alternative syntactic proposals for explaining focus. It is claimed that there is no movement of focused constituents for designated syntactic positions in Portuguese. A putative proposal according to which movement of focused constituents would take place at LF in Portuguese is explicitly tested and refuted. The results of this chapter are crucial for strengthening the type of constraint regulating the distribution of focus assumed throughout the dissertation. Furthermore, these results provide
evidence for the redundancy of LF as a level to codify certain types of information in a framework like Optimality Theory.

The first three chapters provide the crucial elements for OT-analysis: competing structural representations; motivated constraints with contradictory requirements on outputs; identified cases of conflict; cross-linguistic variation. Based on these elements, chapter 5 introduces Optimality Theory as the formalism permitting a formalization of the conflicts between constraints and explaining the cross-linguistic variation. In this chapter, I will contrast the discourse-conditioned word order of Portuguese with the rigid word order of English. It will be claimed that this contrast follows from the interaction of a constraint on focus, a constraint on economy, and a constraint on Case. Compliance with the constraint on focus may imply violating the syntactic constraints, yielding word order variation. I will argue that ranking syntactic constraints over discourse constraints derives rigid word orders or lack of optionality. Checking the potential grammars generated by the interaction of these three constraints will lead to an explanation of the different types of behavior of nominal objects found in Portuguese, English and Icelandic. At the end of this chapter, I will argue that the role of syntactic constraints may be visible even in languages where they are dominated by discourse constraints in unmarked contexts.

Chapter 6 extends the results of the previous chapter to other languages. Its goal is to emphasize the role of Optimality Theory as a theory of language variation. I argue that re-rankings of the set of constraints used in chapter 5 derives other types of languages. I also argue that Optimality Theory provides a formalism to express what it means for a word order to be unmarked, and predicts that unmarked values may differ cross-linguistically, depending on the ranking of constraints for each language. The set of languages looked at in this chapter comprises Portuguese, two varieties of Spanish, Greek, Italian, Malagasy and Celtic. The results of this chapter are important both for proving the adequacy of the constraint-based approach and to test the generality of the analysis defended. More importantly, it provides an explanation for why there is variation of unmarked values of word order.

Although I am combining Principles and Parameters with Optimality Theory, there are aspects in which the two approaches differ. Within the Principles and Parameters framework, cross-linguistic
variation follows from different settings for the value of an absolute parameter. In Optimality Theory, cross-linguistic variation follows from different rankings of violable constraints. Given these differences, it is important to compare the two types of approaches for deciding which is more adequate. In chapter 7, I develop such a comparison of frameworks. I argue that the choice has to be made on empirical grounds, and establish the criteria for comparing the two types of frameworks. It is argued that positively set parameters differ from high-ranked constraints in that only the latter predicts that there are contexts in which violability may be found. It is also shown that low-ranked constraints are not negatively set parameters, since there may be contexts in which they are operative. For making these points clear, I will expand the set of data, and consider the distribution of PP complements in English; Heavy NP shift in English, and interactions between binding and focus in Portuguese. Importantly, this work of comparison of theories will enable me to come back to the question of chapter 2 of how prosody and syntax interact in regulating the distribution of adverbs.

Finally, chapter 8 presents a summary and conclusions of the dissertation, and discusses some issues for future research.

Note:
Preliminary versions of these chapters have been presented and published elsewhere:
Versions of chapter 2 were presented at the University of Leiden (November 1994), Rutgers University (May 1996), University of Amsterdam (March 1995), and at the Workshop on Optionality, Utrecht (September 1995). Preliminary versions of it have been published as Costa (1996,1997a,b).
Versions of chapter 5 were presented at the University of Leiden (June 1996), Groningen University (June 1996), MIT (March 1996), University of Massachusetts at Amherst (April 1996), Rutgers University (May 1996), at the WCCFL XV, Irvine (March 1996), and at SCIL 8, New York (April 1996). Parts of it have been published as Costa (1997c,d,e).
A preliminary version of chapter 4 was presented at Going Romance, Utrecht (December 1996). It will appear as Costa (1997f).
Versions of chapter 5 were presented at the Universities of Leiden (September 1996), Groningen (October 1996), Tilburg (October 1996), Amherst (May 1996), Rutgers (June 1996), Algarve (July 1996), and at GLOW 20, Rabat (April 1997). A preliminary version of it appeared as Costa (1997g).
Versions of chapter 6 were presented at the Universities of Lisbon (October 1997), Leiden (January 1998), Stuttgart (July 1998), and at the Workshop on Inversion in Romance, Amsterdam (May 1998). It will appear as Costa (1998).
Versions of chapter 7 were presented at the Universities of Leiden (May 1997) and Utrecht (June 1998), at Chicago Linguistic Society (April 1998), and at the 8th
2 The Distribution of Adverbs

1. Introduction.

In this chapter, I intend to spell out my assumptions concerning the position of adverbs in the candidates to be discussed in the part of the dissertation in which Optimality Theory is used.

In order to achieve that goal, I will:

a) Discuss some theories of adverb positioning available;

b) Present monosyllabic adverbs as a test for the position of the other constituents of the sentence, and argue that these adverbs are more reliable as test than adverbs with a rather flexible distribution;

c) Discuss recent approaches to phrase structure (Kayne 1994), and show that sentence-final adverbs may provide evidence in favor of the ban on right-adjunction.

Before getting in the specifics of the chapter, I would like to show the relevance of the objectives to be attained for the general discussion in the dissertation.

Adverbs are the elements that allow variation para excellence. It is well known that they are quite a flexible class with respect to their position in the sentence. This can be illustrated for several languages:

(1) Portuguese
(provavelmente) O Paulo (provavelmente) tinha (provavelmente) probably the Paulo probably had probably lido (provavelmente) o livro (provavelmente) à Maria read probably the book probably to Maria (, provavelmente). probably
Chapter 2

(2) *English:
(probably) John (probably) had (probably) read (*probably) the book (probably) to Mary (, probably)

(3) *French:
(probablement) Jean (*probablement) a (probablement) lu
(probably) Jean probably has probably read
(probablement) le livre.
(probably the book

This flexibility has to be accounted for. Since the idea defended in this dissertation is that there is no true optionality, the account for this flexibility must be to the account to be proposed for the distribution of arguments.

Adverbs play a crucial role here, since tradition in generative syntax, starting with Emonds (1978) (see also Pollock 1989, Blevins 1990, and many others), takes adverbs as diagnostics for movement of other constituents. The general idea is that if an adverb is argued to be adjoined for instance to VP, all elements preceding the adverb may be argued to be outside VP, and all elements following the adverb are inside VP (or extraposed).

Naturally, other approaches, not involving movement, are conceivable for the same kind of data. Such approaches would defend that the adverbs are adjoinal to different positions and that the observed flexibility of word orders is a consequence of moving adverbs to several positions in the sentence, or a consequence of adverbs being base-generated in several positions. This type of approach is defended by Jackendoff (1972), Iatrondou (1990), Neeliman (1994) and Ernst (1997).

There is still a third type of approach to the word order variation observed with adverbs, which I will call mixed accounts. This is the position whereby the word order variation is accounted for both by allowing adverbs to be generated in different positions in the sentence, and by moving the other constituents across Adverb Phrases. This is the type of approach defended in Ambar (1989), Alexiadou (1994), and Cinque (1997). As will be obvious, I will position myself in this type of approach throughout this chapter. However, a different methodological path will be taken in this chapter. I will not take an a priori stand, as the other authors do. In fact, Alexiadou (1994) and Cinque (1997) propose that adverbs are specifiers of functional projections, partially based on their assumptions
THE DISTRIBUTION OF AVERBS

concerning phrase structure, following Kayne 1994. Instead of trying to implement a view on phrase structure, I will look at the properties of individual adverbs, and check whether their behavior may be taken to show anything concerning possible base-positions for adverbs, possible conjunction sites, and phrase structure.

Following this line of inquiry, I will propose a revision of Pollock’s (1989) conclusions regarding the position of arguments and V in English. It will be argued that the application of Pollock’s methodology with a careful choice of adverbs leads to the conclusion that both V and object raise out of VP in English. This section will provide the first type of argument in favor of the mixed account: on the one hand, it is possible to establish the surface position of verbal heads and arguments on the basis of the distribution of adverbs with a rigid position; on the other hand, some adverbs have too flexible a distribution, and must not be taken as test for the position of arguments. By looking at individual adverbs, one may draw conclusions on their position. This is what I will be doing in section two.

This section on English will also permit a clarification of my position with respect to the theory of Case which will be assumed throughout the dissertation. Since it will be claimed that nominal objects move overtly in English to a case-related position, I will be forced to adopt Chomsky’s (1993) Agr-based Case-theory.

One of the crucial parts of the analysis discussed in the preceding section is that right-adjunction of monosyllabic adverbs is to be excluded. I will not address the question of why that should be the case, that is, why should syntax be sensitive to the number of syllables of one adverb? Section three investigates the necessity of base-right-adjunction of adverbs. The conclusion will be that base-right-adjunction is empirically inadequate. This conclusion will be drawn on the basis of the observation of the behavior of individual classes of adverbs (manner and subject-oriented), consistently with the methodology adopted in section two. Asymmetries of interpretation between left-joined adverbs like carefully and nicely will constitute the main empirical argument. A general ban on right adjunction will explain the assumption made in the preceding section that monosyllabic adverbs cannot be right-joined.

Ruling out right-adjunction requires that I propose an explanation for the (apparent) right-adjointed positions. I will adopt (a weak version of) Barbiers’s theory of modification and extraposition. This will allow me to formulate a hypothesis concerning the base-position of adverbs and the apparent right-adjunction effects.
A first notion of unmarkedness will be presented in section three, in the context of default meanings for adverbs.

2. Adverb positioning and V-movement in English.

2.1. Pollock’s interpretation of the facts: no movement.

Pollock’s (1989) seminal work on the structure of IP follows Emonds (1978), who had already studied contrasts of the type in (4) and (5) in English and French, respectively:

(4)  a. John often kisses Mary.
    b. *John kisses often Mary.

(5)  a. *Jean souvent embrasse Marie.
    Jean often kisses Marie
    b. Jean embrasse souvent Marie.

The sentences in (4) illustrate that, in English, an adverb may intervene in between the subject and the object, if it respects the adjacency between verb and object, an effect also noted in Stowell (1981).

In French, the facts are exactly the reverse: the adverb may intervene in between the verb and the object, but not in between the subject and the verb.

Pollock’s interpretation of these facts is as follows: assuming that adverbs are uniformly adjoined to VP, and since we know that IP exists as a functional projection (cf. Chomsky 1986a), one may assume that the contrast between French and English is due to the overt V-to-I movement in the former language, and the absence of such movement in the latter, yielding the (simplified) surface representations in (6) and (7):
Pollock further argues based on the distribution of infinitives that IP must be split into TP and AgrP, yielding the clause structure in (8):

(8)  [TP NP I T I_{Agr} Agr [Agr V NP]]

This hypothesis concerning the functional architecture of the clause has been criticized by many linguists (e.g. Iatridou 1990, Williams 1994), but it nevertheless created an area of research by itself (see Hoekstra 1996 for a survey). Since Pollock (1989), at least the following functional projections have been proposed:
(9) (taken from Webelhuth 1995):

<table>
<thead>
<tr>
<th>Proposed category</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agr$_A$</td>
<td>Chomsky (1992)</td>
</tr>
<tr>
<td>Agr$_V$</td>
<td>Mahajan (1990)</td>
</tr>
<tr>
<td>Agr$_N$</td>
<td>Johns (1992)</td>
</tr>
<tr>
<td>A$_V$</td>
<td>Johns (1992)</td>
</tr>
<tr>
<td>Aspect</td>
<td>Hendrick (1991)</td>
</tr>
<tr>
<td>Aux</td>
<td>Mahajan (1990)</td>
</tr>
<tr>
<td>Clinic Voices</td>
<td>Sportiche (1992)</td>
</tr>
<tr>
<td>Gender</td>
<td>Shlonsky (1989)</td>
</tr>
<tr>
<td>Honorific</td>
<td>Kim (1992)</td>
</tr>
<tr>
<td>$\mu$</td>
<td>Pesetsky (1989), Johnson (1991)</td>
</tr>
<tr>
<td>Neg</td>
<td>Pollock (1989)</td>
</tr>
<tr>
<td>Number</td>
<td>Shlonsky (1989), Ritter (1991)</td>
</tr>
<tr>
<td>Person</td>
<td>Shlonsky (1989)</td>
</tr>
<tr>
<td>Predicate</td>
<td>Bowers (1989)</td>
</tr>
<tr>
<td>Tense</td>
<td>Pollock (1989)</td>
</tr>
<tr>
<td>Z</td>
<td>Stowell (1992)</td>
</tr>
</tbody>
</table>

This list of functional categories keeps growing. There have been recent proposals concerning the existence of discourse-related functional categories (Brosly 1990, Kiss 1996, among others); functional categories with very specific semantic values (Beghelli and Stowell 1997, among others), and many other types of categories.

Cinque (1997) proposes that there is a universal clausal structure, and that no variation is allowed with respect to the list of projected functional categories. This is a safe methodology, since the contrary would lead to a situation of analytical indeterminacy for very simple sentences, since it would be hard to know which of the potential functional projections is actually present. Evidence for postulating a given functional structure for a sentence is very scarce, unless the sentence contains adverbials or auxiliaries, which allow for the labeling of the functional projections dominating them in accordance with whatever the semantic value of these elements is.

I will postpone a more complete discussion of functional projections until the very end of the dissertation (chapter 8). For now, I will take the following approach: I will not assume the existence of a given functional projection, unless there is overt evidence for postulating it. As for their actual name, I will remain neutral in the absence of morphological or semantic evidence. For the projections for which there is a wider
consensus (TP and AgrP), I will assume that they are ordered like in (9), following Belletti (1990):

\[(9) \quad \text{TP} \rightarrow \text{Agr} \rightarrow \text{T} \quad \text{[ \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots ]}\]

Belletti proposes this ordering on the basis of the ordering of morphemes in Italian, which should mirror the ordering of the functional projections, in accordance with Baker’s (1988) Mirror Principle, according to which the outermost inflection must correspond to the outermost functional projection.

\[(10) \quad \text{ama-[va]-[mos]} \]
\[\text{love-IMPF-TpPL} \]
‘We loved’

After this excursus on functional projections, let me come back to the main issue: the distribution of adverbs. Independently of the actual clausal structure proposed, it has become a standard assumption in the literature that there is no V-to-I movement in English.

This assumption has been challenged by several authors. Pesetsky (1989), Ouhalla (1990) and Johnson (1991) have provided some evidence that main verbs do undergo movement in English. These authors propose that verbs move in English, although not as high as in French.

Before getting into the empirical arguments of these authors, I would like to present some additional arguments in favor of the idea that short verb movement, that is, V-movement out of the VP, but not to the highest functional projection, is necessary.

\[\text{2.2. Evidence for short verb movement.}\]

A problematic aspect of Pollock’s analysis is its implication that the merging of the verb and inflectional affix in English be done via lowering of the affix from I to V. In a review of Pollock’s analysis, Chomsky (1989, 1993) proposes that the lowering operation can be dispensed with if verbs (and all lexical forms) are inserted in the syntax fully inflected, and have to move to the inflectional heads just to check whether the information they bring from the lexicon is correct. Under this approach, lowering of the affix is unnecessary, and the merging with the inflectional head may take place at LF, thus in invisible syntax. Chomsky actually proposes a rather
simple approach to language variation: there is a uniform representation at LF, variation at the surface corresponds to different point where derivations are visible. In this sense, French has visible V-to-I movement, and English has invisible (or covert) V-to-I movement. In this approach, optionality is generally not allowed. That is, a language should in principle not have V-movement applying either in overt or in covert syntax.

Pollock, under this view, and following his own assumption that adverbs are uniformly adjoined to VP, runs into problems with the distribution of French infinitives, as in (11a,b), which may either follow or precede the adverbs:

(11) a. Mal parler l'italien,...
b. Parler mal l'italien,...

'To badly speak Italian,...'

In his original (1989) paper, Pollock suggests that the verb may either stay inside VP or move up to Agr. Given the current trend to eliminate optionality from the grammar, Pollock (1994b) makes an attempt to circumvent this problem by saying that when there is optional movement, what is at stake is the occurrence of forms which are morphologically ambiguous. This would be the case for French infinitives, which would allow an interpretation either as nominal forms (11a) or as verbal forms (11b). Since in French, only verbal elements do move to I, only when the infinitival forms are interpreted as verbal will this movement be required. If the infinitival form is interpreted as nominal, movement is not induced.

This analysis is however not tenable, since there are cases of apparent optional verb movement, for which the analysis based on morphological ambiguity may not be sustained. This is the case of Portuguese, illustrated in (12):

(12) a. O Paulo frequentemente beija a Maria.
    Paulo often kisses Maria

b. O Paulo beija frequentemente a Maria.
    Paulo kisses often Maria

The form beija/kisses in (12) is unambiguously a verbal form in the third person singular. The mechanism proposed by Pollock (1994b) for the optional movement of French infinitives may not be involved here, since this form is not subject to be analyzed as a nominal element.
An alternative view is to assume that adverbs may be adjoined to different projections. Such an assumption, combined with the possibility of moving the verb to intermediate functional projections (which is also assumed in Pollock 1989), would then derive the word order facts in Portuguese. (13) illustrates the relevant analysis:

(13) \[_{\text{arg}} \text{O Paulo [VP beija [VP t_v a Maria]]}\]

If the adverb \textit{frequentemente} is adjoined to TP, we get the ‘English order’: S-Adv-V-O:

(14) \[_{\text{arg}} \text{O Paulo [TP frequentemente [VP beija [VP t_v a Maria]]]}\]

If the adverb is adjoined to TP, the surface word order will match the French pattern: S-V-Adv-O:

(15) \[_{\text{arg}} \text{O Paulo [VP beija [VP frequentemente [VP t_v a Maria]]]}\]

The same type of analysis is also preferred if one takes into account sentences containing sequences of auxiliaries and in which adverbs may surface in several positions without radical meaning changes. (16) is an example of such a case:

(16) \textit{provavelmente} O Paulo \textit{provavelmente} tinha \textit{provavelmente} probably the Paulo probably had probably lido \textit{provavelmente} o livro \textit{provavelmente} à Maria read probably the book probably to Maria

\textit{(provavelmente)}.

Probably

Adopting the rigid view on adverbs that there is a single position for adverb attachment and trying to derive the multiple possibilities via optional movements of all the other constituents is quite implausible, since it creates the rather unlikely need of making as many optional movements as there are constituents and positions for adverbs.

The method of attaching the same adverb to different positions is not new. It has been used in the literature to derive the same effects of Pollock (1989) by Iatridou (1990) and Williams (1994), among others. It has also been used by Zwart (1993) to derive scrambling in Dutch, without
resorting to optional object movement. Another potential approach to the order S-Adv-V in Portuguese would be to follow Belletti’s (1990) approach to similar facts in Italian.

(17) Gianni probabilmente sbaglierà.
    Gianni probably fail-FUT-3ps
    ‘Gianni will probably fail.’

Belletti (1990) argues that the order presented in (17) is to be derived in terms of left-dislocation of the subject, which would explain that the subject and the verb (in I) would not be adjacent. This analysis is confirmed by her observation that the order S-Adv-V is only possible with definite subjects (indefinites may not be left-dislocated in Italian) or with indefinites bearing a heavy stress (which may independently be A-bar moved, in contrastive focus constructions). The contrast between the two types of elements is exemplified in (18):

(18) a  Ognuno probabilmente sbaglierà.
       everyone probably fail-(future)
 b  *Nessuno probabilmente sbaglierà.
    no-one
 c  NESSUNO probabilmente sbaglierà.
    ‘No-one will probably make a mistake’

Although, it seems to make the right predictions for Italian, this analysis cannot be extended to Portuguese. The reason is that the counterpart of (18) does not display any asymmetries: both types of subjects may occur in the order S-Adv-V, independently of focal stress. This is exemplified in (19) below:

(19) a  Todos provavelmente errarão.
 b  Ninguém provavelmente errará.
 c  NINGUÉM provavelmente errará.

1 I am not adopting the radical position that all adverbs are adjoinable to different projections. Rather, I will follow what I called in the introduction to this chapter the mixed approach, accepting that some adverbs have fixed positions and other may be adjoined to different projections. For instance, for scrambling in Dutch, I will not follow Zwart, and I will accept the traditional analysis of scrambling involving movement of the object (cf. discussion in chapter 3).
At this point, the reader is perhaps wondering about the difference in terms of economy between a model with optional verb movement and a model with optional adverb positioning. I have to postpone this issue until section 3, but the provisory answer to that question is: the theory of optional verb movement, as formulated in Pollock (1994b) makes wrong predictions. I now have the burden of building up an analysis of adverb placement that fares better, which will be the topic of section 3 of this chapter.

For the point I am trying to make in this section, it seems that one has to accept short verb movement as an empirical necessity: in some languages verbs move out of the VP but not to the highest functional projection of the clause.

This point is important in order to understand the analysis to be proposed for the distribution of adverbs in English.

2.3. Adverb positioning in English.

Pesetsky (1989), Ohall (1990) and Johnson (1991) have noted that Pollock’s argumentation is only true if one only considers nominal complements. These authors have noted that the adjacency requirement between the verb and its complement may be violated if the complement is prepositional or clausal. This is exemplified in the following sentences, taken from Pesetsky (1989) and Johnson (1991):

(20) a *Mickey visited quietly his parents.
b *Betsy sung loud the anthem.
c *Chris hit quickly the dog.

(21) a Chris walked quickly down the street.
b Mickey talked slowly to Gary.
c Sam said suddenly that we must all leave.
d Betsy spoke loudly to everyone.
e Mary tried diligently to leave.

(20) illustrates the well-known cases of adjacency between verb and nominal complement. This adjacency may not be broken by adverbs. If the complement is clausal or prepositional, like in the sentences in (21), no
adjacency is involved.\footnote{Similar data have been discussed by Postal (1974), who shows that in ECM constructions an adverb modifying the matrix verb may intervene in between the Exceptionally Case Marked object and the infinitival clause in examples like (i):}

On the basis of these facts, Pesetsky suggested that in English, like in French, there is movement of the verb out of VP, though not to such a high position. Moreover, Pesetsky argues that in order to get the word order facts right, one must assume that objects also move out of the VP.

Pesetsky proposes then that the verb moves out of VP up to a functional projection above the one immediately dominating VP. Nominal objects must also move out of the VP to the functional projection immediately dominating VP, which Pesetsky calls $\mu P$.

The structure proposed by Pesetsky is then the following:

\[
[\text{VP} \ldots V \mu P \text{ NP } [\text{VP} \text{ Adv } [\text{VP} t_{\text{obj}} t v t_{\text{obj}}]]]
\]

The status of this functional projection $\mu P$ is quite intriguing. Why should it be the case that only nominal complements move there? Some researchers have followed Chomsky’s (1989) proposals concerning Case theory, and assumed that the functional projection $\mu P$ is to be called AgrOP. Chomsky (1989) has noted that, on theoretical terms, Case should not be assigned in two different ways: under Specifier-Head agreement and under government. Chomsky makes the radical move of eliminating government from the set of relevant structural relations, and proposes that Case is to be assigned uniformly under Spec-Head Agreement. Following this reasoning, one must assume that complements bearing Accusative Case also enter a Spec-head relationship with a functional projection: this is the role played by AgrOP. AgrOP and AgrSP are then responsible for accusative and nominative Case checking/assignment, respectively.

Branigan and Collins (1993), looking at quotative inversion in English, suggest that $\mu P$ may be identified with AgrOP. They also claim that there is verb movement in English, though only when the complements of the verbs are not nominal. Proposals along the same lines have also been made by Johnson (1991), Ouhalla (1991) and Koizumi (1995). Here I would like to make a synthesis of all these proposals, combining them with the uniform Case theory of Chomsky (1989):
(23) In English, nominal complements move out of the VP to Spec,AgrOP for Case-licensing purposes. The verb moves up to the first functional projection above AgrOP.

This proposal implies that Prepositional and clausal complements, since they do not need to license Case, may stay in situ. Note that this derives the word order facts observed above: adverbs may intervene in between V and PP since the adjunction site for adverbs, VP, is in between these two categories.

This synthesis of proposals leads to the following representation, where I call the projection above AgrOP XP on the lack of semantic or morphological evidence for labeling it.\(^3\)

\[
\text{[Exp } \text{[V, } \text{[AgrOP NPP, } \text{[AgrOP } t \text{ (VP } \text{Adv)}\text{[VP } t \text{, } t \text{ ]] ] } \text{]]]
\]

Pollock (1994a) has reacted to these proposals (in particular Johnson’s), arguing that the evidence is not conclusive. Pollock (1994a) claims that the same word order facts may be derived, resorting to extraposition, a process that is independently known to apply preferentially to PPs and clauses. Pollock argues in favor of this point with examples like (25) and (26):

(25)  
\begin{align*}
\text{a} & \quad \text{*Bill knocked (hardly) on it (hardly).} \\
\text{b} & \quad \text{*Sue looked (hardly) at him (hardly).} \\
\text{c} & \quad \text{*Harry relies (sure) on it (sure).}
\end{align*}

(26)  
\begin{align*}
\text{a} & \quad \text{Bill knocked (recently) on it (recently).} \\
\text{b} & \quad \text{Sue looked (carefully) at him (recently).} \\
\text{c} & \quad \text{Harry relies (frequently) on it (recently).}
\end{align*}

The relevance of these examples for Pollock’s argument is the following: in (25) and (26), the word order V-Adv-PP is only possible with adverbs that may independently surface in sentence-final position. If this position is not available for an adverb, the order V-Adv-PP is not available either. In his interpretation of the facts, this means that V-Adv-PP is derived from an

\(^3\) The exact label is not entirely relevant, if we assume a view on functional projections like Grimshaw (1991): all functional projections are an extension of VP. At this stage, I will not take a stand regarding this issue. The reader may check chapter 5 and 8 for further discussion.
order V-PP-Adv via extrapolation of the complement; if the latter order is not available due to properties of the adverb, the extraposed word order may not be derived (since there is no derivational basis for the operation to take place).

We seem to have reached an impasse in the discussion, and the purpose of the remaining of this section is to provide some additional tests that may enable us to decide for either analysis. To attain that goal, I will resort to a specific class of adverbs: a class that must be left-adjoined. If the same word order facts arise, Pollock’s argumentation will not hold any longer.

2.4. Testing the position of the complements: extraction tests.

In order to falsify Pollock’s claims, it is necessary to find a PP across an adverb that must be left-adjoined, and a test for checking the position of the PP. In this section, I will show some asymmetries in the behavior of post-adverb PPs with respect to extraction possibilities, which can only be explained if there is indeed extrapolation in one case, but not in the other.

It is well known that extraction from extraposed PPs is impossible. This is due to them having been moved, and this phenomenon has been called freezing effects (Ross 1967, Wexler and Culicover 1980): descriptively, this ban on extraction from a moved constituent may be represented as in (27):

(27) *XP, ..., t, ..., [ ... t, ...]n

If Pollock’s analysis of the order V-Adv-PP is right, we expect that extraction out of a PP complement yields an ungrammatical sentence. If this is checked with a sentential adverb like yesterday, which is undoubtedly right-adjoined, the prediction is correct: extraction from an extraposed PP is impossible:

(28) a. John looked yesterday at the pictures of Miró.
   b. *Which painter did John look yesterday at the pictures of?

The contrast in (28) shows that the ungrammaticality of the extraction is not due to an impossibility of having the PP to the right of the adverb. Nor can it be due to an impossibility of extracting from prepositional complements, as (29), where the same sentences without the adverb are
given, illustrates:

(29)  a. John looked at the pictures of Miró.
    b. Which painter did John look at the pictures of?

Further evidence that ungrammaticality is triggered by the extraposed status of the PP comes from the fact that the extraction is possible in the order V-PP-Adv:

(30)  a. John looked at the pictures of Miró yesterday.
    b. Which painter did John look at the pictures of yesterday?

This kind of evidence seems at first sight to confirm Pollock’s conclusion, but only if this were true for all types of adverbs. If we replace yesterday in the examples above by an adverb that could in principle be adjoined to VP, we observe that the results of the tests differ: extraction out of the allegedly extraposed PP becomes possible. That is the case with an adverb like carefully:

(31)  a. John looked carefully at the pictures of Miró.
    b. Which painter did John look carefully at the pictures of?

Contrary to what happened with yesterday in (29), extraction out of the PP complement is possible in (30). The minimal hypothesis, given what we know concerning the correlation between surface positions and extractability and the lack of evidence for saying that different types of adverbs may induce different results with respect to extraction, is to assume that in (29) the PP is extraposed, but not in (31).

For completeness, note that the order V-PP-Adv is also possible, as attested in (32a), and that extraction from the PP in this order is legitimate (cf. 32b):

(32)  a. John looked at the pictures of Miró carefully.
    b. Which painter did John look at the pictures of carefully?

The contrasts between the sentences with yesterday and those with carefully lead to the conclusion that, as Pollock proposes, some sentences with the order V-Adv-PP are indeed the result of PP extraposition across an adverb. Differently from Pollock, however, I am forced to conclude that not all sentences with that order are the result of extraposition. I
therefore conclude that in some cases the word order V-Adv-PP is derived via leftward Verb movement across the adverb, which is left-adjointed to VP.

The following representations for the sentences in (29) and (31) are therefore obtained.\(^4\) (33) is the representation of the sentence without extraposition, and with the manner adverb *carefully* left-adjointed to VP.

\[
(33)\quad \begin{array}{c}
\text{IP} \\
\text{NP} \\
\text{I} \\
\text{V} \\
\text{Adv} \\
\text{VP} \\
\text{PP}
\end{array}
\]

(34) represents the first case discussed: V-Adv-PP is derived via extraposition of the PP to the right of a right-adjointed adverb.

\(^4\) Note that these representations are simplified: I am not considering functional projections that are not relevant for the present discussion, nor am I considering all possible representations for extraposition (adjunction to CP vs. adjunction to IP vs. lefward movement). My positions regarding some of these issues will become clearer in section 3, and in the next chapters. For now, I just hope to have a transparent representation.
A final note regarding the extraposition test is necessary: in this section I have talked about PPs only. This is because this test does not work with extrapoosed clausal complements, as (35) shows:

(35) What did Peter say yesterday that he had seen \texttt{t}?

This asymmetry between PPs and CPs with respect to sensitivity to extraction after movement has been noted before, and has been included in the set Anti-freezing effects (see e.g. Mueller and Sternewald 1993 and Mueller 1995 for recent discussions). I do not have anything interesting to say about this asymmetry, I would just like to emphasize that the special behavior of CPs with respect to extraction does not affect the conclusions regarding the behavior of PPs.

To close this section, and to stress the point that in the sentences with \emph{carefully} there is no extraposition of the PP complement, I would like to note that these adverbs do not easily surface in typical contexts of extraposition (or heavy NP shift), as the sentences in (36) illustrate:

(36) a I read a description \{yesterday/\texttt{carefully}\} of Miro's latest picture.

b Bill told me to drink \{tomorrow/\texttt{frequently}\} two glasses of water.

The incompatibility of this type of adverbs with extraposition constitutes indirect evidence against the claim that the PPs preceding them are extrapoosed.
Summing up, extraction shows that not all \( V\-Adv\-XP \) constructions involve extraposition. Hence, it is legitimate to claim contra Pollock (1994a) that the ordering \( V\-Manner\ Adverb\-PP \) is to be described by overt verb movement across the adverb, leaving PP in situ.

### 2.5. Types of adverbs and positioning.

#### 2.5.1. Monosyllabic adverbs.

Crucial in the discussion above is that only some kinds of adverbs may be left-adjointed to VP. This kind of argumentation is similar to Pollock’s, who argues that the order \( V\-Adv\-PP \) is only possible with adverbs that may be right-adjointed. If we find examples of the word order under discussion \( (V\-Adv\-PP) \), in which the adverb belongs to a class that may not easily be right adjoined, we find further evidence against Pollock’s claim.

In this section, I will argue that monosyllabic adverbs of the type listed in (37) are the kind of adverb we are looking for.

(37) well, bad, hard, fast, …

The peculiarity of these adverbs is that they do not easily surface on sentence-final position, following a prepositional complement, unless they bear heavy stress:

(38) a. *John looked at those pictures hard.
   b. John looked at those pictures HARD.
   c. John looked hard at those pictures.

(38) illustrates this peculiarity: in (38a), the monosyllabic adverb hard follows a prepositional complement. Without any special intonational contour, the sentence is ill-formed. If the adverb bears heavy stress, like in (38b), the sentence becomes acceptable. Likewise, if the adverb precedes the prepositional complement, following the verb, the sentence is also acceptable (38c).

I interpret these facts in the following way: monosyllabic adverbs

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5 In the next chapter, we will see the correlation between these options and discourse contexts.
may only be left-adjoined to VP. The fact that their position is very low may provide further evidence for this analysis. The sentence in (39) illustrates the rigid position of this adverb. The tree in (39) indicates the only potential adjunction site:

(39) John (*well) has (*well) been (*well) reading (well) to his children (*well).

(39) 

```
  AgrSP
    TP
      AgrOP
        VP
          well
          VP
```

This type of adverbs contrasts with adverbs like 

probably (cf. (3)), which have a much less restricted distribution. Their occurrence in the apparent right-adjoined position is marked, and may only occur if the adverb bears a heavy stress, or if it branches:

(40) John reads to his children WELL.

(41) John reads to his children very well.

This type of prosodic constraint on adverb position is not observed in cases in which the sentence-final position is canonical:

(42) John read to his children yesterday/YESTERDAY.

In fact, in (42), which involves an adverb traditionally analyzed as right-adjoined (either to VP or to IP), both possibilities are grammatical, with or without the heavy stress on the adverb.

Note that it cannot be said that monosyllabic adverbs cannot surface in sentence-final position, since this the only legitimate position for them if the complement of the verb is nominal:
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(43)  a. John read the book well.
    b. John speaks French well.

All other positions yield ill-formed results:

(44)  a. *John well read the book.
    b. *John read well the book.

In the sentences in (43), the normal sentence stress will stress the adverb. In addition, two heavy stress patterns may be found: prominence on the object (45a) or prominence on the adverb (45b), which also makes them differ from the sentences with prepositional complements:

(45)  a. John read THE BOOK well.
    b. John read the book WELL.

These data with nominal complements also permit to discard a potential analysis according to which the low position of the adverbs follows from the fact that these adverbs are adjoined to the verbal head forming a verbal complex predicate (along the lines of Rivero 1990). If the adverb was adjoined to the verbal head, it should be able to intervene in between the verb and the complement, like in (46), patterning like other verb-particle constructions (47):

    b. *John well-read the book.

(47)  a. John looked up the word in the dictionary.
    b. John woke up his brother.

In spite of the fact that there seems to be some correlation between the possibility of these particles to surface after the nominal complement if they are prosodically more complex (cf. Neeleman 1994), they cannot be treated like adverbs, given the difference between (46) and (47).

We thus have an asymmetry in behavior of the adverbs depending on whether the complement involved is nominal or prepositional. Following Pesetsky’s (1989) and Johnson’s (1991) proposals and the discussion above, these facts get a straightforward analysis: monosyllabic adverbs like well precede prepositional complements, because they are adjoined to the left of VP, and PPs stay in situ (in their base position, as
complements of the verb). The representation of this word order then is the following, where empty functional projections are omitted, as well as irrelevant traces, like the VP-internal subject trace:

\[(48) \quad \text{[IP] John [XP read [VP well [VP t₁ to his children]]]}\]

If the complement is nominal, it must surface in Spec, Agr OP for case-licensing reasons, crossing the adverb, which will end up following the complement. (49) is the representation of a sentence with a nominal complement:

\[(49) \quad \text{[IP] John [XP read [Agr OP the book [VP well [VP t₁ t_{86}]]]]}\]

The fact that these adverbs cannot be easily adjoined to the right of the prepositional complements provides evidence in favor of the hypothesis that verbs move overtly out of the VP in English. This fact challenges Pollock’s (1994a) counter-argumentation: there is an order Adv-PP with an adverb that only is sentence-final when it follows NPs.

The crucial aspect about monosyllabic adverbs is that they have quite a strict distribution: the more fixed their position is, the better it may serve as a diagnosis for where the verb and arguments are. In the remainder of the dissertation, I will resort to monosyllabic adverbs as a test for position of complements in many occasions. It may strike the reader as a surprise that the unifying factor of this class of adverbs is their prosodic shape (that they are monosyllabic). Indeed, we do not expect words to have a specific syntactic behavior because of the number of syllables, or because of where stress falls. By resorting to a class of adverbs which is monosyllabic, I run the risk of dangerously loosening the notion of autonomy of syntax, which postulates that syntactic rules do not mention phonological information. However, we know that some aspects of syntax interact with prosody: for instance, the distribution of parentheticals (cf. Frola and Vigário 1996 among others) is prosodically determined. Likewise, the sentence-final position is the place where sentence stress falls. Hence, a syntactic position is connected with a prosodic factor. If some words are too light to bear the main stress of the sentence by default, they will be dispreferred in the syntactic position where sentence stress falls. A

---

6 I will postpone an analysis of the order V-PP-Adv with heavy stress on the adverb until chapter 3, since for the analysis to be clear, I will have to resort to discourse notions that were not introduced so far.
conspiracy between prosodic and syntactic factors driving the ban on certain words in certain positions is thus obtained. Assuming that this is the case for monosyllabic adverbs, it is no longer surprising that syllabicity is the unifying factor.

Further evidence that prosodic shape is the main factor banning monosyllabic adverbs from the sentence-final position comes from the fact that they may appear there if they are phonologically heavier. This is shown in the contrast in (50):

(50)  a. He read well to his children.
   b. *He read to his children well.
   c. He read to his children WELL.
   d. He read to his children very well.

Whilst (50b) is not good, (50c) with a heavy stress on the adverb becomes grammatical, as well as (50d), where the adverb is modified, forming a branching phonological constituent. This type of data was independently observed by Cinque (1994), who notes that adverbs that generally may not be right-adjointed (like <often>), may appear in the sentence-final position if they are phonologically heavier. This is exemplified in (51):

(51)  a. He often eats watermelons.
   b. *He eats watermelons often.
   c. He eats watermelons very often.

Cinque’s data provide further evidence that light elements are not easily placed in sentence-final position.

Note that it may well be the case that this observation on monosyllabic adverbs is not universal, and that they may not be taken as a cross-linguistic test for identifying the left edge of VP. For taking them as a diagnostic, the same kind of methodology used here is necessary, namely, comparison with other adverbs, observation of the position of complements with respect to the verb and the adverb, and observation of the prosodic aspects associated with the positions.

2.5.2. Other adverbs and floating quantifiers.

Recall that Pollock (1994a) has proposed that Johnson’s interpretation of the facts could not be correct, since the order V-Adv-PP
could not occur with adverbs that could not be right-joined, like *hardly. Pollock claims that this is so because this word order is an instance of PP-extraposition across a right-joined adverb. Though I have shown in the preceding section that Pollock’s argumentation does not go through, I still have to say something about what is valid in Pollock’s argumentation: though it is not true that the order V-Adv-PP may only emerge with adverbs that can be right-joined, it is true that this word order is not possible with adverbs that cannot be right-joined. In this paragraph, I will try to explain that this correlation follows naturally from the analysis proposed. I will further argue that the distribution of floating quantifiers, which might be a counter-argument for the analysis proposed here should receive a similar treatment to those adverbs.

Let me start by the latter category: floating quantifiers. Since Sportiche (1988), floating quantifiers are taken as a diagnostic for A-movement. More specifically, Sportiche argues that floating quantifiers indicate where a subject has been on its way to Spec,IP. For instance, in the sentence in (52) from Portuguese, the floating quantifier may either move along with the subject to Spec,IP (52a) or be stranded in the base position of the subject in (52b):

(52) a. Todos os miudos foram ao cinema.
    All the kids went to the cinema
    ‘All the kids went to the movies.’
 b. Os miudos foram todos ao cinema.
    The kids went all to the cinema

Note that the distribution of floating quantifiers is one of Pollock’s (1989) arguments for saying that the verb does not move in English. He notes the following contrast between English and French:

(53) a. The kids all love Mary.
 b. *The kids love all Mary.

(54) a. Les enfants aiment tous Marie.

In (53), the verb stays in situ, and as a consequence, the stranded floating quantifier precedes it. In (54), the verb moves to I, hence the stranded floating quantifier follows it.
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Note that if the same argumentation is followed, there is again evidence for short verb movement of the verb in Portuguese, since the two positions for the floating quantifier are possible:

(55) a. Os miudos amam todos a Maria.
The kids love all Maria
b. Os miudos todos amam a Maria.

Crucial for the analysis proposed here is that there seems to be evidence against the analysis that there is movement of the verb out of the VP. Actually, floating quantifiers provide evidence against movement of the object as well: if objects move to Spec,AgrOP overtly, then it is strange that floating quantifiers do not appear stranded in what would be the base position of the object: after the object.

(56) a. Mary saw all the kids.
b. *Mary saw the kids all.
b’. *Mary saw [\textit{Ag} \textit{Gr} \textit{Op}] the kids [\textit{VP} \textit{TV} [\textit{QP} \textit{all} \textit{tVP}]]

Likewise, they do not appear in between the verb and prepositional or clausal complements:

(57) a. The boys (all) said (*all) that Mary was sick.
b. The boys (all) run (*all) to the end of the track.

Under the hypothesis that the subject, the verb and the object move out of the VP, we should get a (subject) floating quantifier following all those elements, which is again not true:

(58) a. *My friends love Mary all.
a’. *My friends love [\textit{Ag} \textit{Gr} \textit{Op} \textit{Mary} [\textit{VP} [\textit{QP all} \textit{tSubj}]] \textit{TV} \textit{tObj}]]

However, I would like to note that the adverbs with floating quantifiers are only relevant under either of two assumptions: either floating quantifiers are adverbs, and as such they \textbf{must} be adjoined to VP (which is Pollock’s 1989 assumption, see also Doetjes 1992,1997 for analysis of floating quantifiers as adverbs), or Sportiche’s (1988) analysis is correct, and floating quantifiers do trace the base position of arguments.

Given the discussion in the preceding sections, concerning adverb positioning, it should be clear by now that it is not worthwhile keeping the
assumption that if something is an adverb, then it must be adjoined to VP. In fact, we have seen that there is a limited set of adverbs that are unambiguously adjoined to VP. In that respect, floating quantifiers should pattern like the other monosyllabic adverbs, since they are monosyllabic, and they may appear sentence-finally, if they phrase at least prosodically with something else:

(59) a. The boys ran [all very quickly].
    b. Mary saw the boys [all wearing sun glasses].
       a’. *The boys ran all.
       b’. *Mary saw the boys all.

Although they pattern like the monosyllabic adverbs discussed above as far as the possibility of surfacing in sentence-final position is concerned, note that they do not pattern like those adverbs in what concerns positioning. Consider the asymmetry below:

(60) a. The kids speak French (well/*all)
    b. The kids read (well/*all) to their friends.
    c. The kids (*well/all) read to their friends.
    d. The kids (*well/all) speak French.

If we are to accept the conclusion above that monosyllabic adverbs are left-adjointed to VP, the data in (60) seem to show that floating quantifiers have a different distribution and may not be analyzed as VP-adjuncts.

Regarding Sportiche’s conjectures concerning floating quantifiers, the sentences in (61) show that floating quantifiers do not necessarily trace a position of the associated argument.8

---

7 I will not present an analysis of the sentences in (59), in the sense that I will not take a position regarding the status of the floating quantifier as a modifier of the argument in the main clause or modifying a PRO in the PP or gerundive that it appears adjacent to. I only use these examples to emphasize the parallelism in behavior between these elements and the monosyllabic adverbs discussed before.

8 For other counter-arguments to Sportiche (1988), see Doetjes (1992) and Bobaljik (1995).
(61)  

a.  The carpets will have probably all been being dusted for 
    hours.

b.  The carpets will have all probably been being dusted for 
    hours.

c.  The carpets will have all very probably been being dusted for 
    hours.

In these sentences with many auxiliaries, one might suppose that each of 
the auxiliary heads has a specifier position used by the subject to land on 
its way to Spec,IP. If that is true (and something along these lines is 
necessary for avoiding problems of relativized minimality (Rizzi 1990)), it is 
expected to find floating quantifiers stranded next to these auxiliary verbs. 
(61a) confirms this prediction: let us assume that the projection headed by
been is called ZP; the form been occupies the head position, the floating 
quantifier is stranded in Spec,ZP, and the adverb probably is a ZP-adjunct. 
The following representation for this part of the sentence are thus 

obtained:

(62)  

\[
\begin{array}{c}
\text{Adv} \\
\text{probably} \\
\text{ZP} \\
\end{array}
\]

\[
\begin{array}{c}
\text{all} \\
\text{been} \\
\end{array}
\]

However, the sentence in (61b) disconfirms this type of analysis. If 
floating quantifiers were always stranded in A-positions, (61b) should be 
ungrammatical, since the adverb probably, adjoined to ZP, intervenes in 
between the floating quantifier and the head. The only way to rescue 
Sportiche’s analysis would be to assume either that the adverb is adjoined 
to the head (cf. Travis 1988 for adjacency of adverbs to heads), or that it is 
adjoined to Z. The former is not correct, since the adverb may be a 
phrase, like in (61c), hence adopting such a hypothesis would yield a 
violation of structure preservingness (Emonds 1976). The latter is not 
correct either, since clearer cases of Spec,head relationships, like Subject 
and verb in French, show that there is no adjunction of adverbs to the bar-
level:
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(63) a. Probablemente, Jean a lu le livre.
   b. *Jean probablement a lu le livre.

Rohrbacher (1994) proposes an account for the cases like (61b) where floating quantifiers precede an adverb. Under his analysis, Sportiche’s (1988) analysis can be saved, since the floating quantifier is stranded in the Specifier position of a functional projection above the VP-joined adverb. His analysis for both orders is presented in (64):

(64) a. [IP The children have [VP probably [VpP all] seen the movie]]
   b. [IP The children have [VpP all] probably [VP all seen the movie]]

The analysis represented in (64) has at least two problems: first of all, it cannot be extended to cases with more auxiliaries, since it relies on the existence of a projection having an empty head. For sentences with more auxiliaries like (61), it would be difficult to find evidence for extra empty heads. This is not just a matter of taste concerning the postulation of functional projections. Actually, the deletion facts in (65) confirm that the floating quantifier is not in the specifier position of an empty headed functional projection.

(65) The carpets will have all probably been being dusted for hours, and the tapestries will have (*all/*all probably/all probably been) too.

Assuming that only constituents can be deleted, we can test whether or not the floating quantifier is the only visible material in its projection. If it is, deletion of anything following it should be possible. That is however, not the case: either the whole sequence floating quantifier + adverb + head is deleted or deletion may not apply to a subpart of this sequence. I take this to show that Rohrbacher’s analysis cannot be maintained.5

I will then assume, along the lines of Doetjes (1992, 1997), that floating quantifiers are adjectives. The difference between them and the monosyllabic adverbs considered in the previous section is that they cannot be adjoined to VP. They must be adjoined higher than VP. Note that this is

---

5 A further complication that would arise from adopting Rohrbacher’s analysis would be the fact that we are identifying μP with AgrOP. Having this position occupied by the QP, there would be no position for moving the object.
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no different from other quantificational adverbials such as those used in Pollock’s (1994a) reply to Johnson. I repeat his examples in (66):

(66) a  *Bill knocked (hardly) on it (hardly).
   b  *Sue looked (hardly) at him (hardly).
   c  *Harry relics (sure) on it (sure).

Like floating quantifiers, the adverbs in (66) cannot be adjoined low in the sentence. It may well be that there is a unifying property in the lexical meaning of these adverbs. I will not get into a proper characterization of these elements. For the point to be made here, it is enough to note that floating quantifiers may not be taken as a counter-argument to the proposal that verb and nominal objects move out of the VP in English, since it may be shown that like other elements they are high attached.

I now have the tools to answer the question raised at the outset of this paragraph: why is there a correlation between the impossibility of having some adverbs right-adjointed and having the order V-Adv-PP? Under the approach defended here, the adverbs used in Pollock’s examples are just another case of adverbs that may not be right-adjointed, like the monosyllabic ones. The difference with respect to the monosyllabic adverbs is that they may not adjoin to VP, while the monosyllabic adverbs must adjoin to VP. Hence, we get the possibilities summarized in (T1):

<table>
<thead>
<tr>
<th>(T1)</th>
<th>Able to surface in S-Final position?</th>
<th>Able to adjoin to VP?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monosyllabic adverbs</td>
<td>No</td>
<td>Yes (only position)</td>
</tr>
<tr>
<td>Floating quantifiers and other Q-Adverbs</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>-ly adverbs</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sentence adverbs (e.g., yesterday)</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

The fact that we get all possibilities proves the main point: no prediction can be made concerning site of adjunction by looking at the sentence-final position alone. In my view, this is the fallacy of Pollock’s (1994a) argumentation.

Going back to the previous discussion on verb movement in English and Portuguese, and combining these results with the several positions where the verb can surface, differences between languages can be
derived.

Remember that I have assumed so far the existence of the following functional categories:

- AgrS, the Spec of which is occupied by the subject;

- T, which is the landing site for Portuguese verbs and English auxiliaries;

- X, which is the unlabeled category where main verbs move to in English, and

- AgrO, the Spec of which is occupied by nominal complements (in overt syntax in English).

I will not get into the question of why verbs move to one of these categories and not the others. It surely may be formalized in a theory assigning different values in terms of feature strength or feature specification (like in Chomsky 1993), as well as in a theory expressing contradictory requirements on the need to lexicalize some heads on the one hand, and the need to have economical representations on the other hand (cf. Grimshaw 1997, Vikner 1997).

Let us see how these assumptions may derive the facts described above:

Let us start with French: in French there is a strict adjacency between the subject and verb (whether it is a main verb (67a,b) or an auxiliary verb (67c,d)):

(67) a. Jean embrasse souvent Marie.
    Jean kisses often Marie

b. *Jean souvent embrasse Marie.

c. Jean avait souvent embrassé Marie.
    Jean had often kissed Marie.

d. *Jean souvent avait embrassé Marie.

These facts may be derived under the following assumptions: *souvent* may adjoin to TP (and to XP and VP as well), and all verbs move all the way up to AgrS, yielding a representation like in (68):
The difference with respect to Portuguese is that the verb in the latter language is in the lower functional projection in T. The difference with respect to French is represented in (69):

(69) \[ \text{AgP} \text{ Jo\~ao \text{ (VP frequente})} \text{ VP \text{ beija (XP frequente})} \text{ VP t\_v \text{ t\_v a Maria)]]}$

The position proposed for the verb, combined with the three potential adjunction sites for the adverb derives the two word orders observed for Portuguese, repeated in (70), without having to resort to Subject left-dislocation as an additional mechanism, which would lead to the problems discussed above:

(70) a. \text{O Jo\~ao beija frequentemente a Maria.}\text{ Jo\~ao kisses often Maria}\n
b. \text{O Jo\~ao frequentemente beija a Maria.}\text{ Jo\~ao kisses frequently a Maria.}\n
Note that adverbs like \textit{well}, which according to (T1) can only be adjoined to VP, do not surface in the preverbal position, since that position results from adjunction of the adverb to TP:

(71) a. \text{O Jo\~ao fala bem franc\'es.}\text{ Jo\~ao speaks well French}\n
b. \text{O Jo\~ao bem fala franc\'es.}\text{ O Jo\~ao well speaks French}\n
Finally, it is also possible to derive the word orders that are attested in English, exemplified again in (72):\textsuperscript{10}

(72) a. \text{John frequently kisses Mary.}\text{ John kisses frequently Mary.}\n
b. \text{*John kisses Mary frequently.}\text{ John kisses Mary frequently.}\n
c. \text{John kisses Mary frequently.}\n
This word order may be derived by moving the verb up to \textit{X}, and the

\textsuperscript{10}I am using \textit{frequently} instead of Pollock’s (1989) traditional example with \textit{often}, since it easier to compare the \textit{-ly} adverb with the forms discussed in the other two languages, since \textit{-ly} adverbs, but not \textit{often}, permit adjunction both to TP and VP.
object to AgrO, as discussed above, and represented in (73):

\[
\begin{align*}
(73) & 
\begin{array}{ll}
\{_{\text{AgrO}} \text{John} \} & \{_{\text{TP}} \text{frequently} \} \{_{\text{XP}} \text{frequently} \} \{_{\text{XP}} \text{kisses} \} \{_{\text{AgrOP}} \text{Mary} \} \\
\{_{\text{AgrO}} \text{t_c} \} & \{_{\text{TP}} \text{frequently} \} \{_{\text{S宾}} \text{t_v} \text{Mary} \} \{_{\text{O}} \} \{_{\text{O}} \} \{_{\text{O}} \}
\end{array}
\end{align*}
\]

The difference between English and Portuguese concerning the position of the verb is necessary to derive the difference of behavior between auxiliary verbs and main verbs in English. English auxiliary verbs pattern like Portuguese verbs, in that they may either follow or precede an adverb (cf. Kayne 1989, among others):

\[
\begin{align*}
(74) & 
\begin{array}{ll}
a. & \text{John frequently is singing beautiful songs.}^{11} \\
b. & \text{John is frequently singing beautiful songs.}
\end{array}
\end{align*}
\]

This can be captured if the auxiliary verb, differently from main verbs is in T, and the adverb is adjoined to TP in (74a), and to XP in (74b). The proposal that auxiliary verbs in English are higher than main verbs goes back to Emonds and Pollock’s original works. The fact that they behave similarly to Portuguese main (and auxiliary) verbs is now accounted for the similar representations proposed. (75) is the representation for English auxiliary verbs:

\[
\begin{align*}
(75) & 
\begin{array}{ll}
\{_{\text{AgrO}} \text{John} \} & \{_{\text{TP}} \text{frequently} \} \{_{\text{XP}} \text{frequently} \} \{_{\text{XP}} \text{kissing} \} \{_{\text{AgrOP}} \text{Mary} \} \\
\{_{\text{AgrO}} \text{t_c} \} & \{_{\text{TP}} \text{frequently} \} \{_{\text{S宾}} \text{t_v} \text{Mary} \} \{_{\text{O}} \} \{_{\text{O}} \} \{_{\text{O}} \}
\end{array}
\end{align*}
\]

Crucial in the analysis of English is the role of AgrOP. The well-known adjacency between the verb and the object is derived from the fact that I have not proposed AgrOP as a potential adjunction site for adverbs. This is an issue to be dealt with in the next paragraph.

2.6. No adjunction to AgrP.

The question we were left with at the end of the preceding paragraph may be rephrased in simple terms as follows: is there any principled reason to exclude adjunction to AgrOP? In this paragraph, I will show that the hypothesis that adjunction to AgrOP is to be ruled out is tenable, since the same must be said for AgrSP. I will further advance two

\footnote{11 Favored with a heavy stress on the adverb.}
possible answers (of a theoretical nature) to this question.

Let us assume with Chomsky (1993) that AgrO and AgrS are not distinct categories, but two instantiations of a single category (O and S being mnemonics for what moves where, and the final position of the object and the subject being derived by some strategy related to conditions on movement.12 If this hypothesis is right, we predict that the ban on adjunction to AgrOP proposed above should be extended to AgrSP as well, since the two categories are identical. Sentences like (76) seem however to disconfirm such a hypothesis:

(76) John said that probably Mary gave a flower to Bill.

This problem may be circumvented if one assumes with Culicover (1991), Zwart (1993) and Müller and Sternefeld (1993) that TopP (Topic Phrase) is an independent projection appearing ordered with other categories as indicated in (77):

(77) [\[\#P\rightarrow\]TopP\[\rightarrow\]AgrSP\[\rightarrow\]

This contrasts with base-generated topics in adjunction to CP, which would never be able to surface in sentences like (76), since the adverb would then precede the complementizer (see Duarte 1987, 1996 for further discussion).

The hypothesis that the apparent adjunction to AgrSP is to be interpreted as an instance of topicalization receives further support from the sentences under (78).

(78) a. I said that flowers John gave to Mary.
    b. I said that yesterday, flowers, John gave to Mary.
    b’. I said that flowers, to Mary, John gave.
    c. I said that flowers, yesterday John gave to Mary.

(78a) constitutes additional evidence for the fact that the position in between complementizer and subject may be filled in by topicalized constituents. Actually, in (78a), the constituent may not be base-generated,

12 I will note take a position regarding the technical details enabling the subject to move across the object. For the sake of the argument, I might assume Chomsky’s formulation in terms of equidistance. However, since in chapter 4 I use the general ban on crossing paths for ruling out a derivation involving A-bar movement, I do not want to dwell on this question, so I can use traditional argumentation.
since it is an argument of the verb in the embedded sentence. Further support comes from (78b) and (78c): multiple topicalization is marked in English (cf. 78b). The same kind of markedness obtains when the constituents intervening between the subject are an adverb and the complement of the embedded verb (cf. 78b). The null hypothesis is that there is multiple topicalization also in this case. (78c), though not very conclusive given the subtle status of the judgements, shows that the preferred order for multiple topicalization is the one in which the adverb precedes the other topic. Now, if the adverb was base-generated in conjunction to AgrSP, and the other element was the topic, this order should be impossible. If the two elements are topics, no ordering restrictions are predicted.

The exclusion of conjunction to AgrS/OP is also addressed by Johnson (1992), who argues that conjunction is to be excluded because the presence of an adverb in between an extracted constituent and its trace creates a barrier for government of the latter by the former. This observation is based upon the following contrast:

(79)  

\begin{tabular}{ll}
\text{a.} & \text{How did you say that Mary danced?} \\
\text{b} & \text{*How did you say that probably Mary danced?} \\
\end{tabular}

Similarly, conjunction of an adverb to AgrOP would prevent V from governing its trace.

Although I will adhere to Johnson’s conclusion that conjunction to these categories should be barred, I would like to note that barrierhood cannot really be the reason behind the exclusion of conjunction to these categories. In fact, there are some problems with Johnson’s explanation. First of all, we have seen before that an adverb does not create a barrier for extraction, but that it is the position where one extracts from that creates this effect. If that were not the case, all the sentences with extraction of a complement across an adverb should be ruled out.

Also, the description does not seem to be entirely correct. Actually, the position between the complementizer and subject may contain an adverb, provided it is of a different type than the one in (79b). This is

---

13 This statement must be qualified: when I say the constituent may not be base-generated, I do not intend to exclude an analysis of this type of embedded topicalization which resorts to base-generation instead of movement. The goal of this sentence is to show that this position is occupied by other constituents, which, when they are there, are not occupying their canonical position.
shown in (80):

(80)    How did you say that yesterday Mary danced?

It may well be the case that the problem with (79b) is semantic in nature. Note that placing the adverb in a different position is not very good either, though the sentence clearly improves for most speakers:

(81)  ??/How did you say that Mary probably danced?!

Since barrierhood is not likely to be the reason behind the impossibility of adjoining to AgrS/OP, another reason for this ban has to be found. I would like to suggest that this ban has to do with the nature of the categories themselves. Emonds (1985), among others, has provided evidence for the fact that adverbs are not modifiers of nominal categories. Following the results of Raposo (1987) with respect to the nominal status of the category Agr, the problem is solved in a rather simple way: there can be no adjoinment of adverbs to AgrS/OP because adverbs do not modify nominal categories.14 Another possible explanation is to adopt Chomsky’s (1995) view that Agr is a meaningless category, and exclude adjoinment of adverbs to Agreement because the adverbs would not be modifying any meaningful category, yielding semantic problems.15 Such a hypothesis involves knowing much more about the exact nature of functional projections, a study which goes beyond the scope of this dissertation. Only when more basic questions are answered, like whether there are functional projections, and how many and which functional projections we need, can we start investigating their nature with respect to computing semantic values for the sentences. For now, it is enough for me to note that the data seem to be uniform in that adjoinment to the two (alleged) Agreement Phrases seems to be impossible.

14 I overlook here elements like only, which appear adjoined to NPs in sentences like (8):
(8)    I saw [only Mary].
There are however reasons to consider only not an adverb but a focus particle (together with just and even), given their distribution. See Barbiers (1994) and Bayer (1995) among others for a description and analysis of these words.
15 This is a suggestion made by Marcel den Dikken (p.c.).
2. 7. Conclusions.

In this section, I provided evidence coming from extraction tests in favor of the hypothesis sketched in Pesetsky (1989) and Johnson (1991) that main verbs do move overtly in English. Short-verb-movement and generation of the same adverb in different positions were independently motivated. I highlighted the fact that, in order to test verb movement, only adverbs which may unambiguously be adjoined to VP (e.g. *well* in English) should be used.

The conclusions of this section raise several questions:

a) Why is right-adjunction of some adverbs forbidden?

b) Why are some adverbs adjoinable to different functional projections, while other adverbs have a more rigid distribution?

c) What is the relation between adverb position and the prosodic effects observed?

In the next section, I will look at sentence-final adverbs in order to try to answer these questions.

---

16 What has been said for verb-movement in Portuguese and English may create a problem with respect to Greed, if one adopts Chomsky's theory of movement. Though I will not adopt a feature-based theory for movement in this dissertation, I think it is important to point out this problem, since I will not take any position regarding the motivation of verb movement. The problem for a feature-based theory is the following: if the verb can check its features overtly against some intermediate functional projection, it should be able to move all the way up until AgrS, unless we assume that the verb carries specific features which are checked off against specific functional heads. This hypothesis seems rather unelegant, since it would lead to a proliferation of features, for which it would be difficult to find empirical motivation. If one, however, follows Lasnik's (1993) weakened version of Greed, Enlightened Self-Interest, we can explain short verb movement in the following way: only functional categories have features to check. These features have to be checked off against a lexical head. In the case of English, only the functional head immediately dominating AgrO has strong features. The features of AgrO end up overtly checked as a consequence of the shortest steps requirement. The last hypothesis appears to be more economical, but still requires further investigation allowing for a clear choice for the weakened version of Greed. Hopefully, this note may enable to make my results compatible with a theory of verb movement which is minimalist in nature.
3. On right-adjunction of adverbs.

3.1. Right-adjunction of adverbs and its problems.

3.1.1. Introduction.

In the preceding section, I have argued that in order to check whether complements move or do not move in English, it is necessary to resort to adverbs that could be only left-joined. I have also claimed that monosyllabic adverbs are such a class. Taken seriously, this classification leads to a split in adverbs according to which adverbs differ in ability to right-adjoint. This seems rather unnatural, since the possibility to adjoin should exist independently of the shape of the adverbs.

In this section, I will argue that the ban on right-adjunction proposed for monosyllabic adverbs is natural, and it follows from the fact that no adverb may be right-joined. I will then try to derive the apparent right-adjunction effects observed by resorting to another mechanism. The privileged position for the study of right-adjunction is sentence-final. This position for adverbs has traditionally been explained as an instance of right-adjunction (e.g. Bowers 1993). Recent work on phrase structure (Kayne 1994, Chomsky 1994) suggests that this kind of configuration should be abandoned. The results of this section will show that adverbs provide empirical evidence for this conceptually desirable simplification.

The class of adverbs under investigation will be those which may be ambiguous between a manner reading and a subject-oriented reading (e.g. cleverly, intelligently, carefully). I will provide an analysis explaining the possibilities for each meaning to be available. The analysis I will pursue is based on the work of Barbiers (1995), who proposes that movement is triggered by purposes of interpretation.

The organization of this section will be as follows:

In section 3.2., I will present the data and the problems for a right-adjunction analysis to account for the contrasts at stake. In 3.3, I will make a brief summary of the theoretical background on which the analysis will be based, namely, the theory of movement proposed in Barbiers (1995). Section 3.4. will extend these theories to an explanation of the facts under consideration, deriving some interpretations from configuration. In section 3.5., the restriction in sentence-final position will be derived. In section 3.6., some further remarks about sentence-final position and prosodic edge effects will be drawn.

If the approach to be suggested here is right, one step forward is
made in the direction of establishing a more clear picture about the interactions between meaning and structure and solving some problems related to the syntax of adverbs presented above. One main advantage of the approach to be defended here is that the optionality traditionally assumed to exist in the syntax of adverbs may be significantly reduced.

### 3.1.2. Analyses of the syntax of adverbs.

#### 3.1.2.1. Right-Adjunction accounts for sentence-final position.

In the preceding section we have made the standard assumption that (at least) some adverbs may be right-joined. Such an assumption was common in most analyses of the distribution of adverbs until 1993, when Kayne proposed that right adjunction should be banned as a potential configuration (cf. Kayne 1994). Let us review some of the analyses involving right-adjunction.

In most works, right-adjunction of adverbs is accepted as a legitimate configuration. In fact, as long as there is no empirical evidence against it, nor any theoretical problem leading one to try to derive alternative configurations, the null hypothesis is that if something may be left-joined, it can be right-joined as well.

Bowers (1993) is quite explicit in proposing structures like (82), involving left- and right-adjunction of adverbs:

\[
\begin{array}{c}
\text{XP} \\
(\text{AdvP}) \\
\text{XP} \\
(\text{AdvP})
\end{array}
\]

Bowers’s proposal is not novel. It is based on earlier analyses such as Jackendoff (1972), Travis (1988), and is also assumed in works such as Neeleman (1994). Earlier approaches, like Keyser (1968) assumed that adverbs had a feature [+transportable], which made them be moved and attached to different sites in the sentence structure. Transportability did not impose any restrictions on the attachment site, hence configurations like (82) were also legitimate.

More general hypotheses about modification implicitly include the possibility of right-adjunction, like Zubizarreta’s (1987) Rule of Modification:

\[
\begin{array}{c}
\text{Role of Modification}
\end{array}
\]
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A modifies B in the context:

\([C_\cdot A_\cdot B_\cdot]\)

iff C immediately dominates A and B, C is a projection of B, and B is not a head.

If A is an adjunct predicate which contains a variable \(\pi\), then B or the head of B contains an arg-variable with lexical index \(i\) and \(\pi\) is assigned the value \(i\).

If A is an adjunct argument with lexical index \(i\), then B or the head of B contains a variable \(\pi\) and the value \(i\) is assigned to \(\pi\).

This rule includes the configuration in (82), since for either location of the modifier, the non-head XP (which is a projection of the modifiee) immediately dominates XP and AdvP. Since right-adjunction is assumed as a legitimate configuration, it is natural that theories of modification, such as the one formulated by Zubizarreta, must take into account this configuration. An approach related to this one has been proposed by Travis (1988).

Laenzlinger (1993) proposes that the placement of adverbs be conditioned by the \(Adv\)-criterion, which creates a configuration where they can be licensed and interpreted:

(84) \(Adv\)-Criterion:

A [+F] adverbial phrase must be in a Spec-head configuration with a [+F] \(X\).

Laenzlinger (1993) makes a distinction between Spec-A and Spec-A-bar (only the latter is available for adverbs), proposing a phrase structure configuration very similar to the one in (82):

(85)

\[
\begin{array}{c}
\text{XP} \\
(\text{Spec-A-bar}) \quad \text{XP} \\
& \text{(Spec-A-bar)} \\
\text{Spec-A} \quad \text{X}\quad \text{Compl} \\
\end{array}
\]

In conclusion, in spite of technical differences regarding the mechanism for modification, all these approaches allow right-adjunction configurations.
3.1.2.2. Free base-generation vs. rigid position for adverbs.

The hypotheses discussed above have in common that they attempt to find an answer for whether there is a constraint on attachment site in the generation of adverbs. All of them resort to right-adjunction as a legitimate configuration for generating adverbs.

The specific nature of each hypothesis has to do with different assumptions regarding the licensing mechanism for adverbs. All authors seek to obtain an answer for the apparent freedom of adverbs, which appear to adjoin to whatever position in a sentence:

(86) (carefully) John (carefully) has (carefully) talked (carefully) to his mother (carefully).

In order to try to explain this free distribution, previous analyses have dealt with sentences like (86). We can basically find three types of answers:

a) Adverbs are freely moved targeting different adjunction sites (Keyser 1968, Jackendoff 1972).

b) Adverbs are freely base-generated (Neeleman 1994, among others).

c) Adverbs are licensed under Spec-Head Agreement with different functional heads (Ambar 1989; Laenzling 1993; Alexiadou 1994; Rijkhoek 1994; Cinque 1997).

Let me discuss the three types of analysis one by one:

a) Adverbs are freely moved targeting different adjunction sites (Keyser 1968, Jackendoff 1972).

According to this type of approach, adverbs bear a feature [+transportable], enabling them to move to positions where they get different interpretations.

This type of analysis was possible in early stages of syntactic theory, where movement was allowed independently of its motivation. Stricter syntactic frameworks require that movement does not take place
just for the sake of yielding the surface word orders, but some (theoretical) motivation has to be found for movement operations (see Chomsky 1993 for discussion). Moreover, the framework in which I will work is Optimality Theory, which presupposes a representational view of the sentences. This makes it difficult to compute what it means for a category to be associated with a [+transportable] feature. Even in non-OT analyses, the idea that the free distribution of adverbs is to be derived via movement is problematic. Suppose a strict minimalist view of movement would be adopted. This would imply that adverbs had to move for the sake of checking some morphological feature. Given the multiple classes of adverbs and respective interpretations, it will be difficult to define the exact nature of the features motivating the movement operations. Note that I am aware that the level of this discussion is purely methodological, hence highly controversial. For instance, studies such as Alexiadou (1994) and Cinque (1997), to be discussed below, crucially resort to the idea that there is Spec,Head agreement between different classes of adverbs and functional projections labeled in accordance with the meaning of these classes. I think both hypotheses are worth exploring. My position with respect to the problem, or the reason behind my methodological choice is that I think it is better for a theory which intends to be restrictive in nature to prevent a proliferation of features, so that we do not run the risk of having a collection of allegedly formal features with very little explanatory power, playing a rather descriptive role.

Analyses deriving the free distribution of adverbs via movement face the question as to why adverbs are base generated in the positions where they are moved from. When movement of arguments is involved, their base position is related to other aspects of the theory, such as thematic criterion. Base-generation of adjuncts should be related to a relation between modifier and modifiee which needs to be established. Now, if movement has the same function, it is not clear what is the purpose of having the adverb in the base position.

Note that the criticism addressed to the movement analysis is not to be applied to cases where movement seems to be as general a process for adverbs as for other categories. For instances, topicalization of adverbs is legitimate, and in this case, we can identify two different functions for the source configuration and for the target configuration: establishing the relation modifier-modifiee and establish the
configuration topic-comment, respectively.\footnote{See also Costa 1995, and the next chapter for adverb scrambling and Khalaily 1995 for movement of adverbs related to quantification.}

b) Adverbs are freely base-generated (Neeleman 1994, among others):

Since there is no motivation for moving the adverbs, the most likely alternative is that they should be base-generated in the positions they surface in. However, it is already known that this type of analysis is problematic as well, since not all positions are possible (recall the discussion of adjunction to AgrP above).

Also, not all adverbs exhibit as free a distribution as the adverb in (86). For instances, an adverb like \textit{yesterday} cannot appear in sentence-internal positions.\footnote{Note that this is true for English and French, but not for languages like Portuguese and Dutch. We will sketch some ideas about this difference later in this chapter.}

(87) (yesterday) John (*yesterday) talked (*yesterday\textsuperscript{20}) to his mother (yesterday)

The difference between adverbs like \textit{yesterday} and adverbs like \textit{carefully}, independently of the specific interpretations associated with each position, show that free-base generation is not the whole story. An adverb-specific theory of base-generation is still necessary.

Another problem for the free base-generation approaches is the following: if free base-generation is possible, how can ordering restrictions between adverbs be accounted for? More specifically, why in a sentence like (88), must the Sentence adverb (\textit{yesterday}) follow the VP-adverb (\textit{carefully}) if they could freely adjoin?

(88)

\begin{itemize}
  \item a. John talked to his mother carefully yesterday.
  \item b. *John talked to his mother yesterday carefully.
\end{itemize}

Many solutions to this problem may be found, like adding to free base-generation a constraint on relative scope, but without additional machinery, the ordering restrictions do constitute a problem for a theory of adverb placement based on free base-generation.

\footnote{This position is only ungrammatical if the PP is not extraposed, which can be tested with the tests of extraction discussed in section 2.}
c) Adverbs are licensed under Spec-Head Agreement with different functional heads (Ambar 1989; Laenzlinger 1993; Alexiadou 1994; Rijkhooek 1994; Cinque 1997):

One way to maintain the free base-generation type of analysis, without getting into the problems pointed out above is to assume that each adverb enter a unique feature checking Spec-Head relation with a different functional head. This is the approach defended by the authors listed above, which in the case of Alexiadou (1994) and Cinque (1997), has the interesting effect of predicting a universal order of adverbs, which is reflected in a similar order of auxiliary and modal heads. The mechanics of the analysis is now the following: adverbs are base-generated in the specifier of the functional head they agree with.

The first problem for this type of analysis, which perhaps is not a problem at all, as discussed above, is the little knowledge we have about features, and the impossibility of defining them formally, given the whole range of adverb classes and interpretations.

Another problem for these analyses is that they predict a very rigid placement for adverbs, since each adverb is predicted to emerge as the specifier of the agreeing projection. Additional stipulations are necessary to enable all the other material to optionally move. However, it is known that in most cases adverbs are optionally generated, like in (89) repeated from above:

(89) (carefully) John (carefully) talked (carefully) to his mother (carefully).

Finally, the Spec-Head agreement analyses predict that it should be possible to stack adverbs without any other lexical material intervening, since these analyses take the presence of the adverb as an argument for the presence of a given functional projection. However, if this were the case, the existence of these projections should be independent from the overt realization of the heads. This is not borne out by the data, as (90) illustrates:

(90) a. *John carefully quickly read the book.
    b. John carefully and quickly read the book.
    c. John carefully has quickly read the book.
    d. John carefully read the book quickly.
The Distribution of Adverbs

For some speakers, (90a) is not too bad if there is a clear meaning difference between the two adverbs. There is nevertheless a contrast between that sentence and the others for all speakers.

Coming back to the initial issue, whether right-adjunction is possible or not, it can be seen that only the latter set of analyses assumes that one should do without right-adjunction. This is proposed in Alexiadou (1994), Rijkhoek (1994), and Cinque (1997). Their proposal is based on their method: they all work on implementations of Kayne’s (1994) Antisymmetry hypothesis, according to which there is no right-adjunction.

Although I will not assume Kayne’s framework throughout the dissertation, in the next sections I will argue that there is evidence for the ban on right adjunction for adverbs. The evidence will come from asymmetries in interpretation of ambiguous adverbs in sentence-medial and sentence-final position.

If the arguments to be presented hold, the ban on right-adjunction of monosyllabic adverbs reduces to a general characteristic of adverbs.

An alternative analysis to those presented above will be given for what is the real constraint on adverb placement, which may at the same time solve the problems discussed above and derive the (apparent) right-adjunction effects.

3.1.3. Interpretational Asymmetries.

The analyses of the distribution of adverbs discussed above have specific theoretical assumptions regarding directionality of adjunction. That is, they either accept left- and right-adjunction a priori, without questioning it (that is the case for Jackendoff 1972, Travis 1987, Zubizarreta 1987, Bowers 1993, Laenzlinger 1993, Neeleman 1994), or they reject right-adjunction, basing their position on Kayne’s proposal for X’-structure without right-adjunction (that is the case in Rijkhoek 1994, Alexiadou 1994 and Cinque 1997), without testing the validity of the assumption. It is the goal of this section to test the assumption that right-adjunction is unnecessary.

3.1.3.1. Ambiguous adverbs.

It is well known, at least since Jackendoff (1972), that some
adverbs are ambiguous between a subject-oriented reading and a manner reading. Adverbs of this type are listed in (91), and an example with a paraphrase for each reading is given in (92):

(91) carefully, nicely, cleverly, stupidly, clumsily, ....

(92) a. John carefully talked to his mother.
   Subject-oriented:
   b. It was careful of John to talk to his mother.
   Manner:
   c. John talked to his mother in a careful way.

The theories allowing right-adjunction predict that the interpretation of these adverbs should be the same independently of the direction of adjunction. Whether the relation modifier-modifiee is to be established under c-command, adjacency or Spec-Head agreement, such configurations are kept independently of whether the adverb is to the right or to the left of the relevant head or projection. Hence, if the meaning is determined via such configurations, the prediction is that there should be no asymmetries between left- and right-adjointed adverbs with respect to interpretation.

However, such prediction is not borne out by the data. If the ambiguous adverb appears at the right of the sentence, traditionally viewed as a right-adjointed position, the subject-oriented reading for the adverb is lost:

(92) John talked to his mother carefully.
   MANNER/*Subject-Oriented

Jackendoff (1972) notes that it is not only in sentence-final position that the subject-oriented reading is lost. This does not bear directly on the debate on directionality of adjunction, but will help to define how to relate readings with positions. The subject-oriented reading may also be lost on the left-side of the sentence. The ambiguity of sentence (91) may

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Footnote: The subject-oriented reading in sentence-final position is available as an afterthought, if there is comma intonation (cf. Rijksheek 1994, den Dikken 1995). Though I know of no good analysis of comma intonation, I think this possibility can be accommodated in Frota's (1992) analysis of prosodic markedness of adverbs to be discussed below.
be undone if there is an auxiliary verb. In that case, the pre-auxiliary position is associated with the subject-oriented interpretation, and the post-auxiliary position prefersentially gets the manner interpretation.\footnote{Speakers’ judgments are sharper for the impossibility of obtaining manner readings in pre-aux position than with the impossibility of obtaining subject-oriented readings in post-aux position, although the preferences are clear. I do not know how to interpret this slight contrast.}

(93) a. John carefully has talked to his mother.

\hspace{1cm} \textsuperscript{*}MANNER/Subject-Oriented

b. John has carefully talked to his mother.

\hspace{1cm} MANNER/\textsuperscript{??}Subject-Oriented

Note that one cannot argue that the pre-auxiliary position is a position triggering a compulsory subject-oriented reading, because this contrast is only relevant for ambiguous adverbs. If this position is filled in with a non-ambiguous adverb, this contrast does not exist (cf.94) though the position is still available for adjunction.\footnote{I am leaving aside intonation effects which will lead to a reformulation of this remark.}

(94) a. John quickly has spoken to his mother.

a’. \textsuperscript{#}It was quick of John to speak to his mother.

a”. John has spoken to his mother in a quick way.

b. John has quickly spoken to his mother.

b’. \textsuperscript{#}It was quickly of John to speak to his mother.

b”. John has spoken to his mother in a quick way.

This is the first problem for a right-adjunction account. Under the right-adjunction configurations, we might expect to have \textit{cleverly} in (95a) right-adjointed to the position it is left-adjointed to in (95b), without getting any difference in meaning:

(95) a. John \[X\text{cleverly has \[Y\text{spoken to his mother}]\]

\hspace{1cm} \textsuperscript{*}MANNER/\textsuperscript{SUBJECT-ORIENTED}

b. John \[X\text{has \[Y\text{spoken to his mother}] cleverly}\]

\hspace{1cm} MANNER/\textsuperscript{*}SUBJECT-ORIENTED
3.1.3.2. Stacked Adverbs in Sentence-final position.

Another problem for a right-adjunction approach is the contrast between (96a) and (96b):

(96) a. *John has spoken to his mother nicely carefully cleverly,
b. ?John cleverly has carefully spoken nicely to his mother.

While adverbs can be left-adjointed to the positions XP, YP and ZP, as in the analysis of (96a) given in (97), they cannot be right-adjointed to those same projections, yielding a ‘stacked’ order, as shown in (98):

(97) John [XP cleverly has [YP carefully spoken [ZP nicely to his mother]]]

(98) *John [XP has [YP spoken [ZP to his mother] nicely] carefully] cleverly

An analysis based on ‘free’ left- and right-adjunction of adverbs cannot account for this constraint on right-adjunction in a non-stipulative way.

The ungrammaticality of (96a) may be circumvented, if the adverbs occur coordinated. This fact precludes an analysis of (96a) claiming that the sentence is ungrammatical because there are three adverbs modifying the same category (the verb or the verb phrase).

(99) John spoke to his mother nicely *and carefully.

The obligatoriness of coordination has no obvious explanation under a right-adjunction account, nor under a purely semantic account (e.g. McConnell-Ginet 1982), since the modification is possible if the adverbs are on the left-hand side of the sentence. Moreover, as pointed out to me by Ana Arregui, there is additional evidence that an approach claiming that the ungrammaticality follows from the co-occurrence of three modifiers for a single category would not very clearly solve the problem. The Spanish examples below show that the order of the adverbs on the left-hand side of the sentence is interchangeable without affecting the interpretation of the sentence, which shows that they are modifiers of the same category (say VP). At the right-hand side, they cannot occur without
coordination, which, given what happens on the left-hand side, cannot be
due to some semantic restriction forcing coordination of adverbs which
modify the same elements:

\[(100) \quad \text{a. Juan había intensamente abrazado rápidamente a María.} \]
Juan had intensively hugged quickly María
Juan had hugged Mary quickly and intensively
b. Juan había rápidamente abrazado intensamente a María.
c. Juan había abrazado a María rápidamente *(y) intensamente.
d. Juan había abrazado a María intensamente *(y) rápidamente.

I take these facts as an additional asymmetry between left- and right-
adjunction, which may be explained if right-adjunction does not exist.

\[3.1.3.3. \text{Simultaneous left- and right-adjunction.}\]

The theories discussed above that permit right-adjunction of
adverbs face an additional problem besides the interpretive asymmetries
and the impossibility of stacking adverbs in sentence-final position.
Unless some stipulation is made, nothing prevents simultaneous left- and
right-adjunction.

Keeping with the analysis of verb movement in English defended
in section 2, this would predict that, in English, a prepositional
complement could be simultaneously preceded and followed by an
adverb. The adverb preceding it would be left-adjointed to VP, and the
adverb following it would be right-adjointed to VP. If that is the case,
ungrammatical sentences of the type illustrated in (101) are generated:

\[(101) \quad \text{a. John spoke carefully to his mother *(nicely).} \]
John spoke nicely to his mother *(carefully).

The ungrammaticality of these sentences excludes the possibility of
having simultaneous left- and right-adjunction. Again, if the hypothesis
that there is no right-adjunction holds, the ungrammaticalcy of this
sentence comes for free.

If the observation that an adverb may not be simultaneously left-
and right-adjointed is combined with the observations made above
regarding interpretations of adverbs, another pattern should be found: an
adverb appearing in sentence-final position will never have the same
meaning as one appearing on the left-hand side of the sentence. Therefore, (alleged) right-adjunction of a manner adverb will disambiguate an adverb of the ambiguous type illustrated above, even if the latter is not in pre-auxiliary position. If the adverb is not ambiguous, the sentence remains bad (in the examples, the interpretation given refers to the adverb in italic):

(102) a. John * cleverly spoke to his mother.
    b. John cleverly spoke to his mother nicely.
    c. *John quickly spoke to his mother nicely.

The pattern in (102) emerges for the following reasons: it was already shown that a sentence-final adverb may not have a subject-oriented reading. It was also observed that simultaneous left- and right-adjunction of adverbs is not possible. Then, it is expected that the interpretation of an ambiguous adverb will be fixed by contrast to that of the sentence-final position adverb. A manner interpretation for cleverly in (102b) would be ill-formed, since it would force an interpretation involving an analysis in terms of simultaneous left- and right-adjunction.

3.1.4. Summary and list of problems.

Let us summarize the distributions observed above and list the problems we want to solve.

In (103), where SO stands for Subject-Oriented and M for Manner, I list the legitimate positions for adverbs and the interpretation associated with each of these positions:

(103) a. Subj AdvSO/*M Aux V PP
    b. Subj Aux Adv*SO/M V PP
    c. Subj Aux V Adv*SO/M PP
    d. Subj Aux V PP Adv*SO/M
    e. Subj Aux V PP AdvM *(and) AdvM
    f. *Subj Aux V AdvM PP AdvM

The observations summarized above were intended to illustrate the
claim that adverbs may not be right-joined. The first and most obvious
problem for this claim then is:

(104) How are the effects of right-adjunction derived?, that is, how is it
explained that adverbs do surface in sentence-final position?

Given the observations above, I would like to answer this question in a
way that could also account for the problems raised to the right-
adjunction account:

a) The ordering restrictions between sentence-adverbs and VP-
adverbs;
b) The absence of Subject-Oriented reading in sentence-final
position;
c) The ambiguity in preverbal position in English;
d) The absence of sequences of adverbs in sentence-final
position without coordination;
e) The absence (effects of/apparent) simultaneous left- and
right-adjunction.

The main idea defended here will be, as already mentioned, that there is
no right-adjunction of adverbs. This is the null hypothesis, given the
observation above that right-adjunction overgenerates, yielding all kinds
of ungrammatical sentences. If the approach here proves right, partial
confirmation is given to the theoretical proposals of Kayne (1994) and
Chomsky (1994).

3.2. An analysis without right-adjunction.

3.2.1. Theoretical background.


In this section I will briefly present the theory which will be the
basis for my alternative analysis. As outlined above, a theory is needed
that enables modification relations to be established without resorting to
a right-adjunction configuration. Such a theoretical model is the core of

Barbiers designs a model for phrase structure, proposing that all
configurations must be interpretable. This implies that, in a structure, all movements are motivated by interpretive purposes. Barbiers further argues that interpretative relations, which he calls qualifications, must be binary, that is a qualifier must establish a relation between two related positions in a configuration. If this does not happen, there is no interpretable configuration. The whole design of this framework presupposes the antisymmetric view of syntax, postulated by Kayne. Barbiers terms the principle regulating the generation of interpretable configurations the Principle of Semantic Interpretation, which I present below:

(105) Principle of Semantic Interpretation (PSI)

(i) The node $Z$ establishes a S(emantic)-relation between the nodes $X$ and $Y$ iff $X$ immediately $c$-commands $Z$ and $Z$ immediately $c$-commands $Y$

(ii) The node $Z$ is a qualifier of $Y$ iff $Z$ establishes a $S$-relation between $X$ and $Y$, and $X$ and $Y$ are coindexed

What is the advantage of adopting such a framework for solving the problems listed above? Crucially, Barbiers does not resort to right-adjunction, and more importantly, his framework allows to express the fact (observed above for adverbs) that there is a relation between meaning and configuration. The principle in (105) establishes that every semantic relation will be determined by X-bar structure. That is, for a qualifier/modifier to be interpreted as such, it has to be in a configuration which permits that interpretation. Under this approach, full interpretation depends on creating the structural relations which determine semantic relations compatible with the lexical information associated with the terminals of the nodes involved.

Let me present a (summarized) example of the application of the Principle of Semantic Interpretation: Barbiers’s analysis of PP-extraposition in Dutch. Dutch is an OV-language, thought it permits the orders V-PP and PP-V, as illustrated in the example below:

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25 Barbiers’s approach implies that interpretations are the result of a given configuration. I will not fully endorse this view, because of the Optimality-theoretical approach adopted in the dissertation. Instead, I will consider that a given interpretation is obtained because of a meaning which must be parsed in the syntax. I refer the reader to chapter 7 for a more detailed discussion and comparison of the two approaches. For the time being, this discussion is irrelevant.
(106) a. Jan heeft in de tuin gewerkt.
Jan has in the garden worked
b. Jan heeft gewerkt in de tuin.

This possibility contrasts with what happens with nominal objects, which must appear on the left-hand side of the object:

(107) a. Jan heeft Marie gezien.
Jan has Mary seen
b. *Jan heeft gezien Marie.

The possibility of placing the PP after the verb is considered a case of PP-extraposition, traditionally analyzed as an instance of rightward movement. Barbiers’s framework makes it possible to analyze this alternation in terms of leftward movement (hence, without right-adjoining the moved PP).

He proposes the following configuration for the sentence with PP-extraposition:

(108) \[ \begin{array}{c} \text{VP}^* \\
| \text{PP}^* \\
| \text{ti} \\
| \text{VP}_1 \\
| \text{PP} \\
| \text{P} \\
| \text{NP}^* \\
| \text{NP}^\text{spec} \end{array} \]

Under the configuration in (108), PP-extraposition is actually analyzed as intraposition of the VP. In the structure presented, the PP is left-adjoined to VP, which yields the order PP-V illustrated in (106a). The order V-PP is derived via leftward movement of the VP into the specifier position of the PP. Note that this operation yields the structure required by the Principle of Semantic Interpretation: for the PP to be interpreted as a modifier/qualifier of the VP, it is necessary that the VP immediately c-commands it, and that the PP immediately c-commands something coindexed with the VP. This is exactly what we have in (108): the displaced VP immediately c-commands the PP from the Specifier position where it
has landed, and the PP immediately c-commands the trace of the VP, which is coindexed with VP (by virtue of being its trace). Under this theory, the movement of the VP is obligatory, because the S-relation is not established otherwise. Barbiers (1995) further claims that the level of application of this movement is optional (that is, it can be either made overtly or covertly in the sense of Chomsky (1993)).

Let us look again at the example presented above, and repeated here:

(109) a. Jan heeft in de tuin gewerkt.
   Jan has in the garden worked
b. Jan heeft gewerkt in de tuin.
   Jan has worked in the garden
   'Jan worked in the garden'

(109a) is the covert counterpart of (109b). The movement of the VP in (109b) is necessary to establish an S-relation between ‘worked’ and ‘the garden’, and to create the configuration in which ‘in the garden’ is a qualifier of ‘worked’.

3.2.1.2 Ernst (1984).

I have argued above that it is necessary to establish a relation between meaning and structure. That is why I am adopting Barbiers’s framework. I have also pointed out that Barbiers’s framework creates structures that are compatible with lexical information associated to each qualifier. If I am dealing with (ambiguous) lexical meaning of adverbs, a theory must be adopted that may express the context in which each of the possible meanings emerges. This is the part of Ernst’s work I am crucially going to adopt here: the loose-fit theory of adverb meaning.

According to the Loose-Fit theory, which is contrasted with Jackendoff’s (1972) ‘Tight-Fit Theory’, the scope of adverbs may but need not be lexically determined. Rather than proposing a theory according to which the meaning of adverbs is already fixed in the lexicon, Ernst (1984) proposes that this may be true for some adverbs only. For

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24 I will not present the specific definitions of c-command proposed in Barbiers (1995), which are crucial for the interpretation of the configurations above. I refer the reader for Barbiers’s own work for a detailed explanation.
example, adverbs such as *preferably* may only have a sentential reading (which is lexically determined), and adverbs such as *quickly* only have a manner reading. Other adverbs, among which the ambiguous class under consideration in this section may be found, do not have a fixed meaning. Instead, their meaning varies, and is only instantiated according to interaction with interpretation rules. Such rules must be sensitive to the linear order of the adverb with respect to the other constituents. In Ernst’s model, such rules of interpretation have scope over the surface structure.

Here, I want to combine Ernst’s *low-fit theory* with Barbiers’
framework. Ignoring for the present the exact level at which these rules apply (i.e. overt or covert syntax), I would like to propose that Barbiers’
framework may be the key for determining the possible interpretations.
Barbiers’s framework is an algorithm about how to interpret syntactic
configurations. If an adverb does not have a fixed meaning, the
interpretation may be fixed in the syntax. The advantage of such
interaction between interpretation and configuration is, as Ernst argues,
that we prevent a proliferation of homonymous adverbs in the lexicon. In
the remainder of this section, I will assume a version of the Loose-Fit
theory, showing, however, that, for the case of ambiguous adverbs, the
meaning is not entirely variable: there is a default meaning which can be
overridden by the occurrence of a given syntactic configuration: that is,
when nothing else happens ambiguous adverbs get a manner
interpretation. If a particular meaning is intended, that must be reflected
in the syntactic structure.

A potential difficulty of combining Barbiers’s Principle of
Semantic Interpretation (PSI) with Ernst’s Loose-Fit Theory is the
relevance of Surface configurations for the application of the PSI over
the meaning of adverbs. This has to do with the problem raised above
that Barbiers’s principle underlyingly assumes that meaning is the result
of configuration only. As a result, it does not matter at which point of a
derivation the configuration which is in accordance with the PSI is
formed. Though I will have to postpone this discussion until chapter 7, I
would like to note that this is only true if we assume LF as a syntactic
level, which Barbiers does. If we do without LF and tackle this issue the
other way around, i.e., if we see the configuration as the syntactic parse of
semantic interpretation, we solve the potential conflict between Ernst’s
approach and Barbiers’s approach: if an adverb has a fixed meaning, the
syntactic parse has to be the correct parse of that meaning. For example,
if an adverb is lexically specified as a VP-modifier, the syntactic parse
must yield a configuration whereby the modification/qualification
relation between the adverb and the VP is met. If the meaning of the
adverb is not lexically determined, the only difference is that there will be
more parses available. For instance, if an adverb may either be a VP-
modifier or a Sentence-modifier, two parses will be generated, yielding
two different interpretations. The preferred one will be the one matching
the speaker’s intentions. I hope to be able to further clarify this
discussion in chapter 7. Crucial for the understanding of this section is
that I will need to resort, like Ernst does, to some relation between S-
structure and semantic interpretation for the case of ambiguous adverbs.

The access of semantics to surface representations has been
independently argued for by Diesing (1992) (among others), who has
shown that the surface position of arguments may trigger different
semantic readings. In her study, she looks at the following contrast
between the position of indefinite subjects in German: if the subject
remains inside VP (to the right of the adverbial ja doch ‘indeed’ (cf.110b)),
it has both an existential reading and a generic reading, if it moves to IP
(to the left of the adverbial ja doch ‘indeed’ (cf.110b)), it can only be
interpreted generically.

(110) a. …weil Professoren ja doch verfügbar sind.
    since professors ‘indeed’ available are
    ’…since (in general) professors are available.’

b. …weil ja doch Professoren verfügbar sind.
    since ‘indeed’ professors available are
    ’…since there are professors available.’

Diesing shows that the surface position of the subjects is not optional,
and determines their semantic interpretation. Under the assumption that
all subjects must move to Spec,IP, yielding the same LF configuration,
interpretation will only have to look at the S-structure configuration.25

Turning back to the case of ambiguous adverbs, I will show that
their default meaning may be overridden by the creation of certain
surface configurations, providing further evidence for a Diesing-like
proposal concerning the relation between S-structure and semantic
interpretation. As mentioned above, it will be assumed that when the
meaning of an adverb is not fully specified, for the relevant configuration

25 Likewise, if this assumption is dismissed and there is no movement at LF, the only
representation available for (110b) is the one in which the subject is in Spec,VP.
to be picked, semantic interpretation has to have access to the surface position of the adverb.

3.2.2. Deriving the interpretation of adverbs.


The first analysis attempting to derive the interaction between the position and interpretation of ambiguous adverbs has been proposed by Den Dikken (1995). Relating the meaning of subject-oriented adverbs to their adjectival counterpart in (111), Den Dikken (1995) claims that their structure must reflect the fact that the sentence is an argument of the adjective.

(111) a. John cleverly broke the window.
    b. It was clever of John to break the window.

Den Dikken presents the following representation and derivation for subject-oriented adverbs, which reflects this thematic relation:

(112) a. \[ \lambda_{\text{AdvP}} \lambda_{\text{Adv'}} \lambda_{\text{AdvP'}} [_{\text{Adv'}} \text{cleverly} [_{\text{AdvP'}} \text{John has answered the question}]] \]
    b. \[ \lambda_{\text{AdvP}} \lambda_{\text{Adv'}} \lambda_{\text{AdvP'}} [_{\text{Adv'}} \text{John} [_{\text{AdvP'}} \text{cleverly} [_{\text{AdvP'}} \text{he has answered the question}]] \]

The representations in (112) not only express the fact that there is a relation between the adverb and the unaccusative adjective clever, but also derives the observation that sentence-initial, and post-subject and pre-auxiliary are the only two positions where the subject-oriented interpretation surfaces. The structure in (112b) is in accordance with the PSI, since the adverb, which modifies the subject is c-commanded by John and c-commands its trace. The c-command configuration is achieved by moving the subject from Spec,IP to Spec,AdvP.

Although it does respect the PSI, this analysis faces some problems. First, by postulating that the adverb is the head of a projection above IP, it predicts that this head, at least when filled in by an adverb, should block head movement to a projection above it, for minimality reasons. However, this prediction is wrong, since I-to-C is possible, in the presence of subject-oriented adverbs, as the grammatical interrogative in (113) illustrates:

\[ \text{John cleverly} \, \text{did he?} \]
(113) What has John cleverly answered?

If the adverb were to head a projection above IP, it should count as an intervening head barring the movement of the auxiliary to C.

Another problem has to do with the possibilities of coordination. If it is true that coordination is only possible between categorially identical categories, then coordination of a sentence containing an adverb should only be possible with another sentence containing an adverb. Only in this case would an AdvP be coordinated with another AdvP. However, this prediction is again not borne out, since sentences containing subject-oriented adverbs are easily coordinated with sentences without adverbs:

(114) John cleverly has answered the question and Mary went home.

Yet another problem has to do with Den Dikken’s assumption, following Kayne (1994), that adjuncts are specifiers and that there can be only one specifier per projection. This assumption combined with the rest of the analysis makes it impossible to derive a sentence like (115):

(115) John very cleverly answered the question.

The problem is that if very is the specifier of the adverb, the subject may not be in Spec, AdvP, hence the requirements of the PSI are not met. Den Dikken proposes that this problem may be solved if very is the head of a Degree Phrase. However, if the DegP is projected above AdvP like in (116a), and in (115) the subject is in Spec, DegP, nothing prevents (116b) to emerge as grammatical, contrary to fact:

(116) a. \[[\text{AdvP} [\text{DegP} \text{ very} ]]\]_{\text{Adv}} \text{ cleverly}

b. *Very John cleverly has answered the question.

(116b) would correspond to the point of the derivation where the subject is still in Spec, AdvP either for minimality reasons or in order to establish the semantic relation between the adverb and the subject. If, alternatively, the DegP were itself in Spec, AdvP (117a), and the subject would move to Spec, DegP, like in (117b), a problem arises with respect to the PSI:

(117) a. \[[\text{AdvP} [\text{DegP} [\text{DegP} \text{ very}] ]]\]_{\text{Adv}} \text{ cleverly} [\text{IP} . . . . . .

b. \[\text{AdvP} [\text{DegP} [\text{DegP} [\text{John} [\text{DegP} \text{ very}] ]]\]_{\text{Adv}} \text{ cleverly} [\text{IP} t_i]
THE DISTRIBUTION OF ADVERBS

The problem is the following: although the subject may immediately c-command the adverb from the specifier position, in accordance with the definitions of c-command in Barbiers 1995, and the original motivation for the subject to move there is maintained, it is not clear how to express the fact that the relation of qualification is no longer between John and the adverb, but between the subject and the modified adverb. The configuration in (117b) cannot express this, since, although John immediately c-commands very, the latter does not immediately c-command anything co-indexed with the subject. Barbiers’s definitions of c-command allow for immediate c-command by the Specifier of a Specifier, but not by the head of the projection occupying the Specifier position into the head of the upper projection.

In (117b), there would then be semantic relations between the subject and the adverb, but not between the subject and the adverb and its modifier, which both intuitively and semantically does not correspond to the true meaning of the sentence.

Finally, I would like to point out one of Den Dikken’s arguments for postulating (117a) as the base for deriving the subject-oriented reading of these adverbs: in this position the adverb has a subject-oriented interpretation. Note, however, that this is not very conclusive, since an adverb may also have a manner reading in this position. Such a reading is favored when there is a contrast, like in (118):

(118) Cleverly, John has talked to his mother,…
   a. Less cleverly, he forgot greeting his grandmother.
      SUBJ-ORIENTED
   b. In a clumsy way, he played with his nephew.
      MANNER

The contrasts above show that the sentence-initial position is not necessarily associated with subject-oriented readings. The fact that the contrast helps disambiguating the meaning of the adverb may be explained by the fact that the sentence-initial position for adverbs is a topic position (recall the discussion above concerning IP-adjunction). Further evidence for this claim comes from the data discussed in Kuno and Takami (1993). They show that there is a difference between sentential adverbs which may appear in sentence-initial position as adjuncts to CP, and other adverbs, which only appear in this position if they are fronted. The evidence for this difference is the interaction
between sentential adverbs and topicalized constituents.  

(119) a. Probably in London John drove the car.  
   b. *Cleverly in London John drove the car.  
   c. *In London probably John drove the car.  
   d. *In London cleverly John drove the car.  

As the examples in (119) show, a sentential adverb, arguably base-adjointed to CP, may surface before a topicalized constituent. However, the same is not true for a subject-oriented adverb, which may only occur in that position under a multiple topic reading.  

In spite of the problems pointed out above for Den Dikken’s analysis, I will adopt the essence of it. That is, I will follow Den Dikken in assuming that a subject-oriented reading requires some semantic relation between the subject and the subject-oriented adverb. Given the problems noted in this section, the proposal needs to be reformulated. That is the goal of the next paragraph, where I will also try to integrate the results of section 2, concerning verb-movement in English, Portuguese and French.

3.2.2.2. Subject-orientation: a meaning dependent on subject position.

I have claimed in section 2 that auxiliary verbs move up to T in English. It was observed in this section that the subject-oriented reading surfaces in pre-auxiliary position (Jackendoff 1972). Combining the proposal with the observation, I would like to suggest that subject-oriented adverbs are adjoined to TP, in a configuration like (120):

(120) \[ {\text{[AgrSP John, \text{TP cleverly } [\text{TP } \text{[T ] has talked to his mother]]]}} \]  

\[ \text{SUBJ-ORIENTED/\#MANNER} \]

Before explaining how the modification/qualification relation between

26The sentences b-d are possible under a multiple topicalization reading. Nevertheless, the argument still holds, given the ordering between yesterday adverbs in questions. If they were adjoined to AgrSP, we would be able to have them in between the auxiliary verb in C and the subject, which does not happen:

(i) a Yesterday, what did you see?  
   b *What did yesterday you see?
the subject and the adverb obtains, I would like to note that the proposal that subject-oriented adverbs are TP-adjuncts makes correct predictions for the other languages considered above, taking into account the positions the verb occupies in each language.

Let us start with Portuguese. In this language, the pre-verbal position for ambiguous adverbs is never ambiguous (leaving aside prosodic markedness facts again). This is true independently of the subcategory of the verb (main or auxiliary):

(121) a. O João inteligentemente falou com a mãe.
   John cleverly talked to the mother
   SUBJ-ORIENTED/*MANNER

   b. O João inteligentemente tinha falado com a mãe.
   John cleverly had talked to the mother
   SUBJ-ORIENTED/*MANNER

Portuguese is quite similar to English in that subject-oriented readings are preverbal. However, there is no difference between main verbs and auxiliary verbs. This is actually in accordance with the analysis proposed above, claiming that all verbs in Portuguese move up to T in a short-verb-movement fashion. This results in the following representations for (121a) and (121b):

(122) a. [\text{SUBJ-ORIENTED} O João \text{[TP, inteligentemente [TP, [\text{falou com a mãe}]}}]]

   b. [\text{SUBJ-ORIENTED} O João \text{[TP, inteligentemente [TP, [\text{tinha falado com a mãe}]]}}]

For French, I follow most traditional analyses which interpret the adjacency between subject and verb as evidence for the existence of verb movement all the way up to AgrS. If that is the case, the prediction is that the reverse of the situation with English main verbs arises: postverbal auxiliaries should be ambiguous. This is indeed borne out by the French data:

(123) a. Jean a intelligemment parlé avec sa mère.
   Jean has cleverly talked to his mother
   SUBJ-ORIENTED/MANNER

As Williams (1994, citing Viviane Dépréx) has noted, the ambiguity in French may also be undone, if the sentence is negated. If the negative
particle *pas* precedes the adverb, then only the manner reading is available; if the order is adverb-*pas*, then the adverb is unambiguously subject-oriented. (124) illustrates this pattern:

(124) a. Jean n’a pas intelligemment parlé avec sa mère.  
Jean neg-has NEG cleverly talked to his mother  
*SUBJ-ORIENTED/MANNER*  
b. Jean n’a intelligemment pas parlé avec sa mère.  
SUBJ-ORIENTED/**MANNER**

William’s observation may be interpreted in the following terms: if the adverb is adjoined to TP, and *pas* heads some negative projection below TP (à la Pollock 1989) or is adjoined to some lower projection (see Diesing 1992 for similar assumptions for negation in German), then only the order adverb-*pas* (124b) may correspond to the case in which there is adjunction to TP. According to the proposal here, it is then correctly predicted that only in this position may the verb be interpreted as subject-oriented. This results in the representation in (125) for French:

(125) \[L_{\text{adv}} \text{Jean} \ L_{\text{adv}} \text{a} \ L_{\text{adv}} \text{intelligemment} \ L_{\text{adv}} \text{tp} \text{t} \text{tf} \ldots \text{parlé avec sa mère}]]]]

I will adhere to this analysis, since it seems to make some adequate cross-linguistic predictions. I will now explain how the Principle of Semantic Interpretation (repeated in 126) is satisfied in the configuration proposed:

(126) **Principle of Semantic Interpretation (PSI)**

(i) The node Z establishes a S(ematic)-relation between the nodes X and Y iff X immediately c-commands Z and Z immediately c-commands Y.

(ii) The node Z is a qualifier of Y iff Z establishes a S-relation between X and Y, and X and Y are coindexed.

Subject movement to Spec,AgrS establishes the qualification relation between the subject and the adverb. Consider the tree diagram in (127), illustrating the English case, though the position of the verb will be shown to be irrelevant for the relation to be established in between the subject and the adverb:
In (127), the adverb may be interpreted as a modifier of the subject, because the following structural relations, which are conform to the Principle of Semantic Interpretation, are observed. The NP, *John* has been moved from the VP-internal position cyclically, stopping in all intermediate Specifier positions, among which Spec,TP. According to traditional assumptions on movement, these intermediate steps leave traces in the landing positions which are co-indexed with the displaced constituent. Whatever the status and purpose of the relation between Spec,Agr$S$ and Agr$S$ is, that is, independently of whether there is checking or just simple agreement, Agr$S$ will be co-indexed with the subject via Spec-Head Agreement.\(^{27}\) Having observed all the steps of this representation and the implications of those steps for the indices attached to the several categories, it is now possible to see which structural relations allow for establishing a qualification relation: the adverb is the modifier, hence it must be immediately c-commanded by the modifice and simultaneously it must be able to immediately c-command something co-indexed with the modifice. This is exactly what happens: by virtue of Spec-Head Agreement, Agr$S$, bearing the index of the subject, immediately c-commands the adverb, which immediately c-commands the trace of the subject in Spec,TP. Since the indices on the subject, Agr$S$ and on the trace are all identical, the Principle of Semantic Interpretation

\(^{27}\) I will not take any position concerning the nature of this relation. This issue is irrelevant for the present discussion. Independently of the theory behind it, there is a structural relation between Specifiers and heads, which may be formalized by means of co-indexing.
is respected in (127), and the adverb may be interpreted as a modifier/qualifier of the subject. Structurally, the adverb is establishing a Semantic relation between AgrS and the trace of the subject, but since the reference of AgrS is dependent on the reference of the subject, the interpretative result is that the adverb modifies the subject.

Note that the fact that the adverb is adjoined to a projection of the clause, and not directly to the subject, allows for expressing the relation between the adverb and the subject, but also the fact that the adverb is a sentence modifier, and not a nominal modifier. The locus of adjunction combined with the derivation above permits deriving this interpretation.

In the discussion above, the fact that the subject is in Spec,AgrS seems to be quite crucial, since otherwise all the indices that enable the qualification relation would be absent. Given the important status of this part of the analysis, I would like to show that it is falsifiable, by testing what happens when the subject is not in Spec,AgrS. Testing this is possible in languages where the subject may stay in a low position, like Portuguese: 28

(128) a. Um homem tinha entrado na sala.
   A man had come in the room
   b. Tinha entrado um homem na sala.
   Had entered a man in the room

Since the presence of the subject in Spec,AgrSP is a precondition for the subject-oriented reading, it is predicted that subject-oriented readings will only be possible if the subject is in the pre-auxiliary position as in (128a). This is in fact true, as the following sentences in (129) illustrate. I add an adverb to the beginning of the sentence to preclude a topic reading for cuidadosamente/carefully in (129b), which would make the adverb ambiguous again.

28 In the next chapter, I analyze this distribution of the subject, attempting to derive the reason behind the optionality. For the moment, it is only important that the reader accept that the subject is not in Spec,AgrS in these cases.
(129) a. Ontem, um homem cuidadosamente tinha entrado na sala.  
Yesterday, a man carefully had entered the room  
SUBJECT-ORIENTED/*MANNER  
b. Ontem, cuidadosamente tinha entrado um homem na sala.  
*SUBJECT-ORIENTED/*MANNER

Hans Bennis and Sjef Barbiers (p.c.) report to me that Dutch also provides evidence for the analysis proposed here. In a sentence with a low subject (130a) and an expletive in the typical subject position, the adverb may not get the subject-oriented reading if the subject is high (130b), the adverb may be interpreted as subject-oriented, and as manner if the adverb is adjoined to a low projection.26

(130) a. Jan riep gemeen tegen zijn moeder dat hij laat thuis zou zijn.  
Jan shouted meanly to his mother that he late home would be  
‘Jan meanly shouted to his mother that he would be home late.’  
SUBJECT-ORIENTED/MANNER  
b. Er riep gemeen een jongen tegen zijn moeder dat hij laat thuis  
there a boy  
zou zijn.  
‘There was a boy shouting meanly to his mother that he would  
be home late.’  
*SUBJECT-ORIENTED/MANNER

The same point can be illustrated more sharply by (131) which contains an unambiguously subject-oriented modifier. The corresponding sentence with a low subject (131b) is just ungrammatical:

(131) a. Jan riep boos tegen zijn moeder dat hij laat thuis zou zijn.  
Jan shouted angry to his mother that he late home would be  
‘Jan angrily shouted to his mother that he would be home late.’  
SUBJECT-ORIENTED/MANNER  
b. *Er riep gemeen een jongen tegen zijn moeder dat hij laat thuis  
there a boy  
zou zijn.  
Finally, I would like to note that these examples may constitute preliminary evidence for the idea to be defended in chapter 3 and 4 that

26 The ambiguity is the same as in English.
low subjects never raise at LF (see also Diesing 1992). If they would, an LF configuration would arise in which the adverb could get the subject-oriented reading. I will not get into this question of the relation between surface-structure and interpretation now. I will further explore this issue in the next two chapters.

Let us now turn back to the ambiguous case considered above, and repeated here:

(132) John carefully talked to his mother.

SUBJECT-ORIENTED/MANNER

The question to be answered is: why is this sentence ambiguous? By now, it should be clear that this is just a case of structural ambiguity. If the adverb is adjoined to TP, it gets the subject oriented reading; if it is adjoined lower, it will be interpreted as manner (in a way to be discussed below). Recall that the presence of the auxiliary, which I assumed to be in T, may disambiguate the sentence, or at least favor the manner interpretation, as Jackendoff (1972) noted:\footnote{There is no agreement among native speakers with respect to the impossibility of having subject-oriented interpretation with this sentence. Anyway, it seems that the pre-auxiliary position definitely favors the paraphrase ‘It was X of John to...’ (which is the relevant subject-oriented interpretation at stake), and, for most speakers, the pre-v, post-auxiliary position does constitute a way of disambiguation.}

(133) a. John carefully has spoken to his mother.

SUBJECT-ORIENTED/*MANNER

b. John has carefully spoken to his mother.

*SUBJECT-ORIENTED/MANNER

The location of the auxiliary verb in T is crucial for explaining how the ambiguity can be undone.\footnote{To clarify my theoretical position on this issue, I would like to recall that I am not following Chomsky’s (1993) assumption that auxiliaries are LF-invisible, as noted in section 2. This would imply movement all the way up to AgrS in overt syntax. I think the contrast between Portuguese and Italian with respect to this issue is quite conclusive. As Belletti (1996) shows, in Italian, auxiliary verbs move to AgrS. There can only be adverbs between the subject and the auxiliary if the subject is definite or an indefinite bearing a strong stress, which led Belletti to propose that such cases may be derived in terms of topicalization:}

(i) a Ognuno probabilmente ha shagliato.

everyone probably has failed
3.2.2.3. Manner: modification of VP.

So far I have not mentioned how to derive the manner reading. However, this turns out to be the simplest case: if the manner adverb is adjoined to VP, manner interpretation arises by moving the VP into Spec,AdvP, as represented in (134):

If this movement does not take place in overt syntax, the base configuration in (135) arises:

- Probably everyone failed
- *Nessuno probabilmente ha sbagliato.
- no-one probably has failed
- NESSUNO probabilmente ha sbagliato.
- Probably no-one failed

As mentioned above, since this contrast does not arise in the corresponding Portuguese and English sentences, I have assumed that auxiliaries that auxiliaries may move just to T, and that there is no empirical support for their LF-invisibility:

(ii) a. Todos provavelmente tinham errado.
b. Ninguém provavelmente tinha errado.
c. NINGUÉM provavelmente tinha errado.

(iii) a. Everyone probably had failed.
b. No-one probably had failed.
c. NO-ONE probably had failed.
The two configurations in (134) and (135) generate the two unmarked positions for the manner adverb in (136a) and (136b) respectively:

(136) a. John talked to his mother carefully.
b. John talked carefully to his mother.

It is crucial for deriving these two word orders that the verb has been moved out of the VP, as proposed in section 2.

One may wonder what prevents VP from moving into the specifier position of the adverb adjoined to TP, in order to achieve a manner interpretation, yielding the ungrammatical word order in (137):


There are two mechanisms excluding the configuration in (137). First, it violates the ECP. The trace of the verb in VP is not governed by its antecedent. This might however be circumvented once we know the exact A or A-bar status of the movements proposed in Barbiers (1995). If these movements are of the A-bar type, one could probably assume some kind of reconstruction operation, enabling the VP to be in its base-position at LF, where the trace could be bound. Even if such an explanation would work out, and I am not going to test it here, there would still remain problems with respecting the Principle of Semantic Interpretation. In (137), the VP does immediately c-command the adverb, but the adverb does not immediately c-command the trace of the VP. Hence the qualification relation may not be established, and the sentence is ungrammatical.

Note that at this point, I am not able to derive cases in which adverbs appear with a manner interpretation in pre-auxiliary position. Such sentences are marked, favored with some prosodic markedness on the adverb, but nevertheless possible (the capitals indicate heavy stress):
(138) John {QUICKLY/*quickly} has talked to his mother.

Since these adverbs are unambiguous (that is, there is no legitimate paraphrase ‘it was quick of John to talk to his mother’), the only possible reading is manner. However, we have already seen that the VP cannot move to the Specifier position of an adverb adjoined to TP, which would yield the order in (139):

(139) *John to his mother quickly has talked.

For the moment I will leave aside these considerations about prosodic markedness. I will discuss them in more detail in section 3.8. For the moment, it is sufficient to observe that the implementation of Barbiers’s theory permits deriving the unmarked cases.

3.2.2.4. A potential problem: topicalization vs. wh-movement.

A potential problem for the derivation of subject-oriented and manner readings proposed above is an asymmetry in interpretation between topicalized adverbs and wh-moved adverbs, pointed out to me by Marcel den Dikken. The problem is that topicalized adverbs are ambiguous as indicated above, and illustrated again in (140), while wh-moved adverbs may only be interpreted as manner adverbs (cf. 141):

(140) Cleverly, John answered the question.  

       SUBJECT-ORIENTED/MANNER

(141) How cleverly did John answer the question?  

       *SUBJECT-ORIENTED/MANNER

This asymmetry may be further confirmed by the (im)possibility of adding another adverb in sentence-final position. In (140), adding an adverb forces the manner interpretation, while in (141) it makes the sentence ungrammatical, since there would be two manner adverbs that are not coordinated (or alternatively, a violation of the Coordinate Structure Constraint, if there would be some kind of asyndetic coordination). This is illustrated in (142) and (143):
(142) Cleverly, John answered the question quickly.
SUBJECT-ORIENTED/*MANNER

(143) *How cleverly did John answer the question quickly?

The problem raised by this contrast raises for the analysis proposed above is as follows. If both constructions involve movement of the adverb out of a sentence internal position, there is no clear reason for not making it from the VP-joined position only in (141).

I would like to suggest a way of looking at this problem along the lines of Rizzi (1990) and Cinque (1990). Rizzi (1990) claims that there is no wh-movement of sentential adverbs, since it would be impossible for the wh-phrase to govern its trace. Proper head-government of an adverb adjoined to TP by AgrS is also ruled out by Rizzi (1990:47), who claims that AgrS can only govern the elements it agrees with (its specifier). Given this analysis, Rizzi proposes that sentential adverbs are base-generated in Spec,CP. Rizzi’s notes that in French a wh-adverbial, like pourquoi/why may never appear in-situ, which is quite rare for wh-phrases in French:

(144) a. Pourquoi tu as dit ça?
   Why you have said that
b. Tu as dit ça pourquoi?
   You have said that why
   ‘Why did you say that?’

Rizzi’s hypothesis receives further confirmation in the following data, discussed in Kuno and Takami (1993):

(145) a. Why, man, did you come to the US?
b. How, man, can you drink hot coffee so quickly?
c. *When, man, did you come to the US?
d. *Where, man, did you meet Mary?

(146) a. Why, that man you were dating, did you decide not to date him any more?
b. *When, that man you were dating, did you meet him first?

The data in (145) and (146) show that it can be argued along with Rizzi that at least why and how, the wh-expressions relevant for our discussion,
are base-generated as CP-adjuncts. If they were in SpecCP, strict adjacency is expected between them and the auxiliary in C. The sentences above show, however, that the sequence wh-auxiliary may be interrupted by an interjection or a left-dislocated constituent.

Cinque (1990) makes a similar claim for left-dislocated sentential adverbs: he argues for an analysis in terms of base-generation, rather than movement. So far, no contrast is predicted between the two cases. However, Cinque suggests that one of the differences between wh-‘movement’ and Left-Dislocation is the fact that left-dislocated constituents are connected to a pron in the sentence, which does not happen for wh-phrases.

Following these ideas, and assuming with Obenauer (1984-5) that some non-NPs may be associated with pron, the contrast between (142) and (143) is explained in a straightforward way. In (142), the adverb may be coindexed with a pron placed either at the position where the subject-oriented reading is generated or in some other position. This is represented in (147):\(^2\)

\begin{align*}
(147) & \quad \text{a. Cleverly, John [vp pron vp wrote [vp to the teacher]]} \\
& \quad \text{b. Cleverly, John [vp vp wrote [vp pron to the teacher]]} \\
& \quad \text{SUBJECT-ORIENTED MANNER}
\end{align*}

In the case of wh-extraction, there is no pron for the wh-adverb to associate with. Therefore, there is no relation with any position in the sentence, and the adverb gets the default manner meaning (see discussion above concerning the unmarked meaning for ambiguous adverbs). No configuration is created enabling the subject-oriented reading to emerge. Actually, no configuration is created for the manner adverb either. It gets

\(^2\) Marcel den Dikken (p.c.) brought to my attention the fact that, apparently, the adverb-pron dependency cannot always be established across a CP boundary. In that case, only the manner reading is available:

(i) Cleverly, Bill said that John wrote to the teacher.
I think the dependency is possible if we force a context with emphasis on the subject-oriented interpretation:

(ii) A: Bill said that John cleverly had written to the teacher.
B: Did Bill say that John CARELESSLY had written to the teacher?
A: Cleverly, Bill said that John had written to the teacher.
It is true, however, that a manner reading for the embedded adverb is favored, a fact for which I have no interesting account to offer.
3.2.3. Sentence-final position.

In the preceding section, I have explained how to derive the two readings, I still have the task of showing how the analysis proposed here solves the problems pointed out for the right-adjunction accounts.

Let us examine each of those problems:

3.2.3.1. Loss of subject-oriented reading in sentence-final position.

The first argument pointed out against right-adjunction accounts was that they counterfactually predict that interpretations on the left-hand side of the sentence also appear in sentence-final position.

(148) a. John cleverly answered the question.
    SUBJECT-ORIENTED/MANNER

b. John answered the question cleverly.
    *SUBJECT-ORIENTED/MANNER

It is now clear why, in sentence-final position, there can be no subject-oriented interpretation. Recall from the discussion of (139) that movement of VP into the Specifier of an AdvP adjoined to TP is not allowed because of the ECP and the Principle of Semantic Interpretation. This leaves only one possible derivation for the sentence-final position of this class of adverbs: it can only be derived by moving VP to an AdvP adjoined to VP, as in (149):\(^{30}\)

\(^{30}\) A reviewer of a published version of this section brought to my attention that movement of subconstituents is not generally allowed, as illustrated by the apparent impossibility of having VP-fronting with adverb stranding, except if there is adverb extraposition (cf. Baker 1971):

(5) *Alice said that Bill would surely be home by 5, and [be home by 5]_f, he will surely be \(f\).

These facts are derivable from the present analysis, since (5) involves fronting of the VP, thereby skipping the position of the AdvP, where modification is to be established. If the extraposition effects are derived in the way proposed, no problems are expected, since the VP stopped in AdvP for qualification purposes before fronting. In any case, this generalization is more problematic and requires further
(149) a. John spoke \([_{vp} \bigl[_{advp} \text{carefully} \bigr] \bigl[_{vp} \bigl[_{tv} t, \text{ to his mother}\bigr]\bigr] \bigr)\\n b. John spoke \([_{vp} \bigl[_{advp} \bigl[_{vp} \bigl[_{tv} t, \text{ to his mother}\bigr]\bigr] \bigl[_{advp} \text{carefully}\bigr]\bigr] t]\)

Since this is the only possible derivation for an adverb in sentence-final position, it is explained why the subject-oriented reading is not available in this context: the position of the adverb is never the one where it may get a subject-oriented reading according to the Principle of Semantic Interpretation.

3.2.3.2. Simultaneous left- and right-adjunction.

Another fact that can be derived from the present analysis is the ban on simultaneous left- and right-adjunction, illustrated in the examples repeated here as (150):

(150) a. John spoke carefully to his mother (*nicely).

b. John spoke nicely to his mother (*carefully).

The most obvious explanation for the ungrammaticalities under the present approach is: if there is no right-adjunction, there can be no simultaneous left- and right-adjunction. However, even under the exclusion of right adjunction, these sentences might be generated as multiple adjunction to VP and subsequent movement of VP into AdvP. However, the contrast in (151) shows that multiple adjunction of adverbs of a same semantic class is to be excluded anyway, since the positions adverbs can adjoin to are dependent on the existence of auxiliaries projecting possible adjunction sites:

(151) a. John has quickly spoken nicely to his mother.

b. *John quickly nicely spoken to his mother.

c. *John spoke quickly nicely to his mother.

d. *John has quickly nicely spoken to his mother.

e. *John cleverly nicely has spoken to his mother.

research, since only some VP-adjuncts cannot be stranded (recall Roberts’ 1988 conclusions about subject secondary predicates as VP-adjuncts, though they can be stranded in elision contexts).
Chapter 2

Besides the evidence against multiple adjunction of semantically identical adverbs, these contrasts provide some evidence for the claim made by Giorgi and Pianesi (1994), among others, that there is not an universal clause structure, but rather a dependency between the functional domain and the lexical material projected. That is, the generation of an auxiliary verb extends the clause structure, providing more adjunction sites for adverbs. Furthermore, this is also an argument against a very strict analysis of the syntax of adverbs, which postulates the existence of an agreeing head for each type of adverb (Alexiadou 1994, Cinque 1995).

I have already mentioned that I do not want to get into the debate of whether there is a universal clause structure or not in this chapter. Nevertheless, I think it is important to point out the relevance of these sentences for casting some doubt on such an assumption.

For the present, the important aspect to bear in mind is that the ban on simultaneous left- and right-adjunction may be interpreted as a ban on adjunction of adverbs of a similar type to the same projection. This ban also follows from Barbiers’ theory in a quite natural way: if an adverb is a modifier of VP, it must c-command VP, and not a modified VP. This might be problematic, since Barbiers (1995) crucially considers cases of multiple adjunction of PPs to VP, like in (152):

(152) Hij is [\textit{vp} door \textit{'n stuurfout}][\textit{vp} met een knal][\textit{vp} op het hek]
he is \textit{by a steering-error with a bang} on the fence
[\textit{vp gestrand}]
stranded
‘He got stranded on the fence with a bang by a steering-error.’

The crucial difference between Barbiers’s examples and the case discussed here is that all PPs in (152) are of a different type, hence they are not competing for the same kind of modification. In fact, if adverbs clearly have two different interpretations, multiple adjunction is favored:

(153) \textit{John cleverly nicely} set the table.

This fact may be explained in terms of scope of modification. If two categories are VP-modifiers, and a modifier of the same semantic class is already establishing the relevant semantic relation, there is no other role for the modifier: the relation is saturated, hence the sentence is ungrammatical. With modifiers of a different class, though the modification is the same, the nature of the relations is different. Though I do not want to
get into this discussion, I hope these suggestions may be implemented in a model in which semantic relations of the type defined in Barbiers (1995) may be additionally represented in terms of saturation. Travis' (1987) theory of modification comes to mind, according to which adverbs are adjoined in order to discharge a given semantic role. In Barbiers’ model, adverbs adjoin to establish semantic relation, which may be interpreted as the saturation of a lexically determined role (cf. discussion of Ernst 1984 above). As mentioned, this is not intended as an analysis, but rather as a tempting way of expressing the difference observed between Adverbs and PPs.

3.2.3.3. Stacking adverbs in S-final position.

The final problem that could not be explained by a right-adjunction approach is the impossibility of piling up adverbs at the end of the sentence, unless they are coordinated.

(154) a. *John has talked to his mother nicely carefully cleverly.  
        b.     John has talked to his mother nicely, carefully and cleverly.

This problem can also be made follow from the present analysis. First, it should be noted that this constraint is not different from whatever factor is responsible for the restrictions on the left side of the sentence. Both in sentence initial and in sentence-final position, there is a ban on stacking of adverbs, unless extra projections are provided by auxiliaries.

(155) a. *John cleverly nicely carefully talked to his mother.  
        b.     John cleverly, nicely and carefully talked to his mother.

Thus, if there is only one main verb in the sentence, it is not surprising that they cannot be stacked at the end of the sentence, since there is no such counterpart on the left side. However, the same kind of reasoning may not apply for cases in which the adjunction sites on the left-hand side of the sentence are available. Such a case like is exemplified by (156):34

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34 Let us ignore for the present the possible intonation effects that make (156) more natural. I will return to the issue of prosodic markedness later in this section. I want to stress nevertheless that I am aware of the artificial nature of these sentences. It is hard to think of a context in which they would be used. I must nevertheless resort to them
(156) John cleverly has carefully spoken nicely to his mother.

This case precludes an analysis of the ungrammaticality of (154a) in terms of parallelism between left- and right-hand sides of the sentences, since, as (157) illustrates, the parallelism breaks down:

(157) *John has talked to his mother nicely carefully cleverly.

In order to derive sentence (157) in terms of the Principle of Semantic Interpretation, the following derivation would be required:

(158) a. John \[\text{[TP] cleverly has [XP carefully talked [VP nicely to his mother]]].}
b. John \[\text{[TP] cleverly has [XP carefully talked [VP [\lambda_{\text{adv}}]\text{[to his mother]} nicely] \text{[TP]}].}
c. John \[\text{[TP] cleverly has [XP [\lambda_{\text{adv}}]\text{[talked [VP [\lambda_{\text{adv}}]\text{[to his mother]} nicely] \text{[TP]}] nicely] \text{[TP]}].}
d. John \[\text{[TP [\lambda_{\text{adv}}]\text{[has [XP [\lambda_{\text{adv}}]\text{[talked [VP [\lambda_{\text{adv}}]\text{[to his mother]} nicely] \text{[TP]}] nicely] \text{[TP]}] nicely] \text{[TP]}] nicely] \text{[TP]}].}

The trouble with this derivation is that only the first adverb is a modifier of VP. The second qualification relation established is between \textit{carefully} and XP (step c). The third modification relation (158d) is established between \textit{cleverly} and TP. Since these adverbs are VP-modifiers, the steps in (158c) and (158d) are cases of improper movement: there is no trigger for XP and TP to move into AdvP.

However, nothing rules out the first step of the derivation, predicting that (159) should be good:

(159) *John has carefully talked to his mother nicely.

The problem with this sentence is that there will be no way to establish the qualification relation between \textit{carefully} and VP, since the problems concerning immediate c-command of VP by the adverb referred to above would arise. However, this may not be the end of the explanation, since

\footnotesize{in order to test whether there is a problem of directionality of adjunction, or a problem of establishment of relevant qualification configurations.}
speakers report that the sentence improves with a heavy stress on the sentence-medial adverb, which I indicate with capitals:

(160) John has CAREFULLY talked to his mother nicely.

I will return to this issue in section 3.8.

For now, to this analysis explains the obligatory coordination of adverbs: if they are coordinated, they constitute a single AdvP, which is adjoined to VP. This way, there is no problem to establish the qualification relation between AdvP and VP:

(161) a. John talked \[vP_{\text{AdvP}} \{\text{nicely, cleverly and carefully} \} \] \[vP \] to his mother\[.\]

b. John spoke \[vP \{\text{nicely, cleverly and carefully} \} \[vP \] to his mother\[.\]

The AdvP adjoined to VP in (161) is immediately c-commanded by VP and immediately c-commands its trace. Whatever constraint on the semantics of coordination makes it possible for the set of coordinated elements to count as one for saturation of semantic relations will also enable this relation established under the appropriate configuration to take place.

### 3.2.3.4. Ordering restrictions between adverbs.

Though this is not a crucial problem for right-adjunction accounts, I would like to show that the present account is able to derive ordering restrictions between adverbs in sentence-final position. It was observed above that a manner adverb must precede a VP-adverb:

(162) a. John talked to his mother nicely yesterday.

b. *John talked to his mother yesterday nicely.

The sentence-final order mirrors the order on the other side of the sentence:35

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35 The star for 163b is intended for a sentence without topicalization of the VP-adverb nor extraposition of the PP.
(163) a. Yesterday John talked nicely to his mother.
   b. *Nicely John talked yesterday to his mother.

It is also possible to have the VP-adverb sentence-internally and the S-adverb sentence-finally and vice versa:

(164) a. John talked nicely to his mother yesterday.
   b. Yesterday John talked to his mother nicely.

All other variants yield ungrammatical sentences.36

(165) a. *John talked yesterday to his mother nicely.
   b. *Nicely John talked to his mother yesterday.

The first thing to consider for an analysis of these facts is that sentence-final positions are not all the same. There may be some kind of ambiguity due to the similarity in terms of linear order. If that were not the case, the co-occurrence of adverbs in the order VP-Adv>>S-Adv would be impossible. I would like to suggest here that the base position of yesterday is adjoined to CP. This may be shown by resorting to the tests above for adjunction to CP. The derivation of the position of nicely will be the same as proposed above for other VP-adverbs.

These assumptions will lead to a different analysis for the sentence-final positions in (166a) and (166b). The analyses are represented in (167):

(166) a. John talked to his mother yesterday.
   b. John talked to his mother nicely.

(167) a. \[ \text{CP \ [S\_Adv \ yesterday][S\_Adv \ John talked to his mother]} \]
   a'. \[ \text{CP \ [S\_Adv \ \_S\_Adv \ John talked to his mother][S\_Adv \ yesterday]} \]

   b. John talked \[ \text{VP \ [S\_Adv \ nicely \ to his mother]} \]
   b'. John talked \[ \text{VP \ [S\_Adv \ to his mother][S\_Adv \ nicely]} \]

36 Again barring a topic reading for nicely in 165b, which may be done resorting to Kuno and Takami’s (1993) tests referred to above.
The representation in (167’a) is the only possible way to generate (166a).
This is proven by the fact that there is no other position for *yesterday on
the left side of the sentence:

(168) a. Yesterday John talked to his mother.
b. *John yesterday talked to his mother.
c. *John talked yesterday to his mother.

Given these different representations for the two classes of adverbs it
should be clear by now how the ordering restrictions come about in the
present analysis occur. (162a) is the only possible derivation with all the
movements occurring. (169) shows the result of no covert movement (a),
overt movement of VP and covert movement of CP (a’), covert
movement of VP and overt movement of CP (a”), and overt movement
of both VP and CP (a”):

(169) a. [CP Yesterday [VP John talked [Vp nicely [vp to his mother]}}}]
   a’. [CP Yesterday[CP John talked[ VP nicely [vp to his mother]i
      [lambda P nicely] t ]
   a”. [CP [lambda P [CP John talked [VP nicely [vp to his mother]]
      [lambda P yesterday] t ]
   a”’ [CP [lambda P [CP John spoke [VP [lambda P vp to his mother]j
      [lambda P nicely] t ]i [lambda P yesterday] t ]

In order to derive (162b), one would have to move a non-constituent,
otherwise the adverb nicely could never be stranded in sentence-final
position. The same holds for the other ungrammatical variants.

3.2.3.5. Two notes on adjunction of yesterday to CP.

a) Adjunction to embedded CPs:

   At this point, I would like to point out that the analysis of the
   positioning of the sentential adverb may constitute evidence for a
   representational view of this theory. As it is well-known, adverbs of
   the type discussed here may not adjoin to complement CPs (cf. Chomsky

* See chapter 1 for discussion.
(170) *John said yesterday that he went to the movies.

(170) is grammatical if *yesterday* is modifying the matrix verb. If it modifies the embedded clause, the sentence is ungrammatical. This may constitute a problem for the view defended here that the base position for *yesterday* is base-joined to CP. Combined with the optionality of the locus of application of the movement to Spec,AdvP, this would predict (170) to be grammatical. I would like to argue here that (170) is not necessarily problematic.

Embedded clauses in English must start either with a complementizer or with an overtly realized subject. I will state this, without attempting to derive it or explain it, as in (171):\(^{18}\)

(171) Subordinate clauses must start with a subject (optionally preceded by C when the subject has lexical content).

Whatever the nature of (171) is, it is a constraint on the linear order of initial elements in a subordinate clause, and it is responsible for the optionality of *that* in (172), and for the *that*-trace effects in (173):

(172) a. John said that Mary went home.
    b. John said Mary went home.

(173) a. Who do you think loves Mary?
    b. *Who do you think that loves Mary?
    c. Who do you think that Mary loves?
    d. Who do you think Mary loves?

Further evidence that this is the case comes from the study of Culicover (1991), who has shown that *that*-trace effects are obviated if there is a topicalized constituent before the subject.

(174) a. Who do you think that, under no circumstances, loves Mary?
    b. *Who do you think, under no circumstances, loves Mary?

\(^{18}\) See Grimshaw (1997) among others for a possible explanation.
As sentence (174b) illustrates, topicalization makes the complementizer obligatory. This conforms to the description in (171): if there is a topicalized constituent, the embedded sentence must start with a complementizer, since the subject cannot be initial. Turning back to the case of adverbs, it should be the case that the same description applies. Not that the base-generation of the adverb adjoined to CP is not possible, but the effects of the constraint on the linear order of the elements forces the movement of CP into Spec,AdvP to take place overtly. If this (partial) analysis is correct, it may constitute evidence for a representational view of the sentences discussed, since it is not obvious how to generate the sentence with or without the complementizer dependently on the locus of operation of the movement. Such mechanics would imply some look-ahead, which is generally not desired in this type of framework.

b) English vs. European Portuguese.

Another interesting case to look at in the discussion of base-generation of adverbs like yesterday is European Portuguese. The pattern in this language seems quite problematic in view of what has been said for English. The problem is that Portuguese apparently allows for the yesterday-type of adverbs to appear as predicates of VP.

(175) a. O Paulo ontem falou com a mãe.
   the Paulo yesterday talked to the mother
b. O Paulo falou ontem com a mãe.
c. O Paulo falou com a mãe ontem.
   ‘Paulo talked to his mother yesterday.’

However, this observation is not fully comparable with its English counterpart, since, in Portuguese, this type of adverb not only gives temporal information, but also marks the occurrence of new information to its right. The possibilities of forming contrastive readings in (176) and (177) show that the presuppositions associated with each placement of the adverb are different:

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3 The same is true for other languages: Spanish (cf. Zubizarreta 1995 for data); Dutch (Zwart 1993); Greek (Alexiadou 1994), and others. French patterns like English.  
4 See Zwart (1993) for a similar point with respect to Dutch.
Chapter 2

(176) a. O Paulo ontem discutiu com a mãe,
the Paulo yesterday argued with the mother
a’. hoje com o pai.
today with the father
‘Yesterday Paulo argued with his mother, today with his
father.’
a”. hoje fez as pazes.
today (he) made the peaces
‘Yesterday Paulo argued with his mother, today he made
up.’

(177) a. O Paulo discutiu ontem com a mãe.
the Paulo argued yesterday with the mother
a’. hoje com o pai.
today with the father
‘Yesterday Paulo argued with his mother, today with his
father’.
a”. ‘hoje fez as pazes.
today (he) made the peaces
‘Yesterday Paulo argued with his mother, today he made
up.’

If *ontem* ‘yesterday’ is to the right of the verb, it is not possible to retrieve
the latter in a contrastive reading. That this is not just a case of structural
parallelism required by deletion is shown by English which always allows
for retrieving the verb, independently of the position of the adverb.

(178) a. John argued with his mother yesterday, today with his
father.
b. John argued with his mother yesterday, today he made up.
c. Yesterday John argued with his mother, today with his
father.
d. Yesterday John argued with his mother, today he made up.

Given these different properties of the temporal adverbs in both
languages, it is to be expected that in Portuguese, the possibilities for
getting different orderings in sentence-final position are not as restricted
as they are for English. As a result, (179a) is allowed in Portuguese while
it is bad in English.
(179) a. O Paulo falou com a mãe ontem delicadamente.
    the Paulo spoke with the mother yesterday politely
b. O Paulo falou com a mãe delicadamente ontem.
    politely yesterday
    'Paulo spoke to his mother politely yesterday.'

Note that the presuppositions are different in (179a) and (179b):

(180) a. O Paulo falou com a mãe ontem delicadamente,
    the Paulo spoke with the mother yesterday politely
a'. hoje agressivamente.
    today roughly.
    'Paulo spoke to his mother politely yesterday, roughly
    today.'
a". *hoje com o pai.
    today with the father
    'Paulo spoke to his mother politely yesterday, to his father
    today.'

(181) a. O Paulo falou com a mãe delicadamente ontem.
    the Paulo spoke with the mother politely yesterday
a'. *hoje agressivamente.
    today roughly.
    'Paulo spoke to his mother politely yesterday, roughly
    today.'

Given this characteristic of markers of new information, I do not think it
is fair to derive the behavior of these adverbs in Portuguese on a par with
English, since factors related to focus marking intervene in Portuguese,
creating different effects. For this reason, I will not go into further
details, leaving the derivation of these sentences in Portuguese for after
discussion of other aspects of flexible word order and its relation with
information structure. It will be argued in the next chapters that
Portuguese word order depends on the information structure of the
sentence. Hence, the behavior of these adverbs is just another case like
that placement of the adverb depends on the status of the other constituents regarding the information structure of the sentence.

3.2.4. Syntax vs. Prosody

3.2.4.1. Prosodic markedness.

Throughout this chapter, I have often putting aside data involving prosodic markedness, which seem to be problematic for the analysis developed here.

The main problem is that some sentences which the analysis presented here predicts to be ungrammatical are not fully impossible, as long as some prosodic markedness is present on the adverb. The subject-oriented reading associated with pre-auxiliary position was related to the qualification relation established when the subject moves to Spec,AgrS. Likewise, it was shown that it is impossible to obtain a qualification relation between an adverb and VP if the adverb is adjoined to TP. This explains the preferred reading for ambiguous adverbs in the position just mentioned. However, this prediction is not fully borne out by the data. The data only confirm it if the role played by prosodic markedness is not taken into consideration. Consider the following contrast:

(182) a. *John quickly has answered the question.
    b. (?)John QUICKLY has answered the question.

The sentences in (182) show that adjunction of an unambiguous adverb to TP, forcing a manner reading, yields an ungrammatical sentence, unless there is a special intonational contour on the adverb. This position is not the unmarked one, and as it will be seen later, sentences like (182b) are not uttered in out-of-the-blue contexts. The crucial role played by prosodic markedness in the syntax of adverbs has been explicitly argued for by Frota (1992). Frota shows that sentences predicted to be ungrammatical by the syntax may be “rescued” if the adverbs are prosodically marked. More precisely, Frota suggests that prosodic markedness is required whenever an adverb is outside its domain of modification. This proposal may be adapted to the analysis developed here, and it may be argued instead that an adverb must be prosodically marked whenever it cannot be in a qualification configuration. Frota’s contribution is very important, since it permits predicting the
core/unmarked distribution of adverbs, without crucially changing the syntactic framework just to accommodate the prosodically marked cases. Similar to the case of a manner reading in pre-auxiliary position is the possibility of obtaining subject-oriented readings in post-auxiliary position:

(183) John has CAREFULLY talked to his mother.

Interestingly enough, and very much in the spirit of Frota’s work, prosodic markedness seems to act as a last-resort process of establishing modification rather than as a process of saving derivations. That is, it may not convert sentences which are bad for wrong base-generation or improper movement reasons into good sentences:

(184) a. *John drives CAREFULLY cars.
    b. *John drives carefully cars.
    c. *John drives cars carefully nicely.
    d. *John drives cars CAREFULLY NICELY.

Thus, it is illicit to break the adjacency Verb-Object in English, independently of prosodic markedness, since adjunction of adverbs to AgrOP is never allowed. This is different from the situation discussed above in which the adjunction site is independently available. Likewise, the stacking of adverbs is always impossible, since it would imply movement to establish a configuration which would never yield an interpretation. As a result, this movement is unnecessary and therefore it never takes place. Frota’s suggestions and the interpretation I am making here of them do not imply that adverbs may be freely generated and rescued by prosodic markedness. Availability of adjunction sites is a precondition for generating the adverbs.

3.2.4.2. More on prosodic markedness: monosyllabic adverbs.

Recall that this chapter started by looking at the behavior of monosyllabic adverbs and using them as a test for position of the complements and verb. It was observed that these adverbs may not right-adjoin, an assumption which makes sense now (it is just a general property of adverbs). This assumption has to be restated at this point: it must be said that, with this class of adverbs, the movement of VP to
Spec\textsubscript{AdvP} must not apply overtly. This derives the contrast in (185):

(185) a. John talked fast to his mother.
    b. *John spoke to his mother fast.

One may wonder at this point as to whether there is a difference between saying that this specific class of adverbs may not right-adjoin or saying that this specific class of adverbs does not involve overt movement of VP. The decision should be made on an empirical basis. If there is a ban on right adjunction, one predicts that these adverbs never appear in this configuration. Alternatively, if the solution is to be incorporated within the spirit of what I have been proposing here, it is possible that prosodic effects similar to the ones described above show up. That is, it was established that there is some complementarity between prosodic markedness and the syntactic derivation of adverb positioning discussed here. Hence, if similar effects arise with monosyllabic adverbs, it is possible to build a coherent analysis, which may be superior to the ban on right adjunction for a single class of adverbs.

Along the lines of Frota (1992), Cinque (1995) shows that restrictions on sentence-final positioning for some adverbs may be circumvented if the adverb at stake is phonologically heavy (see Alexiadou 1994 for a similar point). Cinque discusses the case of no longer vs. anymore, claiming that the latter is heavy, which makes it be placed at sentence-final position, explaining the relative ordering between these adverbs and always.

(186) a. Since then, John no longer always wins.
    b. Since then, John doesn’t always win anymore.

In the same way, the contrast between (185a) and (185b) may disappear, if the adverb bears heavy stress, or if it contains more lexical material, as (187) shows:

(187) a. John talks to his mother FAST.
    b. John talks to his mother very fast

(187) shows that VP-movement into Spec\textsubscript{AdvP} is not necessarily ungrammatical. The problem is then that monosyllabic adverbs are too light to surface in sentence-final position (unless other mechanisms force this situation to emerge, like the obligatory movement of nominal objects
to Spec,AgrOP). Thus, monosyllabic adverbs may be sentence-final, as long as they bear heavy stress.

The difference between the two approaches is then: there is a phonological explanation for the ban on overt VP-movement. If the phonological shape of the adverb changes, VP-movement may apply. If there would be a ban on right-adjunction, these adverbs should never appear in sentence-final position, given the syntactic nature of the restriction.

Another example of the role played by heaviness in the placement of adverbs is given below: it was shown that there are ordering restrictions between VP-adverbs and S-adverbs. Such restrictions are lifted, however, if one of the adverbs is phonologically heavy:

(188) a. John talked to his mother nicely yesterday.
   b. *John talked to his mother yesterday nicely.
   c. *John talked to his mother yesterday and the day before nicely.
   d. John talked to his mother nicely yesterday and the day before.
   e. John talked to his mother yesterday nicely and carefully.
   f. John talked to his mother nicely and carefully, yesterday and the day before.
   g. John talked to his mother yesterday and the day before, nicely and carefully.

As (188) shows, the ordering restrictions, exhibited in the case that no adverb is heavy (188a,b), or in the case that only the most peripheral one is heavy (188c), disappear if the VP-adverb is heavy (188e), or if both the sentential adverb and the VP-adverb are heavy (188fg).

Although I am putting the case of the loss of ordering restrictions and that of monosyllabic adverbs together under the umbrella of *heaviness effects, it is important to note a difference between the two cases. In the case of sentence-final adverbs which are unordered with respect to each other, an apparent violation of the conditions on qualification seems to be involved. This may be explained under a Frola-like approach: the adverbs are not in their canonical position, but there is some prosodic markedness involved. In this case, weight effects may actually trigger the destruction of the syntactically determined ordering.

In the case of monosyllabic adverbs, the reverse situation obtains: it is not the case that prosody is marking that the reading of the adverb is
not the one configurationally expressed. Instead, the movement operation which is part of the normal derivation of the legitimate interpretations for adverbs takes place, only if prosodic markedness is involved. This leads to questioning one of Barbiers's (1995) assumptions: is the locus of application of movement for interpretation purposes truly optional? The data with monosyllabic adverbs seem to indicate this that is not the case. It seems clear that there is a phonological trigger for determining whether the movement is overt or covert. It has long been recognized that phonological triggers can promote or block syntactic movement (see Zubizarreta 1994, Truckenbrodt 1994, among others). It is therefore possible to hypothesize that the determining factor for the locus of application of the movement for interpretation purposes is phonological in nature. If that is true, an explanation for a loose end of Frota's (1992) analysis of adverbs may be found: prosodic markedness comes about whenever an adverb is outside its domain of modification, but why should these marked sentences ever be generated?


In this chapter, I have looked at the distribution of adverbs in order to lay out some of the assumptions concerning the representation of the structures to be compared and evaluated.

I have proposed the following:

✔ Adverbs are not always adjoined to the same projection;
✔ Verbs and nominal objects move overtly in English, which is confirmed by extraction tests and the ordering restrictions between complements and low adverbs; the landing site of nominal complements is Spec,AgOp;
✔ Adverbs may not be right-adjoined;
✔ Right-adjunction effects may be derived via intraposition of modifiees into Spec,AdvP.
✔ Prosodic effects intervene in the distribution of adverbs: sentences without the legitimate qualification configuration are grammatical if the adverb is prosodically marked (confirming Frota’s (1992) conclusions).

These results make it possible for me to be clear about the base generated position of adverbs and to place myself into two lines of thought
regarding triggers for movement: either for Case purposes or for interpretation purposes. The analysis of adverbs based on Barbiers (1995) has also enabled a considerable reduction of the optionality traditionally assumed to exist in the syntax of adverbs, reaching one of the goals of the dissertation: to reduce optionality to its minimum and try to explain the sources of optionality.

Several questions were left unanswered throughout this chapter:

- I have proposed that monosyllabic adverbs may not display the effects of right-adjunction, because they are too light. Why should there be a restriction on heaviness interacting with the movement of the VP?
- Frota’s conclusions that prosodic markedness is required whenever an adverb is not in the position to establish a relation with its modifier was confirmed. Why should sentences wherein the relevant configurations are not established ever be generated? That is, what is the trigger for generating marked sentences?
- I have argued that the possibility of obtaining subject-oriented readings is dependent on movement of the subject to Spec,IP. Why is movement of the subject not obligatory in Portuguese?
- I have remained quite neutral with respect to the exact nature of the relation between meaning and structure. Is a given configuration generated because there is a meaning to be expressed, or does a specific meaning arise because of a specific syntactic configuration?

In the next chapter, I will try to answer the first three questions. I will look at the distribution of arguments in Portuguese, from a comparative perspective. I will try to show that the flexible word order of arguments in this language is due to an interaction with information structure constraints, which can only be understood if prosodic factors are taken into consideration. Hopefully, the work to be developed in chapter 3 will shed some light on the question of why there are marked positions for adverbs and why there are prosodic constraints on adverb positioning.
3 The Distribution of Arguments

1. Introduction

In the preceding chapter, several issues were left unsolved concerning the interaction between word order and prosody, which are relevant for understanding the syntax of adverbs. In short, the problem is: to what extent does prosody interact with syntactic principles?

In this chapter, I will look at word order alternations in Portuguese, and observe that word order variations may be due to the interaction of syntax with discourse and prosody.

The goals of the chapter are twofold:

First, I want to show that word order variation reflects the status of Portuguese as a discourse-configurational language; Secondly, I will argue for a definition of the constraints triggering variation in discourse and prosodic terms.

In order to achieve these goals, I will be looking at the distribution of arguments, limiting myself to the distribution of subjects and direct objects.  

The present chapter is organized in the following way:

Section 2 investigates the several positions where subjects may surface in Portuguese, and argues for the relation between position and discourse based on felicitous contexts for production of each attested word order.

Section 3 performs the same job for nominal objects, arguing that Portuguese has scrambling of the German/Dutch type, and providing further evidence for the claim made in Reinhart (1995) among others, that scrambling is prosodically motivated.

The results of this chapter will contribute to the second part of the dissertation (chapters 5-7), in the sense that I will be able to decide what types of candidates are in competition, and will enable me to determine

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1 I will postpone a discussion of complements of ditransitives until chapter 7.
what the exact representation of candidates is concerning the positions occupied by subjects and objects.

2. Positions for subjects in European Portuguese.

Considering the possible orderings between Subject, Verb and Object, it can be observed that Portuguese exhibits five out of six logically available orders:

(1) SVO
   2*SOV
   VSO
   VOS
   OSV
   OVS

(2) a. O Paulo comeu a sopa.
    Paulo ate the soup
   b. 2*O Paulo a sopa comeu.
   c. Comeu o Paulo a sopa.
   d. Comeu a sopa o Paulo.
   e. A sopa, o Paulo comeu.
   f. A sopa comeu o Paulo.

These patterns of variation are well known and have been subject to several analyses in the Generative tradition, among which Ambar (1992) and Duarte (1987) were the most careful studies considering the relation between these word orders and discourse. All authors agree that, in spite of the variation, the unmarked/canonical word order of European Portuguese is SVO.²

In this section, I will concentrate on the subjects and investigate their relative positions with respect to verbs and objects. This section is organized in several subsections: in section 2.1, I will identify the positions occupied by postverbal definite and indefinite subjects. In section 2.2 and 2.3, the same will be done for postverbal subjects in VSO

² In chapter 6, I will propose an analysis for why there is cross-linguistic variation concerning what the unmarked word order is, and I will further clarify what is meant by unmarked.
and VOS contexts respectively. Section 2.4 investigates the contexts in which each word order is felicitous. Finally, in section 2.5, I will elaborate on a theory of markedness in order to explain the different positions for subjects and to determine the relation between each position and its respective discourse function. This theory of markedness will be the first step on the road towards understanding why the unmarked word order of Portuguese is SVO.

2.1. Sentence-initial position.


(3) O Paulo comeu a sopa.
Paulo ate the soup

This assumption has been recently challenged by several authors (see e.g. Barbosa 1995 for Portuguese, Valmala Elguea 1994, Ordoñez and Treviño 1995 for Spanish and Alexiadou and Anagnostopoulou 1995 for Greek).

The assumption shared by these authors is that in Null-Subject-Languages preverbal subjects are not in Spec,IP, but rather left dislocated. As noted, for instance in Barbosa (1995), this has theoretical advantages in a framework like the one proposed in Chomsky (1993). According to Chomsky, derivations are uniform, and the overt or covert nature of a syntactic operation is determined by the specification of formal features associated either with the categories to be moved or with the functional category which is their landing site. Strong features trigger overt movement and weak features trigger covert movement only. Within such a framework, optionality in word order of the type observed above is a problem, since it is theoretically undesirable to have features that are at the same time weak and strong. Barbosa and the other authors propose that features of the subjects in Null Subject languages are uniformly weak. Hence, subjects are only expected to move to Spec,IP in covert syntax. Now, nothing prevents them from being topicalized or left-dislocated like other categories are, since overt movement of topics may be formalized by assigning them some [topic] feature requiring checking.

In this section, I will review this analysis and argue that, although it
The Distribution of Arguments

may be conceptually desirable for its compatibility with Chomsky’s framework, it may not be maintained for European Portuguese. The methodology to be used is the following: I will take some of the tests the authors referred to above use in their argumentation and apply them to Portuguese sentences.

2.1.1. Preverbal Definite Subjects.

In order to decide whether the subject is in Spec,IP or not, it is necessary to find out whether preverbal subjects exhibit A- or A-bar properties.

Let us start with preverbal definite subjects, like in (4), and go through several tests.

(4) O Paulo comeu a sopa.
Paulo ate the soup

a) A-binding:

First, it should be noted that preverbal definite subjects are A-binders: they are able to bind an anaphor from this position:

(5) Todos os coelhos comem a sua cenoura.
All the rabbits eat POSS carrot
‘Every rabbit ate his carrot’

In (5), the QP todos os coelhos is able to bind the possessive anaphor sua contained in the direct object.

Barbosa (1995, 1997) claims that this is expected under either analysis. When it is argued that preverbal subjects are left-dislocated, they are associated with a pronominal element in Spec,VP from where binding can take place in a configuration like (6):

(6) [Subject, [IP V [VP pro, t Object]]]

This type of argumentation is not as strong as one might expect. In fact, preverbal definite subjects are able to bind an anaphor contained in a preverbal PP-adjunct. This PP surfaces to the left of Spec,VP. Hence, the binder may not be the pronominal element in Spec,VP, since it does not c-command the
anaphor. (7) illustrates a case of an anaphor contained in a preverbal PP-
adjunct:

(7) Todos os coelhos, durante a sua refeição, comeram uma cenoura.
    All the rabbits, during POSS meal ate a carrot

Moreover, there is a contrast between left-dislocated direct objects and
in-situ direct objects concerning the possibility of binding into an indirect
object, which is not expected if the same mechanism evoked for subjects
would apply:

(8) a. Os jornalistas deram todos os livros, aos seus, autores.
    The reporters gave all the books to POSS authors
b. ??/??#Todos os livros, os jornalistas deram aos seus
    autores.1

I therefore conclude that A-binding may be taken as a diagnostic for the
position of the preverbal subject.

b) A-bar minimality effects:

If preverbal subjects are left-dislocated, one expects to get A-bar
minimality effects if there is A-bar extraction across a preverbal subject,
in accordance with the findings of Rizzi (1991). That is attested for
Spanish and Greek by Ordoñez and Treviño (1995) and Alexiadou and
Anagnostopoulou (1996) respectively, but is nevertheless incorrect for
Portuguese, as examples (9) and (10) illustrate:

(9) Que livros o Paulo leu?
    Which books Paulo read

(10) Esses livros, o Paulo leu.
    Those books Paulo read

(9) and (10) show that neither wh-movement nor topicalization induce A-

---

1 The three notations reflect the three types of judgements I got from speakers. Some
consider the sentence marginal, others very marginal, and others only get an odd
interpretation in which the authors are the authors of the reporters. Every time the
sentence was verified with a native speaker I contrasted it with (8a).
bar minimality effects of the type described in the works cited above.

c) Multiple topicalization:

In European Portuguese, it is possible to have multiple topicalization, but this is a slightly marked construction: for example, (11b) is felt as more marked than (11a), and it is necessary to introduce a prosodic break between the second preposed PP and the verb:

(11)  a. Sobre o tempo, falei com o Pedro.
     About the weather (I) talked with Pedro.

     b. ?/??Sobre o tempo, com o Pedro, falei.

The contrast between (11a) and (11b) is not reduplicated in the constructions involving a preverbal subject and a preposed constituent: neither a marked sentence is obtained nor is it necessary to introduce a prosodic break in between the subject and the verb:

(12)  Com a Maria, o Pedro falou.
     With Maria, Pedro talked

The difference noted is further confirmed by the fact that in true cases of multiple topicalization, the order of the two preposed constituents is not rigid: there is a counterpart of (11b) with the reverse order of PPs, for which the grammaticality judgements do not change:

(13)  ?/??Com o Pedro, sobre o tempo, falei.
     With Pedro about the weather (I) talked

Note that with preverbal subjects, changing the word order between subject and preposed PP does not yield a good result, unless the subject preceding the PP is a hanging topic (cf. Duarte 1987), in which case it can be reduplicated by another NP in the normal preverbal subject position (14b): 4

---

4 Accordingly, (14a) is as marked as any sentence with multiple topics. It thus requires the introduction of prosodic breaks. I would like to note Pilar Barbosa reports to me that she accepts all sentences with multiple topicalization, independently of the order of constituents. For me, there is a clear contrast between (i) and (ii) and legitimate answers to A. For her both are possible answers:
(14) a. Ó Paulo, com a Maria, falou rapidamente.
Paulo with Maria talked quickly
b. Ó Paulo, com a Maria, esse sacana falou rapidamente.
Paulo with Maria that jerk talked quickly

The fact that there is a contrast between sentences with preverbal subjects and sentences with multiple topics provides further evidence against the idea that preverbal subjects are left-dislocated in European Portuguese.

From the results of the three tests listed above I conclude that preverbal definite subjects in European Portuguese are in an A-position, traditionally identified as Spec,IP (cf. Ambar 1992, Duarte 1992, among others).

It is important to note that the results of the application of the tests above to European Portuguese do not imply that the results may be extended to other Null Subject Languages. Actually, I will assume that the descriptions and analyses of Greek by Alexiadou and Anagnostopoulou (1996) and Spanish by Ordoñez and Treviño (1995) are correct, and will try to account for the difference between these languages and Portuguese later in the dissertation.

In Barbosa’s work, a quite wide and interesting range of Romance dialects is studied which does indeed provide evidence in favor of her approach to Null Subject Languages. However, the only argument used for Portuguese comes from the distribution of clitics. If the argument for Portuguese is not strong enough, there will be no clear reason to maintain the generality of the analysis.

A well-known fact concerning clitics in European Portuguese is that, differently from other Romance languages, clitics in declarative

<table>
<thead>
<tr>
<th>A: O que é que o Pedro fez ao chocolate?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What did Pedro do to the chocolate</td>
</tr>
<tr>
<td>(i) O chocolate, o Pedro comeu.</td>
</tr>
<tr>
<td>The chocolate, Pedro ate</td>
</tr>
<tr>
<td>(ii) *O Pedro, o chocolate comeu.</td>
</tr>
<tr>
<td>Pedro the chocolate ate</td>
</tr>
</tbody>
</table>

It would be interesting to see to what extent the difference in acceptability in these sentences relates to other differences and to the different interpretations of the data.
affirmative sentences are enclitic, as illustrated in (15):\(^5\)

\[(15)\]
\[
a. \quad \text{O Paulo viu-o.}
\]
\[
\text{Paulo saw it}
\]
\[
b. \quad \ast \text{O Paulo o viu.}
\]

Barbosa (1996) argues that this pattern may be explained if preverbal subjects are adjoined to CP. Barbosa assumes that each CP will be mapped onto an Intonational Phrase, and that clitics must not be initial in such a domain. In favor of the prosodic basis of this constraint, she presents the fact that although wh-questions allow proclisis (since the wh-phrase is in Spec,CP, and the clitic is not IntP-initial), yes/no questions, in which an empty operator occupies Spec,CP do trigger enclisis. The analysis hinges on the relevance of whether or not the material in Spec,CP is lexical. The sentences illustrating this pattern are given below:

\[(16)\]
\[
a. \quad \text{Quem o disse?}
\]
\[
\text{Who it said}
\]
\[
a'. \quad \ast \text{Quem disse-o?}
\]

\[(17)\]
\[
b. \quad \text{Disseste-o?}
\]
\[
\text{(you) said it}
\]
\[
b'. \quad \ast \text{Disseste?}
\]

Barbosa’s argumentation runs into problems when confronted with data from the work of Duarte and Matos (1995) and Frota and Vigário (1996). In these two studies, evidence is presented showing that both in acquisition and from a prosodic point of view enclisis is the unmarked case. These observations challenge a view in which enclisis is triggered by the effects of a prosodic constraint. That is, although Frota and Vigário’s work confirm Barbosa’s observation that the variation enclisis/proclisis is prosodically determined, it seems that the prediction Barbosa makes is contrary to the facts: if nothing else happens, enclisis emerges. This is also confirmed in the study by Duarte and Matos, which shows that children display generalized enclisis until quite late.

\(^5\) For the contexts of proclisis, see Duarte and Matos (1984, 1995), among many others.
These observations should cast some doubt on Barbosa’s conclusions regarding the relevance of clitic placement for determining the position of subjects in European Portuguese. I will therefore not consider clitic placement as a problem for the standard idea that preverbal definite subjects are in Spec,JP.

2.1.2. Preverbal Indefinite Subjects.

Indefinite subjects behave differently from definite subjects with respect to the tests presented above. In this section, I will show that indefinite subjects in European Portuguese apparently pattern like preverbal subjects in other Null Subject languages in that they display the effects of left-dislocation. In order to obtain a fair comparison I will use exactly the same tests I did for the definite subjects.

I will consider an analysis of preverbal indefinites on a par with what the authors referred to above did for subjects in general: they are left-dislocated.

a) A-binding.

Let us start by checking whether an indefinite subject can bind:

(18) shows that binding by an indefinite subject does not yield ungrammaticality, but is more marked than what was observed for preverbal definite subjects.5

(18) a ??Uma criança gosta da sua mãe.

‘a child likes possessive mother’

---

5I should note that, for some speakers, (18a) and (18b) are grammatical. Nevertheless, it is interesting to note that speakers who allow binding by an indefinite subject also find the sentences in (19) acceptable, with reconstruction of the left-dislocated element. Related to this issue is the interesting contrast that comes about in wh-extraction: while subject wh-extraction reconstructs, extraction of a non subject wh-phrase does not (cf. ii):

(i) Que autor leu o seu livro?

‘which author read poss. book’

(ii) ??Que livro é que a Maria deu ao seu autor?

‘which book Maria gave to poss. author’

An explanation for this contrast might be that subject wh-phrases are not moved to Spec,CP, as suggested in Grimshaw (1997), among others.
b) Um homem qualquera viu o seu filho.
   ‘a man saw possessive child’

Differently from definite subjects, preverbal indefinite subjects are not Abinders, and pattern like other cases of left-dislocation:

\[
\begin{align*}
(19) \quad a & \quad \text{?A cada realizadora, a Maria deu o seu prémio.} \\
& \quad \text{‘to each director, Maria gave possessive prize’}
\end{align*}
\]

\[
\begin{align*}
(19) \quad b & \quad \text{?Cada filme, a Maria devolveu ao seu, realizador,} \\
& \quad \text{each movie, Maria returned to possessive director}
\end{align*}
\]

I should qualify the statements about the status of (18) and (19). Binding in these sentences is not impossible but more marked than in sentences with a preverbal definite subject, as referred to above. Speakers report to me that the preferential interpretation for the possessive in sentences (18) and (19) is that the possessive refers not to the coindexed element in the sentence, but to a discourse (formal) 2nd person, for which the grammatical 3rd person pronoun *ール is used (cf. Cunha and Cintra 1984, among many others). The preference for this reading makes the reading involving binding more difficult to obtain. The results of the binding tests are not very conclusive, but nevertheless show an asymmetry with respect to the behavior of definite subjects. Such an asymmetry might be interpreted in terms of position: if indefinite subjects are left-dislocated, then we do not expect them to be able to bind a possessive anaphor.

b) A-bar minimality effects:

Considering extraction, it may be observed that, with indefinite subjects, A-bar minimality effects do emerge. This is exemplified in (20):

\[
\begin{align*}
(20) \quad a & \quad \text{*Que livro um homem leu?} \\
& \quad \text{‘which book a man read’}
\end{align*}
\]

\[
\begin{align*}
(20) \quad b & \quad \text{*Com quem é que umas crianças quaisquer falaram?} \\
& \quad \text{‘with whom some children talked’}
\end{align*}
\]

Differently from preverbal definite subjects, preverbal indefinite subjects may not cooccur with wh-extraction. This can be explained if preverbal indefinite subjects are left-dislocated, hence A-bar moved, inducing A-bar minimality effects when a wh-phrase is extracted.

The nature and quality of the data must again be clarified. The first
time I considered these data (Costa 1997c), I only considered the two most opposite ‘levels’ of definiteness: DPs introduced by determiners like um/a and proper names. However, there are more possibilities: if we have a DP with a determiner like várias ‘several’, the judgements become fuzzier, and for some speakers the sentence is fully acceptable.

(21) a. (¿/¿) Que livro várias pessoas leram?
   Which book several people read

  b. (¿) Com quem é que várias crianças falaram?
    With whom several children talked

Again, it is rather unclear to me what the right interpretation of these data should be. However, there is a (subtle) contrast between definite and indefinite subjects, which might be taken into account, if one would assume a structural difference between the two. Variation depending on the type of indefinite under observation remains problematic.

c) Complementary distribution with other left-dislocated elements:

It was observed above that preverbal definite subjects are not in complementary distribution with topicalized phrases. Differently from definite subjects, an effect of markedness arises when there is topicalization across an indefinite:

(22) a. *A sopa, um cão comeu. (no multiple topics)
   ‘the soup a dog ate’
   b. *Sobre o Big Bang, pessoas falam. (no multiple topics)
   ‘about the Big Bang people talk’

The markedness of the sentences in (22) disappears if the subject is post-verbal:

(23) a. A sopa, comeu um cão.
   b. Sobre o Big Bang, falam pessoas.

Interestingly enough, sentences such as (22) are only acceptable under a multiple topicalization reading. In this case, the left-dislocated element and the preverbal subject are not crucially ordered with respect to one another:
(24)  a.  A sopa, um cão comeu.  (under multiple topic reading)
‘the soup a dog ate’

   b.  Um cão, a sopa comeu.
‘a dog the soup ate’

This optional ordering never exists between left-dislocated elements and
definite subjects (cf. 25), but it does exist with other instances of multiple topicalization (e.g. topicalization of two complements of the verb, as in
(26)):

(25)  a.  A sopa, o cão comeu.
‘the soup the dog ate’

   b.  *O cão a sopa comeu.
‘the dog the soup ate’

(26)  a.  Sobre o Big Bang, com o Pedro, o Paulo falou.
About the Big Bang with Pedro Paulo spoke

   b.  Com o Pedro, sobre o Big Bang, o Paulo falou.
With Pedro about Big Bang Paulo spoke

The lack of ordering between left-dislocated elements and indefinite subjects may be interpreted in the following terms: each of them occupies a specifier position at the topic position, so no ordering between these specifiers is established.

The results of the tests above seem to indicate that preverbal indefinite subjects are left-dislocated.

Unfortunately, this conclusion is not very strong (contra Costa
1997c), since there is variation in judgements across speakers, and depending on the type of indefinite used. I will therefore note that there is an alternative analysis which has to do with the referential potential of indefinites. Such an analysis will not be adopted here, for lack of space and tools for pursuing it. Nevertheless, I will comment on it and consider it as a potential (and maybe more realistic) solution.

In previous work (Costa 1997c), I applied the tests above and argued that preverbal indefinite subjects are left-dislocated. An unsatisfactory aspect of this conclusion is that the quality of the data is not very good: there is a contrast between definites and indefinites in the position under scrutiny, but the sentences with preverbal indefinites often are not just ungrammatical, but only marked. Moreover, for the first two tests it has been observed that the evidence is weak: the less definite the
DP is, the better it fares for those tests. This gradation of results is suspicious under a purely structural account of these data. If the properties were determined by the nature of the position the DP sits in, the exact form of the DP should be irrelevant, since the properties would be a consequence of the position and not of the DP. Since the results are not crystal-clear, I will not attempt to provide a fully worked out alternative view. I would nevertheless like to point out that, rather than postulating different positions for the two types of DPs, one may suppose that they are always in Spec,IP, and that the oddness/markedness of the sentences with preverbal indefinite subjects is to be found elsewhere. A potential solution for this would be to associate the sentence-initial position with topic position, and exclude topic-promotion of indefinites. Neither of these assumptions is unusual: in regular topicalization constructions, it is observed that topics are sentence-initial; given the discourse requirements for topics to be licensed (they must be given information, Reinhart 1982), indefinite DPs, which by definition introduce new information, do not easily function as topics and therefore do not surface in the position for topics (Spec,IP in the case of subjects, adjoined to CP in the case of objects).

I think an analysis along these lines is worthwhile pursuing, although I will not do so here. The reason is that doing so would require the determination of a scale of definiteness, which should find independent motivation in other processes (see for instance Ariel (1981) for a possible starting point). Such task would lead me beyond the scope of this dissertation. I will therefore not adopt this analysis nor will I consider preverbal indefinite subjects due to the inconclusive nature of this section.

The main point I wanted to make here is descriptive: there are certain asymmetries between preverbal definites and indefinites, although the proper analysis of such differences is still unclear to me.

2.2. Post-verbal subjects

In this section, I will look at the properties of post-verbal subjects and argue that this word order arises whenever the subject is in its base position, Spec,VP. I will consider two contexts for post-verbal subjects: VSO and VOS. For both contexts, the conclusion will be that the subject is in Spec,VP.

The argumentation will be the following: first, I will show that the post-verbal position of subjects is not necessarily a consequence of V-
movement across the subject from I° to another functional projection. This conclusion will be based on similarities between root and embedded contexts. I will further recall the results of the preceding chapter and argue that the distribution of adverbs constitutes a test for the surface position of post-verbal subjects.

Before presenting the arguments for the claim that post-verbal subjects occupy the Spec,VP position, I would like to note that in this context there is no difference between definites and indefinites, as (27) below shows:

(27) a Comeu o Paulo maçãs.
    ‘ate Paulo apples’
    b Comeu um homem maçãs.
    ‘ate a man apples’

In the discussion of this position, it will be shown that binding effects provide evidence that both types of subjects occupy the same position. For this reason, I will mainly use examples with definite subjects, since no further distinctions are necessary.

2.2.1. Post-verbal subjects in VSO context.

2.2.1.1. Available analyses for VSO

In any theory admitting the existence of functional projections, which are potential landing sites for V, and accepting the VP-Internal Subject Hypothesis (Koopman and Sportiche 1991), there are three ways of deriving postverbal subjects in VSO order. Such mechanisms are illustrated in (28), (29) and (30):

(28) \[ IP V_i [IP Subject_i [IP t_i [VP t_i Object]]]]

(29) \[ IP V_i [VP Subject_i [VP t_i Object]]]

(30) \[ IP V_i [VP Subject_i [VP t_i Object]]]

(28) illustrates an analysis of VSO, according to which this word order arises in the following way: both Subject and Verb move out of VP; the subject stops in Spec,IP, but the verb is further moved to the head
position of a functional projection above IP.\footnote{I am ignoring here the exact label of I. This may cause some confusion, when this discussion is confronted with the results of chapter 2, since I argued for different landing sites for verbs in English, French and Portuguese. I decided to do so to make the discussions clearer. For clarity: I is the functional category where subjects land, that is, $\alpha$SP in the preceding chapter. For the present discussion, the crucial fact is whether we need or do not need a landing site for the verb above the category where subjects move for case reasons.}

In (29), an alternative is presented: the verb moves up to $\text{I}^0$ and stops there. The subject does not precede it, because it has never been moved from its base-position $\text{Spec,VP}$.

Finally, (30) illustrates another type of analysis, according to which the subject undergoes short-movement out of VP, in the sense that it does not move all the way up to its ‘normal’ landing site, $\text{Spec,IP}$. The verb undergoes movement to $\text{I}^0$.

It is important to note that these three types of analyses do not exclude each other. In fact, it may be seen that they are all independently instantiated in different types of languages. For instance, (28) is the type of analysis argued for Dutch and German Verb-second phenomenon and for English Subject-Aux inversion in questions (cf. 31); (29) has been argued by Ouhalla (1991) to be the correct analysis for Celtic VSO (32); (30) has been argued for Icelandic Transitive Expletive Constructions by Bobaljik and Jonas (1996):

\begin{enumerate}
\item\hspace{1em}a. \textit{Dutch V2:}
\begin{quote}
\begin{tabular}{l}
\small{
Gisteren heeft Jan het boek gelezen.}
\end{tabular}
\end{quote}
Yesterday has Jan the book read

\item\hspace{1em}b. \textit{English Subject-Auxiliary Inversion:}
\begin{quote}
\begin{tabular}{l}
\small{
Who had Mary seen?}
\end{tabular}
\end{quote}
\end{enumerate}

\begin{enumerate}
\item\hspace{1em}Celtic VSO:
\begin{quote}
\begin{tabular}{l}
\small{
Darnellod y plentyn y llyfr.}
\end{tabular}
\end{quote}
Read the child the book
\end{enumerate}

\begin{enumerate}
\item\hspace{1em}Icelandic Transitive Expletive Constructions:
\begin{quote}
\begin{tabular}{l}
\small{
Pað hafa margir jólasveinar börðað búaðing}
\end{tabular}
\end{quote}
There have many Santa Clauses eaten pudding
\end{enumerate}

For European Portuguese, all three types of analyses have been proposed: Amhar (1992) has argued that post-verbal subjects in this
language are the reflex of movement of I-to-C, along the lines of (28); Martins (1994) has proposed that under certain circumstances subjects may be stranded in the Specifier of a functional projection below IP but higher than VP, following the lines of (30); in this chapter, as in Costa (1997c), I argue for an analysis along the lines of (29).

The fact that the three types of analyses exist independently of each other does not mean that they exclude each other. For instance, it is possible to assume that V moves to C in questions, as proposed in Ambar (1992), and that the subject stays in Spec,VP. That is, we may have two analyses for the sentence in (34):

(34) Quem viu o João?
Who saw João
‘Who did João see?’

One analysis would assume that the subject is in Spec,IP and the verb has raised up to C, as in (35a); another analysis would claim that the subject is in Spec,VP, as in (35b):


That the two analyses are not exclusive is confirmed by the fact that there are two adverb positions, one before the subject and one after it, which may be explained by assuming that the adverb is adjoined to VP, and adopting the explanation in (35):

(36) a. Quem viu o João ontem?
Yesterday
b. Quem viu ontem o João?
b’. [IF Quem [C: viu [IP v] v ontem] [VP o João] v]

Bearing this idea in mind, I will now show that for simple declarative affirmative sentences, an analysis claiming that post-verbal subjects are in Spec,VP is more attractive.

2.1.1.2. Why not V-movement?
There are four main arguments for not deriving VS order in declarative sentences in by resorting to V-movement, which I will list in a) through d):

a) VS is possible in embedded sentences:
If postverbal subjects were derived by V-movement to C, they should not appear in embedded contexts, since C is occupied by the complementizer. This prediction is not borne out by the data.\footnote{VS order in embedded context is possible with all verbs and all types of main verbs, which makes it different from the contextually dependent embedded V2 phenomena in languages such as Icelandic and Yiddish (see McCloskey 1992 for contexts of CP-recursion).}

(37) O Paulo disse que comeu a Maria a sopa.
    ‘Paulo said that ate Mary the soup’

Note that this is not problematic for an analysis in which the subject is stranded in the Specifier of a functional projection higher than VP and lower than IP. Such an analysis will be considered below, when this word order is confronted with possible readings of adverbs.

b) Sequences auxiliary-participle(s):

The second problem for the type of analysis defending that VS arises by virtue of movement of the verb to a functional projection above the landing site of the subject is the fact that in more complex verbal constructions (involving an auxiliary verb and one or more non-finite forms of the verb), the subject may follow all of them:

(38) a. Tinha comido o Paulo maçãs.
    ‘had eaten Paulo apples’
  b. Tem estado a comer o Paulo maçãs.
    ‘has been eating Paulo apples’

If inversion could only be derived by moving the verb across the subject to the functional projection above it, we would expect to find the subject obligatorily following the auxiliary verb, in a construction similar to
Rizzi’s (1982) Aux-to-Comp. In order to assume that the subject in (38a) is in Spec,IP, one has to postulate at least two heads above IP. If more auxiliaries are present, more heads have to be postulated, as (38b) shows, not a very appealing solution.

c) The distribution of adverbs:

The distribution of adverbs also supports the idea that postverbal subjects do not reflect V-movement to a position higher than IP. In the preceding chapter, I have observed that a proper characterization of the distribution of adverbs with a subject-oriented reading requires that these adverbs are adjoined to TP, and that this reading is only triggered whenever the subject moves up to Spec,IP (=Spec,AgrSP). Assuming these results, there is a further diagnostic for identifying the position of the subject: if postverbal subjects were in Spec,IP, adverbs with a subject-oriented reading should be expected to adjoin to TP, thus intervening in between the subject and the object. This prediction is incorrect:

(39) *Comeu o Paulo inteligentemente maçãs.

‘ate Paulo cleverly apples’

The structure allowing (39) would be the one in (40), which yields ungrammatical results:

(40) \[[_IP\text{Comeu}_IP\text{ o Paulo}_IP\tau_V\text{ inteligentemente}_IP\text{ ...}_IP\tau_{Sub}\tau_V\text{ maçãs}]]]]]]

I thus exclude the possibility of moving the verb to C in the derivation of simple VSO sentences.

d) No differences between definites and indefinites:

In the preceding section, I have noted, though not very conclusively, that definite subjects do not surface very easily in Spec,IP. If that is true, and if in VS structures the subject is in Spec,IP, the same type of asymmetry found for the preverbal position is expected. This is however not confirmed by the data:

(41) a. Comeu um rapaz as maçãs.
Ate a boy the apples
b. Comeu o João as maçãs.
   Ate João the apples

In the postverbal position both definites and indefinites may surface without any problem.⁸

In Costa (1997c), I argued that preverbal indefinite subjects are left-dislocated. I now have to reject this analysis, since if it were correct, one would have to claim that in (41a) the subject moves higher than the left-dislocated element. This can however be shown not to work, since post-verbal indefinite subjects may co-occur with left-dislocated elements, and the position of the verb is not to the left of all the left-dislocated phrases:

(42) Com o Pedro, falou um rapaz sobre a Maria.
    With Pedro talked a boy about Maria

On the basis of these arguments, I reject an analysis of inversion in declarative sentences that is based on Verb movement across the subject in Spec,IP. I stress nevertheless that such an analysis is still necessary e.g. interrogative sentences, as shown in Ambar (1992 and subsequent work).

2.2.2. Postverbal subjects are in Spec,VP.

Having rejected an analysis of inversion in terms of verb movement across a subject moved to Spec,IP, it is my task now to develop the alternative analysis for VS orders. In this section I will argue that VSO orders may be analyzed as the result of a representation in which subjects stay in their base-position, Spec,VP, and do not move to

---

⁸ Note that there is a way for the V-to-C proponents to escape this problem: if the restriction on indefinites is due to the information status of first position elements, by placing the verb in sentence-initial position such constraint on the form of the DPs in Spec,IP would become inoperative. That is, the lack of asymmetry is compatible with an explanation of this constraint in terms of a restriction on sentence-initial position rather than a restriction on Spec,IP. I did not want to leave out the observation that the asymmetry does not hold, in case one wants to adhere to the alternative explanation for the behavior of indefinite subjects, which I rejected here: that they are left-dislocated (as in Costa 1997c).
Spec,IP. Evidence for this analysis will come from the distribution of adverbs on the one hand and from binding effects on the other.

2.2.2.1. Interaction between the distribution of adverbs and low subjects.

In chapter 2, I argued that the position of monosyllabic adverbs is a good test for determining the left edge of VP. Although I emphasized that the conclusions reached are valid for English, but not necessarily for other languages, it seems that similar adverbs may be used as diagnostic for the left-edge of VP in Portuguese as well.

Let us recall the two main properties of these adverbs:

a) First, they do not right-adjoint,\textsuperscript{10} which may be seen in the order PP-Adv, which, without any special intonational mark on the adverb is ill-formed in both languages:

\[(43)\]
\[
\begin{align*}
\text{a.} & \quad \text{John looked well at some pictures.} \\
\text{b.} & \quad *\text{John looked at some pictures well.}
\end{align*}
\]

\[(44)\]
\[
\begin{align*}
\text{a.} & \quad \text{O Paulo olhou bem para alguns daqueles quadros.} \\
& \quad \text{Paulo looked well at some of those pictures} \\
\text{b.} & \quad *\text{O Paulo olhou para alguns daqueles quadros bem.}
\end{align*}
\]

b) Secondly, monosyllabic adverbs have a more restricted distribution than other types of adverbs:

\[(45)\]
\[
\begin{align*}
\text{a.} & \quad \text{John (carefully) has (carefully) looked (carefully) at some pictures (carefully)} \\
\text{b.} & \quad *\text{John (*well) has (*well) looked (well) at some pictures (*well).}
\end{align*}
\]

\[(46)\]
\[
\begin{align*}
\text{a.} & \quad \text{O Paulo (cuidadosamente) tinha (cuidadosamente) olhado}
\end{align*}
\]

\textsuperscript{10} Accepting the results of Chapter 2, one has to phrase property a) as not displaying the effects of right-adjunction.
283, (cuidadosamente) para aqueles quadros (cuidadosamente).


Given the similarities between English and Portuguese, I will consider the adverb as a reliable test for marking the left-edge of VP also in Portuguese.

Let us then consider the possible positions for the monosyllabic adverb *bem ‘well’ in a VSO sentence:

(47) a  *Bem comeu o Paulo maçãs,
       ‘well ate Paulo apples’

b  *Comeu o Paulo bem maçãs,

c  *Comeu o Paulo maçãs bem.

d  Comeu bem o Paulo maçãs,

(47) shows that the only position for the adverb to surface in a VSO sentence is in between the verb and the subject. All other positions are excluded. If the position of these adverbs is the same in English and Portuguese, as the similarity of the data makes one suspect, and if the conclusions of the previous chapter are right, we may conclude that in the VSO word order, the subject is in Spec,VP.

Note that it is not possible to adopt an analysis of this word order, in which the subject would move out of the VP to some functional projection above it but lower than AgrSP, as has been argued for Icelandic Transitive Expletive Constructions by Bobaljik and Jonas (1993). The problem with such an analysis is the fact that the adverbs we are considering here obligatorily follow the participial form in a sequence consisting of the inflected auxiliary followed by the participial form. This is exemplified in (48):

(48) a. O Paulo tinha lido bem alguns livros.
       Paulo had read well some books

b.  *O Paulo tinha bem lido alguns livros.

---

11 Actually (47a) is grammatical, but the adverb gets a different (aspectual) meaning. For controlling for that factor, one may have another monosyllabic adverb, in the ruled in position, with a contradictory meaning and the sentence would remain grammatical:

(i) Bem comeu mal o Paulo maçãs.
The contrast in (48) not only shows that it is not possible to extend of Bobaljik and Jonas’ (1993) analysis to Portuguese, but it also provides further evidence for the claim put forward here regarding the distribution of monosyllabic adverbs.

Note that the facts in (48) imply that the participial form moves out of the VP to some functional head. This is possible and confirmed by the distribution of the adverb itself. It should however be noted that the participial form could remain in VP, as it does in French (M.T. Vinet, personal communication):

\[(49) \quad \begin{align*}
\text{a.} & \quad \text{Jean avait bien lu les livres.} \\
\text{b.} & \quad \text{*Jean avait lu bien les livres.}
\end{align*}\]

The fact that (49b) is ungrammatical in French excludes an analysis of (48) in terms of adjunction of the adverb to some lower level within VP. Assuming that monosyllabic adverbs are adjoined to VP in the two languages, we may explain the contrast between the order adverb-participle in French and Portuguese with the usual tools deriving differences in head movement: participles obligatorily move out of VP in Portuguese, while they never do so in French.

I thus conclude that the distribution of adverbs seem to support the idea that postverbal subjects are in Spec,VP.

2.2.2.2. Binding effects.

Although the preceding section has not been very conclusive in terms of the most natural analysis for the position of indefinite subjects, it has been observed that in preverbal position there is a contrast between definite and indefinite subjects. Namely, definite subjects appear to bind more easily a possessive anaphor contained in a direct object. The relevant data were the following:

\[(50) \quad \begin{align*}
\text{a.} & \quad \text{O Paulo, viu o seu, irmão.} \\
\text{b.} & \quad \text{Um homem, viu o seu, irmão.}
\end{align*}\]
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Now, independently of what the correct analysis for this contrast is,\(^\text{12}\) the fact is that, in the position in (50), indefinite subjects are not A-binders. If the position in a VSO context would be the same, and the only difference would be due to existence of V-movement across the subject, one would expect the same contrast to arise. However, that is not true, as (51) attests:

(51) a Leu cada autor o seu livro.
     ‘read each author his book’
     b Leu um autor o seu livro.
     ‘read an author his book’

Such a lack of contrast is expected in an analysis in which the post-verbal subject is in Spec,VP, since independently of its definiteness, the subject is in an A-position, from where it can bind the anaphor.

It might be argued that it is the movement of the verb that focalizes the subject, and makes it able to bind the anaphor. Note however, that such an interpretation of the facts is incompatible with the other data discussed, like the distribution of adverbs. If we combine the two observations here, we see that indefinite subjects are binders only when they are in post-adverbial position, even if inversion is triggered by the presence of a wh-word (cf. Ambar 1992):

(52) a. ?Onde comeu um homem, bem a sua sopa?
     Where ate a man well his soup
     b. Onde comeu bem um homem a sua sopa?

The binding tests seems thus to further argue for an analysis of simple declarative VSO as reflecting an order with the subject in Spec,VP.

2.2.3. Postverbal subjects in VOS contexts.

2.2.3.1. Right dislocated subjects vs. base-generated subjects in Spec,VP.

\(^\text{12}\) The one defending different structural positions for the two types of subjects or the one defending that indefinites should not surface in positions normally associated with topic interpretations.
The Distribution of Arguments 129

In the preceding section, I have investigated the position of postverbal subjects in VSO contexts. In this section, I will look at the other possible position for post-verbal subjects, in which they follow the object. I will argue for an analysis of this word order similar to that of VSO. In VOS, subjects will be claimed to be in Spec,VP, but, differently from VSO, the object has scrambled out of the VP, crossing the subject. The argumentation in defense of the movement of the object, will be presented in the second half of this chapter (cf. Section 3). I will therefore assume the results of that section in my discussion of the subject position in VOS, and refer the reader to section 3 for the evidence supporting object movement in European Portuguese.

The VOS context is exemplified in (53):

(53)  Comeu a sopa o Paulo.
Ate the soup Paulo.

In the traditional analysis for this word order, subjects are claimed to be right-dislocated (see e.g. Rizzi 1982 for Italian). I do not think that the subject-right-dislocation analysis is to be dispensed with, but would nevertheless like to clarify the data a little bit. In this section, I will be concerned with sentence-final subjects that are not right-dislocated. How can the two types of subjects be differentiated? I would like to show that right-dislocated subjects and sentence-final base-generated subjects distribute differently.

The first distinguishing factor is intonation: while right-dislocated subjects are preceded by a pause, sentence-final subjects are not:

(54)  a. Comeu a sopa # o Paulo.
Ate the soup Paulo

b. Comeu a sopa o Paulo.

This observation may seem at first sight rather awkward: it could be that, in both cases, subject-right-dislocation is involved, the pause being optionally possible. As a result, different intonations would not be associated with different syntactic structures. However, if we look at the paradigm in (55), we see that when a pronoun is inserted in Spec,IP, the pause is obligatory:

(55)  a  Ele comeu a sopa # o Paulo.
‘he ate the soup Paulo’
b  *Ele comeu a sopa o Paulo.

(56) shows that the pronoun is ungrammatical when subjects remain in Spec,VP, in the same way as in the VSO context, which is not ambiguous:

(56)  (*Ele) comeu o Paulo a sopa.
      ‘he ate Paulo the soup’

One way to interpret these facts is to assume with Kayne (1994) and Zubizarreta (1995) that the right-dislocated subjects are clause-external (tags in Zubizarreta 1995, the result of clause reduction for Kayne 1994). Further evidence for this claim comes from the interaction between question tags and subjects. Den Dikken (1995) shows that shifted heavy NPs, traditionally analyzed as right dislocated, follow question tags:

(57)  They have found, haven’t they?, the treasure buried on that island 100 years ago.

The same is true in EP: right-dislocated subjects follow question tags while subjects in Spec,VP precede it. This is shown by the interaction between these orderings and pronoun insertion:

(58)  a  Comeu a sopa o Paulo, não comeu?
       ‘ate the soup Paulo not ate’
     b  *Ele comeu a sopa o Paulo, não comeu?
       he
     c  Comeu a sopa, não comeu?, o Paulo
     d  Ele comeu a sopa, não comeu?, o Paulo.

The only possibility to obtain the order subject-tag is either to leave out the pronoun, or to introduce a pause before the subject. This just shows that the two sentence adjuncts, tag and right-dislocated subject are interchangeable:

(59)  (ele) comeu a sopa # o Paulo # não comeu?

In the remainder of this section, I will ignore right-dislocated subjects, since they appear to be extra-sentential. I will concentrate on the ones I claim to be in Spec,VP.
Having established this difference, let us now look at the tests that enable us to identify the position of the subjects in VOS sentences.

2.2.3.2. Testing the position of the subjects in VOS.

I would now like to run the same set of tests to identify the position of the subjects in VOS contexts.

I will in turn investigate the distribution of adverbs, the possibilities of binding, and the differences between definite and indefinite subjects in this position.

a) The distribution of adverbs:

Applying the same test as for VSO, it is now possible to check the paradigm for the several potential positions for the monosyllabic adverb bem ‘well’ in VOS contexts. Keeping in mind that cases of right-dislocation are to be ignored and can be tested by inserting a nominative pronoun, the results are the following:

(60) a  *Comeu bem a sopa o Paulo
       ‘ate well the soup Paulo’
   b  *Comeu a sopa o Paulo bem.
   c  Comeu a sopa bem o Paulo (não comeu?)

The results in (60) seem to indicate that the object is outside VP, and that the only VP-internal material is the subject itself. Further confirmation for this analysis comes from the fact that the subject may be followed by the question tag, as indicated in (60c).

b) Binding effects.

Binding effects seem to support the analysis of VOS I am presenting here. As it is well know, A-movement feeds binding (cf. 61), while A-bar movement does not (cf. 62).

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This characterization of this operation is motivated in the next section. A similar hypothesis is argued for Greek in Alexiadou (1995) and for Spanish in Zubizarreta (1995).
(61) a. *It seems to each other that the boys are tired.
    b. The boys seem to each other to be tired.

(62) a. *Paul introduced each other to Mary and Paul.
    b. *Who did Paul introduce to each other?

The same effects may be visible in Portuguese: in (63) the QP only binds the possessive in the passive construction (63b), and not when it is wh-extracted (cf. the Weak Cross-over effects in 63c):

(63) a  *O seu realizador viu todos os filmes.
    'their director saw all the movies'
    b  Todos os filmes foram vistos pelo seu realizador.
    'all the movies were seen by their director'
    c  *Que filmes viu o seu realizador?
    'which movies saw their director'

Now consider the behavior of subjects and objects in a VSO order: if the object is a QP and the subject contains a possessive anaphor, binding is impossible. If object scrambling were A-movement binding would be acceptable, on a par with (63b). This is not the case, as (64b) illustrates:

(64) a  *Viu o seu realizador todos os filmes.
    'saw their director all the movies'
    b  *Viu todos os filmes o seu realizador.
    'saw all the movies their director'

The impossibility of binding becomes even clearer in cases like (65), which are only acceptable if interpreted as involving VSO order:

(65) a  *Viu [Obj o Paulo] [Subj o seu irmão].
    'saw Paulo his brother'
    b  Viu [Subj o Paulo] [Obj o seu irmão].

One could argue that these effects do not constitute conclusive evidence in favor of the analysis of VOS order I am advocating, since binding would be impossible anyway if the subject were moved rightwards and adjoined to a position higher than the object, making it impossible for the
object to c-command it. However, the following examples prove that this is not true: in the cases which were identified as instances of right-dislocation, i.e. those cases in which a tag may intervene between the object and the subject, binding is possible\(^\text{14}\):

\[(66)\]  
\[\begin{array}{ll}
\text{a} & \text{Viu o Paulo, não viu?, o seu irmão.} \\
& \text{‘saw Paulo, not saw, poss brother’} \\
\text{b} & \text{Viu todos os filmes, não viu?, o seu realizador.} \\
& \text{‘saw all the movies, not saw, poss director’}
\end{array}\]

\(c\) The differences between definites and indefinites:

If VOS contexts indeed involve subjects in Spec,VP, there should not be any difference between definites and indefinites in accordance to the data presented above, which showed that in VSO context both definites and indefinites may appear in Spec,VP. This prediction is indeed confirmed by the facts in (67):

\[(67)\]  
\[\begin{array}{ll}
\text{a} & \text{Comeu a sopa o Paulo.} \\
& \text{‘ate the soup Paulo’} \\
\text{b} & \text{Comeu a sopa um homem.} \\
& \text{‘ate the soup a man’}
\end{array}\]

The fact that definiteness does not play any role also confirms that VOS word order is not necessarily derived in terms of right-dislocation of the subject, since in the true cases of subject-right-dislocation, indefinite subjects are marginal, as illustrated in (68), in which the question tag helps to differentiate the two types of constructions:

\[\text{I am not going to speculate here on the mechanism which renders binding possible in this context. I would like to note anyway that it is very likely that the object QP is bound not by the right-dislocated subject but by the pro in subject position (cf. the possibility of inserting overt pronouns discussed in examples (55) and (56)). For a thorough discussion of binding conditions in Portuguese, see Menuzzi (forthcoming). One of the aspects discussed in Menuzzi’s dissertation, which are relevant for the discussion of these data is his observation that the grammaticality of these sentences is to be judged in comparison with other sentences. All the cases presented here as ungrammatical are possible if the anaphor is interpreted as 2nd person (formal) pronoun. In cases in which this ambiguity does not exist, it is easier to get these judgements. This confirms Menuzzi’s conclusions on the relevance of pronominal paradigms in the construction of tests and examples.}\]
(68)  a.  Comeu a sopa, não comeu?, o Paulo.
    Ate the soup, not ate?, Paulo
    b.  Comeu a sopa, não comeu?, um homem.
    Ate the soup, not ate?, a man

From the tests above, I conclude that in VOS context, subjects occupy the Spec, VP position.

The difference between VSO and VOS will be derived in terms of object scrambling in the latter, in accordance with the evidence to be presented in section 3.

2.2.4. Preliminary conclusions.

At this point, it is possible to tell which position occupies the subject in each of the attested word orders.

The conclusions reached so far are the following:
1- Preverbal definite subjects occupy the Spec, IP position;  
2- Preverbal indefinite subjects do not very easily surface in Spec, IP  
3- Postverbal subjects in VSO context are in Spec, VP  
4- Postverbal subjects in VOS context are in Spec, VP

Until now, the question as to the source of this word order variation has not yet been shown. One might suppose that the possible orders are in free variation. In the next section, I would like to present arguments showing that this is not true, motivating the position of each subject.

2.3. Felicitous contexts for each word order

In this section, I will present the contexts which make each of the possible positions for subjects acceptable, showing that the variation is not discourse neutral but the reflex of discourse configurationality (see Kiss 1995 and King 1995 for similar conclusions for other languages). I will proceed by providing an appropriate discourse context and check which possible order is an appropriate continuation for each case. For the proper characterization of these contexts, the notions **topic** and **focus** will be relevant. I will assume the following tests to identify topics and focus:
a) In a question-answer pair a focused constituent in the answer replaces the wh-word in the question (cf. Dik 1978, Bresnan and Mehombo 1987, Rochemont and Culicover 1990, among others)

b) A Topic is information already referred to in the discourse or a subpart of a referent already mentioned (see Büring 1995 for discussion and relevant examples). 15

At this stage, and in the discussion of the positions for objects in section 3, it will be important for the reader to realize that there is a correlation between position and discourse factors in European Portuguese. I will not be concerned with comparing specific views on focus, or testing competing theories concerning the distribution of focus. Such work is necessary, since I will basically show that foci tend to be rightmost, and it is very often assumed that foci must be leftmost. I will postpone a comparison of terminologies and theories until the next chapter. I would like to concentrate on the correlation between discourse functions and different positions. Occasionally, I will need to refer to theories of focus. At the end of the chapter, I will recap and spell out all the assumptions made throughout the text, so that we know on what basis the comparison between theories of focus will be made in chapter 4.

2.3.1. Context for SVO

2.3.1.1. Definite subjects

The SVO order with definite subjects may be uttered in either of two cases: if the subject is familiar to all participants in the discourse (i.e. topic) but the object is not (69); or if both the subject and the object are familiar (70).

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15It is important to note that this does not mean that topic is the complement of focus. I will assume with Jäger (1996) and Büring (1995) among others a tripartite structure for information: topic, focus and background. These analyses make the right prediction that a sentence may have only a focus, or no topic. See Büring and references therein for discussion.
(69) (A and B are checking which languages each person in a given group speaks. They are talking about Paulo)
   A: O Paulo sabe que línguas?
      ‘Paulo knows which languages’
   B: O Paulo sabe francês.
      ‘Paulo knows French’
      #Sabe o Paulo francês,
      #Sabe francês o Paulo
      #Francês o Paulo sabe.
      #Francês sabe o Paulo.

In the given context, the only legitimate order is SVO. All other orders are not felicitous.

(70) (A and B are checking which persons in a given group speak French. They are talking about Paulo)
   A: O Paulo sabe francês?
      ‘Paulo knows French’
   B: O Paulo sabe francês.
      #Sabe o Paulo francês,
      #Sabe francês o Paulo
      Francês o Paulo sabe.
      #Francês sabe o Paulo.

Again in this case SVO is legitimate. The only difference with respect to (70) is that OSV is also possible if the object is topicalized.\(^{16}\) Note that the fact that the subject is old information does not mean that it is a moved topic (cf. Büring 1995). This is proven by the fact that it is not in complementary distribution with a topicalized constituent, as shown above and illustrated again in (71):

(71) A: Com que é que o Paulo falou sobre o Big Bang?
      with whom        Paulo talked about the Big Bang
   B: Sobre o Big Bang, o Paulo falou com o Pedro.

\(^{16}\)It can also be shown that in (69) and (70) the objects occupy different positions (the base position and the scrambled position respectively). Since the main concern here is the distribution of subjects, I will skip this discussion when it is not relevant, referring the reader to section 3 of this chapter.
about the Big Bang, Paulo talked with Pedro.

Another felicitous context for SVO order is the case in which all elements of the sentence constitute new information. This is the case in an answer to *what happened?*, as illustrated in (72):

(72) A: O que é que aconteceu?
   What happened?
   B: **O Paulo comeu um bolo.**
      Paulo ate a cake
      #Comeu o Paulo um bolo.
      #Comeu um bolo o Paulo.
      #Um bolo o Paulo comeu.
      #Um bolo comeu o Paulo.
      *#O Paulo um bolo comeu.

In the remainder of this chapter, I will not pay close attention to this context of sentence-focus. I will return to it on chapter 4 and 6, since by then the necessary tools will be in place to analyze it.

### 2.3.1.2. Indefinite subjects

SVO order is acceptable with indefinite subjects if they are not new information, as the following context shows:17

(73) A: Estão imensos animais neste parque: cães, gatos, galinhas.
   *There are a lot of animals in this park: dogs, cats, chickens*
   B: **Olha: um cão mordeu uma criança.**
      *Look: a dog bit a child*
      #Mordeu um cão uma criança,
      #Mordeu uma criança um cão
      #?Uma criança um cão mordeu.
      #Uma criança, mordeu um cão.

If the indefinite subject represents new information, the SVO order is not felicitous:

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17 I will skip the discussion of objects, since the results would be the same for definite subjects.
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(74) A: O que é que mordeu o Paulo?
   'what bit Paulo'
B: #Uma cobra mordeu o Paulo,
   'a snake bit Paulo'

The results are not different from what was obtained with definite subjects. The comparatively greater awkwardness of preverbal indefinite subjects must be due to the fact that it is more difficult for an indefinite to carry accessible information (i.e. it is more difficult for an indefinite to function as topic). The context in (73) is one of the contexts discussed for instance in Büring (1995), in which it is legitimate for an indefinite to be a topic: the indefinite is used to express a subpart of a given referent.

The conclusion from the paradigms above is that preverbal subjects must constitute old/accessible information in the discourse. The only case in which that does not happen is the case of sentence focus, in which the subject is new information, but it nevertheless appears in preverbal position. As mentioned above, that case will not be discussed in this chapter.

2.3.2. Contexts for Subject in Spec, VP

Let us now turn to the contexts in which a postverbal subject is felicitous. I will not distinguish between definite and indefinite subjects in this section, since as it was shown above there is no difference in acceptability between sentences with either type of subject in postverbal context.

VSO order is felicitous when both subject and object are new in the discourse:

(75) A: Ninguém sabe línguas neste grupo.
   'No-one in this group knows any language.'
B: Sabe o Paulo francês,
   'knows Paulo French'
   #O Paulo sabe francês. 18

18It should be noted that SVO order in this context is marginally acceptable if it is shared knowledge that Paulo is a member of the group. In that case, Paulo is not new in the discourse in the sense referred to above, since it constitutes a subpart of a given
The sentence (75) contrasts with (76) below. In (76), only the subject constitutes new information. In that case, the only felicitous orders are VOS or OVS, derived by object left-dislocation, which is not surprising, since the object is old information:

(76) A: Ninguém sabe francês neste grupo.
    ‘No-one in this group knows French.’

B: Sabe o Paulo francês.
    ‘knows Paulo French’
    O Paulo sabe francês.
    Francês, o Paulo sabe.
    Sabe francês o Paulo (não sabe?).
    Francês sabe o Paulo.

It should be noted that the most felicitous answer to (76A) is one without the object (77). That follows from whatever principle determining that answers are non-redundant.

(77) Sabe o Paulo.
    Knows Paulo

However, it should be noted that in spite of the greater naturalness of (77), the VOS word order in (76) is also possible.

From the examples above, it seems to be the case that for a post-verbal subject to be possible, it must constitute new information.

2.3.3. Conclusions

The contexts described above permit drawing the following conclusions:

1- Preverbal definite subjects are old information

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19 referent, fitting in Büring's definition of topic.

10 Ignoring sentence-focus.
2- Preverbal indefinite subjects are old information.
3- Postverbal subjects must be new information: if they precede the object, the object is also new information. If the object is not new information, the subject follows it.

The main conclusion of this section is that the word order variation identified in the first part of this chapter is not free. Each order reflects a different discourse function. Very similar conclusions were reached for Italian by Pinto (1994) (see also Adger 1995). The nature of the relation between the discourse information and the positions identified in the preceding sections still remains to be explained. That is, I have identified structural positions and identified a felicitous context for each of these positions. As yet, there is still no explanation as to why specific contexts correlated with specific positions. In the next section, I hope to show how these two aspects can be combined.

2.4. Word Order and Discourse in European Portuguese.

2.4.1. The mapping between Syntax and Discourse.

Combining the conclusions reached in 2.3 and 2.4.3, the following descriptive generalizations are obtained:

1- Spec,VP is a position for subjects introducing new information;
2- Spec,IP is a position for subjects yielding old information, but not necessarily topics;

The question I intend to answer in this section is the following: why should these relations between positions and discourse information exist? What does each of the identified syntactic positions have to do with the correspondent discourse function?
Throughout this section I will be assuming the following:20

a) Old information has to be either topicalized or defocused, while new information is the Focus of a sentence;

b) I will follow proposals concerning the correlation between syntax and

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20 As I already referred, these assumptions will be further motivated in chapter 4.
phonological sentence stress which suggest that sentential stress falls on the rightmost constituent of a sentence.\textsuperscript{21} Thus, in a normal SVO sequence, stress will fall on the object. Assuming with Jackendoff (1972) that the focused element in a sentence is the one which bears the most prominent stress, the proposals above capture the fact that in an SVO sentence with unmarked intonation the object is interpreted as the focus (cf. Lambrecht 1994 who shows that objects tend to be focus).

Still concerning focus, I will follow Reinhart’s (1995) suggestion that XPs may be marked as foci with a heavy stress. This happens to any XP that does not get default stress by virtue of not being rightmost.

c) I will assume with Zubizarreta (1995) and Reinhart (1995) that some syntactic operations are prosodically motivated.

d) I will assume that the following tendencies hold, as observed by Lambrecht (1994): subjects tend to be topics; objects tend to be foci; definites tend to be old information (topic); indefinites tend to be new information (focus). It is important to emphasize that these are just tendencies and not absolute statements. Optimally, it would be possible to derive these tendencies from some structural property of subjects, objects, definites and indefinites.\textsuperscript{22}

Let us now come back to the issue under investigation in this chapter and see how these assumptions derive the facts described in the previous sections. From the line of inquiry I am pursuing, it is obvious that some new facts have to be added to the paradigms described. More specifically, since the notion of focus is crucial, and I am assuming with Nespor and Vogel (1986), Cinque (1993), Zubizarreta (1995) and Reinhart (1995) that focus is a prosodic phenomenon,\textsuperscript{23} it now becomes important to see how

\textsuperscript{21} See Nespor and Vogel 1986, among others. For a formulation in terms of embedding, see Cinque’s (1993) proposal that sentential stress falls in the most embedded constituent of a sentence and Nash’s 1995 reformulation of Cinque’s algorithm.

\textsuperscript{22} This is actually done for the case of the tendency of objects to be foci. Since objects are normally the rightmost constituents of the sentence, they will bear the default sentence stress. This way, they are the most prominent element in the sentence, being interpreted as focus. For the relation between definiteness and information status, see Heim (1982). For the relation between topichood and subjecthood, see Li (1976).

\textsuperscript{23} See arguments in favor of interpreting focus as a prosodic phenomenon in EP in Frota 1992, and in chapter 4.
subjects behave with respect to intonation in each of the positions identified above.

2.4.2. Position and intonation

2.4.2.1. In VSO and VOS order

In VSO order, all subjects have to bear heavy stress (I will use capital letters to mark heavy stress, the starred sentences in the examples below are ungrammatical without heavy stress):

(78) a) Comeu O PAULO maçãs.
    'ate Paulo apples'
 b) Comeram MENINOS maçãs.
    'ate children apples'
 c) *Comeu o Paulo maçãs.
 d) *Comeram meninos maçãs.

In VOS context there are two possibilities: the subject may receive just the default sentential stress (79a) or bear heavy stress (79b)24:

(79) a) Comeu a sopa o Paulo
    'ate the soup Paulo'
 b) Comeu a sopa O PAULO

These two possibilities hold more easily for definites than for indefinites, as the following contrast illustrates:

(80) a) Comeu a sopa um menino.
    'ate the soup a child'
 b) *Comeu a sopa UM MENINO.

Interestingly, it is possible to establish a difference between the (a) cases and the (b) cases. The interaction with tags below shows that heavy stress is impossible when the subject precedes a tag being in Spec,VP position, while it is optional after the tag (81c,d).

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24I am grateful to Sónia Frota for pointing out the latter possibility to me.
(81) a. Comeu a sopa o Paulo, não comeu?
   'ate the soup Paulo, not ate?'
b. *Comeu a sopa O PAULO, não comeu?
c. Comeu a sopa, não comeu?, o Paulo.
d. Comeu a sopa, não comeu?, O PAULO

Thus, the generalization to be drawn for VOS context seems to be that heavy stress is impossible when the subject is in Spec,VP. If it is in the 'right-dislocated' position, it is optionally possible. Since right-dislocation of indefinites is independently excluded, it makes sense that heavy stress on an indefinite subject in VOS order be marked.\(^{23}\)

(82) a. ??*Comeu a sopa, não comeu?, um menino.
b. ??*Comeu a sopa, não comeu?, UM MENINO.

2.4.2.2. In SVO order

Looking at the intonation effects in SVO order will turn out to be more revealing than one might suppose. At first sight, SVO involves nothing really surprising: both indefinites and definites may optionally bear heavy stress:

(83) a. O PAULO comeu maçãs.
   'Paulo ate apples'
b. O Paulo comeu maçãs.
c. UM MENINO comeu maçãs.
   'a child ate apples'
d. Um menino comeu maçãs.

\(^{23}\) The exclusion of indefinites in right-dislocated position may be related to the discourse function of this position, similarly to the principle excluding indefinites in preverbal position. Although I have not investigated the discourse function of right-dislocated elements in European Portuguese carefully, it would not be surprising if this position were reserved for background information, as it is the case in languages like Turkish (Erguvanlı 1976), and Catalan (Vallduví 1990). If this hypothesis proves true, the definiteness requirement is straightforwardly explained: background information is definite because it is given. I will not explore this hypothesis here, because I am concentrating on intra-sentential material.
Chapter 3

The surprising results arise when applying the methodology used in VOS cases, reviewing the tests applied to indefinite subjects, and checking whether the different intonational patterns correspond to the same position identified above. Recall that the data involving indefinite subjects were quite unclear: indefinite subjects appeared very ‘A-bar-like’ in preverbal position, although the judgements were not very clear. This led me to propose that the peculiar nature of the data had to do with the use of an indefinite in a position which should be associated with topic elements (given information). Surprisingly, if an indefinite subject is heavily stressed, it behaves much more clearly as if it were in an A-position. This can be illustrated by the familiar Binding effects, A-bar minimality properties and the absence of left dislocated behavior, as shown below:

a) Binding effects:

When the preverbal indefinite subject is stressed it binds more easily the possessive anaphor contained in the direct object:

(84) [??Uma criança/UMA CRIANÇA] gosta da sua mãe.
‘a child likes possessive mother’

b) A-bar minimality effects:

As with other types of indefinites, A-bar extraction across a preverbal indefinite subject is easier if the subject is stressed:

(85) Com quem é que {umas crianças/UMAS CRIANÇAS} falaram?
‘with whom some children talked’

c) Complementary distribution with other left-dislocated elements:

The complementary distribution between topicalized elements and preverbal indefinite subjects ceases to exist, as is also the case with preverbal definite subjects:

(86) A sopa, {um cão/UM CÃO} comeu.
‘the soup a dog ate’

Also, in this case, the lack of order between indefinite subjects and left-
dislocated elements disappears:

(87) a  ?A sopa, um cão comeu.  (multiple topic reading)
    ‘the soup a dog ate’
 b  ?Um cão, a sopa comeu.
 c  A sopa, UM CÃO comeu.
 d  *UM CÃO, a sopa, comeu.

Summing up, it seems thus that whenever a preverbal indefinite subject is
heavily stressed it behaves as a definite subject. I think this contrast may
be used as an additional argument against the proposal made in Costa
(1997c) that preverbal indefinite subjects are left-dislocated. The
argument goes as follows: Frota (1994) has argued that independently of
the word order variations that may be used in European Portuguese to
express different information structures, it is also possible to use stress
alone to mark focus in unchanged SVO structures. Although the type of
focus she concentrates on is quite different from the information focus
under investigation here, I would like to draw on her conclusion for an
interpretation of the facts above. First, note that heavy stress on an
indefinite subject is not a felicitous answer to a wh-question:

(88) A:  Quem comeu a sopa?
    Who ate the soup.
 B:  #UM CÃO comeu a sopa.

This suggests that indeed a strategy of prosodic marking of the type
described in Frota (1994) is used here. If that is true, then it may be
assumed that, in this case, no crucial difference occurs with respect to the
normal syntactic representation. That is, a heavy stress is assigned to a
subject in its normal position (Spec,IP). Compare now the two
hypotheses considered here for the structural representation of preverbal
indefinite subjects. If Costa (1997c) were right, one would need some
principle explaining why and how stress may transform an A-bar position
into an A-position. If the alternative hypothesis advanced here is right,
that the oddness of the sentences follows from the fact that we are using
an indefinite as a topic, the cases in which heavy stress is involved make
more sense: preverbal indefinite subjects are marked because this position
is associated with topics (except in the case of sentence-focus); however,
prosodic marking may mark (contrastive) foci in the canonical SVO
order, in accordance with Frota’s findings. If a preverbal indefinite
subject is marked as a contrastive focus, it will not be a topic, and hence the oddness of this word order will be lifted. This is exactly what was observed.

The data in which preverbal indefinite subjects are prosodically marked thus provide further evidence in favor of an explanation of the distribution of indefinite subjects which refers to their informational potential rather than a purely syntactic account. Prosodic markedness of the type described in Frota (1994) may now be used as a test for lifting topicalhood, and neutralizing the effects observed above in the study of indefinite subjects.

2.4.3. Topic, focus, markedness and syntax

At this point of the analysis, the data showing the position, function and intonation of subjects in all contexts have been gathered. It is now possible to start formulating an analysis capable of explaining this variation.

Before presenting the analysis, let us review the position of each type of subjects and respective intonation and function, integrating the data just found:

Spec,IP:
Definite subjects - old or new information\(^{26}\) - heavy or normal stress
Indefinite subjects - old or new information\(^{27}\) - heavy or normal stress

Spec,VP:
Definite subjects - new information - heavy stress (VSO)
normal stress (VOS)

I
Indefinite subjects - new information - heavy stress (VSO)
normal stress (VOS)

I have not discussed in detail that SVO is the unmarked word order in Portuguese, a fact noted in Ambar (1992), Duarte (1987),

\(^{26}\) Subjects in Spec,IP are only new information in contexts of sentence-focus. See the discussion above, and an analysis of these facts in chapter 6.

\(^{27}\) Bearing in mind that the use of indefinites as markers of old information is highly marked.
Martins (1994), Mateus et alii (1989), among others. Any analysis of the subject positions discussed above has to be able to explain the contrasts in markedness between the several types of positions. If all discourse tests (e.g., answer to ‘what-happened?’) show that SVO is the unmarked case, the other positions for subjects must be treated as marked constructions. Therefore analysis of these sentences in terms of markedness is needed.

At this point, it is necessary to explain what I mean by markedness. At this stage, I am not taking any theoretical stand regarding the technical implementation of a theory of markedness. The crucial aspect here is that there is a (canonical) word order that is unmarked with respect to a specific context: SVO. The main difference between this word order and the other word orders is the discourse function they serve. Naturally, one would like to know why SVO is the unmarked one. This question will be answered in chapter 6. Before we can answer that, we need to answer the following questions:

a) When is a marked word order required?
b) How do markedness operations work?
c) Is there a theoretical way of codifying the difference between marked and unmarked constructions?

The first question deals with the problem of how the model to be designed works. That is, how do we know whether a sequence of words will be marked or not? Is it a random operation or is it determined by considerations of any sort? In other words, what triggers markedness?

The second question has to do with the nature of the markedness operations themselves. From the discussion above, it is by now obvious that focalization is a marked operation. This is sufficient from a descriptive point of view, but it is still unexplained how focalization works, and to what extent processes of focalization are language-specific or universal. The same holds for other marked operations.

The third question is more theoretical: is there a theory enabling to establish the difference between marked and unmarked constructions, or must this difference be stipulated? That is, why is SVO more unmarked than VSO in Portuguese from a theoretical point of view?

In the remaining of this section, I will only answer the first
question. The mechanics of the markedness operations will be touched on here, but only developed in more detail in the next two chapters. The theoretical status of markedness will be dealt with in chapter 6.

The hypothesis I want to explore to determine when markedness is required is the following:

(89) Markedness (either prosodic or syntactic) comes about every time there is a contradiction of any of the tendencies below:
   a. Subjects tend to be topics;
   b. Objects tend to be foci;
   c. Definites tend to be topics;
   d. Indefinites tend to be foci.

Let us assume that operations such as topicalization or focalization are operations that yield marked structures (see Reinhart 1995). This assumption is not unnatural, since in cases that are neutral with respect to topic and focus (sentence-focus) and correspond to the unmarked word order, such operations are not required.

A corollary of the idea of markedness is that there must be unmarked counterparts. I claim that the tendencies in (89) represent the unmarked cases. Discourse factors may intervene forcing a speaker to violate the tendencies above. Note that these tendencies are certainly derivable from other notions (e.g. as noted above, the tendency for object to be focus follows from Nespor and Vogel’s (1986) algorithm for default sentence stress assignment). I will not investigate the source of these tendencies, but I will assume them, since they correspond to factual evidence (see Lambrecht 1994). Let us now see how this proposal account for the possible subject positions and respective function.

According to (89), an unmarked subject will be a subject which is both a topic and definite. In that case, no markedness is required, such a subject can stay in the canonical subject position without requiring neither a special intonation nor movement to any other position, nor being stranded in a position lower than its case-licensing position. This is indeed what we found for preverbal definite subjects.

If a subject is a topic, but it is indefinite, there is a clash in the tendencies above. On the one hand, it has topic properties, on the other hand it should be a focus because it is indefinite. In this case, markedness is required: if the subject simply stays in Spec,IP, the sentence is marginal. One solution is to assign it topic properties, capturing the similarity between preverbal indefinite subjects and topocalized objects.
which by default ought to be interpreted as focus must move to a topic position, if by discourse reasons, one wants it to be interpreted as topic). The other solution is to mark it with a special intonation.\(^{29}\) It remains to be explained whether the topic-like behavior of indefinite subjects is to be explained on a par with other types of syntactically marked topicalization.

These two possibilities exhaust the options for subjects to be topics.

What happens when subjects are forced to be foci by discourse reasons? Every time this happens, independently of their definiteness, they will have to be marked, since (89a) is violated. According to Frota (1992), who presents several arguments against a focus projection (defended by Uriagereka (1995) among others for languages like Portuguese), focus marking in EP is a prosodic process. I will assume that this is true, and claim, oversimplifying matters to be discussed in greater detail in the next chapter, that focus stress may be assigned by two mechanisms. Either the rightmost constituent bears the default sentence stress (Nespov and Vogel 1986, Cinque 1993, Nash 1995), or a prominent stress is assigned to the focus constituent (Jackendoff 1972, Büring 1995, Truckenbrodt 1995, Reinhart 1995, a.o). The latter takes place when the focused constituent is not in a position where the default sentence stress may reach it.

Let us now see how these two mechanisms account for the data described above. The first contrast that follows is the fact that subjects in VOS order do not need to bear a heavy stress. Since the object scrambles across the subject, as will be shown in more detail in section 3, the latter will be in the rightmost position and receive the default sentence stress (see also Nash 1995 for a proposal in which prosodic markedness and configurational stress assignment are in complementary distribution). In all the other cases (SVO and VSO) the subject is not in the most embedded position, hence it will have to be marked with a heavy stress.

One remaining question is why focused subjects may appear in all orders, differently from topics, which only appear in SVO order. I am assuming, in accordance with Reinhart, that topicalization is a syntactic phenomenon, hence marked topics will have to be licensed in a specific syntactic position, explaining their strict distribution.\(^{30}\)

\(^{29}\) Duarte (1987) and Frota (in preparation) present several examples of topicalization constructions with a special intonation.

\(^{30}\) Note that when I say that topics must be licensed in a specific syntactic position, I do not endorse a view claiming that topics must be licensed always in the specifier
In EP, focalization is a prosodic phenomenon, hence the distribution of focused constituents is freer. This does not mean however that generating a focus subject in Spec,IP or in Spec,VP is an open option. I would like to suggest that the choice for either representation is determined by the focus-set of constituents (Reinhart 1995) one wants to build. Reinhart proposes that when focalization applies, a focus set is established, which is defined as the most prominent constituent and all the constituents it dominates. That is, in (90a) the focus set would be \{ZP, XP, YP\}, while in (90b) the focus set would be \{XP, YP\}:

\[
\begin{align*}
(90) & a & [[ZP]F [XP [YP]]] \\
& b & [ZP [[XP]F [YP]]]
\end{align*}
\]

This formulation captures the fact that focused subjects may appear in Spec,IP, or Spec,VP. The choice between these two positions will depend on the focus set the speaker intends to construct. The following tests show that this is indeed the case: in (91) the whole sentence is focused, so the only position where the subject may appear focused is in Spec,IP, since this is the only position where it will dominate all the other constituents of the sentence. (91b’) is infelicitous, because it presupposes that it already known that someone threw something somewhere. In (92), the subject has to be in Spec,VP, because the question implies that we already know that someone yelled, hence the verb must not be a member of the focus set of constituents.

\[
\begin{align*}
(91) & A: & O que é que aconteceu? \\
& & \text{‘what happened?’} \\
& B: & \text{UM MIUDO atirou a sopa ao chão.} \\
& & \text{‘a kid threw the soup to the floor’} \\
& B’: & \# \text{Atirou um miúdo a sopa ao chão.}
\end{align*}
\]

\[
\begin{align*}
(92) & A: & \text{Quem é que gritou?} \\
& & \text{‘who yelled’}
\end{align*}
\]

position of a designated functional projection. It is possible to assume that topics are defined in terms of relative position with respect to the other elements of the sentence, as it proposed in Givón (1990), among others. In the latter type of approach, we still have a syntactic explanation for topicalization, and we are able to explain that Spec,IP, being the first position in a sentence, may be sufficient to license the topichood of subjects that independently need to land there for case-licensing purposes.
B:  Gritaram três ladrões.
    'yelled three thieves'
B': #Três ladrões gritaram.

Summing up, it can be shown that although focus marking is indeed prosodic, this does not mean that stress may be assigned to subjects generated in any position.

2.5. Subject positions: conclusions

In this section I have shown that the distribution of subjects in Portuguese is not free, but determined by the need of marking them with respect to information structure: subjects expressing old information do not need to be marked, and may therefore appear in the canonical Spec,IP position. Subjects expressing new information, focused subjects, must be marked with a heavy stress, since this is the general mechanism for marking focus in European Portuguese. This may cause them to surface in Spec,VP, if the verb is to be excluded from the focus set of constituents to be established in the sentence.

In the next section, I will show that the conclusions reached for subjects are also productive for describing the distribution of objects. More concretely, I will justify the assumption made throughout section 2 that objects in VOS word order are scrambled to the left of the subject. It will be seen that the reasons underlying variation in the distribution of objects are parallel to those underlying variation in the distribution of the subjects. Such parallelism will reinforce the strength of the results reached here.

3. Object positions: Scrambling in European Portuguese

In the preceding section, I have assumed without providing arguments that Portuguese VOS orders involve object scrambling across the subject.

In this section, I will motivate that assumption, arguing that it is possible to identify similarities between scrambling in European Portuguese and the well-known scrambling configurations in Dutch and German. In order to achieve this goal, I will first show some properties of scrambling in Dutch and German (section 3.1.) This section will
establish the grounds for comparison between Portuguese and Dutch/German, and determine how to trace scrambling in a VO language. Section 3.2. will show what the difference between Portuguese and English nominal objects is that makes scrambling impossible in the latter language. The hypothesis to be outlined is that scrambling is adjunction to VP and that what makes the scrambling configuration impossible in English is the obligatoriness of Object-Shift in this language. This hypothesis will be extended to some other languages. Section 3.3 reviews three of the theories of scrambling: case-driven movement (Zwart 1993 among others), semantically-driven movement (Diesing and Jelinek 1995) and prosodically-driven movement (Reinhart 1995, Zubizarreta 1995), showing that the Portuguese data provide evidence in favor of the latter. In the last section, some problems concerning the behavior of complements in other object-shift languages will be considered.

The results of this section will be advantageous in two ways: first, it will provide further evidence that discourse and prosody are triggers for variation within one language. Second, it will enable us to challenge the view advocated in Webelhuth (1989) and Neeleman and Reinhart (1996) that scrambling is a property of OV languages only.

Showing that there is scrambling in Portuguese will also add one more language to the group of languages in which this phenomenon is visible, which makes it possible to broaden the empirical coverage of the very debated issue of what the exact nature of scrambling is.

3.1. Scrambling in European Portuguese

3.1.1. Properties of Dutch/German scrambling

Scrambling was first discussed by Ross (1967) to refer to the syntactic process that permits breaking the adjacency complement-verb by insertion of an adjunct. The scrambled variant of (93a) is (93b):

(93)  a. Adverb Object Verb  No scrambling
     b. Object Adverb Verb  Scrambling

In this section I will illustrate some of the properties of scrambling in German and Dutch, just to establish a basis for comparison between these languages and European Portuguese. I will sometimes use the term
movement for scrambling, but this does not yet mean that I am adopting a specific theory of scrambling. At this stage, I will remain neutral with respect to the correct analysis of scrambling (movement or base-generation of the complement in the scrambled position). The properties that will be considered are the following:

a) Scrambling moves NPs and PPs$^3$:

(94) Dutch:
   a) dat Jan in Amsterdam zijn vriendin ontmoet.
      that Jan in Amsterdam his girlfriend meets
   b) dat Jan zijn vriendin in Amsterdam ontmoet.
      that Jan his girlfriend in A’dam meets

(95) a) dat Jan in A’dam op zijn vriend wacht.
      that Jan in Amsterdam for his friend waits
   b) %dat Jan op zijn vriend in Amsterdam wacht.
      that Jan for his friend in Amsterdam waits

b) Differently from the categories in (94) and (95), predicative APs and Small Clauses cannot be moved, as (96) and (97) show:

(96) *dat Jan Marie aardig altijd vindt.
      that Jan Marie always nice finds

(97) *dat Jan ziek altijd is.
      that Jan sick always is

c) Another property of scrambling noted by Bennis and Hockstra (1984) is that it licenses parasitic gaps:

(98) a. Jan heeft die boeken zonder te lezen weggelegd.
      Jan has these books without read put away

$^3$Speakers of Dutch disagree with respect to the possibility of scrambling PPs. There seems to be some variability with respect to the adverbs that intervene between the PP and the verb. That is why the sentences with PP-scrambling are marked with the percentage sign. I keep these examples in the text, since they are fully acceptable for some speakers, but I am aware that a more precise collection of data is in order. Thanks to Martin Honcoop, Ruben van de Vijver and Marga Petter for pointing this problem out to me.
b. *Jan heeft zonder te lezen die boeken weggelegd.
   Jan has without read these books put away

With respect to this property, it is important to note that some authors do not consider these facts conclusive for determining the type of movement involved in scrambling (see e.g. de Hoop 1992, Zwart 1993, Neeleman 1994, among others), either because there are constructions in which subjects of passives license parasitic gaps (cf. de Hoop 1992) or because parasitic gaps are marginal in Dutch or because there are cases in which parasitic gaps appear to be licensed by a constituent in an A-position (other than subjects of passives) (cf. (99) from Weibelhuth 1989).

The problem with (99), which exemplifies what came to be known as Weibelhuth’s paradox, is that the QP jeden/everyone is in a position where it both licenses the parasitic gap and A-binds a pronoun (contained in the same clause that contains the parasitic gap). Note that the fact that the parasitic gap and the pronoun are in the same clause is really paradoxical, and cannot be solved by means of two-step movement, as proposed in Vanden Wyngaard (1989) and Mahajan (1990).

(99) German (Weibelhuth’ paradox):
   weil Maria jeden, ohne 
   because Maria everyone without to-
   vorgestellt hat
   introduced has
   ‘because Maria introduced everyone to his neighbor without 
   looking at him’

Here, I will take the opposite approach to this problem, ignoring the A-binding facts. For a solution for this problem I refer the reader to Lee and Santorini 1994. One of the reasons for this option is that there is not a clear description of what the WCO and WCO repair facts are, and, moreover, pure A-positions (meaning absolute subjects and not subjects derived form object positions never license parasitic gaps as (100) illustrates (see also Diesing 1995, Vikner 1994 and Bobaljik 1995 for similar ideas).

(100) *Jan heeft zonder eg te zien het boek gelezen.
   Jan has without to see the book read

I emphasize, though, that this is a purely methodological option, due to
the unclarity of binding as a diagnostic. It is very likely that whenever there is a clear description of the facts, the methodology will have to be reviewed.

d) Though this property is not available in Dutch, but only acceptable in German, it has been observed that scrambling may move an object across a subject:

(101) German:
    weil den Patienten der Arzt besucht hat,
    because the patient-ACC the doctor-NOM visited has
    'because the doctor visited the patient'

    Another well-known property of Dutch and German scrambling are the semantic/pragmatic requirements of this operation (the scrambled constituent has to be specific or non-novel, cf. de Hoop 1992, Diesing 1995 among others).

    Having described some of the properties of Dutch and German scrambling, let me now move to a description of the Portuguese data and check out the similarities with Germanic scrambling.

3.1.2. How to trace scrambling in a language with V-to-I movement?

The problem with identifying scrambling in Portuguese is that this language has V-to-I movement, which makes it difficult to identify the position of the object. Since the verb is not in VP anymore, the position of the object is ambiguous between its base position or the scrambled position. That is, an SVO sentence may be analyzed as either (102a) without scrambling, (102b) with the object adjoined to VP, or (102c) with the object moved to Spec,AgrOP:

(102) a. \[\text{S} \{ \text{V} \{ \text{VP} \{ t_v \} \} \} \]
    b. \[\text{S} \{ \text{V} \{ \text{VP} \{ t_v t_o \} \} \} \]
    c. \[\text{S} \{ \text{V} \{ \text{AgrOP} \{ t_v t_o \} \} \} \]

    I would like to argue that an extension of the results of chapter 2 will shed some light on deciding for one analysis. I will claim, once again, that
given their properties monosyllabic adverbs provide a good test to check whether the object is inside or outside VP.

3.1.2.1. Monosyllabic adverbs in Portuguese

In chapter 2, I have argued, based on English facts, that monosyllabic adverbs are a good diagnostic for marking the left-edge of VP. The properties that make them a reliable test are summarized below:

a) Their distribution is very restricted (cf. 103a)
b) In English, they never surface preverbally (cf. 103c)
c) They obligatorily follow NPs and precede PPs (103b-e) (for the adverb to follow a PP it has to be heavily stressed)
d) The PP that follows them is not extraposed as the extraction tests in (103f,g) testify.

(103) a. John (*hard) has (*hard) been (*hard) looking (hard) at those pictures (*hard).
b. John speaks French well.
c. *John well speaks French.
d. John looks hard at those pictures.
e. *John looks at those pictures hard.
f. Which painter did John look hard at the pictures of?
g. *Which painter did John look yesterday at the pictures of?

In the preceding chapter, the English pattern was analyzed by assuming, following Pesetsky (1989) and Johnson (1990), that both verbs and nominal objects move out of the VP overtly: NPs move to Spec,AggrOP and the verb to the first functional projection immediately above AggrOP. The sequence PP-Adv is bad because these adverbs do not right-adjoint to VP and because differently from nominal complements, PPs do not need to move to license Case.

The behavior of these adverbs is not an idiosyncrasy of English. As already mentioned in the discussion of subject positions, the same basic generalizations hold for Portuguese: a paradigm almost equivalent to (103) may be built for this language:

(104) a. O Paulo fala francês bem.
Paulo speaks French well
b. *O Paulo bem fala francês.
   Paulo well speaks French
c. O Paulo olha bem para aqueles quadros.
   Paulo looks well at those pictures
d. *O Paulo olha para aqueles quadros bem.
   Paulo looks at those pictures well
e. O Paulo olha para aqueles quadros BEM.
   Paulo looks at those pictures well
f. De que pintor é que o Paulo olha bem para os quadros?
   of which painter CLEFT Paulo looks well at the pictures

A difference between English and Portuguese is that in the latter the order V-Adv-NP is also possible:

(105) O Paulo fala bem francês.
   Paulo speaks well French

This order is impossible in English:

(106) *Paul speaks well French.

The fact that the nominal complement may either precede or follow the adverb that marks the left edge of the VP is quite similar to the distributional pattern of nominal complements in scrambling languages: in Dutch and German, the objects may appear either to the left or to the right of a VP-adjunct. The only difference is that these languages are V-final, hence the adjacency between complement and verb is visible in the case of non-scrambling. In a language with V-to-I movement, there is only adjacency if there is no other adjunct in between the inflected verb and the object, as in (107):

(107) O Paulo fala sempre francês bem.
   Paulo speaks always French well

At first sight, it thus seems that monosyllabic adverbs may be taken as markers of the left edge of VP in Portuguese as well. The interaction between these adverbs and the distribution of objects shows that they can be both in their base position and in a scrambled position in Portuguese.


3.1.2.2. The behavior of Subjects

In section 2, I have argued that subjects may stay in Spec,VP in Portuguese. This led us too an analysis of VSO in which the subject is in Spec,VP. If these results are correct, one may take postverbal subjects as another marker of the left-edge of VP, and take it, together with monosyllabic adverbs as a diagnostic for the position of the complements. The two possibilities are given in (108): in (108) the object is VP-internal, while in (108b) the object is VP-external:

(108) a. Tinha comida o Paulo a sopa.
    had eaten Paulo the soup
b. Tinha comida a sopa o Paulo.
    had eaten the soup Paulo

I will from now on take these two tests seriously, and propose that when the object precedes either the subject or a monosyllabic adverb, it has been scrambled out of the VP.

3.1.3. Scrambling in EP:

Having established two tests to identify the structural position of the complements, let me now go through the properties identified for scrambling in Germanic, and see the similarities between scrambled objects in the latter and pre-adverbial or pre-subject objects in Portuguese.


The first property of the XP-Adv order in European Portuguese I want to consider is the novelty effects also observed in Dutch/German scrambling. Checking for felicitous answers for questions, we see that in the answer to (109aA) a new language is introduced in the discourse, and the order of the constituents has to be Adv-NP. On the contrary, if the answer does not introduce any new referent or focuses on the adverb, the
NP that is repeated from the question has to be scrambled, as (109b)

shows.

(109) a. A: Há alguém aqui que fale bem francês ou inglês?
Is there anyone here who speaks French or English well?
B: #Não, mas o Paulo fala alemão bem.
No, but Paulo speaks German well
B': Não, mas o Paulo fala bem alemão.

b. A: Há alguém aqui que fale bem francês ou inglês?
Is there anyone here who speaks French or English (well)?
B: O Paulo fala francês bem.
the Paulo speaks French well
B': #O Paulo fala bem francês.

This behavior is similar to Dutch, where the elements that are new information appear rightmost (as in 109). The only difference is that rightmost in Dutch includes being to the left of the verb:

(110) Dutch:
a. A: Wanneer heeft Jan Marie gekust?
When has Jan Marie kissed
B: Jan heeft Marie gisteren gekust.
Jan has Maries yesterday kissed.
B': #Jan heeft gisteren Marie gekust.

b. A: Wie heeft Jan gisteren gekust?
Who has Jan yesterday kissed
B: Jan heeft gisteren Marie gekust.
Jan has yesterday Marie kissed
B': #Jan heeft Marie gisteren gekust.

3.1.3.2. Parasitic Gap licensing.

Another similarity between European Portuguese on the one hand and Dutch and German on the other has to do with the fact that scrambling licenses parasitic gaps. Prima facie, this appears to be hard to
test, since we know independently that null objects exist in Portuguese (see Raposo 1986). However, Bianchi & Figueiredo (1993) and Menuzzi (1994) have shown that null objects (of the type treated in Raposo’s work) can only occur if the antecedent is inanimate. This is exemplified in (111) and (112) below:

(111) (from Menuzzi 1994):
(Talking of [the car we have just seen]):
   a. O José conhece [NP a mulher [CP que comprou o]]
      José knows the woman who bought (it)
   b. O José [VP ficou nervoso] [CP porque a Maria comprou o]
      José got nervous because Maria bought (it).

(112) (talking of [Paulo]):
   a. *O José conhece [NP a mulher [CP que beijou o]]
      José knows the woman who kissed (him)
   b. *O José [VP ficou nervoso] [CP porque a Maria beijou o]
      José got nervous because Maria kissed (him)

Bianchi and Figueiredo (1993) and Menuzzi (1994) conclude from the sensitivity to islands in (112) that only in these cases is operator movement involved. They disagree with respect to the proper characterization of the empty category in (111), but what is relevant for the current discussion is that this difference allows to differentiate between null objects and gaps left by movement.

A parasitic gap has to be involved when an animate antecedent is used, since null objects may not be animate. This is what the examples above show. Accepting this, it is now possible to test for parasitic gap licensing, excluding the possibility of being misled by results involving a null object construction. If scrambling in Portuguese is like in Germanic, it is expected that an object be able to license the parasitic gap from the scrambled position, but not from the base-position. Indeed, there is a difference (though not very sharp) between the base position of the NP (113a) and the scrambled position (113b).

(113) a. *O Paulo conhece bem a Maria mesmo sem nunca ter visto.
Paulo knows well Maria even without have seen

   b. O Paulo conhece a Maria bem mesmo sem nunca ter visto.
Paulo knows Maria well even without have seen
3.1.3.3. Predicative APs and Small Clauses do not scramble.

Like in German and Dutch, Small Clauses and predicative APs do not scramble. This is shown in (114) and (115) below:

(114) a. O Paulo acha sempre a Maria simpática.
    Paulo finds always Maria friendly
b. *O Paulo acha a Maria simpática sempre.

(115) a. O Paulo é sempre muito simpático.
    Paulo is always very nice
b. *O Paulo é muito simpático sempre.
c. O Paulo está constantemente doente.
    Paulo is often ill
d. *O Paulo está doente constantemente.

In (114), it can be seen that a small clause (complement of the verb *acha ‘to find’) may not be scrambled to the left of the adverb, which modifies the matrix verb. In (115), it is shown that a predicative AP may never scramble to the left of an adverb modifying a predicative verb (for completeness, I provided examples with the two aspectual variants of *be in Portuguese: *ser and *estar, to show that this distinction does not yield any difference with respect to scrambling).

3.1.3.4. Scrambling does not feed binding.

Although I have not exemplified this property for Dutch and German (see Déprez 1989, Weibelhuth 1989, Vanden Wyngaerd 1989, Müller and Sternefeld 1994, Corver and Rijmsdijk 1994, among others), in Portuguese scrambling does not feed binding, patterning like other cases of A-bar movement and unlike A-movement. This is exemplified in (116): the sentence (116a) in which the subject contains a possessive anaphor not bound by the QP in object position does not improve if the object is scrambled across the subject.

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32 (114b) is possible if the adverb is modifying the adjective *simpática ‘friendly’. 
(116) a. *Viu o seu pai cada criança.
    saw his father each child
b. *Viu cada criança o seu pai.
    saw each child his father
    ‘His father saw each child’

As mentioned above, I am not taking into account the binding facts, since I do not think that it is possible to establish a parallel with Germanic. I wanted nevertheless to add these data, to show that in Portuguese scrambling an object across a subject does not feed binding.33

Note that (116b) contrasts with (117), where A-movement is involved and the binding relation can be finally established:

(117) Cada criança foi vista pelo seu pai.
    Each child was seen by his father

3.1.4. Conclusion.

From the evidence presented above and the similarities with German and Dutch, I conclude that European Portuguese has scrambling of the Germanic type. Moreover, given its properties, scrambling seems to be A-bar movement, as has been argued for German and Dutch. A potential problem for the claim that scrambling in Dutch and German is A-bar movement,34 comes from Déprez’ (1989) data showing that Floating Quantifiers are licensed in scrambling contexts:

(118) German (from Déprez 1989):
    weil ich diese Bücher einem Kind alle geben wollte
    because I these books a child all to give wanted
    ‘because I wanted to give all these books to a child’

The problem that these data raise for the A-bar movement approach is that apparently FQs can only be licensed in A-movement contexts, and at

33 As in Germanic, the data are more complicated. See chapter 7, where I discuss cases in which scrambling an indirect object PP across a direct object permits establishing binding. I have no explanation for this sensitivity to the grammatical function.
34 Besides all the binding data, WCO effects, and WCO repair that I am deliberately ignoring.
least for English and French this seems to be a very robust generalization.  

(119)  a. The boys seem to have all been arrested.  
   b. *These are the boys that were all arrested.

There is however data from Dutch challenging the universality of Déprez’ generalization. Evidence that it may not hold for all languages comes from the fact that under the appropriate context (D-linked interpretation in the sense of Pesetsky 1987), wh-phrases seem to license floating quantifiers:

(120) Dutch:
   Welke kinderen heb je {allen/allemaal} gisteren gezien?
   which children have you all yesterday seen
   (D-linked interpretation)

The position of the adverb precludes an analysis of this sentence with the FQ licensed by the wh-phrase from the intermediate Spec,AgrOP position, and not from the final landing site Spec,CP. If the FQ would be to the right of the adverb, it could be thought that it was licensed from the trace of the wh-phrase stranded in Spec,AgrOP. Such an analysis does not seem possible, however. The fact that an A-bar chain licenses the FQ in Dutch makes the claim that scrambling has to be A-movement because it licenses FQs untenable.

Further evidence against the claim that FQs are universally licensed by A-chains comes from an Irish English dialect described by McCloskey (1995) which allows wh-elements to license FQs:

(121) Irish English (McCloskey 1995):
   a. What did he get all for Christmas?
   b. Who did you see all when you were in Derry?

The consequences of establishing the existence of scrambling in European Portuguese are the following: First, scrambling may not be seen as an OV phenomenon anymore (as suggested, for instance, in

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38 In chapter 2, I have already adopted the analysis of FQ as adjectives rather than stranded Qs in an A-chain. Nevertheless, whatever analysis is taken, the data showing that these elements only appear in A-chain contexts must be accounted for. See Doetjes (1992, 1997) for discussion.
Furthermore, the lack of scrambling in other VO languages such as English becomes an interesting question. Finally, European Portuguese can be considered another language allowing for the investigation of what the reason for scrambling is. In the next section, an explanation will be offered as to why scrambling does not occur in a language like English.

Apart from these considerations, I have already provided evidence in favor of the analysis proposed in section 2 for Portuguese VOS.

3.2. Absence of scrambling effects in English

In this section, I want to address the problem that the existence of scrambling in European Portuguese raises for other VO languages. The problem is the following: if scrambling is not an OV phenomenon, as suggested by Weibelhuth (1989) and Vikner (1994), why do some VO languages, of which English is an example, lack scrambling? That is, why is it that only the order NP-Adv is found in English:

(122) a. John has read the book carefully.
    b. *John has read carefully the book.

Phrasing the problem more correctly, it appears that only the scrambled order exists in English. This is however surprising, since in Portuguese, Dutch and German, scrambling is not obligatory.

I think the solution for this puzzle lies on the conclusions of the preceding chapter regarding the behavior of nominal objects in English. Recall the behavior of English objects with respect to monosyllabic adverbs repeated in (123):

(123) a. *John well speaks French.
    b. John speaks French well.

These adverbs seem to provide evidence that nominal objects move overtly obligatorily in English. If scrambling is A-bar movement, and can be identified as adjunction to VP, moving the object to Spec,AgrOP will destroy the configuration created by the scrambling operation. If case-movement is obligatory in English (note that, in English, the effects of discourse-conditioned movement to Spec,IP of subjects do not arise,
hence it is not surprising that objects behave uniformly). This is the hypothesis I would like to explore:

English does not have scrambling because objects move overtly to Spec,AgrOP. Since scrambling is adjunction to VP, the obligatory case-driven movement masks what would be the scrambling configuration.

The idea is, therefore, that obligatory movement to a higher position than the landing site of scrambling prevents the visibility of the scrambling configuration. Further evidence that grammatical movement to a higher position is what precludes scrambling in English comes from the following cases, for which the hypothesis outlined above seems to make the right predictions:

a) Korean wh-scrambling:

Korean is a language without overt wh-movement. Given this property, and on a par with what was proposed for Portuguese, Dutch and German, wh-elements are free to scramble in Korean, given the appropriate discourse conditions. This type of movement is possible because the wh-element is not required to move to a higher position in overt syntax.

(124) Cholsu-ka [vP muos-ul] [vP Sunhi-ekc t; chu-oss-nil]?
    Cholsu nom     what acc     Suni dat   gave-Q

38 Though it is not necessary that subjects and objects behave alike, as it will become clear in chapters 5 and 6, which contradict Chomsky’s (1993) initial suggestion that, due to equal feature values for Agr$S$ and Agr$O$, subjects and objects should exhibit a uniform behavior.

37 In the discussion of the motivation for scrambling it will become clear why visibility is an important condition for scrambling. It will be argued that scrambling is a surface phenomenon in nature, which makes it possible to disregard the likelihood of covert scrambling, and to replace the discussion of visibility by availability.

36 Shigeru Miyagawa and Mamoru Saito (p.c.) point out that this reasoning holds for clause-internal wh-scrambling in Japanese as well. The relevant condition seems to be that the scrambled wh-phrase not be the focus of the sentence anymore. Different discourse conditions seem to apply to long-distance wh-scrambling.

35 See Müller and Sternefeld (1993) for a different analysis.
This is similar to what was proposed above. Since there is no obligatory movement to Spec,CP, the wh-element may scramble, adjoining to lower positions.

b) German multiple wh-questions:

Extending the reasoning that explains the possibility of wh-scrambling in Korean to other languages, it is expected that, in multiple wh-questions, the wh-phrase that does not move to Spec,CP overtly is free to scramble. This prediction is indeed borne out, as example (125) from German illustrates:

(125)  a. Wer denkt daβ sie [wen/Hans] gestern besucht hat?
        who_thinks that she who yesterday visited has

  b. ?Wer [wen mit blumen] gestern Hans besucht hat?
        with-what/with flowers

The slight contrast between (125a) and (125b) is due to the (not very strong) contrast independently attested for some speakers of German between scrambling of arguments and scrambling of adjuncts. Independently of the adjunct being a wh-phrase, it will be less good than a sentence without scrambling.40

c) PP-scrambling is possible in English:

In chapter 2, it was noted that, differently from NPs, prepositional complements may either follow or precede the adverbs in English. If the adverb is monosyllabic, there is an additional requirement: for the PP to be able to precede it, the adverb must bear a heavy stress. In chapter 2, I have put the focus on the case of NPs, deriving the in-situ position for PPs from the fact that prepositional complements do not need to license accusative case in Spec,AgrOP. I deliberately left aside the order PP-Adverb, since at the time there were no tools to explain it. I would now like to propose that, differently from NPs, pre-adverbal PPs have been

40 Note that not all speakers feel this contrast (see Müller 1995). Even if (125b) is fully grammatical, the crucial point is that in-situ wh-phrases may scramble.
scrambled to the left of the adverb. The hypothesis outlined above predicts this different behavior: differently from NPs, PPs are not required to move to Spec,AgrOP. Since they are not subject to the obligatory operation that moves NPs to Spec,AgrOP, they may occupy either the base-position or scramble to a higher position, yielding the order PP-Adv as in (126b):41

(126) a. John looked hard at those pictures.
b. John looked at those pictures HARD.

Although the hypothesis formulated above seems to make the right predictions concerning the possibility of obtaining scrambling, it is not clear yet what forces the adverb to be stressed. That is, what is the relation between the possibility of scrambling the PP-complement and the heavy stress on the adverb? The reason is that we identified the position for scrambling and have made a proposal concerning the interaction between this position and further movements without inquiring the nature of the movement itself. This brings us to the discussion of the motivation for scrambling, which will be the subject of the next section.

### 3.3. The motivation for Scrambling.

In recent literature, three proposals have been made to account for the nature of scrambling:

a) Scrambling is A-movement and it is case-driven

b) Scrambling is A-bar movement:
   i) Semantically-driven
   ii) Prosodically-driven

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41 There are now two mechanisms to derive the order PP-Adv: scrambling of the PP on the one hand, and VP-movement to Spec,AdvP on the other. I have not attempted to find out whether one may be dispensed with, since it is not crucial here. It may well be the case that what I am calling PP-scrambling is the movement for interpretation purposes characterized in chapter 2. In most of the representations involving PP-scrambling to be discussed in the next chapters, I will be just adjoining the PP to VP, to simplify the representations, but the reader should bear in mind that the VP-movement approach yields the same linear order, and is independently needed in the analysis I am pursuing here.
In this section, I intend to review these three hypotheses, arguing in favor of the prosodic-driven approach by showing that it is the one that provides the best account of the data.

3.3.1. Case-driven movement.

Several authors have suggested that scrambling is movement to Spec,AgrOP, hence driven by the requirement for objects to check accusative features (Vanden Wyngaerd 1989, Mahajan 1990, de Hoop 1992, Zwart 1993, Bobaljik 1995 among others).

Under this hypothesis, there should be no difference between Scrambling of the type just investigated and Object-shift in languages like Danish, Faroese, Icelandic, Norwegian and Swedish (Holmberg 1986, Webelthuth 1989, Vikner 1994, Bobaljik 1995, among others). However, as noted by some of these authors, the following differences arise:

a) Scrambling moves PPs, Object-Shift does not: this is expected if only the latter is case-related. The PP, not requiring structural case, does not need to move to a case-licensing position, hence this movement is forbidden. Likewise, Object-shift, being A-movement and not A-bar

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42 I will call the languages in which the shift Adv-complement affects only NPs object-shift languages. These include Danish, Norwegian and Swedish, which move only pronouns and Icelandic and Faroese, which move NPs. When unnecessary, I will not distinguish the pronoun-shifting languages from the NP-shifting languages.

43 What follows is mostly inspired on Vikner’s (1994) extensive discussion of the similarities and differences between these two phenomena. In this section, I am using only some of the properties he describes. Most of the literature that unifies scrambling with object-shift pays much attention to data based in Weak-Cross-Over effects and Weak-Cross-Over violation. As mentioned before, I could not get a clear picture of what the facts are, hence I will not consider that type of evidence. Another issue I am not discussing is the data contributing to the question whether scrambling is derived via movement or base-generation (see Corver and Riemslagh 1994 for extensive discussion). I am assuming throughout the dissertation a representational view on scrambling, but not a base-generation analysis of the scrambled word order, in order to be able to compare in the same candidate set representations with or without movement. Also, since I will adopt the A-bar analysis for scrambling, I am forced to claim that the scrambled position is not the A-base position of the complement.

44 A weakness of my analysis is that so far nothing predicts that it is impossible to
movement, excludes the movement of PPs, since they do not fall under
the range of categories that can be A-moved.

This is exemplified in the following contrast between Dutch and
Danish: Dutch (127), at least for some speakers, allows scrambling of
NPs and PPs; Danish only moves nominal categories: PP-shift is
impossible (cf. 128):

(127) Dutch:
   a. dat Jan (%op Marie) in Amsterdam (op Marie) wacht.
      that Jan for Marie in Amsterdam waits
   b. dat Jan (%tegen Marie) altijd (tegen Marie) praat.
      that Jan to Marie always talks

(128) Danish (from Vikner 1994):
   a. Jeg betalte (*for bogen) ikke (for bogen).
      I paid for book-the not
   b. Jeg betalte (*for den) ikke (for den)
      I paid for it not for it

Déprez (1989) claims that the impossibility of A-moving PPs is not
a solid argument, since in locative inversion constructions PPs are A-
moved (see e.g. Mulder and Hoekstra 1990). However, as Mulder and
Hoekstra (1990) show, this type of construction is limited to unaccusative
verbs, unlike Scrambling which allows PP-movement with all verbs,
hence it is not obvious that locative inversion should be taken as an
argument for unifying PP-scrambling with object-shift.

b) Another property that distinguishes scrambling and Object-shift is
parasitic-gap licensing. It is known that A-movement in general does not
license parasitic gaps. This is true for Object-shift. As for scrambling, as
previously shown, parasitic gap licensing is possible:

(129) Dutch:
     Jan heeft die boeken zonder pg te lezen weggelegd.

have both object shift and PP-scrambling in a language. Actually, that is my analysis of
English. Given this approach it does not follow from anything that in the Object-shift
languages there is only NP-movement. I will argue later that the incompatibility
between the two processes follows from independent constraints on PP-adjunction to
the left of VP. For now, it is enough to note that there is a process which affects NPs
but not PPs.
Jan has these books without read put away

(130) Icelandic (from Halmberg 1986, Déprez 1989):
    *Eg las backurnar ekk an thess adh kaupa.
    I read books not without buying

c) Another argument against relating scrambling with case-driven movement derives from the fact that adverbs which are subcategorized by verbs scramble in Dutch (Costa 1995): (131a) shows that a verb like live in the relevant interpretation is not grammatical if no argument is selected. The argument may be either specific (131b) or non-specific (131c).\(^45\) Adding another adverb to check the position of the subcategorized one shows that the adverb can be scrambled (131e,h). If a non-specific adverb is scrambled (131g,i), the sentences become ungrammatical (under a non-specific reading).

(131) a. *Ik woon.
    I live
b. Ik woon daar.
    I live there
c. Ik woon ergens.
    I live somewhere
d. Ik woon steeds daar.
    all-the-time
e. Ik woon daar steeds.
f. Ik woon steeds ergens.
g. *Ik woon ergens steeds.
h. dat ik daar steeds woon.
i. dat ik steeds daar woon.
j. *dat ik ergens steeds woon.
k. dat ik steeds ergens woon.

This pattern is very similar to the behavior of NPs. The null hypothesis is to subsume both categories under the same phenomenon. Assuming, as usual, that adverbs do not require case, the movement of the adverbs may not be driven by case.

\(^45\) I am using the alternation specific/non-specific here for ease of explanation. It may be seen below that I will not consider specificity the trigger for scrambling, but for now it is enough to note that similar effects arise with NPs and adverbs.
d) A final piece of evidence against case-driven scrambling comes from the behavior of subjects of unaccusatives in Portuguese: as discussed above, subjects in Portuguese may either stay in Spec,VP or move to Spec,IP. The conditions for each option are dictated by discourse functions: subjects stay in Spec,VP if they provide new information, and move if they are topics or neutral with respect to discourse structure. The peculiar aspect about the subjects of unaccusatives is that they do not stay in Spec,VP but in their object base position. This is not possible to determine for Portuguese, but it has been noted for Italian by Pinto (1994, 1997) that subjects of transitives and intransitives may not be low in wide focus context, while subjects of unaccusatives may be. Moreover, subject of unaccusatives can also scramble, as shown in (132c) by the order NP-adv.

(132) a O Paulo chegou depressa.
   Paulo arrived fast
 b Chegou depressa o Paulo, não chegou?.
   arrived fast Paulo, not arrived
 c Chegou o Paulo depressa.
   arrived Paulo fast

In case scrambling were to reduce to case-driven movement, this pattern would remain very mysterious: if the central property of unaccusative verbs is that they do not assign accusative case to their objects, scrambling of the object of unaccusatives should always be bad, since there would be object-movement to an inert case-licensing projection (under the assumption that the projection is there, see Gonçalves 1997 for discussion of the (non-)availability of movement to inert functional projections). As (132c) shows, that is not the case: movement of the subject is possible, but case is not licensed, hence the target of movement is not a case-licensing position. Note that it cannot be argued that the object has moved to a potential landing site for Case-licensing, since that yields ungrammatical results in other types of constructions in Portuguese. For instance, in (133), a subject in a raising construction may not be stranded in the embedded infinitival Spec,IP (a potential case-licensing position):

(133) *Parecem os meninos comer o bolo.
   Seem(3ps-pl) the kids eat the cake
Given the counter-arguments presented here, and also those presented in Vítková (1994), I conclude that scrambling is not (case-driven) A-movement.

3.3.2. A-bar movement.

If scrambling is not A-movement, the other option is that it is A-bar movement, not considering the existence of mixed positions. In this section, I will discuss two proposals made within this idea and present arguments in favor of one of them.


Diesing (1995) and Diesing and Jelinek (1995) take the fact that scrambling seems to have semantic effects, more in particular specificity effects, following de Hoop (1992), as evidence for an approach taking semantics to be the motivation for scrambling. According to Diesing and Jelinek (1995), scrambling is a type-mismatch repair operation. Following Diesing’s (1992) Mapping hypothesis, they propose that definite NPs and QPs have to scramble out of VP in order to escape existential closure. That is, VP is a domain for existential material, since definite NPs and QPs are not existential they may not be within that domain by the time a derivation reaches LF.

Since definites may appear inside or outside VP at surface-structure, they suggest that this operation may apply overtly or covertly, provided that at LF the right mapping may be established: at LF, there may be no definite NPs nor QPs within VP.

A problem they are left with is the fact that indefinites do not fall under the scope of this operation, since there is no problem for them to be within the domain of existential closure. However, indefinites may scramble, as in (134). In order to solve this problem, Diesing and Jelinek (1995) propose that scrambling of indefinites follows from the assumption that the Scope Condition applies at S-structure in German. According to this condition, for an element to have scope over another element, the former must c-command the latter. This condition is semantically defined, and must hold at LF. According to the authors, the
specificity of German is that the effects of the Scope Condition are surface-true. This assumption is based on the observation that different semantic representations result, depending on whether the indefinite follows or precedes an adverb.

(134)  

German (from Diesing 1995)

\[
\begin{align*}
\text{a} & \quad \text{weil Elly immer Lieder singt.} \\
& \quad \text{since Elly always songs sings} \\
\text{a’} & \quad \text{ALWAYS}_{t} [\text{time (t)}] \exists_{x} \text{song(x)} \& \text{sings (Elly,}x,t) \\
\text{b} & \quad \text{weil Elly Lieder immer singt} \\
& \quad \text{since Elly songs always sings} \\
\text{b’} & \quad \text{ALWAYS}_{x} [\text{song(x)}] \text{sings(Elly,}x) \\
\end{align*}
\]

Diesing and Jelinek's proposal may be falsified if we find a case of scrambling of indefinites across an adverb which does not affect the semantic/temporal representation of the sentence. Such a case would be problematic for their analysis, since we would have a case in which the indefinite does not need to take scope over the adverb and yet it scrambles. Such examples in which no ambiguity between adverb and indefinite arises, and scrambling of indefinites is still possible exist and are exemplified in (135). The difference between (134) and (135) lies in the choice of adverb. If we control for an adverb that has no effect on the semantics of the sentence, the prediction would be that scrambling of indefinites becomes impossible. However, that is not true.

(135)  

\[
\begin{align*}
\text{a} & \quad \text{O Paulo fala bem francês.} \\
& \quad \text{Paulo speaks well French} \\
\text{b} & \quad \text{O Paulo fala francês bem.} \\
& \quad \text{Paulo speaks French well} \\
\end{align*}
\]

An interesting fact about the adverbs that Diesing (1992,1995) and Diesing and Jelinek (1995) use has been brought up to my attention by Danny Fox (p.c.). He notes that their examples involve adverbs like always (cf. 134) whose semantics is sensitive to focus in the sense of Rooth (1985). If these effects are controlled for, scrambling appears to be still possible. Moving a bit ahead, and supposing that scrambling and focus are related, it is not surprising that changing the location of focus will change the semantics of these sentences. Depending on the location of focus, the adverb will associate with the indefinite or not (captured in
Diewing and Jelinek’s analysis in terms of scopal relations). If the adverb is sensitive to focus and the indefinite is focused, the adverb will associate with the indefinite. If the focus is on some other constituents, the meaning of the sentence will be different.

Under a strictly semantic account, leaving aside discourse effects, this correlation between adverbs, scope and focus would be hard to identify. I take this observation as the first piece of evidence in favor of the idea that scrambling is basically associated with the discourse structure of the sentence, in the sense of Reinhart (1995).

3.3.2.2. Prosodically/Discourse driven (Reinhart 1995).

The last hypothesis concerning the motivation for scrambling and the one I am going to adopt was outlined in Reinhart (1995). Adopting Cinque’s (1993) sentence stress algorithm, which states that the most deeply embedded constituent of a sentence is the one that will receive the most prominent stress, Reinhart observes that in a normal SOV sentence in Dutch, the object is the most embedded constituent, hence it is the element bearing the most prominent stress and gets interpreted as the focus.

As explained above, the distinction made for subjects between default stress and marked stress has to be maintained: the default stress is the one that follows from the stress algorithms proposed in Nespore and Vogel (1986), Cinque (1993) and Nash (1995). Heavy prosodic stress is required when the syntactic configuration obviates the application of the default rule (e.g. stress shifting and heavy stress on focused subjects in English, cf. Zubizarreta 1995 among others). Now, where does scrambling come in? According to Reinhart, the motivation for scrambling is to be found at the interface between PF constraints and discourse-structure. The motivation for scrambling the object is to make it escape the default focus stress. Actually, Reinhart proposes that

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46 As mentioned above, I will follow Nespore and Vogel (1986) rather than Cinque for the formulation of the sentence stress algorithm. See chapter 4 for motivation, as well as Nash (1995), who proposes a reformulation of Cinque’s stress algorithm that I think is more correct in terms of its adequacy to syntactic theories and in more conformity with work done on prosody (see e.g. Frota (1992 and subsequent work) for Portuguese). Nash’s reformulation of Cinque’s algorithm says that the element in a sentence bearing the (default) most prominent stress is the rightmost constituent according to the recursion pattern of the language.
scrambling allows the verb to be focused. However, this description of the facts seems not to be entirely correct, for several reasons: in both Dutch and German, the verb may be focused without resorting to scrambling; it is sufficient to shift the stress; scrambling across an adverb focuses the adverb independently of the stress that the verb receives (see Baart 1987, Büring 1995 among others for the relevant data). The problem with Reinhart’s initial generalization is that the difference between default and marked stress, though acknowledged, is not completely spelled out. Default stress appears as the normal stress in declarative sentences, marked stress requires a marked intonation contour on the focused constituent.47 Once these two are differentiated, it is easy to see what the generalization is like: the complement of the verb scrambles in order to leave the adjunct in the most embedded position where the latter can receive the most prominent stress by default. Of course, for the complement to be able to do this, it must not require stress itself. Scrambling is thus a twofold operation: on the one hand it involves defocusing of the object, on the other hand it is an operation that allows another constituent to be stressed.48 Scrambling is possible with stress on the verb, but then marked stress is needed. Data showing these differences are presented in Baart (1987). Independently of this, Reinhart’s analysis seems correct: scrambling is used for creating appropriate focus configurations, namely to make the element bearing the sentence nuclear stress escape it.

Let us see how this hypothesis is corroborated by Portuguese (the data are similar in Dutch and German): in (136) it is expected that the object be the focus of the sentence given that it is the new information requested in the question. Indeed in this case the object cannot be scrambled, as the infelicitous sentence in (136Ba) shows:

(136) A: O que é que o Paulo fala bem?
what does Paulo speak well?
B: a. #O Paulo fala francês bem.
Paulo speaks French well
b. O Paulo fala bem francês.
Paulo speaks well French

---

47 See Ladd (1996) for the several types of marked stress.
48 As extensively discussed in Reinhart (1995), this analysis captures the so-called specificity effects.
If, on the other hand, the adverb is questioned, so that the object is old information, it must not be in the position where it gets default stress; hence it must be scrambled, allowing the adverb to receive the default stress:

(137) A: Como é que o Paulo fala Francês?
    how does Paulo speak French?
B: O Paulo fala francês bem.
    Paulo speaks French well.
    #O Paulo fala bem francês.
    Paulo speaks well French

An interesting piece of data brought to my attention by Martin Honecoop is the case in which a scrambled element is associated with focus, which, in principle, seems to disconfirm Reinhart’s theory:

(138) Jan zei dat ik DE KRANT gisteren las, (en het boek vandaag)
    Jan said that I the newspaper yesterday read, and the book today

This example is interesting because the NP is scrambled while it is also part of the focus of the sentence. However, there are two important differences between this case and the cases Reinhart describes: first, the scrambled NP bears heavy stress, and second, the NP is not the focus of the sentence by itself. When this sentence is uttered, the speaker intends to focus both the NP and the adverb gisteren/yesterday. According to Reinhart (1995), the focus set of a sentence is the constituent bearing the most prominent stress plus everything it dominates. That is, in order to build an appropriate focus set for (138), the speaker has to make the object dominate the adverb. The only way to do that is by scrambling it. Now, according to the motivation for scrambling that explored by Reinhart, the scrambled position will not allow the object to receive the default stress of the sentence, since it is not the rightmost constituent anymore. The only way to make it the focus of the sentence is to resort to prosodic stress (see also Nash 1995).

Therefore, example (138), rather than disconfirming Reinhart’s theory presents evidence in favor of it: scrambling is related to the need to create appropriate focus configurations: furthermore, it is related to defocusing, since the NP in the scrambled position cannot be the focus of the sentence unless it bears a heavy stress. The only way in which (38) would be problematic would be if the scrambled NP were be the focus
and the adverb were not included in the focus set of the sentence. Under that interpretation, (138) is infelicitous.

3.4. Conclusions.

In this section, I have shown that European Portuguese has scrambling of the German/Dutch type, by looking at the properties of scrambling in Dutch and German, and by comparing them with the order NP-Adv in European Portuguese. I have argued that scrambling is an A-bar movement operation that adjoins the complement of the verb to VP. Furthermore, I have discussed why English does not have scrambling, arguing that English does not have scrambling because the nominal objects in this language moves obligatorily to Spec,AgrOP masking a potential scrambling configuration. Evidence for this hypothesis comes from minimal differences with respect to placement of NPs vs. PPs in English and cross-linguistically (English vs. Portuguese). This hypothesis made correct predictions for other categories in other languages (wh-phrases in Korean).

Finally, I discussed the motivation for scrambling, arguing in favor of Reinhart’s (1995) prosodic/discourse explanation of scrambling. I showed that this was the hypothesis facing the least number of empirical problems.

4. General conclusions

In this chapter, I intended to answer some of the questions left open at the end of the analysis of the behavior of adverbs. At the end of the preceding chapter, I had concluded, partially following Frola (1993), that structural relations between modifier and modifiees may not be established as long as the modifiers are prosodically marked. I had also claimed that monosyllabic adverbs were a good test for marking the left edge of VP, because of their lightness. I did not have an answer however as to what the reason was for this interactions between syntax and prosody. In this chapter I have looked more closely into domains where syntax and prosody interact to try to understand better what happens in the case of adverbs. For that, I have looked at the distribution of subjects and objects and proposed the following:
The word order variation in Portuguese reflects discourse-configurationality; the distribution of subjects and objects is determined by discourse constraints.

1. Preverbal subjects in Portuguese are in Spec,IP. Postverbal subjects are in Spec,VP.
2. Preverbal subjects in Portuguese are topics (except in cases of sentence focus). Postverbal subjects are focus.
3. The reason for subjects to stay in their base position is that this is the position where they can be marked as focus, in compliance with the sentential stress assignment algorithm (Nespor and Vogel 1986), stating that rightmost elements bear the nuclear stress of the sentence.
4. Objects are like subjects: focused objects stay in their base-position; defocused objects must scramble, left-adjoining to VP, in order to escape the nuclear stress of the sentence.
5. Scrambling in Portuguese is quite similar to scrambling in Dutch/German. The two languages pattern alike for several properties.
6. The best analysis available for scrambling seems to be Reinhart’s (1995) discourse-based approach. Case-based and semantic-based approaches seem to be empirically inadequate.

The results reached in this chapter contribute to the goal of this dissertation in several ways. First of all, the behavior of monosyllabic adverbs makes sense. If the sentence-final position is the position where sentence stress falls, it is expected that elements that are too light to bear this stress do not surface there. The impossibility for monosyllabic adverbs to display the effects of right-adjunction is not due to any specific property of its meaning, but rather to a matter of mapping prosody-syntax. I have also started designing a model in which optionality is codified: as with the case of adverbs, structures fully compatible with the syntactic principles are not generated if markedness is required. Markedness was here presented as the results of operations enabling to contradict discourse-based tendencies: a marked structure arises whenever there is a subject which is not topic or an object which is not focus.

I have thus started to offer evidence that optionality in syntax is not the result of free variation, but the result of a tension between syntax and discourse. This is a step forward with respect to the preceding chapter: in chapter 2, the optionality traditionally assumed in the syntax
of adverbs was reduced by adopting Barbiers's (1995) framework. I managed to reduce the base-generation sites and the amount of movement operations. I was however left with the problem of locus of application of the movements which was still a truly optional aspect of that framework. In this chapter, I started showing that, if a given configuration relevant for syntax is not established, then some discourse-related mechanism must be forcing it.

In this chapter, several problems for which no solution was given were touched on:

% I have proposed that subjects and objects stay in their base-positions when they are the focus of the sentence. This implies that focus is rightmost. Several analyses of focus resort to a Focus Phrase projection on the left-hand side of the structure, and assume that in languages like Portuguese in which foci are in situ movement to such a projection takes place at LF. Is the in-situ approach to focus compatible with this one or not? If not, is it empirically superior?
% The focus of this chapter was Portuguese because of its flexibility. For a language like this one, it is possible to draw conclusions of the type, if a subject is focus, it must stay in Spec,VP. However, it is not obvious how to extend the analysis proposed for Portuguese to languages like English, in which movement of the arguments to Case-licensing positions seems to be obligatory. How are the results of this chapter to be considered from a cross-linguistic perspective?
% We have seen that scrambling and object-shift behave differently. It remains to be explained why object-shift languages do not display scrambling, and why object-shift is obligatory in a language like English, but discourse driven in a language like Icelandic.

The two second questions will be answered in part 2 of the dissertation. In the next chapter, I will deal with the first question. I will recap the conclusions of this chapter, and be more explicit about the theory of focus I am assuming, spelling out some of the principles that make the in-situ theory work. I will then compare it with LF-movement approaches to focus.

The research to be done there will be crucial for the definition of the constraints on focus and for establishing how the interact with the several syntactic principles.
4 Focus in Situ

1. Introduction

In the previous chapter, I have argued that in a language like Portuguese, Focus properties determine the distribution of arguments. It was argued that subjects stay in Spec,VP, only if they are focused. Likewise, they may only raise to Spec,IP if they are not focused, and when the entire sentence is focused.

The view on focus adopted in chapter 3 is that information focus is rightmost, for prosodic convergence. This analysis of focus leads to a number of questions regarding my assumptions concerning the exact formulation of this constraint. A very common view on focus is to assume that focused constituents must be licensed at the specifier of a functional projection (Focus Phrase), which in most analyses appears at the left periphery of the sentence (Brody 1990, Kiss 1995, Rizzi 1995). In the analysis I started developing in chapter 3, the exact reverse effect is obtained: focused constituents appear at the rightmost position of the sentence. As it will be shown later in this chapter, the two approaches are not incompatible, but they operate on two different kinds of discourse objects. Nevertheless, it is important to be clear about what type of focus I am talking about, and why I am defending an in-situ analysis of focus rather than an analysis that involves raising to a functional projection.

One crucial aspect I will be concerned with is to demonstrate that the in-situ analysis is incompatible with an approach claiming that in-situ focused constituents move at LF to the specifier of FocusP. This argument will provide more conclusive evidence for the in-situ approach, and it constitutes evidence in favor of a representational view on focus, rather than a derivational view.

The structure of this chapter is the following:

In section 2, I will briefly discuss theories of focus movement (Horvath (1986) and Brody (1990)) and theories of focus-in-situ (Rooth
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(1985)), I will first discuss some of the problems with the former and explain how the latter theories account for the evidence in favor of movement.

In section 3, I will recall the main facts of the distribution of focus in Portuguese. From the results achieved on chapter 2, I will emphasize that for a proper identification of what constitutes the focus of the sentence, one needs to take into account both syntactic and prosodic factors.

Section 4 will discuss the predictions made by an LF-movement analysis of focus for Portuguese. I will argue that such an analysis makes wrong prediction, hence is not desirable.

The alleged existence of contrastive focus-movement in Portuguese will not be taken into account in favor of the need for moving foci at LF. Section 5 will show that these constructions are not an alternative for focus-in-situ, hence they should not be taken as a mere overt counterpart of a movement that normally is done in covert syntax.

In the last section, I will investigate whether the Hungarian data may be included in the analysis of focus outlined here, or whether we still need a movement approach.

Let me emphasize, for the sake of clarity, that, as in chapter 3, I will be looking at information focus: that is, focus that conveys new information (Dik 1978, Büring 1995, de Hoop and Swart 1996, Kiss 1996 among many others). This remark is important, since the term focus is often used with a very wide variety of meanings, rendering discussion of phenomena and identification of scope of research quite difficult (see Givón 1990 for classification and examples of several constructions involving focus-related aspects). I am interested in this study in the focus that is normally associated with a high pitch accent (Selkirk 1984, among others) and that can be identified in question-answer pairs and correction contexts. This type of focus is often called information focus. That is, it is focus in the sense that it conveys new information without altering the truth value of the sentence (see Vallduví 1990, among others). This excludes from the discussion contrastive focus and focus involving uniqueness or exhaustive listing in the sense of Szabolcsi (1981). In the last section of this chapter, I will present some tests to distinguish the several types of focus, and show that they do not necessarily intersect. The behavior of contrastive focus will be shown to be different both in distribution and in meaning. Below I provide examples of each of the constructions involving foci, in order to specify which will be the topic of this chapter:
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(1) **Focus Constructions:**

a. *In situ:*

   Comeu a sopa o Paulo.
   Ate the soup Paulo

b. *Syntactically marked focus (cf. Raposo 1994, among others)*

   Muito vinho o João bebeu
   a-lot-of wine João drunk

c. *Focus-preposing (ungrammatical in Portuguese, OK in other languages).*

   *ESSE LIVRO, o João leu.
   That book João read

(1a) will be the topic of this chapter. I will not talk about (1b), which is discussed in Uriagereka (1995), Raposo (1994), among others, since its discourse characteristics are different from (1a) (see section 5), and I will argue that the ungrammaticality of (1c) in Portuguese is an additional argument for not considering focus-preposing as an argument for movement of foci at LF.

2. **Focus: movement vs. in-situ approaches.**

Focus is represented in different ways in different languages. While a language like English displays focus in situ, as in (2), a language like Hungarian seems to require movement for licensing focused constituents:

(2) I saw JOHN.

(3) a. *(from Horvath 1995):*

   AZ ÚJSÁGOT dobtam el.
   the newspaper threw-l away

b. *Eldobtam AZ ÚJSÁGOT.*

Chomsky (1976) has argued, on the basis of the contrast in (4), that even in English focused constituents need to be moved. Chomsky showed that focus as in (4b) induces weak-cross-over effects just like other operators do e.g. in (5):

(4) a. His, mother saw John,

b. *His, mother saw JOHN.*
(5) *Who does his mother like?

According to Chomsky, the most natural way to explain the parallelism between (4b) and (5) is to assume that, at LF, focused constituents move establishing an operator-variable relation with their traces, yielding a structure like (6b) for a sentence like (6a):

\( (6a) \quad \text{Mary loves JOHN.} \)

\( (6b) \quad [\{\text{JOHN}, [\{\text{Mary loves t},]\}]] \)

This accounts for the weak cross over effects in a rather natural way. The LF-representation of (4b) is a violation of Koopman and Sportiche’s (1982) bijection principle in the same way the overt syntax of (5) is:

\( (7) \quad *[\{\text{JOHN}, [\{\text{his, mother loves t},]\}]] \)

(8) **Bijection Principle: **

There is a bijective correspondence between variables and A-bar positions.

Given (8), the problem with (7) is that ‘John’ is binding two variables: the pronoun and the trace, yielding a violation of the bijection principle.

The weak-cross-over argument together with the existence of overt focus-movement in Hungarian led linguists to assume that languages with focus in-situ like English need to move focused constituents at LF.\(^1\)

2.1 Problems for movement theories of focus.

Movement theories of focus have been criticized in Anderson (1972), Rooth (1985), von Stechow (1990), among others, on the basis of their failure to account in an appropriate way for lack of ECP and subjacency effects, multiple foci and crossing paths at LF. I will briefly discuss these three problems.

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\(^1\) Note, however, that the combination of the two arguments leads to a surprising contradiction, since Hungarian focus movement does not yield WCO-effects, as noted by Brody (1995).
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First of all, Focus displays a lack of ECP and subjacency effects. If focus involves movement, focusing should be impossible within a barrier for extraction. That this is not true can be seen from the following examples:

(10) Focus on an embedded subject (that-trace effects are expected):
Mary thinks that JOHN will go to the movies.

(11) Focus within an adjunct:
Mary arrived late because she was SICK.

(12) Focus within shifted Heavy NPs:
I read yesterday all the books MY teacher recommended.

(13) Focus inside Wh-islands:
I wonder what to write with THIS PEN.

(14) Focus inside a complex NP:
John announced a plan to steal FIVE cars tonight.

(15) Focus within a coordinate structure:
John saw Mary and ALL the other students.

Any movement approach to focus predicts that these sentences should be ungrammatical, since ECP effects (and subjacency) are assumed to be operative at all levels of representation (May 1985, Huang 1982, Koster 1987, Bayer 1995). If alternatively, one would assume that ECP is not operative at LF, one would miss the empirical generalization that may be drawn considering LF-movement, namely the similarities with overt movement (cf. the studies cited above).

Another problem with assuming that focused constituents move at LF (on a par with wh-movement) is the existence of multiple foci:

(16) a. JOHN saw MARY.

b. John gave the BOOK to BILL.

The problem with these sentences is different depending on the theory of focus-movement assumed. If it is assumed, as Brody (1990) does, that focused constituents enter a Spec,Head agreement relation with a Focus
head and that Hungarian is the overt counterpart of English, this would imply that a head has multiple specifiers.\(^2\) This in turn predicts a lack of adjacency between the foci and the element lexicalizing the head (V in Hungarian, according to Brody (1990)). However, multiple focus movement is not possible in Hungarian:

\[(17) \text{ (from Kiss 1995):} \]
\[\text{Évat János várt a mozi előtt.}\]
\[\text{Eve-acc John waited the cinem in-front-of}\]
\[\text{Eve, JOHN waited for her in front of the cinema.}\]

If multiple specifiers are permitted, sentence (17) might incorrectly yield the English interpretation in (18). A uniformization with wh- in situ is not possible, since the postverbal PP in (17) is not interpreted as focus, as mentioned in the footnote:

\[(18) \text{ JOHN waited for EVE in front of the cinema.}\]

The third problem comes from the fact that focus movement may create crossing paths at LF. This argument obviously does not go through in theories allowing for crossing paths (e.g. Chomsky 1995). I will not take a position with respect to whether the theory should or should not allow for crossing paths. In case it should not (Pesetsky 1982, Kayne 1994), these cases remain problematic. The creation of crossing paths at LF arises in a focus movement analysis for a sentence like (19):

\[\text{\footnotesize \[\text{2 Such a hypothesis is entertained in Chomsky (1995). It has been pointed out to me}\]}
\[\text{\footnotesize that the lack of multiple foci overtly moved in Hungarian may follow from a feature-}\]
\[\text{\footnotesize checking approach. If there is only one strong focus feature in the F position in}\]
\[\text{\footnotesize Hungarian, the other focused elements may stay in situ, on a pair with multiple}\]
\[\text{\footnotesize questions in English. I am not sure whether this analysis may work, since as we will}\]
\[\text{\footnotesize see later, Hungarian focus entails uniqueness and is not recursive in the same way}\]
\[\text{\footnotesize English cleft constructions are not recursive:}\]
\[\text{\footnotesize \[(i) \text{ It was in front of the cinema that it was John that Eve waited for.}\]}
\[\text{\footnotesize If, as it will be discussed below and is argued in E. Kiss (1996), clefts are indeed the}\]
\[\text{\footnotesize counterpart of Hungarian focus movement, it has to be explained why multiple-}\]
\[\text{\footnotesize clefting and multiple focused elements are impossible, if multiple in-situ foci are}\]
\[\text{\footnotesize possible. Furthermore, note that in Hungarian contrastive foci in situ are ruled out,}\]
\[\text{\footnotesize even if there is a focused constituent moved (K. Polgardi (personal communication)).}\]
\[\text{\footnotesize Thus, the parallel with wh-movement does not hold since: (i) there does not seem to}\]
\[\text{\footnotesize be a language with multiple focus movement or with co-occuring moved contrastive}\]
\[\text{\footnotesize focus and in-situ contrastive focus.}\]
(19) Who did JOHN wait for?

This sentence should be ungrammatical because moving JOHN at LF would induce a crossing path, which is a ill-formed path according to Pesetsky (1982):

(19') JOHN who did t wait for t?

These three types of evidence should be enough to discard an analysis of focus in terms of movement. However, there is still the evidence from WCO-effects and the distribution of focus in Hungarian.

I will return to these problems after finishing the discussion of the focus-movement analyses.

2.2. The nature of focus movement

The preceding section pointed out some problems known from the literature for the movement analysis of focus. It is also important to determine the exact nature of this movement: focus movement establishes an operator-variable relation, but why should there be such a relation?, and if there is movement, where do focused constituents move to?

Two widely accepted theories of focus movement are the ones advocated by Brody (1990) and Horvath (1986, 1995). In this section, I will discuss the major aspects of both theories showing that they are not empirically adequate.

Brody (1990) argues that there is a Focus Phrase, where focused constituents move to in order to satisfy the focus-criterion, parallel to Rizzi’s (1991) wh-criterion.3

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(20) **Focus-criterion:**

a. At S-structure and LF, the Spec of an FP must contain a +f-phrase.

b. At LF, all +f-phrases must be in an FP.

The source of cross-linguistic variation is then whether (20a) is satisfied overtly (Hungarian) or covertly (English). As noted by Horvath (1995), this approach to focus is not satisfactory since it does not account for the fact that languages other than English and Hungarian codify focus in positions that are not either the base-position or the leftmost position of the sentence.

Horvath (1995) proposes that focus is either assigned like any other grammatical feature (e.g. Case) by a non-lexical head or freely assigned. The need for V-adjacency in Hungarian comes from the need to lexicalize the functional head that assigns the focus feature (which Horvath claims to be $I^0$ in Hungarian). Her formulation of the focus parameter is given in (21). The conditions in (21.1-4) determine what type of manifestation of focus can be found in different languages:

(21) **Focus parameter:**

1. nature of the feature:
   (i) freely occurring, i.e. not transferred from another category (English)
   (ii) assigned by a specific $X^0$ category (Hungarian)

2. what $X^0$ functional category of the clause is the assigner, i.e. the source of the feature

3. whether the feature-assigning category needs to be lexicalized

4. the mode/nature of the process of feature-assignment:
   (i) feature transfer
   (ii) Spec-head agreement

Horvath’s focus parameter has the advantage of accounting for cross-linguistic differences on the representation of focus without crucially resorting to an additional functional projection, making the set of primitive categories of the theory simpler. However, relying on a specific functional projection for assigning of focus creates problems for cases in which focus surfaces in isolated constituents.

In chapter 3, I have shown Portuguese to be a language in which syntax and prosody play a role in the identification of focus. In
accordance with Horvath’s formulation, it might be expected that in Portuguese, focus is assigned (like in Hungarian) by a specific functional projection (C, l, etc). This, however, is problematic for cases in which there is focus without a clausal functional projection associated to it, like in the following examples:

(22) A: Vou comprar um carro azul.  
go-I buy a car blue  
‘I’m going to buy a blue car’
B: Um carro AZUL ou um carro AMARELO?  
a car blue or a car yellow  
‘A BLUE car or a YELLOW car?’

In order to explain the occurrence of focus in B’s utterance, one has to assume that the functional projection responsible for focus-assignment at the sentential level plays the same role at the NP level. That is, one has to assume that the category that assigns focus to a constituent of the sentence, whatever its nature is, also has to occur inside DP. Although there are theories suggesting that the same array of (extended) functional projections identifiable for VPs is present at the NP level (Abney (1987), Kayne (1994)), it seems quite difficult to explain the distribution of focus in the same terms.

Another problem for a theory based on functional projections is how to explain focus on prefixes like in (23), where only part of a word is contrasted.

(23) A: Vou rever o tempo.  
go review the weather  (nonsense)  
‘I’m going to review the weather’
B: REver ou PREver?  
review or preview

Even if there were a functional projection assigning focus, it is not clear what configuration would legitimate governing within the word-

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4 Note that although I am focusing on information focus, the use of contrasted prefixes in this example does not invalidate my point; on the contrary, it makes it stronger: contrastive focus is the case for which it is easier to argue against the in-situ view: they appear more easily in sentence-initial position. However, the argument based on focusing within word-boundaries goes through: even in cases of contrastive focus, these cases are problematic for a movement approach.
boundaries, which would enable government of the prefix alone, excluding the rest of the word.

On a more conceptual level, it remains unexplained under Horvath’s approach why there is a correlation between functional projections and focus. Under her proposal, [focus] is a grammatical feature as any other, with the difference that it cannot be inherent to lexical items. Though this proposal is attractive as far as it explores the similarities between focus and other grammatical configurations, it is not very clear why focus should be compared with nominative case, as Horvath does. There is a crucial difference between these two types of features: nominative case is always assigned every time a certain syntactic configuration is met. Hence, it is a purely structural relation, whose existence depends on a set of syntactic requirements. By contrast, focus is basically a discourse-related relation. It must be marked in the structure, but it is not the case that every time a certain configuration is created, focus will appear. That is, there is a difference in terms of predictability that should be taken into account when proposing to derive focus from a given syntactic configuration.

2.3. In-situ theories

One of the most widely accepted theories of focus-in-situ is Rooth’s (1985). Rooth proposes a semantic theory for focus, according to which no focus-movement is required: given a sentence where focus can be identified, a set of alternatives is construed. The set of possible alternatives is constrained within a certain contextual domain reminiscent of Jackendoff’s (1972) P(resupposition)-set.

Rooth (1985) accounts for Chomsky’s (1976) weak-cross-over independently of focus-movement. Rooth claims that the bound variable readings require λ-abstraction, so that the pronouns or noun phrases can be interpreted as bound variables and not as free variables. A mechanism enabling this to happen is already available in the grammar: Quantifier Raising (May 1985). In other words, it is not necessary to have focus movement as an independent rule of the grammar: like all NPs, focused NPs may be QR-ed but need not. However, if a bound variable reading is intended, QR is obligatory. In that case, LF-evaluation constraints are operative, and weak-cross-over configurations are ruled out. Rooth’s approach does not yet explain why deaccenting (that is, removing the stress from the focused constituent) obviates the WCO effects (cf. 4), but
it is empirically superior to Chomsky’s since it excludes the obligatoriness of WCO with focus (see also Vallduvi 1990 for discussion).\footnote{Note that it is not my goal here to present a solution to Rooth’s problems. The important point of Rooth’s theory which I will follow here is to eliminate Focus-movement from the set of LF-operations. That is, when foci move, they move independently of their being foci: the creation of bound variable readings forces them to be QR-ed. One may wonder what is the advantage of trading focus movement for QR. The advantage is: this QR is independently necessary, and applies to Quantifiers, not to foci without quantificational force. One of my goals in this study is to try derive as many word orders as possible without resorting to covert operations. The best evidence for covert operations comes from the behavior of quantifiers (May 1985), hence, it should be possible to reduce the evidence of some of the apparent focus movement constructions to independently necessary QR operations.}

Adopting Rooth’s approach allows for dismissing the weak-cross-over argument as evidence in favor of focus-movement. At best, we can keep it as evidence for QR.

However, Rooth’s theory of interpretation of focus in situ does not say anything concerning languages like Hungarian, in which focused constituents move to a specific position. Also, it does not explain the behavior of languages like Portuguese, in which focused constituents seem to stay very low in the structure.

Since Rooth’s analysis is not complete enough to take care of the word order facts, I will keep it as a semantic approach to focus. Syntax together with prosody will enable an identification of the focus set of constituents for a given sentence. The identified focus-set will be operated on by semantics. Provided that there is an algorithm permitting a correct identification of focus, semantics may apply over the material identified as focus.

### 2.4. Summary and preview

Two types of evidence have been considered in favor of existence of LF-focus movement in languages where foci appear in situ at S-structure.

The first piece of evidence is Chomsky’s (1976) weak-cross-over facts.

The second is the existence of languages where focused constituents move overtly. Since Chomsky (1977), the reasoning is that if
a language displays a certain kind of operation overtly, other languages perform the same operation in covert syntax. However in a language where overt movement is absent, an appeal to covert movement should be carefully motivated, since the existence of overt movement in one language only constitutes circumstantial evidence for covert movement in another language.

I have shown in this introduction that assuming movement at LF does account for the weak-cross-over facts and for the similarity between a potential LF-representation and the $S$-structure of Hungarian. A number of wrong predictions that this theory makes was also considered.

I have briefly discussed Rooth’s (1985) theory of focus in situ, which explains the weak-cross-over effects in terms of QR and not in terms of focus-movement. What Rooth theory does not do is to explain the need for movement as in Hungarian.

As it stands, there are arguments for and against both theories. In the remainder of this chapter, I will again discuss the data from Portuguese, showing that they provide evidence in favor of an in-situ theory, augmenting its empirical adequacy. Moreover, I will show that an LF-movement analysis for focus makes wrong predictions. The overall conclusion will be that in empirical terms, LF-movement for an account of information focus can be dispensed with.

3. The distribution of focus in Portuguese

In the preceding chapter, I have shown that arguments in Portuguese have a quite free distribution, and that this distribution is conditioned by the information (or topic – Focus) structure of the sentence.

Summarizing the general pattern, the data indicate that focused material is rightmost. In the next paragraphs, I will present the relevant data again, making my assumptions on sentence intonation clearer.

3.1. Position of the focused constituents

In chapter 3, I noted that different word orders in Portuguese correlate to different information structures. This has been noted several times in literature on Portuguese (Duarte 1987, 1996, 1997, Ambar 1992, 1994, 1996, 1997, Martins 1994). To each of the possible word orders
listed in (24), a different felicity context is associated. In (24), I also
indicate the position each constituent occupies in the clausal structure,
according to the conclusions reached in chapter 3.

(24) SVO: subject in Spec,IP, object in base-position
VSO: subject in Spec,VP, object in base-position
VOS: subject in Spec,VP, object adjoined to VP (via scrambling)
OSV: subject in Spec,IP, object topicalized
OVS: subject in Spec,VP, object topicalized

The relation between each word order and context is exemplified in the
following examples.

(25) Object focused:
A: O que é que o Paulo partiu?
what Paulo broke
B: O Paulo partiu a janela.
Paulo broke the window
#Partiu o Paulo a janela.
#Partiu a janela o Paulo.
#A janela o Paulo partiu.
#A janela partiu o Paulo.

(26) Sentence-focus:
A: O que é que aconteceu?
what happened
B: O Paulo partiu a janela.
Paulo broke the window
#Partiu o Paulo a janela.
#Partiu a janela o Paulo.
#A janela o Paulo partiu.
#A janela partiu o Paulo.

(27) Subject and object focused:
A: Ninguém partiu nada.
noone broke anything
B: #O Paulo partiu a janela.
Paulo broke the window
Partiu o Paulo a janela.
#Partiu a janela o Paulo.
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A janela o Paulo partiu.
A janela partiu o Paulo.

(28) Subject is focused:6
A: Quem é que partiu a janela?
   who broke the window
B: O Paulo partiu a janela.
   Paulo broke the window
   Partiu o Paulo a janela.
   A janela o Paulo partiu.
   A janela partiu o Paulo.

For the moment, I will not discuss in detail the cases in which the object appears in sentence-initial position. I will leave that to section 4. For the moment, it is enough to say that for objects to appear in sentence-initial position, they have to have been referred in previous discourse and/or have some contrastive force:

(29) A: A Ana viu o Paulo?
   Ana saw Paulo
B: O Paulo, ela viu.
   Paulo she saw

(30) A: Quem é que partiu as janelas?
   who broke the windows
B: Esta janela partiu o Paulo
   this window broke Paulo.

Summarizing, in terms of information structure, all constituents that convey new information appear to the right, and constituents that

6 In these examples I want to focus on the examples without preposing. Eduardo Raposo reports to me that he does not accept the VOS order in this case. In fact, it is preferential to leave out the object (which I marked with the brackets), given the greater naturalness of non-redundant answers. There are however contexts in which this order is attested, namely with longer subjects (see (i)). I do not know why these examples are more natural:

(i) A: Quem é que já comeu a sopa? (Who has already finished the soup?)
   B: Olha...comeram a sopa o João, a Marta e a Sofia.
   Look... ate the soup João Marta and Sofia
convey information previously referred in the discourse appear at the left periphery of the sentence.

3.2. Intonation

It is a well-known fact that focus is normally associated with high stress. In order to get a clear idea of the correct way to interpret focus, it is necessary to investigate where prominence appears in the sentences. By doing so, I will also be able to clarify the sentence stress assignment algorithm I am assuming.

Frota (1994, 1995) has argued in favor of representing focus in Portuguese as a phonological category that is freely assigned. Part of her arguments is based on the behavior of clitics (see Frota and Vigário 1996 for complete argumentation).

The domain of Frota’s argumentation is narrow (or contrastive) focus, and not information focus (though of course, they may coincide). Actually, Frota (1997) suggests that two types of prominence may be necessary to describe the two types of focus marking. What is relevant for the discussion is that independently of the type of focus looked at, Frota’s claim appears to be correct: focus (contrastive and information) is marked phonologically in Portuguese.

If the distribution of stress in each of the word orders discussed above is considered, evidence may be found in favor of Frota’s claim: there is a one-to-one correspondence between the first focused constituent of the sentence and its most prominent stress.\(^7\)

Consider (31) below, where capital letters indicate high stress:

\[
\begin{align*}
(31) & \quad \text{Partiu o PAULO a janela.} \\
& \quad \text{broke Paulo the window} \\
& \quad a \\
& \quad \text{\textsuperscript{*}PARTIU o Paulo a janela,} \\
& \quad \text{b} \\
& \quad \text{\textsuperscript{*}Partiu o Paulo A JANELA.} \\
& \quad c
\end{align*}
\]

(31) is a VSO sentence in which subject and object are in focus. In that case, both have to appear in the right periphery of the sentence. The

\(^7\) Keep in mind that this type of prominence and the one described in Frota’s work are distinct. In this section, no prosodic analysis of the prominence will be made. I will just propose an algorithm enabling the hearer to identify the locus of the main prominence. It is by no means my goal here to make any specific claims about the nature of the stress assigned to focused constituents.
subject is the first focus that appears and it bears the most prominent stress of the sentence. Conveying the same information by means of the same word order and with other stress patterns is not possible (31b,c).

In (32), only the subject is in focus (VOS). In that case, the subject bears the heaviest stress, though it is not heavier than the neutral stress present in unmarked\(^8\) SVO sentences.

(32) a Comeu a sopa o Paulo.
     ate the soup Paulo
    b *Comeu a sopa o PAULO (OK if subject is right-dislocated)
    c *Comeu a SOPA o Paulo.
    d *COMEU a sopa o Paulo.

In SVO sentences, the most natural intonation is the rightmost prominence, without a very heavy stress:

(33) O Paulo partiu a janela.
     Paulo broke the window

The literature on prosody often distinguishes between neutral stress and heavy stress (see e.g. Chomsky and Halle 1968). This distinction has been criticized by Selkirk (1984), among others, who claims that there is no empirical advantage in proposing such a distinction. Selkirk’s argumentation is based on focus projection. Focus projection is the term given to the fact that neutral stress on e.g. a sentence-final object may yield an interpretation in which only the object is focused, or the VP is focused or the whole sentence is focused. Selkirk claims that not only neutral sentence-final stress projects allowing an interpretation in which there is focus on sentence-final element only, on the VP or on the whole sentence. Selkirk claims that heavy stress in a non-final constituent also permits focus-projection in the sense just explained. If Selkirk’s observations are applied to the Portuguese case, it is expected that sentence (33) be an appropriate answer to any of the questions in (34):

\(^8\) As before, I use the notions unmarked and marked throughout the text as labels for whether a word order may be felicitous in out-of-the-blue contexts or in answer to what-happened questions. A formalization of these terms will have to be postponed until chapter 6, where the theoretical tool of Optimality Theory will have been introduced. For a syntactic distinction between sentence-final subjects that bear a very heavy stress those with neutral stress, see chapter 3.
(34)  
a  What happened?  (*Sentence-focus*)
b  What did Paulo do?  (*VP-focus*)
c  What did Paulo break?  (*Object-focus*)

This is indeed correct. However, differently from Selkirk’s claim for English, a distinction between neutral stress and marked stress is relevant for the identification of focus in Portuguese. Crucially, every time there is a high stress on a non-final constituent, there is no projection of focus in this language. (35) is not a legitimate sentence for expressing VP-focus. Since high stress is only necessary on constituents that are not in absolute sentence-final position, this invalidates Selkirk’s claim: marked stress does not project.

(35)  Partiu O PAULO a janela.
broke Paulo the window

Selkirk claims that stress on XP, which is a constituent of YP, will enable percolation of stress to YP. If focus projection would apply in these terms, (35) could be a felicitous answer to (34b), with focus on the whole VP, since the subject is VP-internal. In other words, the subject corresponds to XP and the VP to YP in Selkirk’s algorithm. Hence, stress on the subject should project to VP. Now, this is not true, though it is predicted by Selkirk’s theory.

Note that even neutral stress does not project if there is a change in the unmarked word order of the language. Hence, a VOS sentence is not a legitimate answer to a question that requires something else than the subject to be in focus:

(36)  What did Paulo do?
a  O Paulo partiu a janela.
    Paulo broke the window
b  #Partiu a janela o Paulo.

Although the sentence’s main stress fall on the rightmost constituent in both cases, and in both cases the rightmost constituent is VP-internal, focus projection is not allowed.

Actually, even the English cases Selkirk presents as possible cases of focus-projection without rightmost prominence are difficult to evaluate. Selkirk claims that (37) may have VP-focus:

(37)  What did you do?  *VP-focus*

(37) (from Selkirk 1984):
    Did John give a BOOK to Bill?

Selkirk claims that (38) is an appropriate answer for this sentence:

(38) No, he gave a pot of NARCISSUS for him.

In (38), the verb and the NP contrast with give a book in (37). Selkirk concludes from this that prominence on the NP may give VP focus.\(^9\) It seems, though, that this is not a very accurate conclusion, since if there were VP-focus in (37), the sentences in (39) might as well be appropriate answers, since (39a) and (39b) involve alternatives to the focused VP:

(39) a No, he gave a pot of NARCISSUS for Mary.
    b No, he killed Mary.

Now, (39a,b) are not appropriate answers to (37), presumably because in (37) there is no VP-focus. Actually, Selkirk acknowledges that for (37) to involve VP-focus, “John, Bill, and, say, Bill’s recent birthday are old information in the discourse” (p.216, my emphasis). If Bill is old information, it is difficult to understand how it can be maintained that the whole VP is in focus. In other words, I am suggesting that the idea that VP-focus is involved comes from the fact that grow \(X\) for \(Y\) and give \(X\) to \(Y\) are minimally different in the relevant context. No new information is added by replacing give with grew. In this sense, the only new information is the NP, and VP-focus is only apparent. The use of a proper name in the question may also determine the impression that there might be VP-focus even without Bill being focused. Proper names never convey absolute new information. If instead of a definite, someone is used, a VP-focus interpretation never arises unless there is rightward prominence:

(40) A: What did John do?
    B: #John gave a BOOK to someone.
    John gave a book to someone.
Speakers who accept (40B) report to me that the DP *a book* clearly must have contrastive force. We have thus a case of overlap of two types of focus: a contrastive focus on the DP and information focus on the VP. Since these two types of focus may be distinguished in semantic terms (cf. last section of this chapter), the behavior of one should not be used as evidence for the other.

Summarizing, it is thus possible to interpret the stress pattern of (38) in different terms: since the pronoun is old information (it refers to *Bill*), it must not be heavily stressed. In the context given, *grew a pot of narcissus for him and give a pot of narcissus to him* are equivalent. Hence, the only new information which is contrasted is the DP object. The stress pattern emerges as a consequence of shifting the stress from the sentence-final PP to the object DP. The VP-focus effects arise only if the identity between *grew X for Y* and *give X to Y* in the ‘birthday’-context are not acknowledged. The fact that not any VP may replace the one in the question confirms that in this case there is no VP-focus.

Another argument used by Selkirk in favor of projection of marked stress comes from sentences like (41):

(41) (from Selkirk 1984):

For them, it is in TERMS of metrical trees that...

Selkirk’s reasoning goes as follows: the PP in terms of metrical tree is in a position normally occupied by focused constituents. Therefore, the whole PP is in focus, though part of it may be old information. Since the prominence is in the noun terms, it has to be assumed that the focus on the noun may percolate up to the whole PP.

There is an alternative to this reasoning: if one wants to make a cleft with the focused noun terms which is contained within the PP, the whole PP has to be dislocated. Extracting only the NP would violate conditions on extraction. I would like to suggest that (41) involves a case of pied-piping of the whole PP, though only the noun terms is focused.

This may explain why in the following case there is no projection:

(42) A: Did they talk in favor of Peter?
B: No! It was AGAINST Peter that they talked.

In this case, *Peter* is not new in the discourse, only the preposition is contrasted and introduced as new information. Clefting only the preposition is impossible, hence the whole PP has to be moved, though
focus does not project. Actually, it seems that the role of intonation in clefs is exactly the reverse of what Selkirk proposes: its function is to preclude focus projection. If a constituent is clefted, in principle, it should be interpreted as focus, since projection is an option if neutral stress is present. By assigning a prominent stress to a subpart of a clefted constituent, one makes sure that only this part is interpreted as new information.

The felicitous continuations demonstrate that this is the difference between the following two sentences:

(43) It was against Peter that they talked,
    a   not against Mary
    b   #not in favor of him.
    c   not in favor of Mary.

The interpretation for (43a) is the one in which the complement of the PP is the focus. This interpretation follows from the neutral stress principle: the rightmost element is the most prominent and it is interpreted as focus. In (43c), the whole PP is interpreted as focus. (43b) is infelicitous, because only the preposition is in focus, but nothing was done to exclude the NP from the set of focused constituents. The only way to exclude it would be to strand the NP in situ, yielding the ungrammatical (44), or stress the preposition, avoiding focus-projection (cf. 45):

(44) *It was against that they talked Peter.

(45) It was AGAINST Peter that they talked,
    a   #not against Mary.
    b   not in favor of him.
    c   #not in favor of Mary.

The inappropriateness of (45c) shows that there is not projection, hence the continuation may not involve an alternate to the whole PP. (45a) is not felicitous, since only the NP is focused, which should be impossible both in the view adopted here and the one defended by Selkirk.

It seems thus that whenever there is a change either in the unmarked word order (SVO for Portuguese) or in the normal intonational pattern (rightmost prominence), there is no projection of focus.
The intonation of information focus in Portuguese can then be summarized as follows. Focused constituents are prosodically prominent. If they are rightmost they bear neutral stress, if they are not rightmost they are assigned a high pitch accent. If there is more than one focus, the leftmost bears the heavy stress; all constituents following the heavy stress are interpreted as focus. Information focus is not incompatible with other types of contrast. Hence, any constituent may bear heavy stress, independently of its being the focus of the sentence for contrast purposes. This will, however, make projection of focus more difficult for the reasons pointed out above.

Under the review of Selkirk’s discussion of projection of focus made above, I reach conclusions similar to hers regarding the status of projection as not being exceptional, although in the exact opposite sense. She concluded that focus-projection is not exceptional, since it may happen almost everywhere. Differently, I concluded that focus-projection is unexceptional, since it does not need to be postulated. The reasoning goes as follows: all that is needed is rightmost prominence. The effects of projection are a consequence of coincidence of rightmost borders of constituents (NP, VP, JP). Any other stress pattern will preclude projection, since projection does not exist as an independent phenomenon. It is just the effect of the ambiguity of several rightward constituent borders.

3.3. An algorithm for identifying focus

Combining the distribution of focus and the prosodic facts, the following generalizations are obtained:

a) Focused constituents are rightmost in the sentence;
b) Focused elements bear high stress (neutral or marked);
c) If there are multiple foci, they appear all to the right of the non-foci elements.
d) If there are multiple foci, the first in a left-to-right fashion bears heavy stress.

These observations may serve as the cues to the formulation of an algorithm to identify information focus in Portuguese, which is given in (46). Note that (46) is meant as an algorithm to identify information focus, not the other types of focus, excluding thus the cleft constructions
discussed above, which were nevertheless useful for the study of focus projection. This formulation is partially based on Reinhart's (1995) observations concerning the distribution of focus and on her own formulation of what a focus-set of constituents is:

(46) The focus set of constituents of a sentence is the prosodically most prominent constituent plus everything it c-commands.

Prosodic prominence is defined as in (47), adapted from Nespor and Vogel (1986), Cinque (1993), Zubizarreta (1995) and Nash (1995):

(47) The prosodically unmarked most prominent constituent is the rightmost one, following the recursion pattern of a language.

(47) states that in VO languages, the most prominent constituent is the rightmost one to the right of the verb, while in OV languages, the most prominent constituent is the rightmost to the left of the verb (the XP in bold in (48) below):

(48) \[ \text{V O XP [XP V]} \]

This is a crucial stage in the work of this dissertation, regarding theoretical options: in most of the work done so far, I have remained neutral regarding Kayne's (1994) hypothesis that all languages are underlyingly SVO and that rightward movement and adjunction are not allowed. The results of chapter 2 are consistent with this hypothesis, since I show on an empirical basis that right adjunction of adverbs may be dispensed with. In chapter 3, I have shown that subjects in sentence final position in Portuguese are not to be derived by means of right-adjunction. I have further shown that Portuguese has scrambling of the Dutch/German type, eliminating one potential typological difference between OV and VO languages. Anticipating the work to be developed in chapter 6, I will show that several word order patterns may be derived from one single basis. Yet, I decided not to adopt Kayne's antisymmetry hypothesis, since for the formulation of the sentence-stress-assignment algorithm, I need to assume the existence of OV and VO languages. If I were to say that stress is rightmost, without adding anything further, I would make wrong predictions for a language like Dutch, in which the most stressed constituent in a sentence is the element preceding the verb
and not the verb itself (except for marked constructions, in which there is stress shift from the preverbal element to the verb):

(49)  a. Ik heb het boek gelezen.
     b. *Ik heb het boek gelezen.

The correlation between sentence stress assignment and the OV/VO distinction finds further confirmation in the language acquisition work by Nespor, Cristophe and Guasti (1996), who show that the directionality parameter is set at the prelexical stage, and argue that the right setting of the parameter is triggered by the prosody of the languages: the relative ordering between heads and complements will be uniform in syntax and phonology.

For reasons of coherence with this type of work developed in the framework of phrasal phonology, I will not abandon the OV-VO distinction. I would nevertheless like to emphasize that this distinction may be eliminated, if a way is found to derive the coincidence of stress pattern and word order independently of the basic word order. A potential solution for this is also mentioned in a footnote in Nespor et alii (1996), who suggest that the PF nature of sentence stress assignment may be relevant at the level in which the movement operations that transform VO into OV have already applied. I will not explore this idea here, since I will propose that syntactic movements in some languages may or may not happen, depending on the relative importance of the constraints on focus. I will thus leave this issue open, and maintain the OV-VO distinction for reasons of coherence.

Let me now return to the algorithm presented above. When the conditions for a constituent which has to be interpreted as focus to receive the sentence (neutral) most prominent stress are not met, a heavy stress has to be assigned. This happens e.g. in the case of multiple foci, in which two constituents cannot occupy the rightmost position at the same time.

Let us see how the algorithm in (46) allows for identifying focus in the cases discussed above. In the case of a VSO sentence with high stress on the subject, the set of focused constituents will be the subject and the object. The subject is interpreted as focus, because it is the most prominent constituent. The object is interpreted as focus, because it is c-commanded by the subject. Since the verb is out of the c-command domain of the subject, it is not interpreted as focus.
In the case of VOS sentences, the subject bears the main neutral stress and does not c-command anything, hence it is the only constituent interpreted as focus. The focus on the subject may not project, because the unmarked word order is changed. The impossibility for rightmost focus to project when there are changes at the unmarked word order will not follow from any considerations in this chapter. A solution for this problem will be proposed in chapter 6.

As for SVO, two situations are possible: the most natural is that the object is the rightmost element, bearing sentence neutral stress. In that case, since it does not c-command anything, only the object is interpreted as new information. The other two possibilities are interpretation of these sentences as VP-focus and everything in focus. These interpretations also follow from the algorithm in (46), since the object is also the rightmost part of the constituent IP or VP that one wants to focus in cases of sentence-focus and VP-focus respectively. Focus projection is thus interpreted here as a natural consequence of the general neutral stress rule: assign the most prominent stress to the rightmost element. This rule is general to any constituent, independently of its label, as observed by Cinque (1993) among others.\footnote{Cinque’s algorithm is defined in terms of embedding, while here I use linear order. I will leave aside the discussion between embedding and linearity for the moment, returning to it when it will be relevant. A reviewer to the published version of this chapter (Costa 1997b) points out to me that the algorithm in (46) does not apply to these cases, and that it should be defined in terms of rightmost word rather than constituent. I will stick to the definition in terms of constituent following the tradition in phrasal phonology and in prosody, since the predictions are exactly the same. The same reviewer argues that marked and unmarked stress assignment follow from different mapping conditions. This is not true, as discussed in this paragraph: in case of VSO with main stress on the subject, the focus set is the subject and everything it c-commands (the object); in case of SVO with main stress on the object, the focus set is this element (which is ambiguously the rightmost part of the NP, VP and IP as a consequence of iambic stress) and everything it c-commands (nothing). The crucial difference between the two cases is whether or not the constituent bearing main stress c-commands another constituent. When that is not the case, the effects of focus-projection arise. Crucially, the algorithm in (46) predicts both cases.}

\begin{itemize}
\item[(50)] a [\text{VP the good man with the red shirt}] \\
\item b [\text{VP much more beautiful}] \\
\item c [\text{VP before midnight}] \\
\item d [\text{VP give something to someone}] \\
\item e [\text{VP John gave a book to Mary}] \\
\end{itemize}
Now, why is focus projection impossible in a VSO sentence? The explanation is simple: since the subject is the most prominent constituent, it cannot be the case that the whole sentence is in focus, since the stress does not fall on its rightmost element (see also Cinque 1993 and Reinhart 1995 for a similar reasoning).

Should it be possible then that stress on a sentence-final subject would yield sentence-focus? In principle, nothing precludes it, since the subject is both the rightmost element and the most prominent one. There is however a reason for excluding this possibility: if one compares a VOS sentence with a SVO sentence, they are equal in terms of prosody. However, the former is more marked, since the subject does not appear in its canonical position: Spec,IP. Hence, since there is no difference in status in terms of possible interpretations, the least marked SVO sentence is grammatical.\textsuperscript{12}

Let us now see why some sentences are impossible when associated to some interpretations, and how that follows from the algorithm in (46). Why can’t a VSO sentence be interpreted with focus on the subject only? That is, why is (51B) not a felicitous answer to (51A):

(51) A: Who broke the window?
B: #Partiu o PAULO a janela.
    broke Paulo the window

The problem with this answer is that it forces the object to be interpreted as new information, since it is within the c-command domain of the subject which bears the most prominent stress. Since window has been

\textsuperscript{11} Some varieties of Spanish and Greek, differently from Portuguese, use VSO in unmarked contexts. However, in those cases, the stress falls on the rightmost constituent. VSO with unmarked stress on the object is ungrammatical in Portuguese. The explanation I am giving in the text is meant to derive the fact that VSO with stress on the subject may not project, yielding a sentence-focus interpretation. This type of explanation also holds for Spanish. According to Zubizarreta (1995), Spanish also has VSO of the Portuguese kind, which may not answer what-happened-questions, with main stress on the subject. In chapter 6, I will provide an analysis for cross-linguistic variation at the unmarked case, explaining why SVO is the order permitting focus-projection in Portuguese, and not VSO as in some varieties of Spanish.

\textsuperscript{12} The same reasoning applies to exclude a sentence-focus interpretation for a VSO sentence with unmarked stress. See the next two chapters for a formalization of this analysis in terms of markedness.
referred to in the discourse, this interpretation is not felicitous.

Another case excluded by the algorithm in (46) is the interpretation for a VSO sentence in which the subject is not stressed:

(52) *Partiu o Paulo a JANELA.
broke Paulo the window

The problem with this sentence is that, according to the definitions in (46), only the object can be interpreted as focus. Now, if that is the case, the sentence is ruled for either of the two following reasons: if the subject is to be interpreted as new information, the sentence is out since the subject is not included in the focus set of constituents. This is because the subject is not c-commanded by the most prominent constituent. Alternatively, if the interpretation required is one in which the subject is not to be interpreted as focus, then there is no reason for it to stay in a low position.\footnote{It has been pointed out to me that subject movement in this case corresponds to a case of defocusing yielding an unmarked word order, which is not common to defocusing operations. Note however, that defocusing in these cases also has the function of topic-promotion which very often is associated with subjects being in their canonical Spec,IP position, given the natural tendency for subjects to be the topic of the sentence (cf Lambrecht 1994, Li 1976). Under the assumption that markedness arises as a consequence of a natural tendency not being met, subject topic-promotion should not yield a marked word order.} Also, heavy stress should never appear in sentence-final position, unless for contrast purposes, since it is not necessary in order to assign prominence to a constituent (recall the discussion of (47)).

It seems thus that the principles given above make a large number of correct predictions, concerning the possible intonations and mappings between word orders, intonations and discourse functions.

3.4. Summary

Summarizing the results of this section, I present the following table, containing the several possible word orders with most prominent element marked in bold. The second column of the table indicates the focus set of constituents given by each word order, and the third column indicates the reason why some pairs word order/intonation and word order/focus-set are impossible:
<table>
<thead>
<tr>
<th>Word Order</th>
<th>Focus-set</th>
<th>Reason for ungrammaticality</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVO</td>
<td>O, VP or IP</td>
<td></td>
</tr>
<tr>
<td>VSO</td>
<td>S and O</td>
<td></td>
</tr>
<tr>
<td>VOS</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>*SVO</td>
<td>S</td>
<td>S is not c-commanded by the most prominent element</td>
</tr>
<tr>
<td>*SVO</td>
<td>S</td>
<td>V and O are c-commanded by the most prominent element; they should be part of the focus-set</td>
</tr>
<tr>
<td>*SVO</td>
<td>IP</td>
<td>The sequence with unmarked stress blocks the more marked one</td>
</tr>
<tr>
<td>*VSO</td>
<td>IP</td>
<td>Stress is not in the rightmost constituent of IP</td>
</tr>
<tr>
<td>*VSO</td>
<td>IP</td>
<td>SVO is preferable, since the word order is less marked (cf. chapter 6)</td>
</tr>
<tr>
<td>*VSO</td>
<td>O</td>
<td>Stress falls on the subject</td>
</tr>
<tr>
<td>*VSO</td>
<td>O</td>
<td>Since the subject is not in focus, there is no reason for it to stay low (cf. ch.3)</td>
</tr>
<tr>
<td>*VOS</td>
<td>VP, IP</td>
<td>SVO is preferable, since the word order is less marked (cf. chapter 6)</td>
</tr>
<tr>
<td>*VOS</td>
<td>S and O</td>
<td>O has been scrambled for escaping focus, so it may not be the focus (cf. chapter 3).</td>
</tr>
</tbody>
</table>

(T1) illustrates the relevance of two aspects for the identification of focus: stress assignment and c-command by the most prominent element. These two aspects have been formalized in the algorithm for sentence stress assignment in (46) and (47).

It is important to note at this stage that the principles in (46)-(47) just represent the instructions hearers have to follow in order to identify the focus of a sentence. As such, these principles are quite descriptive in nature. They are explanatory only to the extent that they follow from independent principles: in order to get to (46) and (47), it is necessary to have a theory of phrasal phonology which relates sentence stress assignment to the directionality parameter (Nash 1995, Nespor, Guasti and Cristophe 1995)). In addition, a theory of sentence structure making sure the c-command requirement is met in the relevant configurations is
required (chapter 3). Finally, there has to be an independent explanation for the part of the principles that require focus to be prosodically prominent (see Givón 1984 for an explanation in terms of attention span). It is a combination of these three aspects that makes it possible to arrive at a formulation of an algorithm for sentence stress identification, as given in (46)-(47).

For the purpose of this chapter, the most important aspect to keep in mind is the following: **prosody and c-command are crucial for identification of focus.**

Concerning the debate focus-in-situ vs. focus-movement, from the Portuguese data discussed above, one may conclude that several rearrangements of the sentence word order must be made for the sake of identifying focus, although there is not one specific position where focused elements move to on the left periphery of the sentence, as is the case in Hungarian. Instead, focused elements seem to stay in the rightmost position, and in most cases they do not undergo any movement in order to reach this position. Given this behavior, the conclusion obtains that Portuguese is not of the Hungarian type, and it can be treated as a language with focus in situ.

If Portuguese is a language with focus-in-situ, the hypothesis according to which languages with focus-in-situ move focused constituents at LF to a position similar to the Hungarian one (Brody 1990) may be tested. Portuguese should be one of those languages in which there is LF-focus movement.

The goal of the next section is to evaluate the predictions of such a hypothesis.

### 4. Focus movement at LF

Assuming the description made in the last section, according to which the key-factor for word order rearrangements in Portuguese is the information structure of the sentence, and more precisely the location of sentential stress, it is now possible to use Portuguese as a test for Brody’s hypothesis concerning LF-movement of in-situ focused constituents. Testing such hypothesis is the goal of this section.

Brody’s proposal is that for an English sentence like (53a), there is a corresponding LF-representation (53b):

\[(53)\]  
\[a \ [\text{Mary loves JOHN}]\]
Let us now review the Portuguese data presented above and see what predictions such a proposal makes.

The discussion in sections 4.1. and 4.2 will be conceptual and empirical: section 4.1 will argue that LF-movement of focused constituents is uneconomical; section 4.2 will argue that LF-movement of focused constituents is empirically inadequate.

4.1. LF-movement is uneconomical

A first problem with an analysis in terms of focus-movement at LF for Portuguese is conceptual in nature. I have shown that there are several word orders available in Portuguese, each of them corresponding to a given information structure. In the previous chapter, I have identified the nature of the operations yielding each word order, which is summarized in (54):

(54)  SVO: subject in Spec,IP, object in base-position  
VSO: subject in Spec,VP, object in base-position  
VOS: subject in Spec,VP, object adjoined to VP (via scrambling)  
OSV: subject in Spec,IP, object topicalized  
OVS: subject in Spec,VP, object topicalized

The motivation for movement operations like scrambling, topicalization, or the postponing (or canceling)\(^\text{14}\) of movement like in cases in which the subject is left in situ is to create configurations which can easily be mapped onto prosody. For instance, objects scramble across the subjects so that the latter is in the rightmost position of the sentence, receiving the main stress, and in order to escape this stress (not being interpreted as focus).

There is thus a set of operations yielding representations that constitute an output to be read off by prosody. These rearrangements in terms of word order are sufficient to identify the focus of the sentence. An application of the algorithm for identification of focus presented in section 2 is sufficient for unambiguously identifying the focus of a

\(^{14}\) A decision in terms of analysis with respect to whether there is Case-movement at LF or no movement at all will be postponed until chapter 5.
sentence.

A functional projection for focus (Brody’s Focus Phrase) and movement to this functional projection ensures that there is identification of focus at a certain level of a derivation. If foci are not identified in overt syntax, they are identified at LF.

A first problem with this type of approach is that there is no doubt that focus must be identified in overt structures. It always appears marked prosodically and/or morphologically, cf. Givón 1990. It is however questionable whether focus is a notion relevant for LF. For instance, Vallduvi (1990) argues quite extensively that there should be an information component for the grammar, given the fact that focus does not change truth-values.\(^\text{15}\) Leaving aside this debate for the moment, it must be noted that this would entail that the grammar contains two independent mechanisms for identifying focus: a surface mechanism based on rearrangements carried out for the sake of a successful mapping onto prosody enabling an unambiguous identification of the focus of a sentence on the one hand, and a movement operation at LF which has the purpose of identifying focus on the other.

This situation is undesirable on conceptual grounds: there are two mechanisms deriving the same thing: identification of focus. The theory is therefore uneconomical (Chomsky 1995).

If other cases of overt/covert movement are considered, it is not all that clear that these also involve a duplication of licensing mechanisms. For instance, wh-in-situ languages, do not resort to other operations in order to identify wh-in-situ. The only difference between, say, Chinese and English has to do with the ordering of words (see Huang 1982), not with prosody.

The question whether one or two licensing mechanisms are necessary for focus is also an empirical one. If there is no empirical advantage in having movement at LF, this operation should be dispensed with. In what follows, I will show not only that there are no arguments in favor of LF movement, but also that this proposal is not descriptively adequate, since it makes wrong predictions.

4.2. Predictions of focus-movement at LF

I have argued that c-command by the most prominent element is

\(^{15}\) I will return to this matter in the last section.
crucial to identify the focus of a sentence. The set of focused constituents may be identified with the most prominent constituent and everything that follows it. (cf. 47).

Keeping in mind the relevance of c-command, let us now evaluate the predictions of LF-representations for each word order.

Let us start with the possible LF-representations for a VSO sentence. Since the subject is the most prominent element, it might be assumed that this would be the element to be moved at LF, yielding an LF-representation like in (55b):

(55) a. Comeu o Paulo a sopa.
    ate Paulo the soup
    LF-representation:
    b. [IP o Paulo [IP Comeu a sopa]]

The representation in (55b) raises two problems: first, it makes it impossible to distinguish this sentence from a VOS sentence in which only the subject is in focus:

(56) a. Comeu a sopa o Paulo.
    LF-representation:
    b. [IP o Paulo [IP comeu a sopa]]

This is because also in this case, the subject is the most prominent element of the sentence.

I have argued above (see chapter 3 for details) that the only difference between (55a) and (56a) is the position of the object (scrambled in VOS). Following Reinhart (1995), I also assume that scrambling takes place for prosodic reasons: in other terms, via

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16 Arguing against an LF-representation for sentences with multiple foci where only one constituent has been moved is strange. However, I will consider such a representation, taking into account the fact that in most analyses involving LF-movement of focused constituents, it is argued that Spec,FP may host at most one constituent (see Kiss 1995 for several examples of analyses assuming this).

17 I am disregarding here a possibility suggested to me by Sje Barbiers. He points out to me that moving the VP to Spec,FP might derive the correct reading, since it is the constituent containing the two focused elements. However, keeping the assumption underlying the focus movement analyses that focus interpretation comes about as a consequence of Spec-head agreement between the head focus and the moved constituent, such an analysis should trigger VP-focus interpretation, which is not true for VSO.
scrambling, the object is out of the scope of the subject and as a consequence, it is not interpreted as a member of the set of focused constituents of the sentence.

Now, in the LF-representations in the (b) sentences, this difference is lost. In both cases, the subject c-commands the object. Moreover, it also c-commands the verb, yielding no difference with respect to an unmarked SVO sentence:

\[
(57) \quad [_{IP} O Paulo comeu a sopa] \\
LF\text{-representation (if the whole sentence is in focus):} \\
[_{FP} [_{IP} O Paulo comeu a sopa][_{IP} t]]
\]

Therefore, LF-movement to a focus position seems to destroy all the c-command configurations created at S-structure and necessary for identifying focus. Since the operations we identified at S-structure have as a purpose to create a c-command configuration that allows identification of focus, it seems unreasonable that a covert LF-operation will undo this work.

Concluding, it seems that, given the relevance of c-command for the identification of focus, the LF-movement analysis makes wrong predictions. Either the scrambling operation is redundant or the LF-focus movement operation is redundant; since scrambling is visible and LF-movement is not, it is more likely that the latter is non-existent.

In spite of the argumentation just presented, there are still some ways of rescuing the LF-movement approach. I will list them and present some criticism to each hypothesis:

\textit{a) Traces keep the original c-command configuration:}

One could argue that the criticism raised above is meaningless, since it overlooks the role played by traces in the identification of focus. If one of the purposes of focus-movement is to establish an operator-variable relation between a focus operator and its base position, the role of the trace (as a variable) is relevant.

Hence, one might say that for a VSO sentence like (56) repeated here the more specific LF-representation (58b) does not create any problem:

\[(58) \quad a \quad \text{Comeu o Paulo a sopa.} \]

\textit{LF\text{-representation:}}
FOCUS IN SITU

b \[ [vP o Paulo] [vP comeu t, a sopal]\]

In (58b), in spite of the movement of the focused NP \textit{o Paulo}, the c-command configuration that was relevant for S-structure is still maintained, since at its base position, the NP does not c-command the verb, and c-commands the object.\footnote{Cf. Chomsky 1995 for reconstruction under the copy theory of traces, which enable a real copy containing lexical material to stay in the base position.}

The problem with the LF-representation given before was that it was undistinguishable from the LF-representation for a VOS sentence. Taking into account the role played by traces, such a problem does not come up. The role of traces predicts a relevant difference with respect to a VOS sentence. The relevant difference is that, since in a VOS sentence the base position of the subject is below the landing site of the object, the relevant c-command configuration is still maintained: at LF, the trace of the subject does not c-command the object: the relevant configuration is given in (59b):

(59) a \textit{Comeu a sopal o Paulo.}

\textit{LF-representation:}

b \[ [vP o Paulo] [vP comeu a sopal t, t] ]

In (59b), the trace of the subject does not c-command anything: it is therefore the only focus in accordance with the algorithm presented in section 3 (47).

Now, there is a flaw in the discussion of (59): remember I have proposed that the derivation of VOS sentences is done via scrambling of the object to the left of the subject, adjoining it to VP. If that is the case, there is also a trace in the base position of the object, hence the right LF-representation for (59a) is (60) rather than (61b):

(60) \textit{LF-representation for VOS:}

\[ [vP o Paulo] [vP comeu [vP a sopal [vP t, t, t]]] \]

But if (60) is the right LF-representation for a VOS sentence, and if traces are relevant for identification of focus, the prediction is that a VOS sentence should always be ambiguous between a reading in which subject and object are focused and a reading in which only the subject is focused.
Since that is not true, the role of traces in the identification of the base position of focused elements can be discarded, since it is empirically inadequate.

Summing up, once traces are taken into consideration, it must be assumed that all traces are relevant for identifying focus (or at least all traces of the same type). Since in VOS sentences, the object has been A-bar moved, we must accept that its trace is relevant for identification of focus for the sake of uniformity of analysis. This assumption makes incorrect predictions.

b) All foci move:

Another attempt to solve the problems that arise in destroying the -command configurations at LF may be to follow Brody’s (1990) Focus-criterion, which suggests that, at LF, all focused constituents have to be in Spec of FP. Now if that is true, we have distinct LF-representations for VOS and VSO, avoiding the problems indicated above:

\[(61)\]
\[
\begin{align*}
1/2O: & \\
\text{a} & \text{Comeu a Paulo a sopa.} \\
\text{LF-representation:} & \\
\text{b} & \left[ [\text{a sopa}], \left[ \text{o Paulo} \right], \left[ \text{\text{comeu} t}_1 t_1 \right] \right]
\end{align*}
\]

Since both the subject and the object are focused, both are moved at LF in a VSO sentence (61b). Note that the representation has to be the one in (61b) and not the one in (62), since (62) involves crossing paths:

\[(62)\]
\[
\left[ [\text{FP [o Paulo]}, \left[ \text{a sopa} \right], \left[ \text{\text{comeu} t}_1 t_1 \right] \right]
\]

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19 A reviewer of a published version of this chapter pointed out to me that the LF representation in (60) should never yield a configuration in which a sopa is in focus, since this constituent is never in Spec,FP. This is indeed true within the narrow view on focus criticized here: that the only way to license focus is by establishing an operator-variable relation at LF. However, since I have already argued that identification of focus is done at S-structure as well, I must seriously consider the arrangements at S-structures as a mechanism of identifying focus. In that case, and since the -command configurations are relevant for defining the focus set of elements, it should be relevant at all levels of representation. This implies that in (60) the object could optionally be interpreted as focus, since it would reconstruct into its base position yielding a VSO order.
In a VOS sentence, in which only the subject is in focus, the LF-representation would only involve movement of the subject:

(63) \(V/O:S\):
   \(V/O:S\):
   a. Comeu a sopa o Paulo.
   \(L F-r e p r e s e n t a t i o n:\)
   b. \([_{P} o Paulo, \{_{P} e comeu \{_{P} a \ sopa \{_{P} t, t, t\}]}]\]

Assuming that all foci must move to FP at LF makes the LF-identification of focus unambiguous, but still not unproblematic.

In case there are two foci (subject and object), their order at LF mirrors the basic one in order to avoid crossing paths when they are moved. Now, LF-movement can be tested by looking at quantifier scope (May 1985). In keeping with the hypothesis that LF exists as a level of representation, it must be assumed that quantifier scope is represented at this level. If a scope relation is established, the quantifier which has wide scope c-commands the other quantifier at LF. Now, if the LF-representation for a VSO sentence is the one in (61b), and there are quantifiers in subject and object position, the sentence should be unambiguous with respect to the possible scope of the quantifiers: only object-wide-scope should be available. However, (64) shows that a VSO sentence may be ambiguous with respect to scope:

(64) Lem dois rapazes um livro. \((S>_{O},O>S)\)
   read two boys one book

From the LF-representation in (61b), a reading in which there is one book such that two boys read should be the only one available.\(^{20}\) However, that is not true.

This is even more obvious if the subject contains a quantifier that obligatorily takes scope over the object:

(65) Leu cada professor um exame. \((S>_{O},*O>S)\)
   read each professor an exam

The reading predicted by the LF-movement hypothesis that all foci move

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\(^{20}\) The subject wide-scope reading is obtained without resorting to crossing paths of the quantifiers: it corresponds to the reading one get from the surface order/configuration of the two QPs.
respecting crossing paths does not emerge. The reading that may be read off the S-structure relation between the two QPs is available. The sentence in (65) should be as bad as one in which cada/each cannot ever take scope over the indefinite. In (66), I give such a case: if the sentence contains an adjunct with an indefinite, and if the adjunct is sentence-final, the quantifier can scope over it (a). If the indefinite is not c-commanded by the quantifier, the sentence is very marked (66b);

(66) a Cada professor falou com a Paula num dia diferente.
each teacher talked with Paula in a day different
‘Each teacher talked to Paulo in a different day’

b ???Num dia diferente, cada professor falou com a Paula.
in a day different each teacher talked with Paula

According to the hypothesis that all foci move, the VSO sentence in (65) should have the same status as (66b), which is not true.

It seems thus that moving all the focused constituents does solve the problem of having ambiguous LF-representations but makes wrong predictions with respect to quantifier scope. Therefore, this is not the way to solve the empirical problems the LF-movement analysis makes.

I should note that the argumentation just developed makes sense only in a framework not allowing for crossing dependencies. If the alternative approach is taken (permitting crossing but not nesting, as in Chomsky 1995), the argument still holds provided that the relative order between quantifiers is swapped. In such case, only subject wide-scope would be predicted, which would remain problematic for ambiguous sentences like (67) repeated from above:

(67) Leram dois rapazes um livro. (S>O,O>S)
read two boys a book
c) Surface c-command has nothing to do with the LF-requirement

The third type of solution one might try to argue for in order to defend LF-movement of foci would be to say that the identification of focus done at S-structure and the identification of focus at LF via
movement to a functional projection are independent from each other. The former has to do with arranging words in a given order for a good mapping with prosody and the latter has to do with semantic identification. It is hard to see what the consequences of such a split would be. However, if focus is a semantic category invisible to prosody, there is no clear reason for why it should be marked prosodically. If instead, one treats focus in discourse/functional terms (e.g. Vallduví 1990), the relation to prosody is clear: the most informative material in the sentence has to be assigned prominence, as argued in Givón 1990, and the structural semantic identification can be dispensed with.

This latter approach is more advantageous than the split between independent prosodic and semantic licensing, since it captures the relation between function and form and the fact pointed out by von Stechow (1990), Rooth (1985) among others that focus does not change truth-values, hence needs not be represented at LF.

One problematic case for the claim that focus does not change truth-values is raised by the following cases discussed in Rooth (1985) and Partee (1991) among others, brought to my attention by Martin Hoccoop:

(68) OFFICERS always escort ballerinas.

Paraphrase:
Everyone who escorted a ballerina was an officer.

(69) Officers always escort BALLERINAS.

Paraphrase:
Everyone who was escorted by an officer was a ballerina.

The problem with these sentences is that it seems that the position of stress does indeed alter the truth-conditions of the sentence. That is, we have a situation in which focus has truth-conditional import. Now, this is more evident when a Q-adverb (either overt or covert) is present.\(^\text{21}\) In (70), the focus either on the subject or on the object does not make any significant difference:

(70) a OFFICERS escorted ballerinas.
    b Officers escorted ballerinas.
    c Officers escorted BALLERINAS.

\(^{21}\) Or other element that associates with focus, see discussion in Rooth 1985.
Partee (1991) notes that the relevance of focus in (68-69) is to decide what goes in the nuclear scope and in the restrictive clause of the focus-sensitive quantifier always. Her conclusion is that focus may be represented in the nuclear scope, and the focus frame in the restrictive clause:

\((68')\) \([\text{VP} \text{ Always}] [\text{RC} \ x \text{ escorts ballerinas}] [\text{NS} \text{ officers}]\)

\((69')\) \([\text{VP} \text{ Always}] [\text{RC} \text{ officers escort } x] [\text{NS} \text{ ballerinas}]\)

For the argument made here that there is no need to move focused elements at LF, these examples are not problematic. Actually, according to Diesing’s 1992 proposal concerning a tripartite structure for quantification and its representation in the syntax (Diesing 1992), the prediction would be that the quantifier would be raised, and the focused constituents would stay inside VP (or undergo LF-reconstruction in the case of the subject), which is assumed to be the part of syntactic structure to be mapped onto the nuclear scope.

Hence, even the cases where focus is truth-conditionally relevant provide evidence against focus-movement at LF, for a proper mapping between syntactic structure and semantics, since the focused constituents should be VP-internal at LF and not in the Specifier of a left-peripheral functional projection.

4.3. Conclusion

In this section, I have argued that LF-focus movement is conceptually undesirable, since it reduplicates the identification of focus done at S-structure. More importantly, LF-focus movement is empirically inadequate, since it irreparably destroys the c-command configurations which are relevant for identification of focus.

Since there appears to be no ground for this operation, I suggest to eliminate it. In the next two sections, I will argue that two potential remaining arguments in favor of focus-movement do not constitute conclusive evidence.
5. Focus-preposing: overt focus movement

There are two types of arguments traditionally used in favor of some covert operation when there is no direct evidence in favor of it: one is the existence of overt movement of the same type within the same language; the other one is the existence of movement of the same type in some other language. In this section, we will look at the first type of argument and see that in spite of constructions like (71), which might naively be called focus-preposing, these sentences do not constitute evidence in favor of LF-focus movement:

(71) a Esse livro, cu li.
    that book I read
    b Com a mãe, o Paulo falou.
    with his mother, Paulo talked

The argument will go as follows: I will first show that Portuguese does not display focus-preposing of the type discussed in studies like Rizzi (1995). I will further argue that the construction labeled focus-preposing by some authors displays quite different properties from the in-situ foci we have been looking at. The conclusion will be that in spite of the terminological coincidence, one construction may not be taken as an empirical argument for the analysis of the other.

The existence of preposing constructions is taken e.g. by Rizzi (1995) as evidence in favor of the existence of some kind of operator movement to a functional projection Focus Phrase. There may be preposing of different kinds, and Rizzi (1995) argues for several differences between preposed topics and preposed foci. The differences he points out are the following ((72-75) are taken from Rizzi (1995)):

i) Topics but not foci can be associated with a resumptive clitic:

(72) a Il tuo libro, lo ho comprato.
    your book, I bought it
    b Il TUO LIBRO, (*lo) ho comprato.

ii) Foci but not topics induce weak-cross-over effects.

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22 The discussion in this section owes a lot to Inês Duarte and Eduardo Raposo.
iii) Bare quantificational elements may be focused but not topicalized.

(73)  a  *Nessuno, lo ho visto
        no-one I saw him
   b  NESSUNO ho visto.

iv) There can only be one focus in the sentence, while there may be several topics.

(74)  a  Il libro, a Gianni, glielo darò.
        the book to John I'll give it to him
   b  *IL LIBRO, A GIANNI, darò.

v) Focus but not topics are incompatible with wh-elements.

(75)  a  A Gianni, che cosa gli hai detto?
        to Gianni, what did you tell him
   b  *A GIANNI che cosa hai detto?

Rizzi claims that the first three properties can be derived from the fact that focus but not topic is quantificational. The first property follows since quantifiers have to bind variables, and clitics are not legitimate variables. For the second property, Rizzi adopts Chomsky’s account of the Weak-Cross-Over facts. The bare quantifier facts are explained under the assumption that a legitimate variable has to be in an A-position. Since clitics are not legitimate variables, there will be no A-position serving as a variable for the bare quantifier.

Rizzi claims that the distributional properties of focused constituents (uniqueness and incompatibility with wh-phrases) can be accounted for assuming the existence of a functional projection where focused constituents move to. I will not discuss here whether there is much advantage in proposing a functional projection or a split-CP or restrictions on adjunction to IP in order to derive the focus-preposing phenomena, since the nature of the structural configuration explaining the distributional facts in the left-periphery of the sentence in Italian falls outside the scope of this chapter.

The relevant aspect of Rizzi’s work for the present discussion is whether the existence of constructions like the ones he discusses is a good enough argument for assuming that focus in situ involves LF-focus movement. Rizzi himself points out that the function of preposed and
non-preposed foci is different: “[preposing] could not be felicitous uttered as conveying non-contrastive new information” (p.5). However, he suggests that lower focalization (cf.76), involving focal stress, which does not involve contrast, also involves displacement at LF to the left periphery of the clause:

(76) (from Rizzi 1995):
Ho letto IL TUO LIBRO.
‘I read your book’

In the remainder of this section, I will show that focus in situ and focus-preposing are two different phenomena, suggesting that they should be analyzed differently and that whatever version of Rizzi’s analysis of focus preposing does not apply to focus-in-situ. Although I will argue, following Raposo (1994), that Portuguese does not display focus-preposing of the Italian type, I will consider Rizzi’s list of properties for the more restricted construction in Portuguese, and show that these properties do not apply to in-situ foci.

The aspects to be considered are the following:

i) Portuguese does not have generalized focus-preposing, which weakens the idea that focus in situ should be construed as movement, since its overt counterpart does not exist.

ii) The construction involving preposing in Portuguese and focus in situ serve two different discourse functions, hence cannot be analyzed as a pure overt/covert manifestation of the same process, like in Brody (1990).

iii) Focus-in-situ and preposing are not incompatible, as it would be expected if Rizzi’s uniqueness constraint is correct and the moved element and the in-situ constituent of the same kind.

iv) Focus-in-situ and wh-phrases are not in complementary distribution.

v) Focus-in-situ is not quantificational.

I will not discuss weak cross over effects, since they can be derived independently of the conclusions concerning LF-movement (Rooth
The first aspect to be noted, which has been reported in several studies on Portuguese (Duarte 1987, 1996, Raposo 1994, 1997) is that Portuguese does not have the same type of construction that we can find in the other Romance languages. Thus, in Portuguese it is not possible to front a bare quantifier:

(77) *Ninguém, eu vi.
     Noone I saw

This contrasts with Italian (73), and is the first sign that Portuguese does not have focus-preposing. The fact that elements may be preposed without being associated with a clitic, as in (78) is due to the property described in Duarte (1987) that Portuguese has “English-like topicalization”, that is, topicalization without association with a clitic. The non-existence of this construction in Portuguese proves that the overt preposed construction may not be used as an argument for LF-movement, and most certainly weakens the LF-movement approach, since there is no overt counterpart of the covert operation. The LF-movement analysis is further weakened, if we take into account the fact that this construction is overt in the other languages.

The syntactically marked focus constructions that are found in Portuguese, described by Raposo (1994), among others, involve quantified DPs, and is exemplified in (78) (Raposo, p.c.):

(78) Muito vinho o João bebeu!
     Much wine João drank

This type of construction is much more natural if the sentence is exclamative.

Comparing this construction with the Italian case, they appear to be alike. Naturally, not all properties may be checked, since the construction is possible only with quantified DPs:

i) As far as combination with elitics is concerned, the preposed quantified DP may not be doubled:

(79) a. *Portuguese:
     Muito vinho, o João (*o) bebeu(*-o)!
     Much wine, João it drank it
b.  **Italian:**
   II. TUO LIBRO, (*lo) ho comprato
   your book, it have-I bought

ii) There may only be one quantified DP in this preposing construction:

(80)  **Portuguese:**
   a.  Muitas vezes o João bebeu vinho!
       Many times João drank wine
   b.  Muito vinho o João bebeu muitas vezes.
       Much wine João drank many times
   c.  *Muitas vezes, muito vinho bebeu.
       Many times much wine João drank
   **Italian:**
   d.  II. LIBRO, A GIANNI, darò.
       the book to Gianni, (I-will-)give

(80a) is similar to (78) in terms of context, hence it may be seen as one of the so-called ‘focus-preposing’ constructions. (80c) shows that two quantified DPs may not be preposed. This sentence is only acceptable if the first preposed element is interpreted as a topic. Under the exclamative interpretation that these preposed DPs receive (see 5.1. below), the sentence is ungrammatical.

iii) Preposed quantified DPs in the relevant interpretation are incompatible with wh-elements:

(81)  **Portuguese:**
   a.  *Muito vinho, com quem é que o João bebeu?
       Much wine, with whom João drank
   b.  *Com quem, muito vinho o João bebeu?
       With whom much wine João drank
Italian:

c. *A GIANNI, che cosa hai detto?
to Gianni, what did you tell

Again, (81a) is only possible under the topic interpretation for the DP
muita gente. With the exclamative interpretation, the sentence is
ungrammatical. This is not surprising, since the preposing is more natural
in exclamative sentences, and a sentence may not be simultaneously
interrogative and exclamative.

Given the similarity of behavior with the Italian construction,
when comparing in-situ with moved foci, I will use quantified DPs to be
sure that we are looking at syntactically marked foci.

5.1. The function of preposing

The two types of constructions can be fruitfully compared
contrasting the function of preposing and focus-in-situ respectively (see
also Raposo 1994, Duarte 1987, Casielles 1996). It will be argued that for
a constituent to be preposed, it has to yield given information, even in the
constructions involving quantified DPs only.

I have been considering throughout this chapter that the focus that
appears in situ is used to introduce new information, hence it is felicitous
as an answer to a wh-question:

(82) A: Quem é que o Paulo viu?
who did Paulo see
B: O Paulo viu muita gente.
Paolo saw many people

Now, if the difference between preposing and focus-in-situ is just a
difference in terms of the locus of application of the operation focus-
movement in the derivational history of the sentence, both cases are
expected to yield a felicitous answer to a wh-question. However, that is
not true, as the inappropriateness of (83) attests: 25

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25 More subtle differences concerning the discourse function of preposed elements are
given in Ambar (1998), who also shows that preposed elements may not be absolute
new information, but argues for the existence of what she calls topic/focus in which
(83) A: Quem é que o Paulo viu?
    who did Paulo see
B: #Muita gente, o Paulo viu.
    many people, Paulo saw

Note that the facts in (82)-(83) are true for any type of preposing. If we prepose a PP, the same effects obtain:

(84) A: Com quem é que o Paulo falou?
    With whom Paulo talked
B: O Paulo falou com {a Maria/muita gente}
    Paulo talked with Maria / many people
(85) A: Com quem é que o Paulo falou?
    With whom Paulo talked
B: #Com {a Maria/muita gente} o Paulo falou
    With Maria / many people Paulo talked

What is then a felicitous context for preposing? Consider the following fragments of discourse, in which preposing is felicitous.

As mentioned before, preposing is possible if the preposed constituent is given in the discourse (or in the context). These are cases in which preposing is undistinguishable from topicalization. (86) and (87) exemplify such cases:

(86) A: Quem é que comeu muita sopa?
    who ate much soup
B: MUTA SOPA, ninguém comeu, (muito pão comeu o Paulo).
    much soup no one ate (much bread Paulo ate)

(87) A: Alguém leu o teu livro?
    someone read your book
B: O MEU LIVRO, o Paulo leu (não o teu).
    my book Paulo read (not yours)

there is fronting and some function overlap. Although such cases do not disconfirm the main observation that the function of focus-in-situ is different from the function of preposing, I think it is important to refer to them for completeness.
Another context for preposing (now for the case considered in Raposo's work cited above) is exclamative sentences:

(88)  Muito vinho o Paulo bebeu!
       Much wine Paulo drank

(89)  Muita gente tu encontraste!
       Many people you met

In these cases there is no implicit contrast with anything else. Note however that even in an exclamative answer to a question, this word order is not licit if the quantified DP is new information (the information focus of the sentence). The relevant contrasts are given in (90) and (91):

(90)  A:    O que é que o Paulo bebeu?
       What Paulo drank
       B:    a.    O Paulo bebeu muito vinho!
            Paulo drank much wine
            b. #Muito vinho o Paulo bebeu!
               Much wine Paulo bebeu

(91)  A:    Quem chegou?
       Who arrived
       B:    a.    Chegou muita gente!
            Arrived many people
            b. #Muita gente chegou!
               Many people arrived

A rather convincing confirmation of the exclamative force of the sentences discussed in Raposo's work was brought to my attention by Inês Duarte: it is impossible to add a question tag to a sentence with a preposed quantified DP, which shows that the sentence may not be interpreted as declarative:

(92)  Muito vinho bebeu o João, (*não bebeu*)
       much wine drank João, not drank

It is thus possible to conclude that the focus-preposing construction may not serve to introduce new in formation. It is possible to obtain this word
order if the quantified DP may be deduced from the context (cf. 93).

(93) A: A festa foi óptima!
The party was great
B: Muito vinho o Paulo bebeu!

As the examples above show, in a felicitous context for preposing, the constituent that is in the left periphery of the sentence has to have been previously referred to in the discourse or be deduced from the context. Moreover, it never introduces new information. Rather, it contrasts some piece of old information with something else. If preposing would convey new information, it might be used for answering questions. As shown above, this is not true. As also mentioned in work by Inês Duarte (Duarte 1987, 1996), anytime there is preposing of a constituent in Portuguese, the information conveyed by that constituent is given (independently of whether it is further contrastive or topical). Actually, the part that answers the question can never be fronted as (94) and (95) illustrate, independently of whether the constituent conveying new information is contrasted to another one or not:

(94) A: Quem é que viste ontem?
who did you see yesterday
B: ONTEM vi [muita gente], (hoje pouca)
yesterday I saw many people, (today few)

An answer in which the focus is fronted and the contrasted temporal adverb is left in situ is simply infelicitous:

(95) A: Quem é que viste ontem?
who did you see yesterday
B: #[Muita gente], vi ontem.
Many people I saw yesterday

This is true even if the focus of the sentence (i.e. the part that replaces the wh-phrase) is itself contrasted:

(96) A: O que é que puseste na prateleira?
What did you put on the shelf
B: #[MUITA COISA], pus na prateleira, [POUCA COISA], na cadeira
Many things I put on the shelf, few things on the chair

A felicitous answer for this question would involve preposing the PP:

(97)  B: NA PRATELEIRA, pus [muita coisa], NA CADEIRA [pouca coisa],
on the shelf I put many things, on the chair few things

It seems thus, that in spite of the need to be contrasted, a constituent that constitutes absolutely new information can never appear in fronted position. On the other hand, topics may be contrasted. This conclusion suggests that taking the constructions of preposing as the overt counterpart of focus in situ is erroneous, and that the label focus-preposing is often used without looking at the specific properties of the language involved and at the contexts in which each construction may be used, as also pointed out by Büring (1995).

For the case of Portuguese, focus-preposing is restricted to quantified DPs, and even in those cases, it is not an alternative to focus-in-situ, since the discourse function is different. Hence the construction involving preposing must not be taken as an argument for LF-movement of focused constituents.

5.2. Preposing and focus-in-situ are not incompatible

Turning now to the properties listed in Rizzi (1995), recall that it was observed that, differently from topicalized constituents, there is no recursion of focused constituents at the left periphery of the sentence:

(98)  (from Rizzi (1995):

* A GIANNI, IL LIBRO darò (no a Piero, l’articolo)
to Gianni, the book I’ll give, not to Piero, the article

According to Rizzi, this is so because there is only one position where foci can move to. Rizzi’s explanation goes as follows (leaving aside the technical implementation): if there is one partition in terms of focus and presupposition, as soon as a first focus is identified, everything that follows it is obligatorily interpreted as presuppositional, hence the inappropriateness of two foci.
Although this binary partition may be too simplistic, as argued by Valdenu’s (1990) among others, Rizzi argues that two foci of the same type cannot cooccur in the same sentence. Now, if this is true and if LF-focus movement exists, a preposed focus is not expected to cooccur with a focus in situ, since the latter will be moving at LF creating a structure like (98). This is, however, incorrect, as (99) shows, where a preposed focus (a quantified DP, which is in agreement with Raposo’s 1994 description) cooccurs with a focus in situ. The sequence may be interpreted as a legitimate (exclamative)24 answer to (99A):

(99)  
A: Onde é que o Paulo partiu muitas coisas
where did Paulo break muitas coisas

B: MUITAS COISAS o Paulo partiu [em tua casa]!
Many things, Paulo broke at my house...

If the distinction between focus-preposing and focus-in-situ could be reduced to a simple difference in terms of locus of application of movement, the contrast between (98) and (99) would not be possible to explain. If, instead, focus-in-situ is interpreted in situ as suggested above, there is no problem when comparing these two structures.25

24 As mentioned before, it is relevant to add that the answer must be exclamative, since speakers tend not to accept the focus preposing construction as a simple answer to the question. I consulted five speakers on that matter and they all agree that this word order is favored if many things is given information. This is however not crucial for my point. The crucial aspect is that there may be a fronted focus (independently of the exact characterization of its discourse function) cooccurring with a in-situ focus. The example in (99) is indeed a focus-preposing construction and not a topicalization, since the preposed quantified DP may not be doubled in the relevant context:

(i) *Muitas coisas, o Paulo partiu-as.
many things Paulo broke them

If the quantified DP would be a topic, it might be doubled:

(ii) What has Paulo done to many things?
A: Muitas coisas, o Paulo partiu-as.

25 One could argue that this argument is pointless, since a parallel can be drawn with respect to wh-phrases in multiple questions: one moves, the other stays in situ and movement of both is ungrammatical. However, there is a difference, given the nature of the explanation advanced by Rizzi. The exclusion of two preposed foci is semantic/pragmatic once one focus is identified the rest has to be interpreted as presupposed material. In Rizzi’s analysis this implies the existence of only one structural position for foci. Such an explanation predicts incompatibility of two foci independently of the position they occupy at S-structure, which is not the case for multiple wh-phrases.
5.3. Focus in situ and wh-phrases are not in complementary distribution

Another property of focus-preposing constructions pointed out by Rizzi is the complementary distribution between preposed foci and wh-phrases. I have already shown above that the same is true for Portuguese. A preposed quantified DP may not cooccur with a wh-phrase and keep the relevant interpretation:

(100) *MUITO VINHO, com quem é que o Paulo bebeu?
    Much wine, with whom Paulo drank

Differently from preposed constituents, in-situ focus material is not in complementary distribution with wh-phrases. This can be attested in fragments of discourse like the following:

(101) A: Tu perguntaste quem é que viu quem ontem?
    you asked who saw whom yesterday
    B: Eu perguntei quem viu ontem [a Maria];
    I asked who saw yesterday Maria

In (101B), there is a wh-phrase and a focused constituent. If the latter would be moved at LF to the same position where preposed constituents appear, the sentence should be as ungrammatical as its overt counterpart (independently of the ordering between wh-phrase and preposed constituent, as shown by Rizzi):

(102) B: *Eu perguntei MUITA GENTE quem viu.
    I asked many people who saw
    B': *Eu perguntei quem MUITA GENTE viu.
    I asked who many people saw

Again, the evidence seems to indicate that focus in situ should be interpreted in situ and that there is no parallel between focus in situ and preposing.

5.4. Focus-in-situ is not quantificational
Kiss (1996) argues that focus-in-situ differs from constructions involving preposing in that it is not quantificational. First of all, it does not change the truth values of the sentence, and secondly it does not involve (semantic) uniqueness.

Kiss (1996) illustrates this by comparing cleft sentences with focus-in-situ sentences, but the same tests may be applied to the difference between focus-in-situ and preposing. The crucial tests for identifying the quantificational nature of focus come from Szabolcsi (1981), who show that the displaced foci in Hungarian do have quantificational force and do change the truth values of the sentences because they imply uniqueness. Szabolcsi (1981) uses two types of tests, given in A and B below, and tested for English and Portuguese respectively.

A: if one coordinated NP is in focus inside a negative sentence and it is opposed to its positive variant from which one of the coordinates has been dropped, then there is exhaustiveness.

(cf. the following examples for English and Portuguese respectively):

(103) JOHN and MARY, I didn’t see, but JOHN I saw.

(104) MUITO VINHO e MUITO PORTO eu não bebi, mas MUITO PORTO eu bebi.

Much wine and much Port I did not drink, but much Port I drank

Note that focus in situ, as noted by Kiss (1996), does not pass this first test for exhaustivity:

(105) *I didn’t see [John and Mary], but I saw John.

(106) *Nao bebi [muitovinho e muitoporto], mas bebi muito Porto.

I didn’t much wine and much port but I drank much Port

(105) and (106) are not well-formed sentences, because they are contradictory.

The second test for exhaustivity proposed by Szabolcsi (1981) and used by Kiss (1996) is the following:

B: If there are two sentences, of which the first one contains a
focused coordinate NP, and the second one only contains one of the coordinates and may be interpreted as a logical consequence of the first one, there is no exhaustiveness:

(107) JOHN and PETER, I saw. -/->
    JOHN, I saw.

(108) O PAULO e O PEDRO, eu vi. ?/->
    Paulo and Pedro, I saw
    O PAULO, eu vi.
    Paulo, I saw

With focus in situ the implicatures are possible since there is no exhaustivity involved:

(109) I saw John and Peter. →
    I saw John.

(110) Eu vi [o Pedro e o Paulo].
    I saw Pedro and Paulo →
    Eu vi o Pedro.
    I saw Pedro

The lack of parallelism between these two cases in terms of influence on the truth value of the sentence and quantificational force makes it suspicious to try an attempt of unification between the two types of focus.

I should note at the end of this section that the results of the tests from (103)-(110) are not too strong. These tests yield clearer results with cleft sentences. As far as I can tell, the reason why these sentences are not too good has to do with the exclamative interpretation associated with the preposing constructions discussed in Raposo’s work. This makes it difficult to evaluate them with respect to their semantics, since exclamative sentences do not necessarily express a truth-value but rather a subjective meaning.

5.5. Conclusion

Concluding, I have argued in this section that there is no empirical
advantage in using focus-preposing as an argument in favor of covert focus-movement. Comparing Rizzi’s (1995) description of focus preposing with the properties of focus in situ, the conclusion was reached that there is no similarity neither in discourse function nor in syntactic behavior, hence there seems to be no need to see focus preposing as an overt counterpart of focus-in-situ.

I have not been concerned throughout this section with the specifics of the analysis of Rizzi for focus preposing, in terms of involving a functional projection Focus Phrase, CP-recursion or adjunction. Whatever is involved, anyway, cannot be assimilated with focus-in-situ, and does not constitute evidence in favor of identification of information focus at LF.

6. What about Hungarian?

In the preceding sections, I have argued that the motivation for LF-movement of focused constituents is rather weak and overgenerates, making incorrect predictions. Given the possibility of treating weak-cross-over effects independently of focus, as done in Rooth (1985), and the incorrect predictions of LF-movement for Portuguese, I suggested abandoning this type of operation. I also considered the circumstantial evidence provided by focus-preposing, and after analyzing its behavior, I concluded that there is no similarity with focus-in-situ, hence it is erroneous to see one as an instance of the other.

The last piece of (circumstantial) evidence in favor of LF-focus-movement comes from the fact that in Hungarian there is overt focus movement (Horváth 1986, Brody 1990, Kiss 1995, among others). It is a quite generalized methodological strategy in recent syntactic studies to assume that, if a language exhibits some kind of movement operation overtly, languages where this movement does not take place in visible syntax perform it in covert syntax. I think this is a reasonable assumption as a methodological point of departure, especially under theories such as Chomsky’s (1993) that assume a uniform LF-representation cross-linguistically. However, in itself it is not an argument in favor of some type of covert operation. Nevertheless, focus-movement in Hungarian has been used several times as an argument in favor of covert focus-movement in other languages (Brody 1990, among others).

Although it is difficult to provide arguments in favor or against this type of analysis, I would like to present some arguments presented by
Kiss (1996), which show that there is no correlation between English focus-in-situ and Hungarian focus-movement.

Kiss (1996) correctly points out that there is a distinction often ignored between information focus and what she calls Focus Operator. The differences between these two are the following:

i) The focus operator involves exhaustivity;
   Information focus presents new information without involving exhaustivity.

ii) Some constituents cannot function as focus operators due to their lexical meaning (e.g. also-phrases, universal quantifiers);
   No such restrictions exist for information focus.

iii) Focus operator takes scope;
   Information focus does not take scope.

iv) (In Hungarian:)
   Focus operator involves movement;
   Information focus does not involve movement.

v) Focus operator is iterative;
   Information focus can project.26

Kiss presents examples for each of the differences showing that they are valid for Hungarian and English.

The part of her work that is relevant for the present discussion and that I would like to repeat here is the fact that the Hungarian correspondent to English focus-in-situ does not involve movement:

(111) (from Kiss 1996):
   A: Hova tettél könyveket?
      where put-you books
      'Where did you put books?'
   B: Tettem könyveket [a polcralj]
      put-I books the shelf-on
      'I put books on the shelf'

(111B) shows that Hungarian information focus is just like English (112),

26 In the context of this chapter, this statement must be reinterpreted under the analysis of focus projection given above. That is, it must be said that only information focus may be interpreted as sentence-focus, because only in this case does stress fall on the rightmost position.
and what was described for Portuguese (113): the part that constitutes new information is rightmost (allowing for the constituent to receive prosodic prominence (Kornai & Kálmán 1988, K. Polgárdi (p.c.)).

(112) A: Where did you put books?
B: I put books [on the shelf],

(113) A: Onde é que puseste livros?
where did you put books
B: Pus livros [na prateleira],
I put books on the shelf

An answer with the constituent replacing the wh-phrase in the so-called focus position means something different: it implies that it was only on the shelf that I put books.

(114) (from Kiss 1996):
A: Hova tettél könyveket? where put-you books
‘Where did you put books?’
B: [A POLCRA] tettem könyveket.
on the shelf put I books
‘It was on the shelf that I put books.’

An interesting fact noted by Kiss is that the sentences with movement correspond to cases where there is also movement in English. That is, the English counterpart of (115a) is not the in-situ version (115b), but the cleft construction in (115c):

(115) a [A POLCRA] tettem könyveket.
on the shelf I put books
b I put books [on the shelf],
c It was on the shelf that I put books.

The same is true for Portuguese: if one wants to express uniqueness and exhaustivity, a cleft construction has to be used.27 The application of Szabóesi’s (1981) tests discussed above for the Portuguese cases (adapted

27 For a recent analysis of clefts in Portuguese, see Ambar (1996).
from Kiss 1996) illustrates this:28

**TEST A:** negation of coordinated foci + positive version of the sentence from which one of the coordinates has been dropped:

(116) *In-situ focus:*

*O Paulo não roubou [o casaco e o chapéu], mas roubou o chapéu.*

Paulo did not steal the coat and the hat, but he stole the hat

(117) *Cleft:*

Não foi [o casaco e o chapéu] que o Paulo roubou, mas sim o casaco.

not was the coat and the hat that Paulo stole, but yes the coat

'It was not the coat and the hat that Paulo stole, but it was the coat.'

**TEST B:** dropping of one coordinate from a coordinate DP and getting logical inference:

(118) *In-situ focus:*

a O Paulo roubou [o casaco e o chapéu]. ⇒

Paulo stole the coat and the hat

b O Paulo roubou o casaco.

Paulo stole the coat

(119) *Cleft:*

a Foi o casaco e o chapéu que o Paulo roubou. -/->

was the coat and the hat that Paulo stole

'It was the coat and the hat that Paulo stole'

b Foi o casaco que o Paulo roubou.

was the coat that Paulo stole

'It was the coat that Paulo stole.'

---

28 As mentioned above, the results of these tests with clefts are much clearer than with the focus-preposing constructions, since here no exclamative interpretation is associated with the sentence.
The discussion by Kiss (1996) shows thus that there is no correlation between in-situ focus in English and moved focus in Hungarian. On the contrary, it shows that in both languages information focus stays in situ, and focus involving exhaustivity ('focus operator', in Kiss's terms) implies some kind of transformation in both languages. Likewise, the tests applied above show that the Portuguese counterpart of the Hungarian focus construction is, as in English, the cleft.

This makes the last piece of potential evidence in favor of focus movement at LF invalid.

7. Conclusions.

In this chapter, it was my goal to clarify the approach to focus defended throughout the dissertation. In the previous chapter, I had started to treat focus in prosodic terms. Here, I compared such an approach with the hypothesis that in languages with focus-in-situ focused constituents move at LF to a designated focus position.

I was able to reach the following conclusions:

✔ Prosody and c-command are quite relevant for the overt identification of focus in Portuguese. Moving information foci at LF is disadvantageous, since: i) it reduplicates the process of identifying the focus-set of constituents; ii) it destroys the c-command configurations which were relevant for the identification of focus.

✔ One potential source of evidence for LF-focus movement is the alleged existence of overt focus-movement, as argued in Raposo’s work. I have compared focus in-situ with constructions involving preposing, and showed that they are different in terms of discourse function and in terms of syntactic behavior. This comparison served to argue that, given the differences, the construction involving preposing must not be taken as evidence for the postulation of covert movement of the in-situ focused constituents.

✔ A final piece of potential evidence for LF-focus movement considered here was the case of Hungarian, where focused constituents move overly. Although it is by no means obvious that the existence of one construction in one language may constitute an empirical argument for postulating a similar operation in another language, I have presented Kiss’s (1996) arguments showing that the Hungarian construction is not the counterpart of in-situ focus in other languages,
but rather the counterpart of cleft constructions in languages like English. I further confirmed Kiss’s conclusions, showing that in Portuguese as well, the counterpart of the Hungarian construction is the cleft constructions.

Testing the hypothesis that foci move at LF and finding out that they do not is quite important for the work I am developing in this dissertation. First, it forces me to abandon a derivational view on focus. Resorting to a derivational analysis, I might be able solve one of the problems I had at the end of chapter 3. The problem is to know how NPs get their case licensed if they do not move because of being in focus. Under the results of this chapter, it is not possible to assume that there is covert movement to satisfy either the Case requirement or for identification of focus.

In this chapter, I have argued that it is enough to have a PF-identification of focus; more than that is both unnecessary and empirically inadequate. Having clarified the nature of the constraint on focus, that is, the reason why focused constituents are rightmost in a sentence, it becomes clear that the constraint on focus is in conflict with the requirement that NPs move leftwards to Case-licensing positions. This situation of conflict will be the basis for Part II of the dissertation.

Let me point out the loose ends of the present chapter, which will be addressed in part II of the dissertation and related to the problems left unsolved in chapter 2 and 3:

I have used Portuguese as the test language for evaluating the hypothesis that focused elements move at LF. I did so, given the empirical evidence for treating this language as discourse configurational and with focus in situ. On the basis of this, I formulated the algorithm for sentence-stress assignment. If we look at a language like English, however, we see that foci remain in situ, but there is no correspondence between rightmost position and focused element. For instance, if a subject is focused, it does not surface in the rightmost position, but in the normal Spec(IP) position. This means, then, that English is a language with focus in situ, but not a discourse-configurational language. This is a difference that must be accounted for. We must answer the following questions:

a) Why are some languages discourse-configurational and other languages are not?

b) How is this difference formalized? Is there a parameter
related to discourse-configurationality?

Another aspect which was deliberately ignored throughout this chapter was the issue of phonology-free syntax (Zwicky and Pullum 1986, among others). According to this principle, syntactic rules may not refer to phonology. In the framework designed so far, it seems that the distribution of syntactic units is phonologically conditioned. Is there a way to combine the results so far with the common assumption that syntactic and phonological principles are defined independently of each other?

As in the previous chapters, the issue left unsettled is how to account for cross-linguistic variation. Like in chapters 2 and 3, the interaction syntax/prosody needs to be made explicit. Chapters 5 and 6 will deal with these problems, formalizing the results so far taking into account the cross-linguistic differences. As announced in the introduction, I will argue that a model allowing for principles to interact and for languages to differ with respect to relative importance of a given constraint is the most natural way to solve the problems left unsolved in this and the previous chapters.

In the next chapter I will try to solve the problem of cross-linguistic differences, while arguing for the Optimality-theoretical approach to syntax-discourse interface. In chapters 6 and 7, I will extend and evaluate the analysis to be proposed on the basis of new data.

The relevance of this chapter for the type of work to be developed in the next chapters is the following: the proposed model for identification of focus which is monostratal. There is no need to resort to a covert level of syntax, nor is it necessary to reduplicate the mechanisms for focus identification. Moreover, if the algorithm for identifying focus defended above is in the right track, there is evidence in favor of representational theories of the grammar for which the surface configurations provide enough information for computing and identifying semantic/pragmatic notions like focus.

Finally, I have managed to clarify what I will be talking about when I will use the notion focus. As mentioned above, and as it is obvious from the comparison of different types of data for which this notion has been used, this term is used with a very wide denotation. This means that using this term is not a trivial issue, and if I want to base my analysis of word order variation on the basis of interactions between syntax and the way focus is codified, I must be explicit about its meaning, representation and role in the distribution of elements.
5 Word Order and Constraint Interaction

0. Introduction

In the first part of the dissertation, I have addressed the issue of word order variation, attempting to describe structures related to:

a) the distribution of adverbs;
b) the distribution of arguments.

I have argued in chapter 2, 3 and 4 that an analysis of word order variation must take into account the following factors:

a) the relation between word order and prosody;
b) the relation word order and discourse functions.

I have further shown that there is a difference between languages in which word order reflects discourse differences and languages with a much more rigid word order.

In spite of the observations made in the preceding chapters, there were many unanswered questions, which may be divided in two main questions:

1- How to formalize the interaction between word order and prosody/discourse function?
2- How to account for cross-linguistic variation?

The first question is more theoretical in nature: I have pointed out that it is necessary to take into account prosodic factors and discourse functions for an accurate description of the contexts in which the several structures described are legitimate, but I have not explicitly formulated a theory wherein syntactic constraints interact with prosodic/discourse principles.
The formalization of this type of interaction is one of the goals of this chapter.

The second question is empirical. So far, I have shown that word order varies in some languages depending on the information status of the constituents, while in other languages word order is rigid. This was shown for the difference between English and Portuguese nominal objects, for instance. While in English they invariably surface to the left of a monosyllabic adverb, in Portuguese, the pre- vs. post-adverbial position depends on the information status of the constituents involved. I have not attempted to explain why there is such a difference between languages. The work developed in the preceding chapters just noted the difference between languages without attempting to derive this difference from one single common structure.

In order to answer these questions, in this chapter, I will discuss some differences concerning word order and discourse function across languages. The languages to be studied are Portuguese, English, Dutch and Icelandic. I will recap three properties of the behavior of subjects and objects in these languages relating position of subjects and objects with their function in terms of discourse. In line with the conclusions reached in chapter 3, I will show that in some languages there is a correlation between position and function which is missing in other languages (e.g. English), though such a relation is operative for non-nominal arguments. I will try to show that the differences between these languages only arise when discourse and syntactic constraints interact and conflict.

Given this situation of constraint conflict, I will propose an analysis of the data to be discussed within the framework of Optimality Theory (Prince and Smolensky 1993; Grimshaw 1997).

The conclusion of the chapter will thus be:

a) Optimality Theory is the framework which allows for a formalization of the interaction between syntactic and discourse constraints.

b) The difference between languages follows from the relative prominence of the constraints at stake: languages where discourse constraints are ranked higher than syntactic constraints are discourse-configurational in the sense described in chapter 3. Languages where syntactic constraints are ranked higher will have a more rigid word order.
1. Problems

1.1. Subject Positions

As observed in chapter 3, in Portuguese, subjects with different discourse functions occupy different positions (this is has been noted in most literature on Portuguese word order: Ambar 1992, 1997, Duarte 1987, 1997, Martins 1994, Costa 1997c,d). In chapter 3, I argued that Portuguese subjects occupy the SpecIP position if they convey old information. If they convey new information they appear in SpecVP. The arguments for this analysis involved extraction tests, ordering with respect to adverbs and the position of objects. In (1), I give the relevant examples again. As before, I am taking question-answer pairs and correction contexts as tests to identify new information. The phrase that replaces the wh-word in the answer is the focus of the sentence, and everything that is referred to in the question is old information in the answer:

(1) a. O que é que o Paulo fez?
   what did Paulo do
   a’ O Paulo partiu a janela.
   Paulo broke the window
   a” #Partiu o Paulo a janela.
   a”’ #Partiu a janela o Paulo.

b. Ninguém partiu nada.
   no-one broke anything
   b’ Partiu o Paulo a janela.
   b” #O Paulo partiu a janela.
   b”’ #Partiu a janela o Paulo.

c’ O que é que aconteceu?
   what happened?
   c’ O PAULO\o Paulo partiu a janela.
   c” #Partiu a janela o Paulo.

The paradigm in (1) shows that old subjects may not appear in postverbal position (1a), and that if both subject and object are new information,
VSO order (1b) is the legitimate one. If everything is new information the SVO order (which is the unmarked order in Portuguese) arises (1c). The fact that depending on the context each order is either felicitous or infelicitous shows that the free word order in Portuguese pertains to different discourse functions.

In chapter 4, I showed that this word order variation is in accordance with prosodic factors: focused constituents must bear the sentence main stress, and sentence main stress falls on the rightmost constituent of the sentence. Under this type of approach, variation is basically understood as compliance with a prosodic constraint. One issue I did not deal with in the previous chapters is the fact that the one-to-one relation between word order and discourse function does not hold in every language. That is, there are languages in which word order is constant independently of the discourse function of the constituents of the sentence. English is such a language.

In English, subjects ambiguously (with respect to discourse function) occupy the Spec(IP) position, independently of their status with respect to the information structure of the sentence. This is shown in (2):

\[(2) \quad a \quad \text{What did John do?} \]
\[a' \quad \text{John broke the window.} \]
\[b \quad \text{No-one broke anything.} \]
\[b' \quad \text{John broke the window.} \]

There are several putative solutions for the differences between these two languages:

One possible solution is to say that subjects in Portuguese move at LF to a focus position, and that the same happens in English, yielding a similar representation at LF for both languages. In chapter 4, this hypothesis was tested and disconfirmed. The main problem pointed out for this type of analysis is that all possible word orders correspond to different structures in terms of information status:

\[(3) \quad \text{SVO - subject is old information, object is new (or VP and sentence focus)} \]
\[\text{VSO - both subject and object are new information} \]
\[\text{VOS - subject is new, object is old} \]

The problem with these different meanings is that it is the relation
between all members of the sentence that matters for defining their status with respect to information structure. Taking prosodic information into account (as in Cinque 1993, Reinhart 1995, Frota 1994, 1995 for Portuguese) the generalization seems to be that what constitutes new information in a sentence is the phrase bearing the heaviest stress plus everything it c-commands. In an SVO sentence the object bears most prominent stress of the sentence by default and indeed it is the only new element there. On the contrary, in a VSO sentence, the subject bears the heaviest stress, and it c-commands the object; both subject and object are new. In a VOS sentence, the stress also falls on the subject which conveys the only new information. It seems thus that the surface ordering between the constituents of the sentence is important for the representation in discourse terms. If focused subjects would move at LF to a focus position (at the left periphery of the sentence by analogy with Hungarian (Brody 1990 among others)), all these configurations would be lost, not only creating similar SVO orders but also failing to establish the relation between the several elements that constitute the focus of the sentence (for instance in VSO sentence). If focus is relevant at LF (cf. Rooth 1985, Partee 1991 among others), the structure that determines the focus structure of the sentence has to be preserved at this level.

Another possible solution for this problem is to say that all subjects in Portuguese have weak nominative features, and that when they are old information, they are left-dislocated (cf. Barbosa 1995; for other null subject languages see Alexiadou and Anagnostopoulou 1995, Ordôñez and Treviño 1995 among others). English subjects would have strong nominative features (or EPP features, depending on the analysis), which would make them always surface in Spec,IP independently of the discourse function. In chapter 3, this hypothesis was tested and disconfirmed. Preverbal subjects in Portuguese (more clearly for definite subjects) are in Spec,IP. The examples illustrating the main argumentation from chapter 3 are repeated in (4):

(4)  a  

\[ A\text{-}\text{Binding:} \]
\[
\text{O Paulo viu o seu irmão.} \\
\text{Paulo saw poss. brother}
\]

b  

\[ \text{No complementary distribution with other left-dislocated elements:} \]

Sobre a Maria, o Paulo falou com o Pedro.
about Maria, Paulo talked with Pedro

b’ ??Sobre a Maria, com o Pedro o Paulo falou.
about Maria with Pedro Paulo talked

c Rigid order with respect with left-dislocated elements:
* O Paulo sobre a Maria falou com o Pedro.
Paulo about Maria talked with Pedro
c’ Sobre a Maria o Paulo falou com o Pedro.
About Maria Paulo talked with Pedro.
c” ??Sobre a Maria com o Pedro o Paulo falou
about Maria with Pedro Paulo talked
c”’ ??Com o Pedro sobre a Maria o Paulo falou.

Assigning optionality to feature strength, that is, to say the features of the
subject are optionally strong would not solve the problem either because
one would only be considering feature properties of the subject, not
considering the status of the other elements of the sentence with respect
to information structure (cf. discussion of (3) above).

The analysis I will pursue here is that the configuration for
licensing nominative Case may not be created, if some other constraint
interacts with this configuration, obviating it. In other terms, I will claim
that when a subject is required to stay in its base-position, the constraint
forcing the subject to raise to Spec,IP is violated. This analysis will be
explained in greater detail below.

1.2. Object Positions:

According to the conclusions of chapter 2 (see also Pesetsky 1989,
Johnson 1990, among others), nominal objects in English always move to
a case position. The contribution I gave for this conclusion was based on
the observation of the distribution of monosyllabic adverbs. These
adverbs cannot be right-adjointed (since they never appear after a PP-
complement (5d) without a heavy stress), and they always follow nominal
objects. On the other hand they never appear before the verb. In chapter
2, this was analyzed as follows: English NPs always move to Spec,AgrOP
and the verb moves to the first head position dominating AgrOP.
Monosyllabic adverbs being left adjoined to VP will always follow
nominal objects and precede prepositional complements which do not
need to check any case features.

(5) a *John well speaks French.
b John speaks French well.
c John looked hard at those pictures.
d *John looked at those pictures hard.
e John looked at those pictures HARD.

As noted in chapter 3, the behavior of nominal objects in Portuguese is different. The position of objects (NPs and PPs) depends on their function in discourse: if the complement is the focus of the sentence it remains in its base position, which is the position where it will receive the default nuclear stress of the sentence. If the focus is the adverb, the object has to be scrambled to the left of the adverb in order to leave the adverb in the position where it can receive the default stress of the sentence, and so that the object avoids it, as discussed in Reinhart (1995). The relevant examples from chapter 3 are repeated in (6) and (7), with the same tests for identification of focus that were used before:

NPs:
(6) a Quem é que o Paulo conhece bem?
who does Paulo know well
a’ O Paulo conhece bem a Margarida.
Paulo knows well Margarida
a’’ #O Paulo conhece a Margarida bem.
Paulo knows Margarida well

b Como é que o Paulo conhece a Margarida?
how does Paulo know Margarida
c’ O Paulo conhece a Margarida bem.
Paulo knows Margarida well
c’’ #O Paulo conhece bem a Margarida.
Paulo knows well Margarida

With PPs, the pattern is exactly the same:

PPs:
(7) a Como é que o Paulo falou com a mãe?
how did Paulo talk to his mother?
a’ O Paulo falou com a mãe bem.
Paulo talked with his mother well

a” #O Paulo falou bem com a mãe.
Paulo talked well with his mother

b Com quem é que o Paulo falou bem?
with whom did Paulo talk well

b’ O Paulo falou bem com a mãe.
Paulo talked well with his mother

b” #O Paulo falou bem com a mãe bem.
Paulo talked with his mother well

Similarly to what was pointed out above for subjects, in English, the word order is rigid and independent of the discourse function of the nominal complement. NPs ambiguously occupy the pre-adverbial position, independently of their status with respect to the information structure of the sentence:

(8) a How does John speak French?
    a’ John speaks French well.
    b What does John speak well?
    b’ John speaks French well.

On the other hand, English PPs behave like Portuguese objects:

(9) a A: What did John look hard at?
    B: John looked hard at those pictures.
    b A: How did John look at those pictures.
    B: John looked at those pictures HARD.

Since the movement of NPs is obligatory and that of PPs depends on their status in terms of information structure, I concluded that the motivation for moving NPs and PPs in English is distinct: NPs move because of Case, PPs move to escape the sentence main stress.

Additional evidence for this claim comes from object-shift languages like Swedish and Icelandic, which exhibit the reverse behavior: only NPs move, PPs always stay in situ.

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1 I am aware of the fact that Scandinavian languages differ with respect to the type of
(10) Swedish (Holmberg 1986):
PPs:
a. Jag tror inte på det.
   I believe not in that
b. *Jag tror på det inte.

NPs:
c. Johan köpte inte den.
   Johan bought not it
d. Johan köpte den inte.
   Johan bought it not

(11) Icelandic (Vikner 1994):
PPs:
a. Ég borgaði ekki fyir bókina.
   I paid not for the book
b. *Ég borgaði fyir bókina ekki.
   I paid for the book not

NPs:
a. Johan keypti ekki bókina
   Johan bought not the book
b. Johan keypti bókina ekki.
   Johan bought book not

The behavior of objects has undergone several analyses in recent work.

Chomsky (1995) proposes that the motivation for scrambling is syntactic: objects move leftwards to check a formal feature which may be related to specificity/definiteness. This type of analysis is more explicit in de Hoop (1991). De Hoop proposes that there is a correlation between case and specificity. NPs checking ‘strong Case’ must move and get a specific interpretation. However, as shown by Reinhart (1995), who

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nominal object that can be shifted. Only in Icelandic and Faroese can NPs be shifted. In the other Scandinavian languages, only pronouns can be shifted. In no Scandinavian language can there be PP-shift. That is why the use of Swedish is not problematic here to illustrate this property.
quotes Ruys (1993), specificity is not at stake: specific NPs may stay in situ, and indefinite non-specific NPs may scramble. Besides, explaining scrambling in syntactic terms only does not capture the relation between stress and position.

As mentioned in chapter 3, a different approach to the behavior of objects is proposed by Diesing and Jelinek (1995). They suggest that definite NPs are scrambled out of VP (all material inside VP is mapped into the nuclear scope receiving an existential reading) in order to escape existential closure. As acknowledged by Diesing and Jelinek, this hypothesis does not explain scrambling of existential indefinite, which may stay inside VP without any problem. Diesing and Jelinek solve this problem by suggesting that there is a scope condition applying at S-structure in German. That is, if an adverb takes scope over the object, the adverb has to c-command the object at S-structure. If the object has scope over the adverb, it has to be scrambled in order to satisfy the scope condition. I have pointed out, however, that examples like (12) show that this analysis may not be on the right track: if one chooses an adverb which does not play any role in the temporal representation of the sentence, scrambling is still possible without any change in terms of the temporal/semantic representation of the sentence:

(12)  a  O Paulo canta bem canções.
   Paulo sings well songs

   b  O Paulo canta canções bem.
   Paulo sings songs well

   The third type of analysis, which I have adopted in this dissertation is the discourse/prosodic approach to scrambling. I have argued, in the spirit of Reinhart’s (1995) work, that a complement scrambles to the left of an adjunct in order to escape focal stress, and to leave the adjunct in the rightmost position, where it is able to receive focal nuclear stress. As noted before, this type of approach captures the semantic analysis: if the object is defocused, it is not new in the discourse. If it is not new, it gets a specific interpretation. Reinhart’s analysis allows thus for treating specificity as an effect of the information status of the elements.

The latter type of analysis was defended in chapters 3 and 4, but there were two problems left:
1) Why is movement of nominal objects obligatory in English?
2) Why is there a difference between object-shift (A-movement) and scrambling (A-bar movement)?

The answer to the first question will be partially similar to the solution to be presented for subjects. I will claim that nominal objects may stay in situ, only when a discourse constraint forces a violation of the configuration for Case. This will be explained in greater detail below.

The second question which was left unanswered in chapter 3 has to do with the other property of object positions I would like to capture: the difference in terms of landing site of shifted objects between Dutch and Portuguese on one hand, and Icelandic and Swedish on the other. While in the former group of languages objects are A-bar moved, being adjoined to VP, in the latter they exhibit A-movement properties, and by assumption their landing site is Spec,AgrOP. As pointed out in chapter 3, this is a very problematic issue which has been subject to much discussion (Zwart (1993), Déprez (1989), de Hoop (1991), Bobaljik (1995), Vikner (1994), Corver and Riemsdijk (1994), Vikner (1994), Costa (1997d) among others).

The general approach in the literature (except for Vikner 1994) is to try to reduce the two types of operation to a single one. Here, assuming the conclusions of chapter 3, I will follow Vikner, and assume that this difference between languages is real. I will further try to explain why languages differ in this respect. The main argument will be that this difference is the result of a tension between syntactic and economy principles.

1.3. Summary of the problems:

At this point, we may summarize the main problems left unsolved in the preceding chapters:

a) Portuguese subjects stay in Spec,VP if they are focused, but move to Spec,IP if they are old information (cf. Chapter 3). This pattern is highly problematic for an analysis of word order in terms of feature strength, specially since LF-movement of focused constituents to the left-periphery of the sentence is empirically
ineadquate (cf. chapter 4).

**Problem: How does the postverbal NP get Case?**

b) The behavior of PPs shows that in English, like in Portuguese, the rightmost position of the sentence is associated with new information (cf. Chapter 3). However, focused subject and object NPs do not stay in the rightmost position, where they would be able to get focal stress.

**Problem: What is the difference between English and Portuguese?**

c) In Dutch and Portuguese, NPs scramble to the left, adjoining to VP. In English and Icelandic, they move to Spec,AgroP (cf. Chapter 3).

**Problem: Why does a language only exhibit one type of movement? What is the difference between object-shift and scrambling?**

In what follows I will try to find solutions for these problems.

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2. Analysis within Optimality Theory

In order to deal with the problems described in the previous section, I will use Prince and Smolensky’s (1993) Optimality Theory (OT). As described in the introduction, under this theory, grammatical constraints are universal and violable. Their ranking is the only factor that determines language variation. Constraints evaluate representations, which are generated from a single input and the grammatical candidate is the one that violates constraints minimally (according to the ranking).

2.1. Combining OT and Principles and Parameters.

At this point, it is important to clarify the following two questions:

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2 Although Heavy NP Shift does not necessarily involve information focus, this observation is corroborated by the correlation between that construction and focus (cf. Rochemont 1990). Heavy NPs normally have contrastive force, and surface in the rightmost position of the sentence.
a) Why am I adopting a different framework?
b) Is OT compatible with the type of work developed in the previous chapters of the dissertation?

In many studies, OT is opposed to other approaches to generative grammar, and seen as an alternative theory. However, until now, there is no Optimality-theoretical analysis that does not resort to concepts and notions of previous approaches to syntax.

The work of Pesetsky (1994, 1997), developed further in Broekhuis and Dekkers (1996), observes this dependency between the two types of approach, and designs a model of the grammar in which the Minimalist Program and OT both play a role (in Pesetsky’s work, the Minimalist Program is responsible for generating several concurrent derivations which are evaluated with respect to more phonological-like constraints at the PF-wing of the grammar).

Grimshaw’s (1997) seminal work in OT-syntax implicitly resorts to other approaches to the grammar. The constraints she uses are partly taken from the Principles and Parameters framework (e.g. EPP, economy of movement (STAY)).

The use of OT I will be making is consistent with both types of work developed. Like Pesetsky, I will assume that only some type of phenomena is to undergo an OT-analysis. Unlike Pesetsky, I will not make any specific claims about the locus of the Evaluator in derivational terms. My position throughout the dissertation will be the following:

a) A phenomenon is to be analyzed in an Optimality-theoretical way if there is evidence for assuming a conflict between constraints.
b) There is no need to postulate what type of constraint is in part of the Evaluator. That is, all constraints may be violable. If the scope of one constraint does not conflict with the scope of another constraint, its violability will never be visible, hence the constraint will be irrelevant for an OT-analysis.

In other terms, I will base the decision of analyzing a given phenomenon in OT-terms on empirical grounds. Moreover, I will take the principles of the grammar as we know them from earlier approaches, and assume that they are violable (like Grimshaw 1997), and avoid as much as possible the postulation of new constraints.

This use of OT is similar to Pesetsky’s, since I will attempt an integration of OT with the previous models. Since OT is a model about
constraint interaction, I will use it to formalize the dependency between principles, but crucially not to define the principles themselves. Principles and Parameters and GB are models where constraints are defined, but little or nothing is said concerning the way principles interact. OT is a model on the way constraints interact, but nothing in the theory is about the format of the constraints. In this and the following chapters, I will show that we have a lot to gain by combining the two types of approaches, letting GB/P&P define the constraints and letting OT tell the way they interact.  

2.2. Assumptions

Let me now spell out some of the assumptions necessary for the OT-analysis. For the analysis to be complete, I will need:

- an input
- considerations on the candidate set
- a list of violable constraints

According to Grimshaw (1997) and Grimshaw and Samek-Lodovici (1995, 1996), the input from which all outputs are generated contains the argument structure of the verb and information concerning what is the focus and the topic of the sentence. I will follow this proposal.

From this input, a list of candidates is generated, which correspond to syntactic parses (or projections) of the information listed in the input. I will follow Ackema and Neeleman’s (1995, 1996) proposals concerning the projection of phrase structure: they propose a theory of phrase structure under which only structure that is required is projected. That is, in the optimal case, there is no empty phrase structure and there is no need for the postulation of several empty functional projections. 

Note that this does not mean that GB does not say anything about constraint interaction, nor that OT does not have anything to say about the format of constraints. For instance, FAITHFULNESS constraints only make sense in a model like OT, and to a certain extent they are a consequence of the format of the theory (cf. McCarthy and Prince 1995).

See also chapter 7 for some notes on the characterization of the input.

The hypothesis that empty functional projections are only projected if strictly necessary is corroborated by the data with auxiliaries and adverbs presented in
The input is thus a list of semantic/discourse information (argument structure, tense, focus-topic), and the list of candidates corresponds to the potential syntactic parses of the input. I will not be concerned here with restricting the candidate set or drawing a framework, reducing the power of the function Gen, which generates the list of candidates. As mentioned above, I will assume that candidates are syntactic representations, and a priori, there is no reason to assume that a given candidate is not a legitimate one. For work concerned with the definition of Gen, see Pesetsky (1994), followed by Broekhuis and Dekkers (1996).

The reason why I will pursue an analysis of the data within the framework of Optimality Theory is that the phenomena described above do suggest that an optimization problem is involved. More precisely, I have argued that the configuration for Case licensing seems not to be overtly created, only if some requirement (focus) forces the NPs not to move. That is, Portuguese subjects as well as Dutch and Icelandic objects do not move to the position where case is licensed, only if focus requires these elements to remain in a position where they get focus stress. On the contrary, in English, discourse related constraints appear to be violated only when case requires an element to be moved out of the position where it gets focus. Thus, constraints appear to be operating on the same elements, and to be in conflict with one another. As we will see, due to different rankings, languages optimize the representations differently, preferring to respect one of the constraints at the cost of one (or more) of the others.

Since the clearest conflict situation is between discourse and Case, it will be clear that two important constraints are labeled CASE and FOCUS. Since the most innovative part of this analysis is the violability of these constraints, I would like to dedicate a section to review the main arguments to treat CASE and FOCUS as violable principles of the grammar.

2.2.1. Violable Constraints.
Before presenting the analysis, I would like to motivate my assumption that the constraints I am going to use are violable. Naturally, this motivation can only be circumstantial and partly theory-internal. I will attempt to present evidence that Case and Information Structure can be violated, but this may well mean for other people that the constraints are not well defined, and that the contexts of violation are just contexts showing that the constraint at hand is not properly understood, and is empirically not powerful enough. Although it is not possible to decide for either evaluation of the facts, I will not only try to motivate the existence of these constraints, but also show that in order to get a better understanding of their effects they have to be taken as violable constraints rather than as absolute conditions. The main point will be that the constraints must be defined independently of each other, and that the points of interaction are cases in which two principles have the same scope. The argumentation will be partially based on the conclusions of the previous chapters. I will nevertheless repeat the relevant examples for case of exposition.

2.2.1.1. CASE

In the chapter concerning the distribution of arguments, I have argued that subjects and objects may not surface in the position where their Case is licensed. In this case, the traditional assumption is to assume that they get Case in some non-canonical fashion (e.g. ECM) or to assume that movement to the relevant position takes place in covert syntax or at the LF component of the grammar.

In chapter 4, I have argued that LF-movement of focused constituents is not desirable, since it destroys configurations relevant for identification of focus. This means that LF-movement is not the solution. My assumption will be that when an argument does not move to a Case-licensing position, it just does not move and the principle underlying this movement is violated.

Let us review the arguments for this assumption:

2.2.1.1. Default case in contexts in which there is no case

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* In chapter 7, I will develop further the comparison between frameworks.
assigner:

The first argument I would like to present for the violability of Case is the existence of constructions in which there is no Case assigner. Such utterances are predicted to be ungrammatical under a strong version of Case theory. However, they are possible, for instance in the case of verb-less utterances, where the unmarked Case of the language emerges.

Case has been taken to be an inviolable constraint. Since the Case filter was proposed, it has been assumed that no NP can surface if it is not assigned case. This predicts that sentences like (13) below are ruled out:

(13) *(For) him to bite a dog is impossible.

In order to render this sentence grammatical, a case assigner has to be inserted. This would seem to be quite general and uniform if we only looked at the sentential level. However, (14) is a perfectly natural utterance, though there is no case assigner for the two NPs:

(14) Coffee or tea?

What happens in these cases is that the NPs get the default case of the language (accusative in English, nominative in Portuguese):

(15) a Him or her?
    b *I or she?

(16) a Eu ou ti?
    I or you
    b *Mim ou ti?
    me or you

There are two ways of thinking of default case: one is to assume that default case is the case assigned when no assigner is present. The other way is to assume that it is a random case that NPs are marked with when no case is assigned. That is, if NPs do not receive any case, they surface with whatever case inflection the language picks just so that the NPs can actually be pronounced (in the absence of caseless forms). It seems to me that the latter option offers two conceptual advantages: it does not require the postulation of `invisible' case assigners, and it explains why, in
a pair of languages like Portuguese and English, two different cases are picked up.

For my purposes, this type of construction is relevant, since it shows that there are grammatical constructions involving NPs where the regular configuration for Case licensing is not created.

2.2.1.2. Subjects in Portuguese

Another example showing that case may be left unassigned comes from the behavior of Portuguese subjects already discussed. In chapter 3, it is shown that subjects in Portuguese may stay in Spec,VP if they are focus. This is exemplified in (17)

(17)  a  O Paulo comeu a sopa.
       Paulo ate the soup

b  Comeu o Paulo a sopa.
    ate Paulo the soup

Two of the possible word orders for subject, verb and object are illustrated in (17). In chapter 3, I argued that only in (17a) has the subject moved to Spec,IP and that in (17b) it stays in Spec,VP. Some of the arguments were: 1. subjects follow sequence of auxiliary and participle construction (cf. 18); 2. the subject obligatorily follows a VP-adverb (cf. 19); 3. this order is possible both in main and embedded clauses (which obviates a V-to-C analysis for inversion) (cf. 20):

(18)  a  Tinha comido o Paulo a sopa.
       had eaten Paulo the soup

b  Tem estado a comer o Paulo a sopa.
    has been eating Paulo the soup

(19)  a  Comeu bem o Paulo a sopa.
       ate well Paulo the soup

b  *Comeu o Paulo bem a sopa.
    ate Paulo well the soup

(20)  a  A Maria disse que comeu o Paulo a sopa.
Maria said the ate Paulo the soup
b A Maria disse que tinha comido o Paulo a sopa.
Maria said that had eaten Paulo the soup

Besides the problems pointed out in the previous section for an analysis involving covert checking, I would like to note that in some dialects of Portuguese (see Raposo and Uriagereka 1990, Raposo 1995) subjects may cooccur with overt expletives:

(21) Ele comeu a Maria a sopa. (ungrammatical in Standard EP)
     he ate Maria the soup

This construction differs from transitive expletive construction (see Bobaljik and Jonas 1996) in that the subject is in Spec,VP is not in the specifier of a higher functional projection. Assuming that the subject were to move later, it would be difficult to explain how it can move to the position which is already occupied by the expletive. Note that even adjunction of the associate to the expletive at LF is not a potential solution, since it would raise the same problems as LF-focus movement. Under the assumption that case is a soft (violable) constraint such a mechanism is not necessary.

For my purposes, it is enough to observe that:

- Subjects may be in Spec,IP;
- The option for subjects to stay in Spec,VP is conditioned by Focus;
- Resorting to covert syntax to satisfy Case assignment is empirically inadequate.

As mentioned above, this case is not really an argument for violability, but it intends to show that the context for non-movement is not free (predicted in OT, which says that violability is motivated by the effect of another constraint), and that the alternative (LF-movement) is not an option (which makes the assumption empirically more adequate).

Changing the formulation of the principle of Case licensing is naturally an option, but as we will see, we need to account not only for the fact that subjects may stay in Spec,VP, but also for the fact that they may move.
2.2.1.3. Objects

Accusative case may also be left unassigned/unchecked. This is clear in languages which exhibit overt and covert object-shift: Icelandic, Mainland Scandinavian (cf. Holmberg 1986, Vikner 1994, Bohaljik 1995 among others).

(22) (Swedish, Bohaljik 1995)
    a  Han såg henne inte.
       he saw her not
    b  Han såg inte henne.7

There are two hypotheses here: one is to say that the object moves covertly in (22b) (in the spirit of checking theory), the other one is to assume that the object does not get case at all. One argument in favor of the latter is the relevance of each order for the interpretational component of the grammar already discussed above (Diesing and Jelinek 1995, Diesing 1995 among others). As noted before, moving the objects covertly would destroy the configuration that is relevant for interpretation of the information structure of the sentence.

Another argument favoring the hypothesis that these objects just do not get case comes from Holmberg’s generalization:

(23) Overt verb movement is a precondition for object shift.8

Holmberg (1986) observes that object-shift in Icelandic and Mainland Scandinavian is dependent on overt movement of the verb. This is confirmed by the following cases which show that the absence of verb-movement blocks object movement.

7 As mentioned in chapter 3, like with subjects in Portuguese it is the option between shifting the object or leaving it in situ is discourse-conditioned. Bohaljik (1995) reports that the sentence without object-shift is grammatical only if the pronoun is stressed, which follows from the notion of defocussing associated with object-shift discussed before.

8 See Zwart (1993) and Bohaljik (1995) for extensive discussion and criticism of Holmberg’s generalization. Zwart and Bohaljik try to prove that Holmberg’s finding is not correct in order to treat Dutch and German on a par with Object-Shift languages. However, as shown by Wechsler (1989), Vikner (1994), scrambling and Object-Shift differ in a reasonable amount of properties. Given the absence of evidence for a complete unification of the two phenomena, I will keep to the standard assumption that they are different and assume that Holmberg’s generalization is correct.
(24) (Danish, Vikner 1991)
   a  Hvorfor har Peter ikke købe den?
      why has Peter not bought it
   b  *Hvorfor har Peter den ikke købe?
      why has Peter it not bought
      (Icelandic, Thráinsson 1994)
   c  Hann hefur aldrei lesð bókina.
      he has never read books
   d  *Hann hefur bókina aldrei lesð.
      he has books never read

The problem with a covert movement approach to the data in (22-24) is
that it predicts that at LF both the verb and the object will move.
However, there is no position where the verb can move to: that is why it
stays in situ in (24). Since the absence of V-movement prohibits object-
shift, there is no way for the object to get its case licensed.

The behavior of objects is relevant for the present discussion in
exactly the same way as the behavior of subjects:

- Objects may be in Spec,AgrOP;
- The option for object to stay in the complement position of the
  Verb is conditioned by Focus;
- Resoring to covert syntax to make sure the constraint on Case is
  not violated is empirically inadequate.

I propose, based on the discussion of default case in the absence of case
assigner, the behavior of Portuguese subjects and that of objects in
object-shift languages, that case is a violable constraint, with the
following format:

(25) CASE:
   NPs are licensed in the specifier position of AgrPs (from Chomsky
   a  OBJ-CASE: nominal objects are licensed in Spec,AgrOP
   b  SUBJ-CASE: subjects are licensed in Spec,AgrSP
Note that the format of the constraint is not new. It is just the standard (early minimalist) assumption concerning Case-licensing. The only novel part is the assumption that this constraint is violable.

One crucial problem raised by the postulation that case is a soft constraint that I will delay until the end of this chapter is the relation between morphological case and the violability of this constraint. That is, why can’t an accusative case surface in subject position when nominative is not licensed? Note that this question only arises under a checking approach, not under a licensing approach. Checking approaches to Case defend that NPs are lexically inserted already inflected for Case. Under this view, the principles on Case require that the NPs move in order to check whether they are correctly inflected. In the more traditional view (which may be partially found again in Chomsky 1995), Case is just an abstract grammatical feature that needs to be licensed. Licensing takes place under a given configuration, but there is no crucial implication regarding the morphological shape of the NPs.

I will return to this problem below. Naturally, a solution for this problem will depend on how lexical insertion and lexicon selection operate in this system, and on the optimality-theoretical cost of generating candidates with the wrong morphological case. This is beyond the scope of this work, but I will nevertheless show that the problem of morphological Case is not a problem for the OT-analysis, but a general problem for the relation between syntactic Case licensing and the actual shape of the NPs.

2.2.1.2. Information structure

In this section, I will reinforce the idea discussed above that information structure constraints are also violable. Under the approach developed here, violation of an information structure constraint corresponds to the following situation: if a language requires foci or topics to appear in certain positions, the unaccessibility of these positions for the elements playing these discourse roles entails a violation of that information structure constraint.

2.2.1.2.1. English subjects
In chapter 3, I have shown that the distribution of nominal objects in English is rigid. The same must be said for English subjects. They are in Spec,IP, independently of their discourse function.

Adger (1994,1995), based upon work by Pinto (1994), has shown quite convincingly that the difference between the distribution of subjects in Italian and English follows from the possibility of Italian subjects to stay in situ or move, depending on the discourse function they play: in (26) the subject is new information, so it has to stay in its base position. In (27), it is old information, hence it has to move to Spec,IP. This is basically the same pattern found for Portuguese before.  

(26) (Italian, Pinto 1996)
A: Chi è arrivato?
   who arrived
B: È arrivato il postino.
   is arrived the postman

(26) A: Mario mi ha scritto una lettera.
   Mario to-me has written a letter
B: La lettera è arrivata ieri.
   the letter is arrived yesterday

Adger shows that English subjects because of being obligatorily forced to move overtly are always ambiguous between new and old information:

(28) A: who arrived?
B: *Arrived the postman
B': The postman arrived.

(29) A: Mario wrote a letter to me.
B: The letter arrived yesterday.

As discussed before, this difference cannot be due to the fact that English expresses focus in a different way than Italian. As Cinque (1993) has shown, in both English and Italian the constituent bearing default focus stress is the most embedded one (or the rightmost one in accordance to the recursion pattern of the language, under Nash’s (1995)}

---

* Some differences between Italian and Portuguese regarding word order and discourse function will be discussed and analyzed in chapter 6.
reformulation of Cinque’s sentential stress algorithm, and Nespòr and Vogel’s algorithm).

(30)  a  John read the book.
       b  Gianni ha letto il libro.

Further evidence for the claim that there is a correlation between right edge and focus in English as well as Italian comes from the observation (Culicover and Rochemont (1990) and references therein) that shifted heavy NPs are normally foci.10

(30)  I met yesterday [my best friend from high school]f.

Given the fact that the correlation between right-edge and focus is operative in the two languages, what appears to be at stake in the case of English subjects (and objects as discussed before) is a violation of the way English codifies information structure.

2.2.1.2.2. Wh-elements

Another case in which information structure seems to be violated is in the distribution of wh-phrases. Wh-phrases have contradictory properties: on the one hand they are operators, which requires them to scope over the sentence; on the other hand, they are new information, which makes them stay in their base position in order to get focal stress.

In English, the scope requirement takes wh-words out of the position in which they get sentential focus stress (putting aside echo-questions):

(32)  a  What did you do?
       b  *You did what?

In Portuguese, on the contrary, wh-words may be left in situ or marked with a cleft (see Bresnan and Mchombo 1987 for the relation between clefts and focus in wh-context, see Ambar 1992 for analysis of the distribution of wh-phrases in Portuguese):11

10 Although focus is not the sole condition for heavy NPs to shift. See chapter 7 for discussion.
11Wh-questions without cleft are assumed to be possible in most literature on Portuguese (cf. e.g. Ambar 1992). It seems to me though that there is a very strong
(33) a A Maria tinha lido o quê?
    Maria read what

b O que é que tinha lido a Maria?
    what is that had read Maria

Leaving wh-words in situ does not seem problematic for a framework in
which covert movement is possible since it has been assumed that covert
operator movement is quite productive (e.g. May 1985). However, once
we take into account the need for a wh-phrase to be interpreted as focus,
and we acknowledge the fact that wh-phrases require a focus
interpretation, a language like English (in which focus is associated with
the rightmost position of a sentence and in which wh-words move) represents a case in which information structure is violated.

It is important to clarify that, given the assumptions spelled out
above, violating information structure does not mean that it will be
impossible for speakers and hearers to determine the focus and topic of a
sentence. This information is expressed in the input, and the constraints
function as a means to project this information on a syntactic structure.
In other words, the interpretation of focus and focus exists independently
of the syntactic position where the constituents surface. This position is
the one indicated by the constraints.

2.3. Constraints

Having given some examples of the violability of the constraints to
be used, let me now explicitly formulate them. The constraints I am going
to use are the ones listed in (34):

(34) **CASE:** NPs are licensed at the specifier position of AgrPs (from
tendency for speakers to use either the cleft constructions or the wh-in-situ variant. A
careful survey of the data is required to establish what the pattern really is.
Independently of this factor, it is relevant to observe that both the in-situ and the cleft
strategy are available.

a. **OBJ-CASE**: nominal objects are licensed in Spec,AgrOP

b. **SUBJ-CASE**: subjects are licensed in Spec,AgrSP

The (prosodically unmarked) focus of the sentence is the rightmost constituent in accordance with the recursivity pattern of the language.

**STAY**: Avoid movements operations in the representations (Chomsky 1989-1995, Grimshaw 1997)

I would like to stress the fact that the constraints are not new. Their motivation and definition may be found in the literature given in the references. The only new assumption is that these constraints are violable. Actually, the violability of ALIGNFOCUS and STAY has been also defended in the work of Grimshaw (1997) and Grimshaw and Samek-Lodovici (1995,1996).

The relevance of the motivation of the constraints outside the framework adopted has to do with the option I took above: to stick to OT as a theory about Constraint Interaction rather than as a theory about constraints.

Let me now spell out more carefully the effects of the constraints listed above:

**CASE** requires NPs to move to the Spec positions where case is licensed. This constraint is violated whenever an NP stays in situ.

The distinction between OBJ-CASE and SUBJ-CASE will not be crucial in this chapter, since the behavior of subjects and that of objects will be studied separately. Nevertheless, some remarks will be made regarding these two constraints. It will be seen that this distinction is important for the different behavior of subjects and objects in Portuguese. Whenever such a distinction is not relevant I will refer to both constraints as CASE. The relevance of treating CASE as two separate constraints will be shown in chapter 6.

The way CASE is formulated is no different from the interpretations this principle gets in early minimalist works (Chomsky
ALIGNFOCUS forces the focus of a sentence to be at the rightmost position of the sentence. It is failed by foci that are not at the rightmost position or foci that dominate constituents that are not members of the focus set of constituents of the sentence (see Reinhart 1995 and chapters 3 and 4 for discussion of focus set of constituents).

For the literature motivating the formulation of this constraint, see chapter 4.

STAY favors representations with the least possible number of movements. It is failed by any movement. This constraint is known from as Economy in the minimalist approaches to syntax. Chomsky (1989) proposes that derivations must be as economical as possible. Movement operations only take place if necessary for convergence. Such movement will then yield a violation of the economy principle Procrastinate. Although Chomsky’s model is not supposed to allow for violability, the underlying idea is that economy is violable. The interpretation of STAY is not very different from this one. The main difference is that STAY may be more important than the other constraints, forcing constituents not to move in spite of the nature of the trigger for movement.

The possible rankings we get from these three constraints are listed in (35):

(35) a  CASE » ALIGNFOCUS » STAY  
      b  ALIGNFOCUS » CASE » STAY  
      c  ALIGNFOCUS » STAY » CASE  
      d  CASE » STAY » ALIGNFOCUS  
      e  STAY » ALIGNFOCUS » CASE  
      f  STAY » CASE » ALIGNFOCUS

(35e-f) will not be discussed here, since they are not relevant for the languages to be analyzed. Hence, I will concentrate on the first three rankings.\(^\text{12}\)

---

\(^{12}\) In chapter 6, I will expand this analysis by looking at more pairs language/constraint ranking.
2.4. Subjects

Let me start with the analysis of the behavior of subjects in English and Portuguese. STAY will not be relevant for this part of the analysis, thus this constraint will not be considered here. Therefore two rankings are possible:

(36)  a. CASE » ALIGNFOCUS
     b. ALIGNFOCUS » CASE

In a language with the ranking in (36a), Case is satisfied in spite of violations of ALIGNFOCUS. In a language with the ranking in (36b), ALIGNFOCUS is satisfied, even if that implies a violation of CASE.

Given the facts described above and the conclusions of Adger (1994, 1995), it is obvious that CASE is higher ranked in English than in Portuguese. Hence I suggest that (36a) corresponds to the English ranking while (36b) corresponds to Portuguese.

Let us evaluate the predictions of these rankings: in the evaluation of the proposal, I will present the context at stake (avoiding repetition of the examples) followed by the corresponding tableau. I will not be very explicit about verb-movement, counting only one movement step (from V-to-I). I do so in order to leave out all the constraints related with V-movement (cf. Grimshaw 1997, Vikner 1997), which will make the reading of the tableaux easier.

Context: Subject is not the focus of the sentence:

English

(T1) input: (V(x,y), Focus:y)

<table>
<thead>
<tr>
<th></th>
<th>CASE</th>
<th>ALIGNFOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>[IP S V [vp t t O]]</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>[IP V [vp S t O]]</td>
<td>*!</td>
</tr>
</tbody>
</table>

Portuguese

(T2) input: (V(x,y), Focus: y)

<table>
<thead>
<tr>
<th></th>
<th>ALIGNFOCUS</th>
<th>CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>[IP S V [vp t t O]]</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>[IP V [vp S t O]]</td>
<td>*!</td>
</tr>
</tbody>
</table>
(T1) and (T2) show that, when the subject is not the focus of the sentence, movement of the subject to Spec,IP is predicted in both languages. This is because ALIGNFOCUS is vacuously satisfied in both cases, and because only CASE is violated when the subject stays in Spec,VP. Since ALIGNFOCUS does not impose any requirements, the optimal candidate will be the one that satisfies both constraints in the two languages. Note that in (T2), though the role of STAY is not represented, it is crucial that CASE dominates STAY, since candidate (a) has more violations of STAY (cf. the traces) than candidate (b), and still (a) is optimal. It will be shown below that this is not the case for objects.

**Context:** Subject and object are the foci but the verb is not (the subject may not c-command the verb, hence it stays in situ):

**English:**

<table>
<thead>
<tr>
<th>(T3) input: (V(x,y), Focus: x,y)</th>
<th>CASE</th>
<th>ALIGNFOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. $\text{IP S V [VP t t O]}$</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>b. $\text{IP V [VP S t O]}$</td>
<td></td>
<td>*!</td>
</tr>
</tbody>
</table>

**Portuguese**

<table>
<thead>
<tr>
<th>(T4) input: (V(x,y), Focus: x,y)</th>
<th>ALIGNFOCUS</th>
<th>CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. $\text{IP S V [VP t t O]}$</td>
<td></td>
<td>*!</td>
</tr>
<tr>
<td>b. $\text{IP V [VP S t O]}$</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

As shown in (T3) and (T4), when the subject is part of the focus of the sentence, a cross-linguistic difference is predicted by these rankings. In the first one (CASE >> ALIGNFOCUS), the winner is the candidate in which the subject moves to Spec,IP though it violates ALIGNFOCUS. The violation of CASE is fatal for the second candidate. In the other grammar, the reverse situation obtains: though CASE is violated by candidate b, this is the optimal one because of the fatal violation of ALIGNFOCUS by the first candidate. Though the subject is not aligned to the right of the sentence in b, it does not violate ALIGNFOCUS, since the focus set of constituents is well defined: the subject bears the most prominent stress and it c-commands the other elements that constitute the focus of the sentence.
The differences and similarities predicted by these two grammars do correspond to the facts observed in English and Portuguese: in both languages, the subject moves to Spec,IP if it is not focused. Only in Portuguese subjects stay in situ if focused.

The analysis I am proposing here is minimally different from Grimshaw and Samek-Lodovici’s (1995, 1996) for the difference between English and Italian. Grimshaw and Samek-Lodovici propose that the difference between English and Italian subjects is to be captured assuming a conflict between ALIGNFOCUS and the EPP. The EPP constraint, as in standard versions of the Extended Projection Principle, requires that Spec,IP be filled by a lexical subject. ALIGNFOCUS may require a subject to be postverbal. Their analysis of the cross-linguistic difference between English and Italian is given below:

(36)  \[
\begin{align*}
\text{English:} & \\
\text{EPP} & \gg \text{ALIGNFOCUS} \\
\text{Italian:} & \\
\text{ALIGNFOCUS} & \gg \text{EPP}
\end{align*}
\]

The following tableaux show that the predictions regarding the behavior of subjects are exactly the same my analysis makes.\(^13\)

**Context:** Subject is not the focus of the sentence.\(^14\)

**English**

(F5) input: (V(x))

<table>
<thead>
<tr>
<th>EPP</th>
<th>ALIGNFOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>[\text{IP S V } [\text{VP t t}]]</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 5

| b. [IP V [VP S t]] | *! |

**Italian**

<table>
<thead>
<tr>
<th>(T6) input: (V(x))</th>
<th>ALIGNFOCUS</th>
<th>EPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>[IP S V [VP t t]]</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>[IP V [VP S t]]</td>
<td>*!</td>
<td></td>
</tr>
</tbody>
</table>

**Context:** Subject is the focus but the verb is not (subject may not c-command the verb, hence it stays in situ):

**English:**

<table>
<thead>
<tr>
<th>(T7) input: (V(x), Focus: x)</th>
<th>EPP</th>
<th>ALIGNFOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>[IP S V [VP t t]]</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>[IP V [VP S t]]</td>
<td>*!</td>
<td></td>
</tr>
</tbody>
</table>

**Italian:**

<table>
<thead>
<tr>
<th>(T8) input: (V(x), Focus: x)</th>
<th>ALIGNFOCUS</th>
<th>EPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [IP S V [VP t t]]</td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>b. [IP V [VP S t]]</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

As the tableaux above indicate, anytime a subject stays in its base position, there is a violation of the EPP constraint. Given the high ranking of this constraint in English, such configurations are never optimal. In Italian, ALIGNFOCUS is ranked higher than EPP. If a subject must stay in Spec,VP for focus reasons, a violation of EPP may arise.

Given the similar results, it seems a priori that there is no reason for not adopting Grimshaw and Samek-Lodovici’s analysis for the difference between English and Portuguese. This analysis would avoid the potential problems related with morphological case. However, my decision to assign to CASE the reason for movement of the subjects rather than to the EPP has to do with two factors, the second of which is the object of the next section:

a) the two hypotheses do not exclude each other;
b) an analysis based on CASE allows for a unified analysis of subjects and objects (cf. 2.5).

As for the first factor, note that opting for a CASE-based analysis does not say anything about the validity of the EPP as a violable constraint. Actually, attempts to combine my approach with Grimshaw and Samek-Lodovici’s may prove to be fruitful. Let us look at the results of possible interactions between CASE, ALIGNFOCUS and the EPP, and check the possible results. From the interaction of these three constraints, six rankings are possible. I list them in (37):

(37) a. ALIGNFOCUS< CASE< EPP  
b. ALIGNFOCUS< EPP< CASE  
c. EPP< ALIGNFOCUS< CASE  
d. EPP< CASE< ALIGNFOCUS  
e. CASE< ALIGNFOCUS< EPP  
f. CASE< EPP< ALIGNFOCUS

I will not present analyses of languages illustrating the several possibilities, since my goal here is just to show that my analysis is not incompatible with Grimshaw and Samek-Lodovici’s. I would nevertheless like to present the predictions of each of the rankings presented above:

a) The two rankings in which ALIGNFOCUS dominates the other two constraints predict that subjects may stay in Spec,VP, and Spec,IP may remain empty. This is because in such rankings, EPP and CASE are not crucially ranked with respect to one another. The non-crucial ranking may be represented as in (38):

(38) ALIGNFOCUS{EPP,CASE}

b) The ranking in which EPP predicts that Spec,IP will always be filled in. That is, it predicts non-null subject languages. If the ranking is EPP< ALIGNFOCUS< CASE, the language will allow for low subjects, but the Spec,IP position must be filled in by an expletive element. This may be the case of Icelandic, which permits Transitive Expletive Constructions (Bohaj and Jonas 1993). If the ranking is EPP< CASE< ALIGNFOCUS, the language will not allow low subjects, no matter what the discourse context is. This may be the case of English.
c) The ranking in which CASE is dominant will also predict that Spec,IP is always filled in, and will not permit low subjects. This may be the English case again. The ranking between ALIGNFOCUS and EPP will thus be irrelevant:

\[(39) \text{CASE} \rightarrow \{\text{ALIGNFOCUS}, \text{EPP}\}\]

The crucial case for distinguishing my analysis from Grimshaw and Samek-Lodovici’s is thus the case in which ALIGNFOCUS is ranked lower than the EPP and higher than CASE. With this ranking, it is possible to observe the effects of the two constraints and verify that the two analyses are compatible.

The other argument for analyzing the behavior of subjects in terms of CASE rather than EPP was the possibility of attaining an unified analysis for subjects and objects. This will be demonstrated in the next section.

2.5 Objects

2.5.1. English vs. Icelandic:

In this section, I will show that the interaction between the constraints CASE and ALIGNFOCUS proposed for subjects also makes correct predictions for objects. Actually, the main point is to demonstrate that the analysis proposed for subject may be maintained to derive the behavior of objects. As before, I will not distinguish between Obj-CASE and Subj-CASE, unless it is necessary. The extension of the analysis of subjects to the behavior of objects will favor the CASE-based analysis of these syntax/discourse interactions.

In the analysis of the behavior of objects, I will try to explain the relative ordering of complements (nominal and prepositional) and adverbs. The reasons are the following: varying between nominal and prepositional complements will allow for detecting the cases in which CASE is really at stake, since CASE is relevant for NPs but not for PPs. The focus of the sentences to be analyzed will be either on the complement or on a VP-adverb. This way, I am able to ensure that there is leftward movement of the complements across the adverb. Without an adverb, it would be impossible to know whether there has been
movement or not. I will thus employ the same methodology as in chapter 2 and 3.

As discussed above, in English, nominal objects always move to Spec,AgrOP. In Icelandic, they stay in their base position if they are focused, and they move to Spec,AgrOP if they are not. Note that the behavior of objects in Icelandic is exactly the same as that of subjects in Portuguese: their moving to a case-licensing position is dependent on discourse functions. Let us look at the tableaux and see how the interaction between these two constraints makes the correct predictions.

The ranking corresponding to Icelandic is the same as the one in Portuguese presented before: ALIGNFOCUS » CASE.

**English NPs:**

**Context:** Object is the focus:

**Example:** John read the book well.

(T9) input: (V(x,y), Focus: y)

<table>
<thead>
<tr>
<th>S, V: [a] S V [AgrOP O], [VP Adv t]]</th>
<th>CASE</th>
<th>ALIGNFOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [IP S V [VP Adv O]]</td>
<td>-</td>
<td>*</td>
</tr>
</tbody>
</table>

**Context:** The adverb is the focus:

**Example:** John read the book well.

(T10) input: (V(x,y), Focus: Adv)

<table>
<thead>
<tr>
<th>S, V: [a] S V [AgrOP O], [VP Adv t]]</th>
<th>CASE</th>
<th>ALIGNFOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [IP S V [VP Adv O]]</td>
<td>-</td>
<td>*</td>
</tr>
</tbody>
</table>

As expected, since CASE outranks ALIGNFOCUS, nominal objects will always move to Spec,AgrOP, independently of what is the focus of the sentence. If the object is not the focus (T10), movement to Spec,AgrOP is exactly what is expected, since this movement does not violate any constraint. However, if the object is the focus, there is a conflict between the two constraints: CASE requires it to move, ALIGNFOCUS requires it to stay in situ. Since CASE outranks ALIGNFOCUS, the candidate which respects the former wins.

If CASE did not impose any requirement on the object,
ALIGNFOCUS might be satisfied. This is actually what happens with prepositional complements, for which CASE is irrelevant. Tableaux 11 and 12 illustrate this; the candidates under consideration are instantiations of PP-in-situ and that of PP-scrambling across the adverb:

*English PP’s:

**Context:** Object is focus:

**Example:** John looked hard at the picture.

(T11) input: (V(x,y), Focus: y)

<table>
<thead>
<tr>
<th>CASE</th>
<th>ALIGNFOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [p \land V \land [V \land Adv \land t]] ]</td>
<td><em>f</em></td>
</tr>
<tr>
<td>b. [[p \land S \land V \land [V \land Adv \land PP]] ]</td>
<td></td>
</tr>
</tbody>
</table>

**Context:** Adverb is focus:

**Example:** John looked at the picture hard.

(T12) input: (V(x,y), Focus: Adv)

<table>
<thead>
<tr>
<th>CASE</th>
<th>ALIGNFOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [p \land V \land [V \land Adv \land t]] ]</td>
<td></td>
</tr>
<tr>
<td>b. [[p \land S \land V \land [V \land Adv \land PP]] ]</td>
<td><em>f</em></td>
</tr>
</tbody>
</table>

As shown above, if the PP is the focus it stays in situ. Otherwise it scrambles across the adverb. This is indeed the pattern derived by the constraint ranking above:

(39) a  A: At which pictures did he look hard?
      B: He looked hard at the pictures of Miró.
      B': #He looked at the pictures of Miró hard.

   b  A: How did he look at the pictures?
      B: He looked at the pictures hard.
      B': #He looked hard at the pictures.

Note that the behavior of PPs alone is uninteresting for an Optimality-theoretical approach, since the two constraints do not conflict. It serves however as a test for the validity of the hypothesis concerning NPs, since it shows that the dominated constraint ALIGNFOCUS is operative.

It is thus possible to conclude that the ranking proposed for
explaining the behavior of English subjects is also able to account for the distribution of complements.

Let us now turn to the ranking in which ALIGNFOCUS dominates CASE, which was proposed above for explaining the behavior of Portuguese subjects. The predicted results should be the same as those obtained for subjects.

**Icelandic NP:**

**Context:** Object is the focus:

**Example:** *Jóhan kveþti ekki bökina*

(T13) input: \((V(x,y), \text{Focus: } y)\)

<table>
<thead>
<tr>
<th></th>
<th>ALIGNFOCUS</th>
<th>CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. (\text{IP} \in S \in V \in x) (\in \text{Agr}_{\text{IP}} \in O \in \text{VP} \in \text{Adv} t)</td>
<td>*!</td>
<td>*</td>
</tr>
<tr>
<td>b. (\text{IP} \in S \in V \in \text{VP} \in \text{Adv} O)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Context:** Adverb is the focus:

**Example:** *Jóhan kveþti bökina ekki.*

(T14) input: \((V(x,y), \text{Focus: } \text{Adv})\)

<table>
<thead>
<tr>
<th></th>
<th>ALIGNFOCUS</th>
<th>CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>**a. (\text{IP} \in S \in V \in x) (\in \text{Agr}_{\text{IP}} \in O \in \text{VP} \in \text{Adv} t)</td>
<td>*!</td>
<td>*</td>
</tr>
<tr>
<td>b. (\text{IP} \in S \in V \in \text{VP} \in \text{Adv} O)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results of (T13) and (T14) do indeed correspond to the data described for Icelandic: if the object is the focus it stays in situ. If the

---

15 I must clarify that I am comparing Icelandic objects with Portuguese subjects, since they may be explained under the same ranking of these two constraints. I am not comparing Portuguese subjects with Portuguese objects, because the latter do not move to Spec,AgrOP, as discussed in chapter 3. This will follow from the role played by STAY, to be discussed in the next section. Likewise, I am not comparing Icelandic objects with Icelandic subjects, since the former are also affected by the influence of the EPP, as discussed above.
adverb is the focus, it moves to Spec,AgrOP:

(41) (Icelandic, Bobaljik 1995)
   context: Does he know “Barriers”?
   a  Hann les Barriers alltaf.
      he reads Barriers always
   b  #Hann les alltaf Barriers.
      he reads always Barriers

(42) context: Does he know Chomsky’s work?
   a  #Hann les Barriers alltaf.
      he reads Barriers always
   b  Hann les alltaf Barriers.
      he reads always Barriers

Given the rankings proposed for each language, the results derived so far from the interaction between CASE and ALIGNFOCUS are the following:

a) English subjects are always in Spec,IP, and they are always ambiguous between new and old information;
b) English nominal objects are always in Spec,AgrOP, and they are always ambiguous between new and old information;
c) English prepositional objects remain in their base position if they convey new information; if the adverb is the focus they scramble across it;
d) Icelandic nominal objects and Portuguese subjects behave alike: if they are new information, they remain in their base position; if they convey old information they move to a case position.

I have basically reached one of the goals formulated at the onset of this chapter: to formalize the dependency between focus and syntax, which makes some languages allow for more than one word order, while other languages exhibit a rigid word order, independently of the discourse context.

It remains to be explained why not all objects move in the same way, that is, why is there a difference between A-bar movement (scrambling) and A-movement (object-shift). This will be explained in the next subsection.
2.5.2. Object-shift vs. Scrambling and the behavior of PPs

If the grammars of argument distribution would only contain the two constraints discussed so far, the prediction would be that, similarly to subjects, objects should always move to the Case licensing position Spec, AgrOP in languages where CASE dominates ALIGNFOCUS, and in the languages in which ALIGNFOCUS dominates CASE, the object must move to Spec, AgrOP if it is not the focus of the sentence.

However, in chapter 3, I assumed the traditional distinction between object-shift (Case-driven A-movement) and scrambling (A-bar movement). Only the former is predicted by the interaction of the two constraints. I have so far explained the way English and Portuguese/Icelandic differ with respect to the obligatory character of movement to CASE, but I still need to derive the difference between the landing sites of the objects in languages like English/Icelandic on the one hand as opposed to Portuguese/Dutch on the other. In other words, I have explained the similarity between Portuguese and Icelandic, which contrast with English in that CASE-movement is only obligatory in the latter. I have not however explained why the landing sites of the objects differ.

In studies accepting the difference between Object-shift and Scrambling (e.g. Vikner 1994), it is generally assumed that the two types of movement operation do not cooccur within one language. So far, this has just been a stipulation. In what follows, I will try to derive this stipulation from the interaction between CASE, ALIGNFOCUS and STAY.

In order to explain the difference between Object-shift and scrambling, STAY will now play an important role. Recall that STAY works against movements. According to the theory of phrase structure underlying most work in OT-syntax (cf. Grimshaw 1997, Ackema and Neeleman 1995, 1996, Bakovic 1995, among others) phrase structure is built up only when it is necessary. For instance, in Grimshaw’s (1997) work, the CP node is only projected when a wh-element moves to its specifier or when an auxiliary moves to its head. A sentence in which no material is visible in CP is assumed not to contain this projection. What is the relevance of this for the difference between scrambling and object-shift? There are two options to move the object: either by adjunction to VP or by moving it to Spec, AgrOP. If the former option is taken, CASE is not satisfied since case is not licensed in A-bar positions. If the latter
option is taken, one additional projection is built up creating one more head position (AgO). This head will have to be filled in by the verb on its way to I, yielding one additional violation of STAY.\(^\text{16}\) This will predict that Object-shift and scrambling will be in complementary distribution, as observed in Webelhuth (1989) and Vikner (1994), since one process will respect STAY but violate CASE (scrambling) and the other will respect CASE but violate STAY (object-shift).\(^\text{17}\) The language-internal complementary distribution of the two operations is predicted, since the two rankings only predict one of them to be possible. Since in OT there is only one ranking per language, only one of the operations will emerge. The complementary distribution between Object-shift and Scrambling will thus not need to be stipulated, but it will rather follow from one of the premises of the theory; namely that Grammars are unique rankings of constraints (cf. Chapter 1).

Let us now look at the tableaux and see how the interaction between the constraints ALIGNFOCUS, CASE and STAY describes the data we have been looking at. In the following tableaux I will only count the violations of STAY concerning V-movement and object-movement, ignoring the case of the subject, to facilitate the reading of the tableaux. The options with respect to information structure will be the same as the ones used for the discussion of Icelandic objects: either the object or the adverb is the focus.

Let us look at the first ranking listed in (35):

Ranking I: CASE » ALIGNFOCUS » STAY

As expected, this ranking will correspond to English, since for the discussion of subjects and objects we proposed that CASE outranks ALIGNFOCUS. The following tableaux illustrate the predictions of this ranking for each situation. The candidates under consideration are: (a) complement in situ; (b) scrambled complement; (c) complement in case-position:

\(^\text{16}\) This additional violation of STAY might be obviated if the verb skips AgO, violating the Head Movement Constraint (Travis 1984). For the moment I know of no evidence for treating this constraint as a soft one, or for postulating that in all these languages it is top-ranked. See Grimshaw (1997) and Balovic (1995) for discussion.

\(^\text{17}\) Note that scrambling followed by object-shift, a typical case of improper movement (Müller and Sternefeld 1993) is also excluded since it induces more violations of STAY than the two other options (the same number of movements of the object and the additional head movement).
Context: Object NP is the focus:
Example: John read the book well.

\[(T15) \text{ input: } (V(x,y), \text{ Focus: } y)\]

<table>
<thead>
<tr>
<th>CASE</th>
<th>ALIGNFOCUS</th>
<th>STAY</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="1" /></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td><img src="image1" alt="1" /></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td><img src="image1" alt="1" /></td>
<td>*</td>
<td>***</td>
</tr>
</tbody>
</table>

Context: Adverb is the focus:
Example: John read the book well.

\[(T16) \text{ input: } (V(x,y), \text{ Focus: Adv})\]

<table>
<thead>
<tr>
<th>CASE</th>
<th>ALIGNFOCUS</th>
<th>STAY</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="1" /></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td><img src="image1" alt="1" /></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td><img src="image1" alt="1" /></td>
<td>*</td>
<td>***</td>
</tr>
</tbody>
</table>

For NPs, STAY does not play any role. All the decisions are made before the strings are evaluated by this constraint. In all the cases in which the object does not move, CASE is fatally violated. Even if the complement is not relevant for CASE (i.e. if it is a PP), STAY will not be relevant, since the decision is made by ALIGNFOCUS:

Context: Object PP is the focus:
Example: John looked hard at the picture.

\[(T17) \text{ input: } (V(x,y), \text{ Focus: } y)\]

<table>
<thead>
<tr>
<th>CASE</th>
<th>ALIGNFOCUS</th>
<th>STAY</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="1" /></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td><img src="image1" alt="1" /></td>
<td>*</td>
<td>**</td>
</tr>
</tbody>
</table>

Context: Adverb is the focus:
Example: John looked at the pictures hard.
(T18) input: (V(x,y), Focus: Adv)

<table>
<thead>
<tr>
<th></th>
<th>CASE</th>
<th>ALIGNFOCUS</th>
<th>STAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [<em>{IP} SV {</em>{VP} \text{Adv} {_{VP} PP}} ]</td>
<td></td>
<td>* *</td>
<td></td>
</tr>
<tr>
<td>b. [<em>{IP} SV {</em>{VP} PP {<em>{VP} \text{Adv} {</em>{VP} t}} ]</td>
<td></td>
<td>**</td>
<td></td>
</tr>
</tbody>
</table>

As (T17) and (T18) show, if the PP is focused, it stays in situ violating STAY only once (because of the movement of the verb). If it scrambles across the adverb, it violates ALIGNFOCUS, since the adverb is the rightmost constituent in this representation. On the contrary, if the adverb is the focus, the optimal candidate is the one with PP-scrambling, since leaving the PP in situ yields a violation of ALIGNFOCUS.

The predictions of Ranking I are the following:

a) Nominal complements always move to Spec,AgrOP;
b) Prepositional complements stay in their base position if they are the focus of the sentence;
c) Prepositional complements scramble if they are not the focus.

This pattern corresponds to the description given above for English (cf. Chapter 3).

Let us now look at the second ranking of these three constraints and see what it predicts. In this ranking ALIGNFOCUS dominates CASE which dominates STAY. This may correspond to Icelandic, since it was proposed before that, in this language, ALIGNFOCUS is ranked higher than CASE.

Ranking II: ALIGNFOCUS » CASE » STAY

Let us first look at the case of nominal complements:

Context: Object NP is the focus
Example: Johan kogti ekki bókina

(T19) input: (V(x,y), Focus: y)

<table>
<thead>
<tr>
<th></th>
<th>ALIGNFOCUS</th>
<th>CASE</th>
<th>STAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [<em>{IP} SV {</em>{VP} \text{Adv} {_{VP} O}} ]</td>
<td></td>
<td>* *</td>
<td></td>
</tr>
<tr>
<td>b. [<em>{IP} SV {</em>{VP} O {<em>{VP} \text{Adv} {</em>{VP} t}} ]</td>
<td></td>
<td>* * **</td>
<td></td>
</tr>
</tbody>
</table>
The table below illustrates the interaction between word order and constraint interaction in the example provided:

<table>
<thead>
<tr>
<th>Structure</th>
<th>ALIGNFOCUS</th>
<th>CASE</th>
<th>STAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>c.</td>
<td>*!</td>
<td></td>
<td>***</td>
</tr>
</tbody>
</table>

**Context:** Adverb is the focus

**Example:** *Johan keypit bokina ekki*

**(T20)** input: *(V(x,y), Focus: Adv)*

<table>
<thead>
<tr>
<th>Structure</th>
<th>ALIGNFOCUS</th>
<th>CASE</th>
<th>STAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>*!</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b.</td>
<td>*!</td>
<td>*</td>
<td>**</td>
</tr>
<tr>
<td>c.</td>
<td>**</td>
<td></td>
<td>***</td>
</tr>
</tbody>
</table>

**(T19)** shows that, when the object is the focus, any movement of this constituent will violate ALIGNFOCUS, which is the highest ranked constraint. This is true, independently of the type of movement (A- or A-bar). Since both candidates (b) and (c) move the object out of its base position, the decision is made on the basis of the highest constraint.

If the adverb is the focus of the sentence (T20), leaving the object in situ will violate ALIGNFOCUS, excluding the first candidate. This is so because the adverb is not rightmost in the sentence, hence it is not able to get the sentence main stress. Since CASE dominates STAY, scrambling the object yields a violation of CASE. Candidate (c) is thus obtained, involving movement of the object to Spec,AgrOP, as the optimal one. Candidate (c) wins in spite of the three violations of STAY (resulting from movement of the verb to AgrO and to I, and from movement of the object).

With PPs, the results are the same as in English, since CASE does not play any role and the decisions are made by ALIGNFOCUS:

**Context:** PP is the focus

**(T21)** input: *(V(x,y), Focus: y)*

<table>
<thead>
<tr>
<th>Structure</th>
<th>ALIGNFOCUS</th>
<th>CASE</th>
<th>STAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>*!</td>
<td>*</td>
<td>**</td>
</tr>
</tbody>
</table>

**Context:** Adverb is the focus

**(T22)** input: *(V(x,y), Focus: Adv)*
The predictions of this grammar are therefore the following:

a) Nominal complements stay in their base position if they are the focus of the sentence;
b) Nominal complements move to Spec,AgrOP if they are not the focus;
c) Prepositional complements stay in their base position if they are the focus of the sentence;
d) Prepositional complements scramble if they are not the focus.

This grammar could correspond to Icelandic and Mainland Scandinavian (putting aside for the moment the difference between the Scandinavian languages that move NPs or just pronouns), if it would not make the wrong prediction that, in these languages, PPs scramble. This prediction is wrong since, as I have shown before, PPs never shift to a pre-adverbial position. This is illustrated in the following example repeated from above:

(43) Swedish (Holmberg 1986):
a) Jag tror inte på det.
   I believe not in that
b. *Jag tror på det inte.

I would like to present a hypothesis that would allow keeping the correct predictions of the ranking presented before, and do away with the wrong prediction concerning PP-scrambling. I must emphasize, though, that this is a quite speculative hypothesis requiring a careful look at the data.

If adjunction of PPs to VP is independently ruled out in Mainland Scandinavian and Icelandic, PP-scrambling will never be possible because of this ban on PP-adjunction to VP. The reason why I think it is possible to propose such a ban on PP-adjunction to VP is that in the literature I checked I have not found a single example of an adjunct PP base-adjoined to the left of VP. Moreover, the only case of a left-adjoined PP-

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adjunct I came across was judged ungrammatical unless the adjunction site is IP. This is given in (44):

(44) (Swedish, Holmberg 1986):
   a) om dom i min frånvaro tilldelade honom priset.
      if they in my absence awarded him the prize
   b) *om dom tilldelade i min frånvaro honom priset.
   c) *om dom tilldelade honom i min frånvaro priset.

This hypothesis has been further confirmed to me by Thorbjorg Hróarsdóttir (p.c.), who reported to me that the following examples from Icelandic with base-generated left-joined PPs are all ungrammatical:

(45) Icelandic (Thorbjorg Hróarsdóttir, p.c):
   a) *Jón skar medð hni fráum kjætið.
      John cut with the knife the meat
   b) *Jón skóðaði medð sjónaukaranum mannin.
      John spied with the binoculars the man
   c) *Jón skar medð aðgangin ekki kjætið.
      John cut with care not the meat

In all the sentences, the PP is grammatical in sentence-final position. The argument goes as follows: if in a language, base-generated adjunction of a given category is impossible, it may not be created either by movement. If it is impossible to base-left-join a PP to VP in Icelandic, it will not be possible to scramble a PP complement, left-joining it to VP.

If this hypothesis proves true, ranking II can still account for Icelandic, though research is necessary in order to know what is the reason for this ban on adjunction to VP. However, as already said, a careful survey of the data is needed to check whether this is true for all classes of PP-adjuncts.

Finally, let us look at the last ranking under consideration here: the one in which ALIGNFOCUS dominates STAY, which outranks CASE:

Ranking III: ALIGNFOCUS » STAY » CASE

The only difference between this ranking and the one discussed above is
that STAY dominates CASE. The number of movements must be minimal, and that is more important than respecting CASE. Let us see the results of this ranking for each situation:

**Context:** Object NP is the focus  
**Example:** O Paulo leu bem o livro.

(T23) input: \( \langle V(x,y), \text{Focus: } y \rangle \)

<table>
<thead>
<tr>
<th></th>
<th>ALIGNFOCUS</th>
<th>STAY</th>
<th>CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [IP \ S \ V \ [VP \ Adv \ [VP O]] ]</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b. [IP \ S \ V \ [VP O \ [VP \ Adv \ [VP t]] ]</td>
<td>*!</td>
<td>**</td>
<td>*</td>
</tr>
<tr>
<td>c. [IP \ S \ V \ [_get_ \ O \ [VP \ Adv \ [VP t]] ]</td>
<td>*!</td>
<td>***</td>
<td></td>
</tr>
</tbody>
</table>

The result of (T23) is the same as the result obtained with the previous ranking: if the object is the focus of the sentence, moving it will induce a violation of ALIGNFOCUS, which excludes both scrambling and object-shift. The crucial difference between the two grammars is represented in the next tableau:

**Context:** Adverb is the focus  
**Example:** O Paulo leu o livro bem.

(T24) input: \( \langle V(x,y), \text{Focus: } \text{Adv} \rangle \)

<table>
<thead>
<tr>
<th></th>
<th>ALIGNFOCUS</th>
<th>STAY</th>
<th>CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [IP \ S \ V \ [VP \ Adv \ [VP O]] ]</td>
<td>*!</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b. [IP \ S \ V \ [VP O \ [VP \ Adv \ [VP t]] ]</td>
<td>**</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>c. [IP \ S \ V \ [_get_ \ O \ [VP \ Adv \ [VP t]] ]</td>
<td>***!</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Candidate (a) is ruled out because of the violation of ALIGNFOCUS. The adverb is not in the position where it can get the default focus stress.
This is the same as in the previous ranking (ALIGNFOCUS » CASE » STAY). The crucial difference between the two grammars lies on the decision between candidate (b) and (c). In the previous grammar, the candidate with movement of the object to AgrOP was the winner, because the other one did not respect CASE. In this ranking, STAY dominates CASE. Candidate (b) violates STAY two times: the verb moves to I and the object moves once. Candidate (c) is ruled out because AgrOP is projected forcing one more movement of the verb; it moves to AgrO, then to I and the object moves to Spec,AgrOP yielding three violations of STAY. Because of this third violation, the optimal candidate is the one in which the object is scrambled.

The situation with PP-complements is the same as the one described by the other two grammars:

Context: PP is the focus:
Example: *O Paulo fala bem com o Pedro.

(T25) input: (V(x,y), Focus: y)

<table>
<thead>
<tr>
<th></th>
<th>ALIGNFOCUS</th>
<th>STAY</th>
<th>CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [IP S V [VP Adv [VP PP]]]</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>b. [IP S V [VP PP [VP Adv [VP ]]]]</td>
<td></td>
<td>*!</td>
<td>**</td>
</tr>
</tbody>
</table>

Context: Adverb is the focus:
Example: *O Paulo fala com o Pedro bem.

(T26) input: (V(x,y), Focus: Adv)

<table>
<thead>
<tr>
<th></th>
<th>ALIGNFOCUS</th>
<th>STAY</th>
<th>CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [IP S V [VP Adv [VP PP]]]</td>
<td>*!</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>b. [IP S V [VP PP [VP Adv [VP ]]]]</td>
<td>**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As in the other two rankings, if the PP is the focus, it stays in situ, otherwise it scrambles.

The properties of the grammar described by ranking III are:
a) Nominal complements stay in their base position if they are the focus;
b) Nominal complements scramble if they are not the focus;
c) Prepositional complements stay in their base position if they are the focus of the sentence;
d) Prepositional complements scramble if they are not the focus.

These are the properties described in chapter 3 for Portuguese and Dutch. Note that, concerning Portuguese, this is consistent with the analysis proposed above for subjects. In both cases, ALIGNFOCUS outranks CASE. The only difference between this pattern and the situation discussed for subjects is that the split between the CASE constraints will play a role. In order to get the correct distribution of subjects, it is necessary that SUBJ-CASE dominate STAY.\(^6\) For the case of objects, and in order to get scrambling, STAY has to dominate OBJ-CASE. This gives us a better understanding of the ranking of Portuguese: ALIGNFOCUS » SUBJ-CASE » STAY » OBJ-CASE. It still needs to be investigated whether SUBJ-CASE and OBJ-CASE are in a relation of subhierarchy (cf. Bakovic 1995, Bakovic and Keer 1996) or whether they work independently.

Dutch only falls under this analysis, if it is assumed that Dutch is I-final (which is the most traditional analysis). If in embedded sentences the verb is inside VP, there would be no difference between scrambling and object-shift in terms of violations of STAY.\(^7\) In a S Aux O Adv V

\(^6\) Cf. chapter 6.

\(^7\) Reuland (1990) presents an empirical argument against vacuous movement of V to I. His argument is based on the following two sentences:

(i) dat Jan Marie herhaaldelijk op beide wangen gelust heeft
   that Jan Marie repeatedly on both cheeks kissed has

(ii) dat Jan Marie op beide wangen herhaaldelijk gelust heeft
   that Jan Marie on both cheeks repeatedly kissed has

Each of these sentences has a distinct meaning: (i) means that John kissed Mary on both cheeks in several occasions; (ii) means that John kissed Mary several times on each cheek. Reuland’s point is that, if right-adjunction of PP to VP is possible and if scope is defined hierarchically rather than linearly, (ii) should have the same reading as (i), by having the PP right-adjointed to the VP which contains the adverb and by moving V-to-I. The fact that that reading does not emerge might prove that there is no V-to-I, hence the PP in (ii) must c-command the adverb. In order to keep my assumption about Dutch being I-final and circumvent the problem with Reuland’s examples, I have to assume that base right-adjunction to VP is impossible, in the spirit of the
sequence in which the object has been scrambled, I must assume that V has moved to I, yielding two violations of STAY (cf. diagram in (46)). If AgrO were projected there would be an additional landing site, and an additional violation of STAY. If I were to assume that the verb is in V, I would run into problems, since both scrambling and object-shift would yield only one violation of STAY.

(46)

```
  CP
 /   \
|     |
Subj  C'  IP
     |
     |   \
     C  Aux
     |
     |   V
     |   |
     |   I
     |   |
     |   |
     VP  V
     |
     |   Adv
     |   VP
     |   |
     |   |
     |   V'
     |   |
     |   |
     |   |
     |
     |
     t_0
     |
     t_1
     |
     t_2
```

I would like to stress again the fact that the interaction between the constraints in the two rankings just discussed predicts that if a language has object-shift, it will not have scrambling, since each of these processes is favored by conflicting constraints. The observation that scrambling and object-shift are in complementary distribution comes from Weibelhuth (1989) and Vikner (1994).21

The predictions for PP complements have been the same for all argument developed in Barbiers (1995). This would anyway be coherent with the results of chapter 2 of this dissertation. For a more detailed discussion of the problems of V-to-(final) I movement in Dutch, see Zwart (1993).

21 See however Vanden Wyngaard (1989) and Mahajan (1990) for different proposals.
Chapter 5

the languages. This is because the constraints at stake do not conflict when evaluating the distribution of PPs. In other words, the behavior of PPs alone is hardly interesting for an OT-analysis. It is however important to note that their behavior, and especially the differences between PPs and NPs is important to evaluate the adequacy of an analysis in Optimality-theoretical terms. From the behavior of PPs, it is possible to observe the effects of ALIGNFOCUS, even in a language like English, where this constraint is dominated. This visibility of the effects of dominated constraints is called Emergence of the Unmarked (McCarthy and Prince 1994), and will be discussed and studied in greater detail in chapter 6 and 7.

2.6. Conclusion

From the interaction of three constraints that were known from the literature, and from the assumption that these are not absolute constraints, I managed to derive the behavior of subjects in English and Portuguese as well as the distribution of objects in Dutch, Portuguese, English and Icelandic. The rankings proposed for these languages are listed under (47):  

(47) a English:  
CASE » ALIGNFOCUS » STAY  
b Icelandic:  
ALIGNFOCUS » CASE » STAY  
c Portuguese:  
ALIGNFOCUS » SUBJ-CASE » STAY » OBJ-CASE  
d Dutch:  
ALIGN-FOCUS » STAY » CASE

Further, I managed to derive the observation that scrambling and object-shift are in complementary distribution.
3. Further issues

Before concluding this chapter, I would like to comment on three issues that the type of approach proposed here raises:

a) The relation morphology/syntax, raised by the violability of Case;
b) The modularity of grammar, raised by the interaction between prosodic constraints and syntactic constraints;
c) The emergence of SVO in unmarked contexts.

3.1. Violability of CASE

The analysis just presented is based on the assumption that CASE is a violable constraint. I proposed above that CASE is violated whenever an NP is not in its designated CASE-licensing position. In other words, CASE is violated whenever a subject is not in Spec,IP or an object is not in Spec,AgrOP.

The issue raised by this aspect of my analysis is the following: in languages with morphological case, why does the right morphological Case appear on the NP, even in contexts in which Case is violated?

I will not propose any solution for this problem. I will however note that there are three arguments to show that this problem is not specific to my analysis:

a) It is not clear that there is a relation between morphological Case and Case-licensing. Marantz (1991) has argued that the trigger for NP-movement to Spec,IP is not CASE, but the EPP. He gives the following Kichaga examples from Bresnan and Moshi (1990), showing that in spite of the movement of the object to a subject position in passive sentences, there is no change in the morphology: the verb still exhibits object agreement markers, like in the active counterpart. This is a challenge for Burzio’s generalization on the relation between accusative case and NP-movement to a subject position:

(48) a  N-á-i-łiy-i-à  'm-kà k-čỳà
       (he) AgrS1-AgrO1-AgrO2-eat-BEN wife3 food1
       ‘He is eating food for his wife’
   b  'M-kà n-á-i-łiy-i-ò k-čỳà
      food1 AgrS1-AgrO1-eat-BEN-pass wife3
CHAPTER 5

‘Food is being eaten for the wife’

The point Marantz (1991) makes is the following: if Burzio’s generalization is correct, it can only involve abstract Case, not morphological case, otherwise (48b) should be ungrammatical, since there is movement to subject position and accusative Case occurring within a single sentence. Marantz raises two hypotheses: a) these examples show that morphological case and abstract Case must be dissociated; b) NP-movement has nothing to do with Case, but it is a consequence of the EPP. Marantz follows the latter hypothesis. I will assume the former for the reasons indicated when I compared my analysis with Grimshaw and Samek-Lodovici’s (1995,1996).

b) The second argument to show that structural licensing and morphological Case are not necessarily related comes from Icelandic. Collins and Thráinsson (1996), among others, propose an analysis of object-shift in Icelandic base on movement for checking Case-related features. They note however that several morphological cases may appear in the same position, depending on the verb involved. Their examples are given below. The sentences in (49) involve cases of object-shift with all morphological cases of the language.

(49) Icelandic (from Collins and Thráinsson 1996):
   a Æg las bókina ekki.
   I read the book(ACC) not
   b Æg henti bókininni ekki.
   I threw the book(DAT) not
   c Æg sakna Haraldar ekki.
   I miss Harold(GEN) not
   d Mér líka bækurnar ekki.
   I like the books(NOM) not

These sentences provide further evidence that position and morphological case are not necessarily in a one-to-one correspondence. The fact that the morphology problem arises in non-OT analyses makes it possible to claim that it is not a problem created by violability of Case only.
c) Finally, on more theoretical grounds, note that a relation between licensing position and morphological Case only arises in certain interpretations of the Minimalist Program (Chomsky 1993, 1995), where the visible morphology is **checked** in a certain position. If Case-licensing is not defined in terms of **checking**, the constraint on Case is a constraint about position of NPs, independent of morphological Case.  

With these three arguments, I do not intend to discard the problem of morphological case, but rather show that this is a much more general problem, shared by all analyses. The solution for this problem is thus beyond the scope of this dissertation.

It may well be that Case theory is superfluous, as Marantz (1991) suggests, given the lack of morphological evidence for it. This is a potential line of research, which I will not explore here. Any solution for the relation syntax/morphology that maintains the idea that NPs must move to designated licensing positions will be compatible with the approach developed here.  

### 3.2. Modularity of the grammar

The crucial aspect of the analysis developed above is the conflict between **CASE**, which is a syntactic constraint, and **ALIGNFOCUS**, which is prosodically defined (cf. chapter 4). A criticism that may be raised against this type of analysis is that I am assuming an interaction between two levels of the grammar that should be autonomous.

Actually, the idea that syntactic rules do not use phonological information is a rather standard assumption in generative syntax (see e.g. Zwicky 1969, Zwicky and Pullum 1986 (apud Miller, Pullum and Zwicky 1997)). This assumption is known as **Principle of Phonology-Free Syntax**.

---

22 I am grateful to Henk van Riemsdijk for discussing this point with me.

23 These observations at first sight seem to weaken the argument for the violability of **CASE** based on contexts in which default case emerges, since it was claimed that a morphological case emerges even when there is no clear assigner. Note, however, that the main point of that argument is the lack of structural context for Case assignment, rather than the emergence of a given morphological Case.
Although this is a rather conceptual problem, I would like to emphasize that my analysis does not clearly contradict this principle.

The Principle of Phonology-Free Syntax states that rules of syntax make no reference to phonology. In the kind of data under investigation, the role of focus and prosody is crucial for describing the distribution of the main constituents in the sentence. Ignoring the role of prosody would then be incorrect from a descriptive point of view.

I must however emphasize that there is a crucial difference between explaining the distribution of arguments in terms of a rule of syntax referring to phonology and the type of analysis developed here.

By using OT, I managed to remain faithful to the Principle of Phonology-Free Syntax: the constraint forcing NPs to move is defined syntactically, and there is no reference to phonology in its definition. The constraint on focus may be defined prosodically. It just happens to be the case that the scope of the principles of phrasal phonology is units with syntactic existence (Nespòr and Vogel 1986). Because of this coincidence of scope, it is expected that phrasal phonology principles will interfere with syntax. This is however different from using phonological information in the definition of syntactic constraints. The Principle of Phonology-Free syntax is thus obeyed in my analysis.

The reason for other phonological constraints not to be relevant for this analysis is that their scope is distinct from the scope of syntactic constraints. For instance, since syntactic constraints do not refer to syllables, there will be no context in which a syntactic constraint is in conflict with a constraint on syllable structure.

3.3. ‘what happened?’ contexts and unmarked order

The interaction between word order and focus as defined in the present analysis derives the fact that, in contexts of sentence-focus, such as answers to ‘what happened?’, the unmarked order of the language emerges. For instance, in Portuguese, the SVO order is the most felicitous one as an answer to such a question:

(50)  A: O que é que aconteceu?
    what happened
B: O Paulo partiu a janela.
    Paulo broke the window
    #Partiu o Paulo a janela.
#A janela, o Paulo partiu.
#Partiu a janela o Paulo.
#A janela, partiu o Paulo.

This follows from the analysis presented here, since ALIGNFOCUS will be satisfied by any sentence, provided that sentence stress falls on the rightmost constituent (cf. chapter 4). If sentence stress is rightmost, the whole IP may be interpreted as focused, independently of the word order. In other words, as far as ALIGNFOCUS is concerned, the sentences in (51), where boldface indicates main stress, are possible sentence-focus sentences, but those in (52) are not:

(51)  
a   O Paulo partiu a janela.  
    Paulo broke the window.  
b   O Paulo a janela partiu.  
c   A janela o Paulo partiu.  
d   A janela partiu o Paulo.  
e   Partiu o Paulo a janela.  
f   Partiu a janela o Paulo.

(52)  
a   O Paulo partiu a janela.  
b   O Paulo partiu a janela.  

Since all the word orders in (51) are potential sentence-focus sentences, all these word orders equally satisfy ALIGNFOCUS. This means that this constraint is irrelevant for deciding which word order is optimal. The decision will be made by the other (syntactic) constraints. This way, I manage to capture the fact that in sentence-focus contexts, the syntactically unmarked word order of a language emerges.

Tableau (27) illustrates this for two possible candidates, which are possible word orders in Portuguese: SVO and VOS:

(T27) (input: V(x,y), Focus:(V(x,y))

<table>
<thead>
<tr>
<th></th>
<th>ALIGNFOCUS</th>
<th>STAY</th>
<th>CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [[p S V [vp t O]]]</td>
<td>**</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>b. [[p V [vp O [vp S t t]]]</td>
<td>**</td>
<td>**</td>
<td>!</td>
</tr>
</tbody>
</table>

Because of focus projection, ALIGNFOCUS will be satisfied by the two candidates, the result being that this constraint will play no role in
deciding what the optimal candidate is. STAY is also violated two times by both candidates, hence the decision will be made by CASE. Since CASE is violated only once by candidate (a), this is the winner. Note that I left the VSO order out of this tableau on purpose. This order would be incorrectly predicted to be optimal, since it only has one violation of STAY, as (T28) shows:

(T28) (input: V(x,y), Focus/V(x,y))

<table>
<thead>
<tr>
<th>ALIGNSUB-FOCUS</th>
<th>STAY</th>
<th>CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [[p V [vp t t O]]</td>
<td>**1</td>
<td>*</td>
</tr>
<tr>
<td>b. [[p V [vp V S t t]]</td>
<td>**1</td>
<td>**</td>
</tr>
<tr>
<td>c. [[p V [vp V S t O]]</td>
<td>*</td>
<td>**</td>
</tr>
</tbody>
</table>

However, if I make use of the independently motivated ranking between the CASE subconstraints and STAY, the desired result is obtained. Because SUBJ-CASE dominates STAY, the latter will not make any requirements on the position of the subject. Tableau (28) gets thus the following appearance:

(T28') (input: V(x,y), Focus/V(x,y))

<table>
<thead>
<tr>
<th>ALIGNSUB-FOCUS</th>
<th>STAY</th>
<th>CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [[p V [vp t t O]]</td>
<td>**1</td>
<td>*</td>
</tr>
<tr>
<td>b. [[p V [vp V S t t]]</td>
<td>*</td>
<td>**</td>
</tr>
<tr>
<td>c. [[p V [vp V S t O]]</td>
<td>*</td>
<td>**</td>
</tr>
</tbody>
</table>

In (T28'), candidate (a) is the optimal one, in spite of violating STAY once more than candidate (c). By making use of the ranking between SUBJ-CASE and STAY, I managed to confirm the relative ranking between these two constraints, which had already been proposed above and also to maintain the hypothesis that in what happened?-contexts ALIGNSUB-FOCUS does not play any role, the decision for the optimal candidate being made by the other constraints.

4. Conclusion

In this chapter, I have investigated some of the problems left unsolved in the previous chapters of the dissertation. The main problem
in chapter 2 and 3 was that a formalization of the interaction between prosody and syntax was missing. Likewise, I had proposed an explanation for language-internal word order variation, suggesting that Portuguese word order obeys constraints on discourse, but I had not explained why other languages, like English, are not discourse-configurational.

In order to solve these problems, in this chapter I have proposed the following:

✓ I have argued that Optimality Theory (Prince and Smolensky 1993) is a theory offering the tools to formalize the dependencies and tensions between syntax and discourse described before. Since OT is a theory about constraint interaction, it enables a formalization of the interaction between CASE and ALIGNFOCUS, two constraints defined in accordance with the results of chapters 2 and 3.

✓ Discourse-configurationality in Portuguese is argued to be the result of the ranking of ALIGNFOCUS over CASE. This is instrumental in deriving the behavior of subjects in Portuguese, and it explains why they may surface either in Spec,VP or in Spec,IP. The reverse ranking explains the obligatoriness of subject-movement to Spec,IP in English.

✓ The same rankings predict the behavior of nominal objects. Dominance of CASE over ALIGNFOCUS predicts that, like subjects, English nominal objects must move to Spec,AgrOP independently of the discourse context. The behavior of PP complements shows the relevance of ALIGNFOCUS even in a language like English.

✓ The constraint STAY, a constraint on economy of movement, allows for deriving the often noted fact in the literature that languages have either object-shift (A-movement) or scrambling (A-bar movement) but not both. This now follows from the conflict between STAY and CASE. For the latter, it is more important to project AgrOP. For the former, it is more important to have an economical representation. When AgrOP is projected to satisfy CASE, STAY is violated. When it is not projected, CASE is violated. The conflict between these two constraints predicts thus that a language may not simultaneously have object-shift and scrambling.

✓ The emergence of SVO in sentence-focus context in Portuguese, a fact left unsolved in chapter 4, is explained by the irrelevance of ALIGNFOCUS in such contexts. When all candidates satisfy ALIGNFOCUS, syntactic constraints alone make the decision.
The potential problems mentioned in chapter 4 concerning the
principle of Phonology-Free Syntax are now solved. Syntactic and
prosodic constraints are defined independently of each other, but
their scopes may coincide. In such cases, conflicts may come up,
solved in the fashion proposed by Optimality Theory.

I have now an explanation for many of the problems raised in
previous chapters. There are however some issues left, mostly related
with the type of framework adopted:

- The pattern of unmarked word order derived for Portuguese (SVO) is
  not common to all languages. Does the analysis proposed here make
  any predictions concerning other patterns of unmarked word orders?
  In other words, if syntactic constraints are ‘making decisions’ in
  sentence-focus contexts, why are not all languages SVO?
- One of the premises of OT is that language-particular grammars are
  rankings of inviolable soft constraints. Do re-rankings of the same set
  of constraints predict other languages?
- To what extent is this type of framework different from a parametric
  approach stating that languages may be discourse-configurational or
  not (e.g. Kiss 1995)?

The first two questions are related. They have to do with the
explanatory power of the theory. Checking whether re-ranking the same
set of constraints predicts other languages is an important task in OT. In
chapter 6, I will tackle these questions, expanding the type of analysis
developed here to other languages. This will enable a confirmation of the
explanatory power of the analysis by enlarging its empirical scope, as well
as a more complete explanation for emergence of unmarked word orders.

The last question has to do with comparison of frameworks. This
issue must be solved on empirical grounds. An evaluation of the
predictions of each theory will be the goal of chapter 7.

Both chapters will be in the same line of research as this one. I will
keep arguing that a better understanding of the effects of constraints can
be attained by accepting their violiability, and by checking the contexts in
which they interact, rather than by loosely changing their formulation just
for the sake of accounting for apparent exceptions.
6 Word Order Typology in OT

1. Introduction

In the preceding chapter, I have used Optimality Theory to formalize the tension between syntax and discourse observed in chapter 3 and 4. I have argued that the flexible word order of Portuguese is the result of the dominance of syntactic constraints by discourse constraints, while the rigid word order of English arises from the dominance of syntactic constraints over discourse constraints. I demonstrated in particular that three constraints were at stake for understanding the word order variations under consideration in English, Portuguese, Dutch and Icelandic: CASE, ALIGNFOCUS and STAY. The following particular grammars were proposed:

(l) a English:
   CASE>> ALIGNFOCUS >> STAY
   b Portuguese:
   ALIGNFOCUS>> SUBJ-CASE>>STAY>>OBJ-CASE
   c Icelandic:
   ALIGNFOCUS>> CASE>> STAY
   d Dutch:
   ALIGNFOCUS>>STAY>>CASE

The use of Optimality Theory to formalize the dependency between these constraints raises several issues:

a) Is it possible to find other word order patterns resulting from different rankings of the same set of constraints?

b) Do other word order configurations arise in contexts of sentence focus, as a reflex of different constraint rankings?

c) Are there differences between related languages derivable from
minimal rerankings of the constraints in (1)?

OT is a theory of constraint interaction making very powerful predictions on language variation. The theory claims that all constraints may be ranked with respect to each other, predicting a quite high number of language-particular grammars. Therefore, it is important to look for other grammars.

Related to the question a), I have argued in the preceding chapter that the effect of the dominated syntactic constraints is visible in the cases of sentence focus. Looking for different word orders in the same context that reflect different rankings of the dominated syntactic constraints is important to confirm the analysis proposed for Portuguese.

Question c) is related to the prediction made by the theory that minimal differences between languages should follow from minimal constraint rerankings.

The goal of this chapter is to propose a study of patterns of word order variation, resorting to OT as a theory of language variation, and testing the descriptive and explanatory power of the approach defended in chapter 5. The study of word order typology will allow for an answer to the questions in a)-c), reinforcing the empirical adequacy of the analysis developed so far.

The main empirical domain of research of this chapter will be the word orders emerging in sentence-focus contexts, identifiable as unmarked. SVO, SOV, VSO and VOS are all well-attested basic word orders in different languages. It is not clear however how to formally motivate why this type of variation at the base exists. In other words, under a universal approach to syntactic structure, and knowing that in several cases, language internal variation reflects information structure variation, one might expect that languages should not vary in contexts that are unmarked with respect to discourse. Since they do, it becomes an interesting research question to know why they do. One potential approach is to say that this a primitive of the theory. This type of approach is defended for instances in Travis (1984), who defines parameters yielding the potential word order patterns. Parametric approaches however crucially lack an explanation of why there is no universally unmarked setting for word order parameters, unlike what is found for other parameters (e.g. the Null-Subject Parameter in Hymas (1986)).

The alternative approach is to defend that unmarked word orders
may be derived from underlyingly similar structures. Although similar, this type of approach may explain variation at the base by just stating that the base is not the first step of a given derivation. This type of analysis has the advantage of assuming a similar basis for all languages and yet predicting differences in the unmarked case. An example of this type of analysis is Zwart’s (1993) implementation of Kayne’s (1994) theory of antisymmetric syntax. Zwart claims that the OV word order found in Dutch (even in an unmarked case) is derived from a deep word order VO. According to Zwart, the VO order never arises because Dutch NP complements have strong features that need to be overtly checked:

(2) Jan heef [vOP het boek, [VP gelezen t]]

Given the existence of OV and VO languages, this type of approach may still raise the question of why all languages do not display the same unmarked values for features on the NPs.

In spite of this problem, I will be basically following a type of ‘non-basic’ approach. That is, I will claim that the emerging word order in unmarked contexts is not necessarily universal nor basic. I will however try to account for this on the basis of different constraint rankings and not on the basis of feature-strength. This will help allow me to maintain in full the hypothesis raised at the end of chapter 5 that unmarked word orders appear when the role of discourse constraints is isolated, and language-particular rankings of syntactic constraint make the decisions.

The basic goal of this chapter thus is to look at unmarked word orders in different languages and explain why there is variation at the base. I will suggest that the observed variation be due to the effect of constraints that are normally not active due to the domination of higher ranked discourse-related constraints. According to this hypothesis, unmarked word orders are a case of the more general phenomenon which is labeled **Emergence of the Unmarked** in OT (McCarthy and Prince 1994).

The Emergence of the Unmarked is an important way to distinguish OT from other theories. It arises when the effects of a normally dominated constraint become visible, because of the vacuous satisfaction of the dominating constraints, or because of an equal number of violations of the dominating constraints by all candidates.

The organization of the chapter is the following: section 2 illustrates the word order patterns to be looked at. Section 3 spells out theoretical assumptions. In section 4 the constraints to be used, and the ranking
proposed for Portuguese are recalled. In section 5, I derive the other word orders considered by re-ranking the constraints proposed for Portuguese.

As mentioned above, the work developed in this chapter intends to test the power of OT as a theory of language variation, and to add to the studies carried out by Grimshaw and Samek-Lodovici (1995, 1996), Samek-Lodovici (1996), Costa (1997g) and Choi (1996). These authors suggest that different word orders are not optional, but the result of different functional specifications in the input. Here, the reverse situation is explored: if several word orders are legitimate expressions of the functional specification in the input, why and how does a language select one of them as basic?

2. The problem.

A well-known fact concerning linguistic variation is that different languages display different basic word orders. By basic word order, it is here meant the word order emerging in sentence-focus contexts. A clear test for this is to check which word order emerges as an answer to a question like *what happened?* (see Li 1976, Dik 1978, among many others).

The following examples show different base word orders for different languages:

Portuguese is an SVO language:

(2) *Portuguese:*

O João comeu o bolo.

John ate the cake

References to the basic word order in Portuguese are made in Ambar (1992), Duarte (1987), Mateus et alii (1989), among many others.

In other Romance languages, the same basic word order can be found: as described by Rizzi (1982), among others, Italian also displays SVO as its basic word order:

(3) *Italian:*

Andrea ha letto il libro.

Andrea has read the book
Likewise, Spanish exhibits the same word order, according to the description made in Hernanz and Brucart (1987):

(4) **Spanish:**
Juan ha visto a María.
Juan has seen Maria

It is worth noting that the situation in Spanish is not that simple. It is common to find in the literature examples of unmarked sentences displaying the VSO order. This may reflect a language internal variation of basic word order. Actually, recent studies on Spanish word order claim that the basic word order of Spanish is VSO (Ordoñez and Treviño 1995, Zubizarreta 1995), arguing that SVO only arises when the subject is left-dislocated:

(5) **Spanish:**
Comió Juan los guisantes.
Ate Juan the peas.

Since Left-Dislocation is an operation associated with topic promotion, it follows that when the subject is in focus, this operation does not take place.

The SVO-VSO alternation has caused some debate. In this chapter, I will not take a position as to whether one of the two descriptions is correct. Instead, I will assume that the two descriptions correspond to dialectal variation and that the two word orders are allowed as basic by different speakers. Henceforth, I will name the SVO variant Spanish A, and the VSO variant Spanish B.¹

Greek is another language with basic VSO order, as described in Alexiadou (1995), Alexiadou and Anagnostopoulou (1995):

(6) **Greek:**
 antidike o Petros tin Ilektra
Married the-Peter-NOM the-Ilekttra-ACC

¹ María-Luisa Zubizarreta and Carmen Piccallo (p.c.) report to me that the VSO variant seems to be found close to Catalonia.
‘Peter married Ilektra’

Greek also permits SVO orders, but those are arguably analyzed in terms of left-dislocation of the subjects (see Alexiadou and Anagnostopoulou 1995 for details):

(7)  

Greek:  
O Petros pandreftike tin Ilektra.  
The Peter married the Ilektra

Like for Spanish, it is argued in the works of Alexiadou and Alexiadou and Anagnostopoulou that subjects are only preverbal when they are left-dislocated.

Arabic is quite similar to Greek in that its basic word order is VSO (SVO being derived via left-dislocation of the subject, as argued in Fassi-Fehri 1989 and Ouhalla 1991):

(8)  

Arabic (from Ouhalla 1991):  
Sa-ya-shbtarit Zayd-un dar-an.  
Fur-3ms-buy Zayd house  
‘Zayd will buy a house’

Other VSO languages include Berber (9), Chamorro (10), and Celtic (11 and 12) (all examples are taken from Ouhalla 1991):

(9)  

Berber:  
Ad-y-segh Moha ijn teddart.  
Fur-3ms-buy Moha one house  
‘Moha will buy a house.’

(10)  

Chamorro:  
Ha-taitai si Maria i leblu.  
3sg-read Maria the book.  
‘Maria read the book.’

(11)  

Welsh:  
Gwelodd y bechgyn y draig.  
Saw the boys the dragon  
‘The boys saw the dragon’
(12) *Irish:*
Deireann siad o paidir
Say they a prayer
'They say a prayer'

Note that in this introduction I am collapsing different types of VSO languages. In the following sections, I will note some differences between these types of VSO languages, which have led some authors to analyze them as belonging to distinct typological groups (cf. Ouhalla 1991 and Alexiadou and Anagnostopoulou 1995).

Dutch exemplifies the SOV group (I am using auxiliary verb-main verb sequences to isolate the effects of verb-second. The status of OV as unmarked with respect to information structure is comparable to the other languages, see Dik 1978):

(13) *Dutch:*
Jan heeft de krant gelezen.
Jan has the newspaper read
'Jan read the newspaper.'

VOS languages are illustrated by Malagasy (see Keenan 1976).

(14) *Malagasy:*
Nahita an-dRabe Rakoto
Saw ACC-Rabe Rakoto
'Rakoto saw Rabe'

In this chapter, I will not consider languages in which the object precedes both the subject and the verb in the unmarked case. Such languages are rare (cf. Derbyshire 1977 for OVS in Carib), and there is debate regarding their status as neutral in the attested cases (see Givon 1984 for discussion). I will nevertheless make an attempt to derive their rarity.

This variation at the base raises several questions, of which I would like to consider the following subset:

a) What does it (formally) mean for a specific word order to be unmarked?
b) Why is there variation at the base?
c) Is the unmarked word order truly basic or is it in itself derived from
a more basic structure?

The first question relates to the old problem of what it means to be unmarked. There are several intuitive definitions of markedness (see Battistella 1996 for a review). Here, I am defining as unmarked the word order emerging in sentence-focus contexts. However, as such, this type of definition has no significance in the theory. Its status is purely descriptive. Ideally, one would like to formalize this notion of unmarkedness without stipulating it. It is not clear whether there is a formalism for expressing unmarkedness in the GB framework or in the Principles and Parameters approach. For instance, in approaches defending binary parameters, one of the settings of the parameters must be stipulated as unmarked. I would like to claim here that such stipulation is unnecessary within Optimality Theory. In other words, I will try to demonstrate that the notion of unmarkedness follows from the format of the theory itself. For achieving this goal, I will basically follow McCarthy and Prince (1994)'s use of Optimality Theory as a formalism wherein emergence of the unmarked structures is predicted.

The second question, already addressed in the introduction, is of a quite general nature: if all these word orders are basic in the respective languages, why should there be different basic structures? That is, why isn’t there a uniform basis? The stand to be taken in this paper is that there may be a uniform basis from which these basic word orders are derived. The fact that different orders emerge as unmarked will follow from the constraint profile for each language, and consequently, the constraint with respect to which each order is unmarked.

Following the reasoning that underlies the answer to the second question, the position taken in this chapter is that the basic word order does not necessarily correspond to an undervived representation. That is, once we assume that the surface base representation may already be the result of compliance to a set of constraints, we may also assume (and in fact, must, in OT) that the identified word orders are themselves derived from a single uniform input. This is in accordance with the tradition and with more recent claims concerning word order, like Kayne (1994). Throughout the chapter, I will not take a strong position with respect to whether there should be only one base word order (like Kayne does). I would nevertheless like to stress the point that, if this type of approach proves to be on the right track, one should not take the variation at the base as an argument for several basic word orders.2

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2 Similar arguments on the irrelevance of surface unmarked word orders as arguments...
3. Theoretical Background: Emergence of the Unmarked in Optimality Theory

According to Optimality Theory, a particular grammar is a ranking of a set of universal violable constraints. These constraints evaluate the relative well-formedness of a set of candidates generated from a single input. Violation of one constraint does not imply ungrammaticality, provided that the other candidates violate higher ranked constraints. The way the theory predicts constraint interaction is by now familiar (cf. Chapter 1). (T1) exemplifies a potential OT-diagram of the type used in chapter 5:

\[(T1)\]

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candidate 1</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Candidate 2</td>
<td>*</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

Tableau 1 shows that, in spite of the violation of constraints A and C, Candidate 1 is the grammatical one, since the other candidate fatally violates Constraint B, which is higher ranked than C. This tableau also shows that it does not matter how many violations there are. Ranking is the crucial factor. This diagram could be bigger and include constraints D, E and F, all violated by Candidate 1 and satisfied by Candidate 2, which would nevertheless be dispreferred. In a potential language where C dominates B, the winning output candidate would be Candidate 2.

This type of theory is different from one where constraints are absolute and either active or inactive for each language. In fact, it predicts that the effects of a constraint which are normally invisible - because all candidates satisfying it fatally violate a higher ranked constraint - may be visible in a context where the violation of the higher ranked constraints is controlled for. That is, the theory predicts that low-ranked constraints may be operative in some cases.

This type of situation may be illustrated by the following potential in favor or against underlying basic word orders are made in Kayne’s and Zwart’s work. On the other hand, on itself, this argument does not force taking any particular word order as basic.
tableaux:

(T2) Input A

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>#Candidate 1</td>
<td>*</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Candidate 2</td>
<td>*</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

(T3) Input B

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>#Candidate 1</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Candidate 2</td>
<td>*</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

Imagine the same abstract constraint profile discussed above. Further suppose that, for most inputs, decisions are made either by constraint A or B, as in (T2). In that case, there is little evidence for postulating constraint C in this language. However, this does not mean that this constraint is not playing any role in the language. It just means that its effects are not visible most of the time. Optimality Theory predicts that there may be inputs for which all output candidates equally violate or satisfy the dominant constraints. In such cases, the effect of the lower ranked constraints becomes visible. Such a situation is illustrated in (T3): both candidates violate A and both candidates satisfy B. Candidate 1 satisfies the low-ranked constraint C, but Candidate 2 violates it, therefore constraint C is able to decide which candidate is optimal.

The possibility of seeing the effects of a constraint that normally is violated is called by McCarthy and Prince (1994) *The Emergence of the Unmarked*.

This notion will be crucial in this chapter, since I will argue that unmarked or base word orders are just a subcase of Emergence of the Unmarked. The next section recaptures the analysis of the unmarked word order of Portuguese, made at the end of chapter 5, showing that it is a case of Emergence of the Unmarked.

**4. Deriving the unmarked SVO order in Portuguese**

In this section, I will recall the analysis made in the preceding chapter for Portuguese, showing that the base word order of a language may indeed be explained in terms of Emergence of the Unmarked.
Before that, I will introduce an additional constraint which was unnecessary in the preceding chapter.

4.1. TOP-FIRST: a constraint on topics

The study in the preceding chapter looked at the interaction between syntactic constraints and discourse constraints. However, in the discussion of discourse, I only considered the distribution of focused elements. For explaining the behavior of subjects, which are, according to most descriptions, unmarked topics (see Li 1976, Duarte 1987, Lambrecht 1994, among others), I will need a constraint on topics.

A well worked out analysis of the syntax of topics goes beyond the scope of this dissertation. However I need a constraint capturing two aspects that are commonly assumed in the literature on topics:

a) Sentence-initial elements tend to be interpreted as topics (Li 1976, Givón 1984, Lambrecht 1994)

b) Elements with a discourse function other than topic must not be topicalized (Li 1976, Duarte 1987, among others).

These two observations are factually true. A sentence with topicalization of a focused element is unfelicitous, as illustrated by the question-answer pair in (15):

(15) A: O que é que o Paulo partiu? 
    what Paulo broke 
    ‘what did Paulo break?’
B: #A janela, o Paulo partiu.
    the window Paulo broke

However, if the object is given information, it can be topicalized. This is illustrated in (16):

(16) A: O que é que o Paulo fez à janela? 
    what did Paulo do to the window
B: A janela, o Paulo partiu com um martelo.
    the window, Paulo broke with a hammer.
The first observation, that sentence initial elements tend to be interpreted as topics, is confirmed by the fact that subjects do not need to be topicalized to be interpreted as topics (e.g. Duarte 1987). The sentence-initial Spec,IP position is sufficient for them to be interpreted as topics. An SVO sentence in Portuguese, which according to chapter 3 and to the standard literature on Portuguese (Duarte 1987, Ambar 1992) may be analyzed with the subject in Spec,IP, would be an example illustrating this observation:

(17)  

A: O que é que o Paulo fez?  
what did Paulo do  
B: O Paulo partiu a janela.  
Paulo broke the window.

In (17), the subject Paulo is the only piece of old information, and yet it does not need to be topicalized.

In other words, the observation basically suggests that it is relative word order between sentence constituents rather than a given structural position that determines interpretation as topic. This is further confirmed by the analysis made above for VSO sentences, according to which V is in I, and the subject and the object are VP-internal. The context favoring these sentences is one in which only the V is given information. This is expected, since the V is now the sentence-initial element:

(18)  

A: Ninguém partiu nada.  
no one broke anything  
B: Partiu o Paulo a janela.  
broke Paulo the window

A sentence like (18B) not only involves a word order respecting the constraint on focus, as discussed in chapters 4 and 5, but also one in which the only topical element is in the right position to be interpreted as topic. In chapter 3, the V-movement approach for this word order was discarded, which suggests, like for subjects, that syntactic movement is not the only way for a topic to be interpreted as such.³

³ This does not mean that V-preposing is to be excluded. In fact, cases of V-fronting are attested, for instance in Icelandic (cf. Maling 1990). However, the Icelandic construction (Stylistic Fronting) has different discourse properties (cf. Holmberg 1997), and other factors, such as V2, may interfere with it. In Portuguese, V-initial
A constraint on topics capturing the two observations mentioned above may be formulated as follows:

(19) **TOP-FIRST**: Topics are sentence-initial.

As stated, this constraint is merely descriptive. The reason for me not to be more specific about the nature of this constraint is twofold: first, I do not intend to get into the discussions regarding the exact representation of topics (whether they are adjoined to CP or to a specific functional projection, as in Müller and Sternefeld 1993 and Rizzi 1995). Second, I want this constraint’s scope to be broad enough to cover cases of marked and unmarked topics. If I were to formulate it in such a way that it would refer to topicalization as a syntactic operation, it would not cover cases like VSO and Subjects in Spec,IP discussed above. In other words, the formulation of this constraint is not committed to any particular type of syntactic analysis of topics. Below, I will be clearer in the implications of adopting certain analyses of topics for explaining unmarked word orders. For the moment, it is enough to have this constraint formulated in these rather general terms.

The integration of this constraint in the Optimality-theoretical approach defended in this study requires that I spell out under what circumstances it is violated. The constraint TOP-FIRST, given the definition in (19) is failed by any sentence-initial element which is not topic, or by any topicalized element which is not a topic.

In the analysis to be presented below, I will mark these violations as follows: any non-topical sentence-initial element violates this constraint once. If, in addition, this element is in a position designated for topics (TopP, adjunction to CP or Spec,CP, depending on the analysis), it violates TOP-FIRST once more. This additional violation of TOP-FIRST seems rather stipulative, since it is a rather ad hoc way to mark the fact that unmarked word orders never arise with left-dislocated material. I am aware of the stipulutive character of this aspect of the proposal, but I would like to note however, that something along these lines is implicitly assumed in

---

sentences are possible, hence no additional movements are necessary. Other additional factors may interfere in preventing verbs from ever being sentence-initial (e.g. the V2 phenomenon in Germanic). I will not discuss the interaction between other syntactic phenomena and the possibility for verbs to be sentence-initial. The only goal of the discussion of VSO is to reinforce the observation that syntactic topicalization is not the only process for attaining the first position for topic elements (see also Duarte 1987).
other analyses of topicalization. Any analysis acknowledging the different
distribution of marked and unmarked topics must stipulate that only the
former are marked with a [topic] feature. The latter are unspecified. In this
sense, topicalizing an element without this type of feature will always be an
uneconomical operation. Since I do not have a feature-based analysis of
the sentences, but rather one in which information represented in an input
is parsed in an output, I must codify the difference between marked and
unmarked topics in some other way.

I crucially do not want to exclude the hypothesis that the constraint
TOP-FIRST is a simplification of two other constraints, and that the
second violation involved in topicalization of non-topics actually follows
from some other constraint. Economy would be a potential candidate, but
I do not want to mark this violation as a violation of STAY, since I will not
assume a movement analysis for topicalization.

One candidate for such an additional constraint would involve the
notion of economy of projection (Grimshaw 1997): since topicalization
involves projection of additional structure on the left-periphery of the
sentence, a representation with topicalization is structurally less economical
than one without topicalization. Since in this work, I do not contrast
economy of movement with economy of projections, I will leave this issue
for further research, and use the simplified version of the constraint on
topics: TOP-FIRST.4

4.2. SVO in Portuguese: unmarked word order

4.2.1. Constraints and ranking

In the preceding chapter, I have proposed that word order variation
in Portuguese and its relation to discourse may be captured by assuming
the constraints in (20) (with TOP-FIRST added to the set) and the ranking
given in (21):

(20) **Constraints:**

4 In chapter 8, I will speculate a bit on the possibility of formalizing economy of
projection in OT. The only time in which economy of projection was crucial so far
was in the discussion of scrambling vs. object-shift in chapter 5. However, the
discussion then was meant to show the relevance of projecting structure or not for
economy of movement. Nothing was said about the conditions on projection of
structure.
Chapter 6

a. ALIGNFOCUS: A focused constituent is the rightmost in a sentence.
b. SUBJ-CASE: Nominative Case is assigned in Spec,IP
c. OBJ-CASE: Accusative Case is assigned in Spec,AgrOP.
d. STAY: Don't move.
e. TOP-FIRST: Topics are sentence-initial (Li 1976).

Failed by topics that are not sentence initial, by sentence initial non-topics (e.g., subjects that are not topics, and by topocalized non-topics.

As illustrated in chapter 5, these constraints are in conflict, since STAY plays against movement, and CASE and ALIGNFOCUS may force a constituent to move. Likewise, ALIGNFOCUS and CASE are in conflict, since ALIGNFOCUS requires that a focused subject be rightmost in a sentence, while CASE requires that it move leftwards to Spec,IP.

Similarly, TOP-FIRST conflicts with OBJ-CASE by forcing an object to surface in the topic position, instead of the case-licensing position. In OT, these conflicts are resolved language-externally, in accordance to the ranking of constraints that constitutes the language's grammar.

For Portuguese, I have proposed in chapter 5, that the following ranking may characterize the behavior of Portuguese word orders:

(21) Ranking for Portuguese:
{ALIGNFOCUS, TOP-FIRST} >>SUBJ-CASE>> STAY>>OBJ-CASE

This ranking determines the following: Subjects only move to Spec,IP if they are not focused; objects never move to Spec,AgrOP; they stay in their base position if they are focused and move, adjoining to VP, if they are not focused. That this is the behavior of arguments in Portuguese has been argued for in chapter 3 and 4.

The high ranking of ALIGNFOCUS and TOP-FIRST reflects the discourse-configurational character of the language. In the preceding chapter, I did not consider TOP-FIRST, since I did not look at the distribution of topics. However, it may be easily demonstrated that it has to be high-ranked:

First of all, it has to be ranked higher than OBJ-CASE to make sure that complements may be topicalized:
(22) O livro, o Paulo leu.
    the book Paulo read

(T4) illustrates that the candidate with the NP in Spec,AgrOP, although
satisfying OBJ-CASE, does not satisfy TOP-FIRST:

<table>
<thead>
<tr>
<th></th>
<th>TOP-FIRST</th>
<th>OBJ-CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>$[O \in \text{S V} \text{[VP t}_5 \text{ t}_4]]$</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>$[\text{VP} \text{ t}_5 \text{ t}_4]$</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

(T4') shows that the reverse ranking would not yield the correct results:5

<table>
<thead>
<tr>
<th></th>
<th>OBJ-CASE</th>
<th>TOP-FIRST</th>
</tr>
</thead>
<tbody>
<tr>
<td>$O [\text{VP} \text{ t}_5 \text{ t}_4]$</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>$[\text{VP} \text{ t}_5 \text{ t}_4]$</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

Secondly, TOP-FIRST must be ranked higher than SUBJ-CASE to
make sure that VSO sentences are possible.

(23) Leu o Paulo o livro.
    read Paulo the book

Although this word order is independently predicted by the ranking
between ALIGNFOCUS and SUBJ-CASE, the ranking of TOP-FIRST
lower than SUBJ-CASE would yield SV sentences in which the V is the
topic. This is demonstrated in (T5):

<table>
<thead>
<tr>
<th></th>
<th>SUBJ-CASE</th>
<th>TOP-FIRST</th>
</tr>
</thead>
<tbody>
<tr>
<td>$[O \in \text{S V} \text{[VP t}_5 \text{ t}_4]]$</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>$[\text{VP} \text{ t}_5 \text{ t}_4]$</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

5 For demonstrating the correct ranking between TOP-FIRST and OBJ-CASE, I am
abstracting away from the fact that the ranking between STAY and OBJ-CASE
independently predicts that objects are not shifted in Portuguese (see chapter 5).
However, the ranking is crucial e.g. for English where OBJ-CASE is ranked higher
than STAY and yet there is topicalization.
The reverse ranking predicts the VS word order to be optimal. This is illustrated in (T5∗):

(T5∗) Input = V(s), Topic=V

<table>
<thead>
<tr>
<th></th>
<th>TOP-FIRST</th>
<th>SUBJ-CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>[vp S V [vp t_v ]]</td>
<td>*</td>
<td>+</td>
</tr>
<tr>
<td>[vp V [vp S t_v ]]</td>
<td>*!</td>
<td>+</td>
</tr>
</tbody>
</table>

As mentioned, this demonstration is quite vacuous, since the ranking between ALIGNFOCUS and SUBJ-CASE independently derives the same results. I think it is, nevertheless, worthwhile to demonstrate the ranking between these two constraints. If it is possible, based on similar reasons, to demonstrate that the two discourse-related constraints are ranked higher than the syntactic constraints, I have further confirmation for the hypothesis formulated in chapter 5 that discourse-configurationality arises as a consequence of ranking discourse-constraints higher than syntactic constraints.

Further confirmation for the relative ranking between TOP-FIRST and SUBJ-CASE may be achieved by looking at interactions between subjects that are neither topics nor foci. Ambar (1998) argues that subjects may have an interpretation of topic/focus in contexts in which something is asserted about the subject, but nothing is known about other entities. In (24), I illustrate such a context:

(24) A: Quem comeu o bolo? who ate the cake
    B: O Paulo comeu…(os outros não sei) Paulo ate… the others I don’t know

Ambar argues that, in these contexts, subjects are dislocated and not in Spec,IP. If her analysis proves true, this reinforces the idea that the distribution of discourse-marked subjects is independent of their having to surface in Spec,IP. This argument is still quite circumstantial, since now I am dealing with subjects that are both topic and focus, according to Ambar. The only way to really decide on the ranking between TOP-FIRST and SUBJ-CASE would be to look at subjects that are neither topics nor foci. I am not aware of the context in which such a case would emerge.6

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6 Expletive subjects would be such a case, but since expletives are null in Portuguese,
Given the general behavior of Portuguese, I will nevertheless adopt the null hypothesis that all discourse-related constraints happen to group together, deriving discourse-configurationality in this language. However, as I will show for Italian, another discourse-configurational language, this is by no means a necessary assumption.

### 4.2.2. Emergence of the Unmarked

One case considered at the end of the preceding chapter regarding possible context specifications in the input was that of sentence focus. That is, what is the word order observed in contexts of answer to *what happened?*. As (25) illustrates, the emerging word order is SVO:

(25) O que é que aconteceu?
What happened
a. A Maria partiu um prato.
   Maria broke a plate
b. #Partiu a Maria um prato.
c. #Partiu um prato a Maria.
d. #*A Maria um prato partiu.
e. #Um prato a Maria partiu.
f. #Um prato partiu a Maria
   ‘Maria broke a plate’

The argument for the reason behind the emergence of SVO as unmarked goes as follows: from a functional point of view, all these orders are equivalent, provided that the rightmost constituent bears the main stress (cf. Nespor and Vogel 1986, Frota 1994, among others). As long as focus projection is permitted (independently of its formulation in terms of syntactic constituency or in terms of linear order, see chapter 4 for discussion), the whole sentence may be interpreted as focus independently of the word order displayed. For the hearer to interpret the whole sentence as focus, it is enough not to hear any high stress before the end of the sentence. An SVO sentence with main prominence on the object may be interpreted as involving focus on the object, on the VP or on the whole sentence, depending on which constituent is taken as the domain of focus. The same holds for a VSO sentence with main prominence on the object:

---

it remains impossible to use them for the argumentation.
the domain of focus may be the object alone, the subject and the object or
the whole sentence.

The preceding paragraph means that as far as ALIGNFOCUS is
concerned, all candidates satisfy it, as long as stress falls on the rightmost
constituent.

Similarly, since there is no topic in these sentences, TOP-FIRST is
violated by all word orders, since no sentence initial element will be the
topic. Moreover, if some element is left-dislocated, this constraint is
violated once more: one mark is due to the fact that the sentence initial
element is not the a topic, and the other one because there was left-
dislocation of a non-topic element. The crucial point is that in sentence
focus contexts, all possible word orders violate TOP-FIRST.

The question then arises why all these word orders are not optional
actualizations of sentence focus. That is, if in all cases the top-ranked
constraints ALIGNFOCUS and TOP-FIRST are satisfied, why aren’t all
these word orders available as potential outputs for a sentence focus input?. In all cases, the specification of the input regarding information
structure is correctly parsed.

I would like to argue that this is where the Emergence of the
Unmarked (McCarthy and Prince 1994) plays a crucial role. Optionality
would only be predicted if ALIGNFOCUS and TOP-FIRST were the only
constraints active in this language. Emergence of the Unmarked predicts
that in a situation like this, the lower ranked constraints will be able to
make decisions on the outputs.

The top-ranking of ALIGNFOCUS and TOP-FIRST very often
results in making the requirements of the other constraints invisible. For
instance, every time a subject is in focus, it is right aligned and
consequently SUBJ-CASE has to be violated. If ALIGNFOCUS is not
violated by any candidate, as it is the case in the sentence-focus context, the
effects of SUBJ-CASE become visible. Since this is the next constraint in
the ranking given above, it is now the one by which decisions may be
made. The winning candidate will be one which is not marked for this
constraint. This is exemplified in (T6):

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|}
\hline
 & ALIGNFOCUS & TOP-FIRST & SUBJ-CASE & STAY & OBJ-CASE \\
\hline
1. & * & ** & * & * & * \\
2. & * & *** & * & * & * \\
3. & * & * & * & * & * \\
\hline
\end{tabular}
\caption{(T6)}
\end{table}
The candidates considered in (T6) include:

- Candidate a: SVO sentence with subject in Spec,IP and object in situ;
- Candidate b: SVO sentence with subject in Spec,IP and object in Spec,AgrOP;
- Candidate c: VSO sentence with subject in Spec,VP and object in situ;
- Candidate d: VOS sentence with subject in Spec,VP and object in Spec,AgrOP;
- Candidate e: OVS sentence with subject in Spec,IP and object in Spec,CP;
- Candidate f: OVS sentence with subject in Spec,VP and object in Spec,CP.

The reader may have noticed that I have deliberately left out of consideration some word orders and representations. SOV order was left out, since I assume that there is an alternation at the base between head-initial and head-final languages. I also suppose that this alternation is to be analyzed at a deeper level than the one proposed here. Since SOV relates with directionality of theta-role assignment (Hoekstra 1984, Travis 1984, among others), and thematic information in OT is partially expressed in the input (cf. Grimshaw 1997), one has to work out a way of establishing the link between the information in the input and its correlation with the directionality of assignment. Such a goal is beyond the scope of this dissertation. Note nevertheless that it is conceivable to incorporate a more recent analysis of SOV word order into the present approach. Zwart (1993), following Kayne (1994), proposes that SOV languages are derived from SVO with overt movement of the object to Spec,AgrOP. In OT terms, this would mean compliance to Subj-CASE, Obj-CASE, two violations of STAY, and a violation of the constraint that forces V to move to I.

The second reason for me to leave out SOV candidates and to not address the OV-VO alternation here is to be coherent with the previous chapter. There, I have explained scrambling in Dutch crucially resorting to rightward V-to-I movement in this language. For this reason, I will not
adopt Zwart’s analysis, stressing nevertheless that this is not crucial for the present chapter.

To recap, the uniform base analysis to OV languages is not adopted in this chapter, since there is no clear way to derive the correlation with theta-role assignment, and to remain faithful to the analysis of scrambling proposed in the previous chapter. The results to be obtained in this chapter alone will nevertheless be shown to be compatible with a uniform base analysis of OV languages.

From the set of candidate output representations, all those in which the verb has not moved to I were also left out. The option of not including them was taken for purposes of clarity; it avoids adding constraints on V-to-I to the tableaux, making their reading much easier. For an analysis of V-to-I within OT, see Vikner (1997). Again, including those candidates would not change the argument to be developed in this work. Unless relevant, I will not discuss candidates without V-to-I movement.

I will now proceed with a detailed analysis of each candidate, starting with the ungrammatical ones:

**Candidate b**: This candidate vacuously satisfies ALIGNFOCUS (like all the others). Since the Subject is in Spec,IP, Subj-CASE is satisfied. Satisfying Obj-CASE implies that the Object also moves out of VP, incurring in one mark for STAY.7 This makes this candidate worse than candidate a. for STAY, the decision being made by this constraint.

**Candidate c**: VSO is ruled out, because the subject does not move to Spec,IP, violating Subj-CASE. This is a case of Emergence of the Unmarked: in general, violation of Subj-CASE is allowed in Portuguese, if the subject is focused. In that case, the effects of Subj-CASE are not visible. Here, since ALIGNFOCUS is vacuously satisfied by all candidates, the effects of Subj-CASE become apparent, and representations that do not cause this constraint to be marked are preferred.

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7 The discussion here is quite simplified for reasons of exposition. Actually, candidate b should have four marks for STAY, since satisfying Obj-CASE involves projecting AgrOP, which creates one more landing site for the verb. I am not including that mark for making the reading of the diagrams easier, and because I am leaving verb movement out of the discussion all together. See chapter 5 for the more detailed analysis.
Candidate d: VOS is ungrammatical for the same reason. It fatally violates Subj CASE.

Candidates e and f: These word orders are slightly different, since they violate TOP-FIRST twice, and are thus immediately excluded. The reason for the second mark on TOP-FIRST is that the first element is not only not a topic (like in all the other candidates, but also there is an unnecessary topicalization of the object. This is maybe also penalized by a constraint not represented in the tableau playing against fronting of elements that are not operators (for constraints of this type, see Grimshaw 1997, Samek-Lodovici 1996, and Grimshaw and Samek-Lodovici 1995,1996).

As mentioned above, topicalization of non-topics not only violates TOP-FIRST, as it is defined above, but it also constitutes a violation of *STRUC (a constraint penalizing structure, cf. Grimshaw 1997), since it involves one extra layer of structure.

*STRUC may be defined as follows:

(26) *STRUC: Do not project structure.

This constraint will be failed any time projection of structure is required to satisfy the other constraints.  

In this chapter, I will mainly adhere to the idea that the reason for excluding OSV and OVS is to be attributed to a constraint that is functional in nature (TOP-FIRST). One advantage of such an approach is the derivation of the fact that OS word orders are very rare or nonexistent as unmarked. This would follow from the fact that the top-

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8 See chapter 8 for potential extensions of the use of this constraint. In Grimshaw (1997) and Bresnan (1996), it is named OB-HD (obligatory head). Under their definition, this constraint is violated by any radically empty functional head. The reason for me to name it *STRUC was to avoid specific mention to head movement, which is not the scope of this work. This was an option for making the explanation more understandable. It makes no difference with respect to the results of the analysis. Naturally, the definition of the constraint in Grimshaw’s work is slightly different (it refers to heads only), but the result is the same: it favors economy of projection.

9 This is actually not entirely true: a potential optimal unmarked OSV candidate is one in which the object has moved to Spec,AggrOP and the subject and the verb have stayed within VP. Likewise, OVS would be a potential optimal candidate with movement of the verb to AggrO, object movement to Spec,AggrOP and with the subject staying in Spec,VP. The prediction I am making is thus that these word orders will only surface as optimal in languages without V-to-I movement (at most there may
ranked functional/discourse-related constraints would immediately filter out such sequences. Note that this is not a matter of choice between the structural and the functional approach, since both constraints are necessary, as it will become evident when we look at Celtic. Unless necessary (see discussion of Celtic below) I will not represent *STRUC in the tableaux, since the role played by this constraint will not be crucial in most of the languages to be discussed.

Summarizing, I have shown that sentence-focus contexts are cases in which the role of dominated constraints is relevant. Although normally ALIGNFOCUS makes decisions in Portuguese, in this context, SUBJ-CASE was crucial.

As a theory of language variation, OT predicts that re-rankings of these constraints should derive other unmarked word order patterns. In the next section, I will show that minimal re-rankings between constraints of the set used for Portuguese derive the unmarked word orders of the other languages discussed in the introduction.

5. Minimal re-rankings, base word orders and variation

In this section, I will try to show that the variation at the base discussed above may be the result of the visibility of the effects of different dominated constraints, depending on the ranking of each language.

If the approach advocated here proves to be true, it has two important theoretical consequences, since it reinforces two of the premises of Optimality Theory:

First, it confirms the idea that constraints are violable. In fact, Emergence of the Unmarked is not expected in any approach defending absolute constraints, since a switched off principle/constraint/parameter should remain switched off independently of specific constructions. Effects of normally inactive constraints are only expected in a framework permitting violability. Moreover, in a model not contemplating constraint

\( \text{be V-to-AgrO movement in the latter case) and obligatory object-shift. Since I am not treating candidates without V-movement, I do not have access to data on OVS and OSV languages, and I do not have a worked out analysis of V-to-I in OT, I will leave the checking of this prediction for further research. The prediction made by the role played by TOP-FIRST may be restated as follows: in languages with V-to-I movement, OS order are predicted to be nonexistent as unmarked.} \)
interaction as a legitimate possibility, it is difficult to explain why some principles are sometimes active and sometimes inactive.\textsuperscript{10}

Second, since one of the main goals of Optimality Theory is to provide a formalism to capture linguistic variation, the analysis here confirms this objective, by showing that re-ranking a constant set of constraints allows for capturing crosslinguistic differences.

### 5.1. Portuguese/Spanish A vs. Spanish B/Greek: SVO vs. VSO

The first difference I will examine is the one between SVO and VSO of the type described for Spanish by Ordoñez and Treviño (1995) and for Greek by Alexiadou and Anagnostopoulou (1995).

Since there is variation among speakers of Spanish with respect to the difference between SVO and VSO, this difference should not result from re-ranking of several constraints, since that might have consequences for the overall grammar of the language, predicting differences between the two sets of speakers that are most likely untrue. Hence, in the optimal case, one expects the difference between the rankings for Spanish A and Spanish B to be minimal.

Spanish A and B are thus a good test for OT and for the analysis I have been developing, since it will be used to show whether minimal variation may be predicted under minimal re-rankings.

If this goal is achieved, I may also assume that the difference between Portuguese and Greek may be analyzed in the same way. That is, since Portuguese and Spanish A group together with respect to word order, contrasting with Greek and Spanish B, one would like to have a unified analysis for the two sets of languages.

Before presenting the crucial rankings, one has to examine the factor that makes these languages differ. According to the descriptions in the literature, the behavior of subjects seems to be one crucial distinctive factor between the two pairs of languages.


\textsuperscript{10} The difference between parametric and optimality-theoretical approaches will be emphasized in chapter 7.
chapter 3 of this dissertation),\textsuperscript{11} preverbal subjects in Portuguese are in Spec,IP (or Spec,AgrSP). The same is argued for Spanish by Hernanz and Brucart (1987), who also describe Spanish as an SVO language. The argument these authors present for these descriptions is the behavior of preverbal subjects as A-moved elements (not intervening for A-bar movement, behaving as A-binders, among other properties).

For Greek and for Spanish B, respectively, Alexiadou and Anagnostopoulou (1995) and Ordoñez and Treviño (1995) have proposed that these languages are VSO, in the sense that subjects remain in Spec,VP and preverbal subjects are just instances of subject left-dislocation. They argue in favor of this analysis on the basis of the following facts: a) preverbal subjects either block A-bar movement (Spanish), or interact with wh-phrases in the same way topics do (27); b) the interpretation of quantifiers is different depending on their position: only preverbal QPs have a strong reading (28); c) the possibility of construing pronouns as bound variables, which is only possible with postverbal ones, showing that only the latter are in an A-position (29).\textsuperscript{12}

(27) Greek (from Alexiadou and Anagnostopoulou 1995):
  a. Pjon (*o Petros) ide (o Petros)?
     Whom (the Peter-NOM) saw (the-Peter-NOM)
  a’. *Pios ton Petro ton ide?
     Who the Peter-ACC Cl-ACC saw
     “Who saw Peter?”
  b. Pote (o laos) apofasise (o laos) na anidrasi?
     When (the people-NOM) decided (the people-NOM) SUBJ react
     “When did the people decide to react?”
  b’. Pote tin tenia tin provalan ja proti for a
     when the movie-ACC Cl-ACC showed-3Pl for first time
     “When did they show the movie for the first time?”

(28) Greek (from Alexiadou and Anagnostopoulou 1995):
  a. Enas heretise ti Maria. \textbf{Strong (partitive/specific)}
     one greeted the-Maria-ACC

\textsuperscript{11} See however Barbosa (1995) for arguments for a different view. See chapter 3 for criticism to her analysis.

\textsuperscript{12} The example in (29) is from Catalan, which according to Alexiadou and Anagnostopoulou behaves in the way as Greek and Spanish.
‘A certain person/one of the people greeted Mary’

b. Heretise enas ti Maria. **Weak (indefinite) reading**
   ‘Someone greeted Mary’

(29) **Catalan (from Solé 1992 and Alexiadou and Anagnostopoulou 1995):**

a. *Tots els estudiantes, es pensen que ells, aprovaran.*
   ‘All the students think that they will pass
   ‘All the students think that they will pass’

b. *Tots els jugadors, estan convencus que guanyaran ells,*
   ‘All the players are convinced that they will win.
   ‘All the players are convinced that they are the ones who will
   win.’

Notice that, as mentioned before, Portuguese subjects are able to co-occur with fronted constituents, and wh-elements (30). Asymmetries like the one in (29) do not exist. Both pre- and postverbal subjects may be construed as bound variables, as (31) shows:

(30) **Portuguese:**

a. Que livros é que João leu?
   ‘Which books is that João read

b. Esses livros, João leu.
   ‘Those books, John read.

(31) **Portuguese:**

a. Todos os estudantes pensam que eles passarão.
   ‘All the students think that they will pass

b. Todos os estudantes pensam que passarão eles.

On the basis of these asymmetries between the two sets of languages, I conclude that the distinction is finer than what is proposed in Alexiadou and Anagnostopoulou (1995) and Barbosa (1995). These authors propose that Null Subject Languages are all supposed to display left-dislocation whenever a preverbal subject is found. The attractive part of their analysis is a uniform account of Null Subject Languages. However, in the light of these data, it seems to me that Null Subject Languages do not behave uniformly: some have basic VSO word order and subjects do not move to Spec,IP (Greek and Spanish B), others have basic SVO word order and subjects may move to Spec,IP (Portuguese and Spanish A). Barbosa’s and Alexiadou and Anagnostopoulou’s analysis may be
maintained but only for a smaller set of Null Subject Languages. The correlations they point out for Greek, e.g., between VSO as a legitimate unmarked word order and the behavior of preverbal subjects will be crucial for the proposal to be made. They make the interesting prediction that if a language does not allow VSO as unmarked, then preverbal subjects are not left-dislocated. In spite of loosing a unified account of Null Subjects, this prediction is true for Portuguese.

The conclusion is then that the crucial difference between these two sets of languages lies in whether preverbal subjects are A- or A-bar moved. Such a difference has implications for which of the constraints presented above is satisfied.

In view of the definition of the constraints given above, whenever a subject moves to Spec/IP, it satisfies SUBJ-CASE at the expense of violating STAY, since there is a single movement operation. In a language in which SUBJ-CASE dominates STAY, it is more important to move the subject than to satisfy economy. This is represented in (T7) below:

\[
\begin{array}{|c|c|}
\hline
\text{SUBJ-CASE} & \text{STAY} \\
\hline
\text{a. } [\text{IP } S V [\text{VP } t O]] & ** \\
\text{b. } [\text{IP } V [\text{VP } S t O]] & * \\
\hline
\end{array}
\]

As for left-dislocation, I will follow the various authors who claim that left-dislocation does not involve movement but base-generation of the left-dislocated element in conjunction to CP (see Duarte 1987, Cinque 1990, Raposo 1996, 1997).

Summarizing, the different preverbal subject positions within null subject languages may be analyzed in Optimality-theoretical terms as the result of a tension between STAY and SUBJ-CASE.

5.1.1. Types of topicalization: additional evidence for the position of the subject in Spec/IP in Portuguese

In the discussion so far, I have always considered left-dislocation as the possibility for subjects to be preverbal in the languages where they are not in Spec/IP. I do so following the analysis of Barbosa (1995) and Alexiadou and Anagnostopoulou (1995).

In Portuguese, the winning candidate will never be one in which a
preverbal subject is not in Spec/IP because of the role played by SUBJ-CASE. Consequently, I will not consider candidates with other types of topic-promotion strategies. I would nevertheless like to point out that a distinction between types of topic promotion syntactic strategies may constitute additional evidence for not unifying preverbal subjects in a language like Greek with preverbal subjects in a language like Portuguese.

The argument goes as follows: Duarte (1996) argues that topicalization in Portuguese is an instance of long-distance scrambling rather than English-like topicalization or, the crucial case for the present discussion, left-dislocation. Duarte’s arguments are the following:

a) Differently from left-dislocation in Italian, Portuguese topicalization is possible with quantified DPs (32) and definite DPs (33), even without clitic doubling:

(32) Italian (Cinque 1990):
   a  *Molti amici, ha invitato, che io sapia.
      many friends has invited that I know
      ‘Many friends, he has invited, as far as I know’

   Portuguese (Duarte 1996):
   b  Alguns livros, já tinha lido quando discutiste comigo.
      some books already had-1sg read when discussed-2sg with
      me
      ‘I had already some books when you discussed them with me’

(33) Italian (Cinque 1990):
   a  Gianni, *(bo) vedrò domani
      Gianni him I-will-see tomorrow
      ‘Gianni, I'll see him tomorrow’

   Portuguese (Duarte 1996):
   b  Esse livro, estamos a pensar oferecer ao João no Natal.
      that book are-1pl thinking to offer to João at Christmas
      ‘That book, we are planning to offer to João for Christmas’

b) In Italian, any time the dislocated constituent is not a bare quantifier, there must be an operator e-commanding pro in the sentence (34). Such a restriction does not apply in Portuguese (35):
(34) Italian (Cinque 1990):
   a  *Pochi soldi, di sicuro guadagna.
       Little money he surely earns
   b  Pochi soldi, di sicuro non guadagna.
       Little money he surely does not earn

(35) Portuguese (Duarte 1996):
   a  Pouco dinheiro, de certeza que ganha.
       Little money, he surely earns
   b  Pouco dinheiro, de certeza que não ganha.
       Little money, he surely doesn’t earn.

c) In Italian, left-dislocation with or without a clitic is in complementary distribution (e.g. 33). In Portuguese, in certain contexts, they are both possible:

(36) Portuguese (Duarte 1996):
   a  Qualquer prospecto que lhe apareça, ele lê(-o)
       any pamphlet that he gets he reads it
   b  Esse livro, só (o) li ontem.
       that book only it read 1sg yesterday
       ‘That book, I only read yesterday.’

d) Finally, in Italian the obligatoriness of the clitic is true for all types of clauses (37), while in Portuguese, doubling is not possible in embedded ‘dislocation’ (38):

(37) Italian (Cinque 1990):
    L’unica persona che a Gianni, non *(gli) ha mai fatto un favore….
    the only person that to Gianni not to-him has ever made a favor

(38) Portuguese (Duarte 1996):
    Não sei a que pessoa, esse livro, o João (??/#(o) ofereceu no Natal
    I don’t know to which person that book, João it offered in
    Christmas

    On the basis of the differences pointed out above, Duarte (1996) claims that topicalization in Portuguese does not involve left-dislocation. I
will not present here her arguments for treating it as long-distance scrambling. The crucial aspect of her observations for the analysis I am developing is the following: it further confirms the claim made above that Null Subject Languages should not be treated uniformly. If left-dislocation is not available in more uncontroversial cases (topic promotion of complements), there is no clear reason to assume that this strategy is involved for promoting subjects. In other words, if one analyzes preverbal subjects as left-dislocated in Portuguese, one has the burden of explaining why that strategy is not an option for other constituents.

Summing up, Duarte’s work constitutes an additional argument for not treating preverbal subjects in Portuguese as instances of left-dislocation.

### 5.1.2. SUBJ-CASE vs. STAY

Having established that left-dislocation is not an available strategy to promote topics in Portuguese, I will now proceed with the analysis of the difference between SVO and VSO languages.

Cinque (1990) and Raposo (1996, 1997), among others, claim that left-dislocation must be treated in terms of base-generation of the preposed element.\(^3\)

---

\(^3\) Actually, Raposo (1996, 1997) attempts to unify all instances of topicalization, claiming that that would enable a single explanation for topicalization and null object constructions, as in (i):

(i) **Portuguese** (from Raposo 1996):
   a. Muito whisky, comprei para o capitão.
      A lot of whisky I bought for the captain
   b. Comprei gg para o capitão.

Raposo claims that, once we acknowledge the necessity of having a null operator licensing the null object construction, as in his (1986) analysis following Huang (1984), we may as well unify the two constructions, by assuming that the two of them are licensed by a null operator, the difference being that the topic is overtly realized in (a) but not in (b).

This approach differs from the tradition, where it is assumed that there must be a partition between topicalization (involving movement) and (Clitic) Left dislocation (not involving movement). This is for instance the distinction proposed in Cinque (1990). Duarte (1987) suggests that some topicalizations may involve A-bar movement of the topic. Given the distinction between left-dislocation and long-distance scrambling proposed in Duarte (1996), I will adhere to the traditional analysis. For discussion, see the works cited.
Accepting this idea that left-dislocation involves base-generation of the topic, it is possible to generalize over preverbal subjects in Spanish B and Greek, and to assume that preverbal subjects in these languages are base-generated in a topic position (Spec,CP or adjunction to IP, depending on the analysis). That this is indeed the case is shown by Barbosa (1996), who shows that some preverbal subjects must associate with subject clitics overtly realized in Spec,IP in some Romance languages.

(39)  *Trentino (from Barbosa 1996):*

a. El Mario *(el) parla*
   the Mario he speaks

b. Ti *(te) parli.
   You you speak

If preverbal subjects in these languages are base-generated in a topic position, a crucial difference between them and preverbal subjects in Spec,IP is whether or not there is movement involved.

If a subject is in Spec,IP, it has been moved from Spec,VP. If the subject is left-dislocated, there is no movement involved. Thus, the option of base-generating the subject in the left-dislocated position is more economical, which in our terms means that the representation with left-dislocation of the subject does not violate STAY. The representation in which there is movement from Spec,VP to Spec,IP violates STAY.

Whether in a language subjects are moved to Spec,IP or base-generated in topic position reflects the difference in hierarchy in the language between satisfying STAY (40) or SUBJ-CASE (41). The two possible situations are given in (T8) and (T9), where candidate a. is the one with subject left dislocation and candidate b. is the one with movement of the subject to Spec,IP.

(40)  STAY >> SUBJ-CASE

(41)  SUBJ-CASE >> STAY

(T8) Greek and Spanish B – Context: subject is the topic of the sentence

<table>
<thead>
<tr>
<th></th>
<th>STAY</th>
<th>SUBJ-CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [IP S [IP V [ VP pro t O]]]</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b. [IP S V [ VP t t O]]</td>
<td>**+</td>
<td></td>
</tr>
</tbody>
</table>
(T9) Portuguese and Spanish A – Context: subject is the topic of the sentence

<table>
<thead>
<tr>
<th></th>
<th>SUBJ-CASE</th>
<th>STAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [IP S [IP V [TP pro t O]]]</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b. [IP S V [TP t t O]]</td>
<td>**</td>
<td>**</td>
</tr>
</tbody>
</table>

(T8) represents the situation for Spanish B and Greek, where it is more important to have an economical representation (without movement) than to satisfy Case. In these languages, both candidates violate STAY once because of the movement of the verb. However, the candidate with movement of the Subject to Spec,IP involves one more violation of STAY, the second one being fatal. This is fully compatible with the analysis proposed in non-OT terms for Greek in Alexiadou and Anagnostopoulou (1995).

(T5) represents what happens in Portuguese and Spanish A: satisfying SUBJ-CASE is more important than having an economical representation, hence the winner is the representation with movement of the subject to Spec,IP.

As mentioned in previous chapters, it is this crosslinguistic difference that favors the OT analysis over the feature-based analysis: the behavior of Portuguese subjects precludes a unified analysis of Null Subject Languages arguing that Case-features of the subjects are weak. As far as Greek and Spanish B are concerned, the two analyses are equivalent. It is only when the Portuguese data are considered from a comparative perspective that the OT analysis seems superior.

Note that VSO word orders were not included in the tableaux above, since, in this context, this word order is independently ruled out by ALIGNFOCUS. VSO is only possible in unmarked contexts, because ALIGNFOCUS is satisfied by all word orders. Otherwise, it forces the subject to be interpreted as focus, which is not the case: for the decision between the two types of SVO, it is only relevant to consider contexts in which the subject is the topic.

The reader may wonder why I did not consider a potential candidate

---

\(^{14}\) See chapter 4.
where the subject is base-generated in Spec,IP, in compliance with the two constraints, as in (42):

(42) \[ [IP \ S \ V \ [_{VP} \ t_\gamma \ O]] \]

In (42), Spec,VP would just not be projected. I would like to argue that such a candidate is never generated. I follow Grimshaw’s (1997) claim that the only candidates generated by GEN, are those that comply with general principles of X-bar structure and the thematic criterion. According to Koopman and Sportiche (1991), the thematic role of the subject is assigned under sisterhood to V-bar, hence base generation of the subject in Spec,IP would yield a violation of the theta-criterion, precluding generation of such candidate.\(^{15}\)

As for theta-role assignment to the base-generated preposed element, I will just follow standard assumptions that the preposed element receives its theta-role by being associated with the empty pronominal element in Spec,VP.

One candidate I am not considering either is the one in which the subject has been topicalized through the regular way to promote topics: long-distance scrambling, in accordance with Duarte (1996). Following her analysis, long-distance scrambling differs from left-dislocation, because it involves movement. If there is movement from Spec,IP to Spec,CP, SUBJ-CASE may be satisfied by the trace. However, this candidate will not be optimal, since it is less economical than the one with only one movement (to Spec,IP). This is represented in (T10) below, where candidate c. is the one in which the subject has undergone scrambling.\(^{16}\)

\((T10)\) Portuguese and Spanish \(A\) -- Context: subject is the topic of the sentence

<table>
<thead>
<tr>
<th></th>
<th>SUBJ-CASE</th>
<th>STAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>[c_{\text{IP}} S \ [<em>{VP} \ V \ [</em>{VP} \text{pro} \ t \ O]]] ]</td>
<td>41</td>
<td>*</td>
</tr>
</tbody>
</table>

\(^{15}\) Note that there may be candidates with arguments unrealized and theta-roles undischarged. This option is permitted under Šamek-Lodovici’s (1996) formulation of the theta-criterion, which imposes requirements on locality relations between assigners and assignees only when the theta-role is discharged.

\(^{16}\) I am not able to explain the cross-linguistic difference with respect to the possible topicalization strategies for other constituents of the sentence, since I did not study them in detail. For a formulation of the differences in terms of setting of parameters, see Duarte (1996).
As (T10) illustrates, STAY is crucial for making the decision between scrambling and a single movement to SpecIP. This is in accordance with the discussion in chapter 5 for short scrambling, where it was shown that the choice between scrambling and moving objects to SpecAgrOP also followed from the interaction between CASE and STAY.

Importantly, my analysis does not in principle exclude representations in which there is dislocation of subjects, as proposed in Ambar (1998) for contexts in which the subject has mixed properties of topic and focus. Crucially, in such cases the three candidates will not be equal with respect to information structure. The discourse properties of the subject alone will condition the decision. Since there is no constraint conflict in such case, I will not address it here.

5.1.3. SVO vs. VSO

So far, I have just described how the choice between SVO with movement to SpecIP and SVO with left-dislocation of the subject is determined. I still have to explain why these two language groups display the unmarked word order SVO and VSO, respectively.

The crucial part of the explanation is again the ranking between SUBJ-CASE and STAY, though TOP-FIRST also plays a role. I am now going to consider three relevant candidates: SVO with left-dislocation of the subject, SVO with subject in SpecIP, and VSO, with the subject in SpecVP. Since the context specified in the input is sentence focus, all these orders will violate TOP-FIRST once. This violation of TOP-FIRST occurs because the first element of the sentence is not a topic. In addition, the candidate involving left-dislocation of the subject will violate it once more, since there is topicalization of a non-topic element. This is similar to the way I excluded OSV and OVS as potential base word orders. The prediction is then that there should be no unmarked word order involving left-dislocation of any type.

In this context, it is thus possible to identify and isolate the role played by the discourse constraints: ALIGNFOCUS does not play any role, since all candidates satisfy it, and TOP-FIRST is only relevant for excluding the candidate with left-dislocation of the subject.

Having controlled for the effects of ALIGNFOCUS and TOP-
FIRST, I am now able to investigate whether the choice is made by SUBJ-CASE or by STAY.

In accordance with the ranking proposed in chapter 5 and above, in Portuguese and Spanish A, it will be more important to satisfy SUBJ-CASE than STAY, hence subjects will move to Spec,IP. This is represented in (T11). In Greek and Spanish B, it is more important to satisfy STAY than SUBJ-CASE, hence subjects will not move to Spec,IP, yielding a more economical representation. This is schematized in (T12):

(T11) Portuguese and Spanish A – Context: sentence-focus

<table>
<thead>
<tr>
<th>ALIGN</th>
<th>TOP-FIRST</th>
<th>SUBJ-CASE</th>
<th>STAY</th>
<th>OBJ-CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [IP S [VP V [VP t O]]]</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b. [IP S [VP t t O]]</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>c. [IP S [VP t O]]</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

(T12) Greek and Spanish B – Context: sentence-focus

<table>
<thead>
<tr>
<th>ALIGN</th>
<th>TOP-FIRST</th>
<th>STAY</th>
<th>SUBJ-CASE</th>
<th>OBJ-CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [IP S [VP V [VP t O]]]</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b. [IP S [VP t t O]]</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>c. [IP S [VP t O]]</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

It is important to note that, in spite of the relevance of TOP-FIRST for the exclusion of the candidate with left-dislocation of the subject, it is the ranking between STAY and SUBJ-CASE that is crucial. The decision between candidates b. and c. is made at the point one of these two constraints (depending on the ranking) evaluates the candidates. In (T11), SVO is selected, because only in this order, the subject has moved to Spec,IP, satisfying SUBJ-CASE. In (T12), because of the reverse ranking, STAY plays against SVO, since the representation of this candidate contains two traces, while the representation for the VSO order only contains one trace. This result is compatible with the one achieved for selecting the representation for SVO: in Greek and Spanish B, economy made the decision.

Note that I have achieved one of the purposes of this chapter in capturing the difference between SVO and VSO: given the difference between Spanish A and Spanish B, which is dialectal,\textsuperscript{17} it would not be

\textsuperscript{17} As mentioned above, this statement must be qualified: I do not possess information
desirable to have a big difference in constraint profiles. Indeed, the difference between the two languages is minimal: only SUBJ-CASE and STAY need to be re-ranked with respect to one another. (43) and (44) are the rankings for Portuguese and Spanish A, and Greek and Spanish B, respectively:18

(43)  Portuguese and Spanish A:
{ALIGNFOCUS, TOP-FIRST} >> SUBJ-CASE >> STAY >> OBJ-CASE

(44)  Greek and Spanish B:
{ALIGNFOCUS, TOP-FIRST} >> STAY >> Subj-CASE >> OBJ-CASE

By proposing a minimal re-ranking of constraints, I manage to keep under control the consequence of re-ranking these constraints for other aspects of the grammar of the languages under consideration, since SUBJ-CASE has in its scope a quite restricted set of elements. If the constraint profiles would be radically different, this might very likely predict differences between the two dialects of Spanish that are not real.

5.2. Postverbal subjects: VSO vs. VOS

In the preceding section, I have derived the difference between

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18 The rankings proposed also predict that all these languages have scrambling of objects as A-bar movement (in adjunction to VP), if they have movement of objects to VP-external positions. For Portuguese, this has been claimed in chapter 3. This prediction is also partially confirmed for Spanish by Ordoñez (to appear), who shows that object movement in Spanish displays A-bar properties. Alexiadou and Anagnostopoulou (1996), in their comparative work on clitic doubling and scrambling, show that Greek objects do not move to Spec,AgrOP (instead there is clitic doubling in this language). What my analysis does not predict is that subjects and objects behave uniformly with respect to Case-licensing within the same language, as it is proposed in Chomsky (1993). The facts of Portuguese (subjects may be in a case licensing position, but objects may not) do not seem to confirm such proposal, hence I will not see this as a weakness of my analysis.
SVO and VSO as unmarked word orders for Portuguese and Spanish A and Greek and Spanish B, respectively. In this section, I would like to develop the analysis presented there in order to accommodate a subtle difference between Portuguese and another Romance language: Italian.

Italian is like Portuguese, in that its unmarked word order is SVO, as (45) illustrates:

(45) **Italian (from Pinto 1997):**
Che cosa è successo?
What happened?
  a. Beatrice ha scritto lettere d’amore.
      Beatrice has written love letters
  b. #Ha scritto lettere d’amore Beatrice.

In her description of neutral word orders, Pinto notes, following Calabrese (1991) among others, that some inverted structures are felicitous as answers to *what happened*. That is the case with verbs that select some kind of locative argument. Though Pinto’s work focuses mainly on such constructions, I will overlook them here, for they are not possible with transitive verbs. This makes them irrelevant for the present discussion, since it becomes impossible to test the ordering between subject and object. I refer the reader to Pinto (1997) for a description of the contexts for VS order in Italian. The possibility of having VS orders with such verbs may be derived from restrictions on the discourse situation imposed by the lexical meaning of the verbs or by the locative argument itself.19

As pointed out above, Portuguese permits VOS word orders, if only the subject is in focus. The same is true in Italian (46)

(46) **Italian (from Pinto 1997):**
Chi ha scritto lettere d’amore?
  a. #Beatrice ha scritto lettere d’amore.
      Beatrice has written love letters
  b. Ha scritto lettere d’amore Beatrice.

However, there is a crucial difference between Italian and Portuguese. Portuguese allows VSO orders, as noted above, in contexts in which both the subject and the object are focused. In Italian, however, VSO is

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19 See section 6 for a potential derivation of VS unmarked word order with unaccusatives in Portuguese.
ungrammatical independently of the context.\textsuperscript{20} This has been noted by Rizzi (1982), Burzio (1986), among others.

The context in (47) is the one that legitimates VSO orders in Portuguese:

\begin{itemize}
\item[(47)] Ninguém escreveu nada.
\item[a. ] Escreveu a Beatriz cartas de amor.
\item[b. ] ¿#Escreveu cartas de amor a Beatriz.
\end{itemize}

(48) illustrates the ungrammaticality of VSO in Italian:

\begin{itemize}
\item[(48)] Nessuno ha scritto niente.
\item[a. ] *Ha scritto Beatrice lettere d’amore.
\item[b. ] Ha scritto lettere d’amore Beatrice.
\end{itemize}

I will follow Pinto’s (1997) analysis of VOS order in Italian. Pinto claims that in spite of the lack of evidence from adverbial placement (cf. Belletti 1990), VOS orders may be analyzed as an instance of subject in Spec,VP with movement of the object to Spec,AgrOP, as in the representation in (49):

\begin{itemize}
\item[(49)] \[ [v \text{ V [Agc} \text{ O [vp, S t t]]} \]
\end{itemize}

Such an analysis is also defended in Cinque (1997), who argues for this on theoretical grounds by rejecting right adjunction as a possibility, and by the observation that postverbal subjects in Italian transitive constructions must be absolutely final. Actually, the observation by Pinto that inverted subjects may precede VP-adjuncts (cf. 50) confirms this hypothesis, since we would otherwise expect to find right dislocated subjects following all base-adjuncts:

\begin{itemize}
\item[(50)] \textit{Italian (from Pinto 1997)}:
\item[a. ] \textit{E’ arrivato Dante da Firenze.}
\item[ ] Is arrived Dante from Florence
\item[ ] ‘Dante has arrived from Florence.’
\end{itemize}

\textsuperscript{20} Naturally, this is true for main verbs. Aux-to-C is possible in Italian, deriving several VS orders (Rizzi 1982).
c. Ha telefonato Beatrice da Milano.
   Has called Beatrice from Milano
   'Beatrice has called from Milano.'

The only possibility to rescue the VP-right-adjointed position for subjects in sentences like (50) would be to assume a multiple right-adjunction structure for the VP. This would nevertheless be problematic, since as Samek-Lodovici (1996) argues, the position involving right adjunction to VP appears to be reserved for contrastive, uniquely restricted, foci (cf. Szabolcsi 1981). As I have discussed in chapter 4, uniqueness is not a requirement on information foci. Since the sentence-final position for subjects may be used for information foci, it is not desirable to collapse the Spec,VP position with the VP-right-adjointed position.

Given the ordering with respect to adjuncts combined with the observation on types of focus, I will follow Pinto (1997) and Cinque (1997) with respect to the structural representation of VOS order in Italian.21

The question raised by this contrast between Portuguese and Italian is whether it is possible to analyze the Italian pattern by varying the ranking of the set of constraints used before.

Before starting the evaluation of possible rankings, it is important to understand where the crucial difference between Italian and Portuguese lies. If Pinto's and Cinque's suggestions are on the right track, Italian has obligatory object-movement to Spec,AgrOP. According to the conclusions of chapter 3, Portuguese nominal complements never move to Spec,AgrOP. As the examples above illustrated, not even discourse context may force a VSO word order in Italian. In the system developed here, this means that the constraint driving the movement of the object is more important than those related to discourse. That is, the ranking between OBJ-CASE and ALIGNFOCUS has to be the one in (51):

(51) OBJ-CASE >> ALIGNFOCUS

The ranking in (51) predicts that no matter what the context is, nominal objects will always move to Spec,AgrOP. It is not different from what I have proposed in chapter 5 to derive obligatory movement of NPs to

---

21 Note that I am only partially following Cinque, since he does not include Agr-phrases in the inventory of potential functional projections, following Chomsky (1995).
Spec,AgrOP in English
Since subjects do not behave this way (their position is dependent on the discourse context), the ranking between ALIGNFOCUS and SUBJ-CASE has to be kept the same as for Portuguese:

(52) ALIGNFOCUS >> SUBJ-CASE

Preverbal subjects are in Spec,IP, according to most analyses of Italian (Rizzi 1982, Burzio 1986, Belleri 1990, Samek-Lodovici 1996, Pinto 1997, among many others). Following the results obtained for Portuguese and Spanish A, this means that it may not be the case that STAY dominates SUBJ-CASE.

(53) SUBJ-CASE >> STAY

Note that this ranking between SUBJ-CASE and STAY and the rankings proposed above imply that OBJ-CASE is ranked higher than STAY (since OBJ-CASE is ranked higher than ALIGNFOCUS, which is ranked higher than SUBJ-CASE). This derived ranking between OBJ-CASE and STAY predicts the impossibility of having scrambling as adjunction to VP in this language, in the same way this was predicted for Icelandic in the preceding chapter.

Since topicalization is possible in Italian (cf. Rizzi 1995 among others), TOP-FIRST has to be more important than OBJ-CASE.

(54) TOP-FIRST >> OBJ-CASE

This results in the following partial ranking for Italian:

(55) **Italian:**
TOP-FIRST >> OBJ-CASE >> ALIGNFOCUS >> SUBJ-CASE
>> STAY

Though it seems quite different from the ranking for Portuguese presented in (56), notice that once again I only had to re-rank one constraint (OBJ-CASE). This is highly desirable, since the discussion is still restricted to variation within one family of languages.

(56) **Portuguese:**
{ALIGNFOCUS, TOP-FIRST} >> SUBJ-CASE >> STAY >>
Let me now show how the selection of optimal candidates is obtained in Italian, according to the constraint ranking in (55). For this case, a context in which both the subject and the object are focused is considered. (T13) represents the evaluation tableau for Portuguese, where VSO wins. (T14) is the evaluation tableau for Italian, where VOS wins.

The candidates under comparison are:

**Candidate a**: VSO with movement of the verb only

**Candidate b**: VOS with movement of the verb to I, and object-movement to Spec,AgrOP

**Candidate c**: VOS with movement of the verb to I, and object scrambling in adjunction to VP.

### (T13) Portuguese (context: S and O are focused)

<table>
<thead>
<tr>
<th></th>
<th>ALIGN FOCUS</th>
<th>TOP-FIRST</th>
<th>SUBJ-CASE</th>
<th>STAY</th>
<th>OBJ-CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td></td>
<td></td>
<td>!</td>
<td></td>
<td>!</td>
</tr>
<tr>
<td>c</td>
<td></td>
<td></td>
<td>!</td>
<td></td>
<td>!</td>
</tr>
</tbody>
</table>

### (T14) Italian (context: S and O are focused)

<table>
<thead>
<tr>
<th></th>
<th>TOP-FIRST</th>
<th>OBJ-CASE</th>
<th>ALIGN FOCUS</th>
<th>SUBJ-CASE</th>
<th>STAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>!</td>
<td>!</td>
<td>!</td>
<td>!</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>!</td>
<td>!</td>
<td>!</td>
<td>!</td>
<td>!</td>
</tr>
<tr>
<td>c</td>
<td>!</td>
<td>!</td>
<td>!</td>
<td>!</td>
<td>!</td>
</tr>
</tbody>
</table>

As can be seen in the tableaux above, the selection of the optimal candidate is determined quite ‘early’ in the evaluation diagram, in the sense that it involves one of the top-ranked constraints. In this sense, one might think that the ranking of SUBJ-CASE and STAY in Italian is irrelevant, since OBJ-CASE immediately filters out all but one candidate. However, once again the effects of Emergence of the Unmarked have to be considered here. Only the ranking proposed may accommodate the facts of postverbal subjects and the emergence of SVO order in the unmarked case.
This is shown in (T15), where the following candidates are considered:

**Candidate a:** SVO with Subject in Spec, IP and Object in Spec,AgrOP;

**Candidate b:** SVO with Subject in Spec,IP and Object in situ;

**Candidate c:** SVO with Subject in Spec,IP and scrambled object;

**Candidate d:** SVO with Subject left-dislocated and Object in Spec,AgrOP;

**Candidate e:** SVO with Subject left-dislocated and Object in situ;

**Candidate f:** SVO with Subject left-dislocated and scrambled object;

**Candidate g:** VSO with Subject and Object in situ;

**Candidate h:** VOS with Subject in Spec,VP and Object in Spec,AgrOP;

**Candidate i:** VOS with Subject in Spec,VP and scrambled object.

(T15) *Italian, sentence-focus*

<table>
<thead>
<tr>
<th></th>
<th>TOP- FIRST</th>
<th>OBJ- CASE</th>
<th>ALIGN FOCUS</th>
<th>SUBJ- CASE</th>
<th>STAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>[IP S V [AgrOP O t [VP t t]]]</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>****</td>
</tr>
<tr>
<td>b.</td>
<td>[IP S V [VP t t O]]</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>**</td>
</tr>
<tr>
<td>c.</td>
<td>[IP S V [VP t t t]]</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>***</td>
</tr>
<tr>
<td>d.</td>
<td>[IP S [VP V [AgrOP O t [VP t t]]]]</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>***</td>
</tr>
<tr>
<td>e.</td>
<td>[IP S [VP V [VP t O]]]</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>f.</td>
<td>[IP S [VP V [VP t]]]</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>g.</td>
<td>[IP V [VP S t O]]</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>h.</td>
<td>[IP V [AgrOP O t [VP S t]]]</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>***</td>
</tr>
<tr>
<td>i.</td>
<td>[IP V [VP S t]]</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

Let me start by emphasizing the crucial aspect of (T15): this tableau shows that SUBJ-CASE and STAY, though dominated by three constraints, are active.

Let us look at the point of the evaluation where candidates fatally violate one constraint:

a) all the candidates with left-dislocation of the subject fatally violate
TOP-FIRST, since they involve topicalization of a non-topic (similarly to what happens in Greek). This rules out candidates d, e and f.

b) OBJ-CASE filters out all candidates with the object in situ or scrambling, precluding the VSO order to emerge. This rules out candidates b, c, g and i.

c) A decision has to be made now between SVO and VOS (candidates a. and h. respectively). ALIGNFOCUS does not play any role, hence SUBJ-CASE will decide for the candidate that satisfies it: SVO. The VOS order fatally violates SUBJ-CASE. Candidate h. is thus excluded because of the violation of this constraint.

Note that, in this context, it is possible to observe the crucial ranking between SUBJ-CASE and STAY. If STAY were to dominate ALIGNFOCUS, the VOS order would emerge, since it only involves three movement operations, against the four movements involved in the representation for candidate a.

Summing up, once again I managed to describe a language by virtue of a minimal re-ranking of the assumed constraints, and to show that the effects of dominated constraints are visible in sentence-focus context.

5.3. VOS in Italian vs. VOS in Malagasy.

The analysis proposed for Italian may be extended to accommodate the unmarked word order in Malagasy illustrated in (57):22

(57) Malagasy (from Keenan 1976):
    Nivy in mfo ho an’ny ankizy aho
    Bought bread for the children I
    ‘I bought bread for the children.’

There are two differences between Malagasy and Italian: first, VOS is

22 My only source for Malagasy data was Keenan (1976). Given the limited access to data, the analysis presented in this section should be seen as a first approach to the basic word order patterns. It is possible that additional data will disconfirm the approach defended here.
unmarked in Malagasy. Second, differently from Italian, VOS word order is
rigid: the complement of the verb may not follow the subject. The
obligatoriness of VOS is illustrated in (58):

(58) a. *Nividy aho mofo ho’an’ny ankizy
   bought I bread for the children
b. *Nividy ho an’hy ankizy aho mofo.
   Bought for the children I bread

SVO orders are not allowed either, as (59a) shows. SVO is only possible if
there is some kind of cleft construction (59b) or topicalization. These
processes must however be morphologically marked (see Keenan 1976):

(59) a. *Aho nividy mofo ho’an’ny ankizy.
   I bought bread for the children
b. Rasoa no manasa ny lamba amin’ity savony ity.
   Rasoa cleft wash the clothes with this soap this
   ‘It’s Rasoa who is washing the clothes with this soap’

   It is possible to suppose that Italian and Malagasy have the same
structure for VOS. In both languages, in this word order, the verb has
moved to I, the object is in Spec,AgrOP and the subject is in Spec,VP:

(60) \[VP [AgrOP O [VP S to]]\]

Evidence for analyzing this word order in the same terms as the analysis
proposed for Italian, repeated in (60), comes from the distribution of
question particles, exclamative particles and no-longer particles. These
particles are often used to determine the position of the subject (see e.g.
Diesing 1992 for German). In this language, they always precede the
subject:

(61) a. Nanome vola an-dRabe ve ianao?
   Gave money acc-Rabe Q you
   ‘Did you give money to Rabe?’
b. Manasa lamba anic Rasoa!
   Washes clothes EXCL Rasoa
   ‘Is Rasoa ever washing clothes!’
c. Tsy manasa lamba intsony Rasoa.
   Not washes clothes longer Rasoa
   ‘Rasoa is no longer washing clothes.’
From the examples above, one may hypothesize that subjects in Malagasy are VP-internal. 

Expressing this hypothesis in terms of constraint ranking, the ranking proposed must capture the fact that VOS is the unmarked word order in this language.

The common factor in Italian and Malagasy would be the obligatory movement of objects to Spec,AgrOP. This follows from ranking OBJ-CASE above ALIGNFOCUS (62) and STAY (63), as in Italian:

\[(62)\quad\text{OBJ-CASE} \gg \text{ALIGNFOCUS}\]

\[(63)\quad\text{OBJ-CASE} \gg \text{STAY}\]

The low position of subjects may be derived by taking the same ranking for Italian and changing the relative ranking of STAY and SUBJ-CASE. For Malagasy, the ranking between these two constraints must be the one in (64):

\[(64)\quad\text{STAY} \gg \text{SUBJ-CASE}\]

This ranking predicts that it is more important for a representation to be economical than for an NP to be assigned nominative Case in Spec,JP. The difference between the two languages will then be similar to the difference between Portuguese/Spanish A and Greek/Spanish B.

This, however, cannot be all. The discourse-related constraint ALIGNFOCUS must be relatively low-ranked in this language, since different contexts do not permit different word orders, unlike in the other

\[\text{One problem with this analysis involves the obligatory movement to AgrOP of non-nominal complements. I did not have access to data enabling me to tell whether there is scrambling involved in such cases. At this stage, I do not have anything interesting to suggest, and I must leave the analysis of Malagasy in these quite preliminary terms.}\]

\[\text{Another surprising factor concerning this analysis is the Definiteness restriction presented by Keenan: subjects must be definite. This is strange in view of my analysis, since it is more common for VP-internal subjects to be indefinite. Keenan presents data showing that whenever there is an indefinite subject, a special type of existential construction must be used. Probably, the availability of this special construction in the language blocks the use of indefinites in the canonical subject position.}\]
languages considered in this chapter. Since subjects are always sentence-final, I propose that ALIGNFOCUS is ranked below SUBJ-CASE:

(65)  SUBJ-CASE >> ALIGNFOCUS

This is the same as in English, in the sense that the position of the subject will not vary with the context. However, the ranking between SUBJ-CASE and STAY is the opposite. The prediction is then that, in both languages, the position of the subject is rigid, because of the low-ranking of ALIGNFOCUS: in English, it always moves to Spec,JP, because of SUBJ-CASE; in Malagasy, it never moves out of VP, because of STAY.

I will not make any proposal concerning TOP-FIRST: since there are topicalizations in this language, TOP-FIRST must be relatively high-ranked. However, I do not know how it interacts with the other constraints. For the sake of exposition, I will leave it top-ranked, but the reader should be aware that this may be incorrect. Additional constraints related to morphologically marked topicalization, and focus-related constraints imposing requirements on the position of contrastively focused elements will most likely be ranked above the constraints discussed here, and trigger morphologically marked topicalization and clefting.

Given these considerations, the partial ranking obtained for Malagasy is the one in (66):

(66)  Malagasy:

\texttt{TOP-FIRST} >> OBJ-CASE >> STAY >> SUBJ-CASE >>

ALIGNFOCUS

The evaluation tableau for this language is given in (T16). It shows how the ranking proposed derives the word order in Malagasy. The candidates considered are the same considered in Italian, to make the contrast between these two languages clear.

(T16)  Malagasy (context: sentence-focus)

<table>
<thead>
<tr>
<th></th>
<th>TOP-FIRST</th>
<th>OBJ-CASE</th>
<th>STAY</th>
<th>SUBJ-CASE</th>
<th>ALIGNFOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. \text{ [p SV {actic \O t {ep t t t }]}</td>
<td>*</td>
<td>****!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. \text{ [p SV {ep t t O]}</td>
<td>*</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. \text{ [p SV {ep O {ep t t t }]}</td>
<td>*</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. \text{ [p SV {actOP \O t {ep t t }]}</td>
<td>#*!</td>
<td></td>
<td>#</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. \text{ [p SV {ep t O}]}</td>
<td>#*!</td>
<td>*</td>
<td></td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>
(T16) shows that SUBJ-CASE and ALIGNSACS are irrelevant for deriving the unmarked word order of Malagasy. The decisions are made in the following way:

a) TOP-FIRST rules out all candidates with left-dislocation of the subject. That excludes candidates d, e, and f;

b) OBJ-CASE penalizes all candidates without movement of the object to Spec, AgrOP. This constraint rules out candidates b, c, g, and i.

c) As in Italian, the two last competing candidates are candidate a. (SVO with movement of the arguments to Case-licensing positions), and candidate h. (VOS). In Italian, SUBJ-CASE ruled out the former. Given the ranking proposed for Malagasy, STAY decides between candidate a. and candidate h., preferring the most economical representation: the one without movement of the subject.

This case is slightly different from the other languages discussed, since, in Malagasy, ALIGNFOCUS does not dominate everything else. Therefore, it is not necessary to look at sentence-focus contexts to see the effects of the other constraints. It is nevertheless worth noting that a rearrangement of the set of constraints used for the other languages derives the unmarked word order of this language. The role played by TOP-FIRST (if any, see discussion above) is however the same as the role played by ALIGNFOCUS in the other languages.

### 5.4. More on VSO and obligatory orders: Celtic and Arabic

The preceding discussion on Malagasy VOS as opposed to Italian VOS enables me to give an account of the opposition between VSO in Celtic versus VSO in Arabic, Chamorro and Berber.

The difference between these languages is, according to Ouhalla (1991), that Berber, Chamorro and Arabic are VSO languages allowing
SVO as a possible word order (namely when the subjects are topics), while Celtic never allows SVO: it is a rigid VSO language. This is similar to the alternation we found between SVO and VOS in Italian versus VOS in Malagasy, though the relation word order/discourse function is different.

The following examples taken from Ouhalla (1991) illustrate these patterns for Berber, Arabic and Welsh:

(67) **Berber**

a. ad-y-segh Moha ijn teddart.
   Fut (TNS)-3ms (AGR)-buy Moha one house
   ‘Moha will buy a house.’

b. Moha ad-y-segh ijn teddart.
   ‘Moha will buy a house.’

(68) **Arabic**

a. Sa-ya-shtarii Zayd-un dar-an
   Fut (TNS)3ms (AGR)-buy Zayd-nom house-acc
   ‘Zayd will buy a house.’

b. Zayd-un sa-ya-shtarii daa-ar-an,
   Zayd-nom fut (TNS)3ms(AGR)-buy house-acc
   ‘Zayd will buy a house;’

(69) **Welsh**

a. Gwelodd y bechgyn y draig.
   Saw the boys the dragon
   ‘The boys saw the dragon.’

b. *Y bechgyn gwelodd y draig.
   The boys saw the dragon.

Ouhalla’s explanation for this difference, though interesting, may not be adopted here. Ouhalla notes that Welsh differs from the other languages not only in the word order, but also in two other aspects which are characteristic of SVO languages: Celtic languages have non-inflected infinitives and the order of inflectional morphemes is TNS-AGR. Ouhalla suggests that word order alternations (VSO enables SVO, but not vice versa), the order of morphemes, and the availability of non-inflected infinitivals are three consequences of a single parametric difference: whether AGR selects T or T selects AGR in the clause structure. Ouhalla shows that all the VSO properties follow from a structure where T selects AGR, and the SVO from a structure where AGR selects T. Under
Ouhalla’s analysis, in a language where T selects AGR, the subject ends up in Spec, AgrSP, not needing to move further up, though Spec, TP remains a legitimate position for topics. In the languages where AGR selects T, the subject has to move all the way up to AGR for Case purposes, yielding the SVO order. Celtic falls within the latter group of languages, with the language-particular rule saying that subjects are assigned nominative Case in Spec, VP.

The reason for not integrating this analysis is that it resorts to two mechanisms not available in OT: language-particular rules and parametrization of functional heads. In OT, constraints are universal, and all language variation has to follow from constraint ranking. Furthermore, I have been following the claim that Spanish B is VSO. This language exhibits the order of morphemes TNS-AGR, constituting a counterexample to Ouhalla’s generalization. If the difference between Portuguese/Spanish A and Greek/Spanish B would follow from the same subcategorization of functional heads, this should, according to Ouhalla, be reflected on the verbal morphology. There is however no attested difference in the inflectional paradigm between the two types of languages.

I will nevertheless retain two aspects of Ouhalla’s analysis: the idea that in Celtic languages subjects do not need to move out of VP, and the analysis for Arabic claiming that preverbal subjects are left-dislocated.

Consider Arabic: this language will have an analysis very similar to the one proposed for Greek and Spanish B: VSO in the unmarked case is a consequence of the dominance of SUBJ-CASE by STAY. The dependence on discourse context will follow from the high-ranking of TOP-FIRST and ALIGNFOCUS. Hence, we will get exactly the same situation as proposed for Greek and Spanish B, represented in (T17):

<table>
<thead>
<tr>
<th>Arabic (Greek and Spanish B); context: sentence-focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [___ S [p V [___ t O]]]</td>
</tr>
<tr>
<td>b. [___ S V [___ t O]]</td>
</tr>
<tr>
<td>c. [___ S [p V S t O]]</td>
</tr>
</tbody>
</table>

28 Note that nothing prevents an extension of Ouhalla’s analysis for Celtic to Spanish: Spanish might be an AGR-initial language with the language-particular rule assigning nominative Case in Spec, VP.
Arabic is like Celtic in permitting VSO. The languages are unlike, in that VSO is obligatory in the latter. I will assume a similar analysis to the one proposed above for Malagasy and in chapter 5 for English: rigid word order is a consequence of the low ranking of the discourse-related constraints. This analysis will explain why Celtic has a rigid VSO order. As expected, this word order will emerge in the context of sentence-focus represented in (T18):

\[
\begin{array}{|c|c|c|c|}
\hline
\text{sent} & \text{STAY} & \text{SUBJ-CASE} & \text{OBJ-CASE} & \text{ALIGN-FOCUS} & \text{TOP-FIRST} \\
\hline
\text{a. } [\text{V } S \text{ [IP } \text{ t O}]] & * & * & * & ***! \\
\text{b. } [\text{V } S \text{ [IP } \text{ t t O}]] & * & * & * & * \\
\text{c. } [\text{V } S \text{ [IP } \text{ t t O}]] & * & * & * & * \\
\hline
\end{array}
\]

Note that it is still TOP-FIRST that decides between candidate a. and candidate c. Therefore, in this case, there is no difference between Celtic and Arabic. The two languages behave alike, and there is no reason to propose a different ranking for TOP-FIRST. However, the low ranking of TOP-FIRST is important to make sure that the same word order will be optimal when the subject is not in focus. This is illustrated in (T19) below.

As mentioned above, the analysis of this language requires resorting to another structural constraint: *STRUC (OB-HD in Grimshaw 1997 and Bresnan 1996). The definition of this constraint is repeated in (70):

\[
\begin{array}{|c|c|c|c|}
\hline
\text{sent} & \text{STAY} & \text{SUBJ-CASE} & \text{OBJ-CASE} & \text{ALIGN-FOCUS} & \text{TOP-FIRST} \\
\hline
\text{a. } [\text{V } S \text{ [IP } \text{ t O}]] & * & * & * & ***! \\
\text{b. } [\text{V } S \text{ [IP } \text{ t t O}]] & * & * & * & * \\
\text{c. } [\text{V } S \text{ [IP } \text{ t t O}]] & * & * & * & * \\
\hline
\end{array}
\]

The inclusion of *STRUC in (T19) clearly shows that the effect of structural constraints determines the VSO word order, and that the discourse-related constraints are very low-ranked. *STRUC plays against generation of phrase structure, and is fatally violated by the candidate with CP projected. If this constraint would not play a role, candidate a. would be the winner. The case of Celtic serves then as a proof to the issue raised
above that topicalization should be controlled for by two types of
costRAINTS: structural and functional. Given the main claim made in this
dissertation and in Grimshaw and Samek-Lodovici (1995) that optionality
arises when discourse constraints dominate syntactic constraints, while
rigid word orders arise when the reverse happens, it is not surprising that
*STRUC dominates both ALIGNFOCUS and TOP-FIRST. If that would
not be the case, candidate a. would win like in Greek and Spanish B.

Note that adding *STRUC to the constraint profile is not a
stipulation to derive the Celtic facts: this constraint is independently used
in the work of Grimshaw (defined in terms of obligatory heads). The role it
plays here confirms the idea that the rigid word order follows from the
very low-ranking of ALIGNFOCUS and TOP-FIRST.25

The weakness of the analysis proposed above is that by not
adopting the whole of Ouhalla’s analysis, I loose the relationship between
weak and strong agreement and position of the subject. Ouhalla proposes
that subject agreement correlates with the position of the subject at S-
structure: Arabic and Celtic have weak Agreement because the subject is in
Spec,VP, while Berber and Chamorro have rich agreement because the
subject is in Spec,AgrSP. However, I do not loose an account of the
agreement patterns provided that I adopt the strong lexicalist hypothesis
(Chomsky 1995), and as long as I make sure that agreement is accounted
for somewhere else in the model: morphological alignment constraints may
account for it (McCarthy and Prince 1994, Grimshaw 1997a). Since Celtic
and Arabic have a similar agreement pattern, it is not clear that there is a
correlation between the typological groups Ouhalla proposes and richness
of Agreement. Moreover, the analysis of the Portuguese SV/VS alternation
casts doubt on the relation between position of the subject and agreement
advocated by Ouhalla. If his observation would be correct, Portuguese
should exhibit different agreement patterns depending on the position of
the subject (like Arabic does).

In spite of losing the account of agreement in the syntax, I account
for the position of the subjects in a uniform way and without resorting to

25 One possible analysis not involving *STRUC and still deriving the right results,
would be to follow Sprout (1985), and assume that VSO in Celtic is an instance of I-
to-C, which would make candidate a. in (T14) violate STAY twice. McCloskey
(1992a), Carne (1995) and Bobaljik (1995) have, however, argued based on the
distribution of complementizers that such an analysis is problematic. I will follow the
V-to-I analyses, which permit a unification with the Greek and Spanish case.
the language-particular rule that subjects get nominative Case VP-internally only in Celtic.

5.5. Summary.

In this section, I have managed to derive several word order patterns, by reranking the set of constraints proposed for Portuguese in chapter 5. Importantly, the following points already made in the previous chapter were reinforced:

- Language-internal variation is a consequence of discourse-constraints outranking syntactic constraints;
- Rigid word orders follow from the high ranking of structural syntactic constraints;
- Movement of arguments to a Case-positions is conditioned by discourse, economy and Case;
- Crosslinguistic variation may be captured under different rankings of a constant set of constraints. Minimal differences may be captured under minimal rerankings.

6. Conclusion

In this chapter, I have tried to derive the unmarked word orders of several languages in terms of emergence of the unmarked. It was shown the effect of constraints normally invisible by virtue of the domination by discourse-related constraints becomes visible in context of sentence-focus. The following goals were achieved:

✔ The sentence-focus context was used to show that the dominated constraint proposed for Portuguese were operative in this language;
✔ The relevance of the constraints used in chapter 5 and the explanatory and descriptive power of OT as a theory of cross-linguistic variation was tested by using the same set of constraints to describe other word order patterns in other languages;
The following pairs ranking/language were proposed:

(71) a. *Portuguese and Spanish A*:  
{TOP-FIRST, ALIGNFOCUS} >> SUBJ-CASE >> STAY >> OBJ-CASE

b. *Spanish B, Greek, Arabic*:  
{TOP-FIRST, ALIGNFOCUS} >> STAY >> SUBJ-CASE >> OBJ-CASE

c. *Italian*:  
TOP-FIRST >> OBJ-CASE >> ALIGNFOCUS >> SUBJ-CASE >> STAY

d. *Malagasy*:  
OBJ-CASE >> STAY >> SUBJ-CASE >> TOP-FIRST >> ALIGNFOCUS

e. *Celtic*:  
STAY >> SUBJ-CASE >> OBJ-CASE >> *STRUC >> {TOP-FIRST, ALIGNFOCUS}

Minimal differences between related languages were explained under minimal rerankings of the same set of constraints;

The hypothesis raised in the preceding chapter that movement of the arguments to Case-licensing positions is conditioned by ALIGNFOCUS, CASE and STAY was successfully extended to other languages.

The hypothesis concerning rigid vs. flexible word orders based on the relative ranking between discourse constraints and syntactic constraints raised in the preceding chapter was successfully applied to VSO in Celtic and VOS in Malagasy.

Some of the results of this chapter are quite preliminary, since the study of some of the languages was not as detailed as the work done in the previous chapters for the differences between Portuguese and English, for instance. Nevertheless, the typological work that the application of the OT analysis allows for seems promising. If it proves true, this typological research constitutes evidence for two of the main goals of OT: to be a theory of language variation and to express variation by means of different rankings of a constant set of constraints.

So far, I have been looking at differences between languages in which different word orders reflect different information structures and
languages with rigid word orders. The OT-analysis has proven fruitful, but so far it is not yet quite clear what the difference is between this type of analysis and a parametric approach splitting languages up in two groups: discourse-configurational and non-discourse-configurational.

The following questions thus arise:

- Is there a way of distinguishing between the approach put forward in this dissertation and a parametric approach?
- Are there empirical data favoring either approach?

Chapter 7 will be dedicated to an investigation of the different predictions either type of approach makes, and to the inquiry into empirical evidence in favor of one of them.

Appendix:
A note on unmarked inverted constructions in Portuguese.

Before finishing this chapter, I would like to note an apparent problem for the analysis presented above. I have argued that the unmarked word order in Portuguese is SVO, based on facts like (1):

(1)  A:  What happened?
    B:  O Paulo partiu a janela.
        Paulo broke the window
        #Partiu o Paulo a janela.
        #Partiu a janela o Paulo.
        #A janela, partiu o Paulo.
        #A janela, o Paulo partiu.
        #O Paulo a janela partiu.

The emergence of SVO as unmarked followed from the ranking of SUBJ-CASE above STAY. This ranking predicts that subjects will always move to SpecIP, independently of the verb class.

However, this prediction is not completely confirmed by the data. With intransitive verbs, inversion is still impossible (2), but it is a legitimate output with unaccusative verbs (3):

(2)  A:  What happened?
B:
a. O João cantou.
   João sang
b. #Cantou o João.

B’:
a. O Piraças ladrou.
   Piraças barked
b. #Ladrou o Piraças.

B’’:
a. A Maria riu.
   Maria laughed
b. #Riu a Maria.

(3) A: *What happened?*

B:
a. O João chegou.
   João arrived
b. Chegou o João.

B’:
a. A casa ardeu.
   the house burnt
b. Ardeu a casa.

B’’:
a. A Maria adormeceu.
   Maria fell asleep
b. Adormeceu a Maria.

The optionality of subject-movement to Spec,IP in (3) is surprising, given
the analysis proposed above. I will not solve this problem here, but I would
like to suggest a potential solution.

I would like to propose that the trigger for subject-movement with
unaccusatives in Portuguese is changing; it is no longer Case, but
something else, perhaps EPP, as suggested in Marantz (1991). Evidence
that this solution may be on the right track comes from the an asymmetry
observed in the verbal agreement between intransitives and unaccusatives.
A plural subject always triggers plural agreement with an intransitive verb,
either in preverbal position (4) or in postverbal position (5):

(4) a. O Pedro e a Ana cantaram.
   Pedro and Ana sang-3pl

(5) a. O João e a Maria adormeceram.
   João and Maria fell asleep
b. Os dois cães ladram.
   the two dogs barked-3pl

c. A Maria e o Paulo riem.
   Maria and Paulo laughed-3pl

(5) a. Cantaram o Pedro e a Ana.
   sang-3pl Pedro and Ana
b. Ladraram os dois cães.
   barked-3pl the two dogs
c. Riram a Maria e o Paulo.
   laughed-3pl Maria and Paulo

Agreement is always obligatory, both in preverbal (6) and in postverbal (7) position:

(6) a. "O Pedro e a Ana cantou.
Pedro and Ana sang-3sg
b. "Os dois cães ladrou,
the two dogs barked-3sg
c. "A Maria e o Paulo riu.
   Maria and Paulo laughed-3sg

(7) a. "Cantou o Pedro e a Ana.
   sang-3sg Pedro and Ana
b. "Ladrou os dois cães.
   barked-3sg Piruças and Rex
c. "Riu a Maria e o Paulo.
   laughed-sg Maria and Paulo

The agreement patterns with unaccusatives are not very different. Plural subjects agree with the verb both pre- and postverbally:

(8) a. O Pedro e a Ana chegaram.
Pedro and Ana arrived-3pl
b. As duas casas ardiram.
   the two houses burnt-3pl
c. A Maria e o Paulo adormeceram.
   Maria and Paulo fell_asleep-3pl

(9) a. Chegaram o Pedro e a Ana.
arrived-3pl Pedro and Ana
b. Arderam as duas casas.
burnt-3pl the two houses
c. Adormeceram a Maria e o Paulo.
fell_asleep-3pl Maria and Paulo

Like with intransitives, lack of agreement with the preverbal subject yields ungrammaticality:

(10) a. *O Pedro e a Ana chegou.
Pedro and Ana arrived-3sg
b. *As duas casas ardeu.
the two houses burnt-3sg
c. *A Maria e o Paulo adormeceu.
Maria and Paulo fell_asleep-3sg

The crucial difference between the two verb classes is that lack of agreement between the verb and the postverbal subject with unaccusatives does not yield ungrammaticality (though it is stylistically marked):

(11) a. (?)Chegou o Pedro e a Ana.
arrived-3sg Pedro and Ana
b. (?)Ardeu as duas casas.
burnt-3sg the two houses
c. (?)Adormeceu a Maria e o Pedro.
fell_asleep-3sg Maria and Pedro

This type of sentences is stylistically incorrect, but quite common. Suppose now that there is an ongoing change in Portuguese with respect to the status of subjects of unaccusatives. The change would be that they would no longer need to move to Spec,IP to get their case licensed, which would be reflected in the agreement morphology. In such case, movement of the subject is unnecessary. The ranking proposed for Portuguese would then predict that in sentence-focus context, the output without movement is chosen. This is illustrated in (T1):

(T1)

<table>
<thead>
<tr>
<th></th>
<th>ALIGN</th>
<th>TOP-FOCUS</th>
<th>SUBJ-CASE</th>
<th>STAY</th>
<th>OBJ-CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [tp S V [vp t t]]</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td>*!</td>
</tr>
</tbody>
</table>


The other word order (SV) would emerge when the NP must receive
nominative CASE in Spec,IP. The alternation SV-VS would then be the
reflex of a change in the case-assigning properties of this type of verb.

As I mentioned at the beginning of this appendix, this suggestion is
by no means a solution to the problem. Its goal is to indicate that inverted
unmarked structures may be linked to a particular verbal class, and that
there is a correlation between this special word order and a given
agreement pattern. If the lack of agreement reflects the lack of nominative
case assignment, my analysis would predict the inverted pattern as well.
However, this suggestion leaves unsolved why subjects may move, why
agreement is obligatory if the subject is preverbal, and how to formalize an
ongoing change in this grammar. For these three reasons, I just leave these
observations as a potential line of research for solving this problem.
7 Comparing Frameworks: Parameters vs. Soft Constraints

1. Introduction

In the previous chapters, I have been proposing an analysis of word order variation as the result of tension between syntactic and discourse-related constraints.

I have argued that discourse-configurationality arises whenever there is dominance of syntactic constraints by discourse-related constraints. One of the grammars in which this happens is Portuguese. The ranking proposed for this languages is repeated in (1) below:

(1) **Portuguese:**
{ALIGNFOCUS, TOP-FIRST} » SUBJ-CASE » STAY » OBJ-CASE

Although I have occasionally presented the advantages of the Optimality-Theoretical approach over a more traditional parametric approach to this problems of word order variation, I have not yet presented a systematic comparison between the two types of analysis.

So far, there is no crucial difference between suggesting that a language has ALIGNFOCUS top-ranked or low-ranked (2) or proposing that a language is [+discourse-configurational] (3):

(2) a. ALIGNFOCUS » … (e.g. Portuguese)
b. CASE » …» ALIGNFOCUS (e.g. English)

(3) a. [+discourse-configurational] (e.g. Portuguese)
b. [-discourse-configurational] (e.g. English)
In this chapter, I will be concerned with evaluating the proposal made in the previous ones. I will explicitly compare the OT-approach with the parametric approach to the same problem. This comparative study is necessary not only to strengthen the points developed throughout the dissertation, but also to clarify where the two types of approach differ and where they converge. It will become clear that many times aspects of the two types of approaches are to be combined, a point made on theoretical grounds by Pesetsky 1994, and developed in Brockhuis and Dekkers 1996.

More specifically, I will argue that violability and ranking are more adequate in empirical terms than parameters that are switched on/off. The OT notions of violability and ranking predict that it is possible to find cases of violability and compliance to a certain low-ranked constraint within one language, if one looks for the appropriate context. Further, I will strengthen the claim made before that, on conceptual grounds, violability and ranking are desirable. These notions allow for the formalization of dependencies between constraints, which must be stipulated in a Principle and Parameters approach, and they permit keeping the formulation of constraints to their minimum, eliminating undesirable complexity from the system.

The structure of the chapter is the following:

In section 2, I will spell out the differences between soft constraints and absolute parameters, and establish the criteria for testing the validity of theories using either type of constraint.

In section 3, I will recall the main contrasts of chapter 5, formalizing again the two crucial constraints (CASE and ALIGNFOCUS), and formulating these constraints as absolute inviolable principles. The formulation of the constraints and parameters is necessary to develop the comparative analysis of both frameworks.

In section 4, I argue that OT may constitute the tool needed in the Principles and Parameters framework to formalize dependencies between principles. I further show how three of the premises of the theory are crucial for the discussion of this chapter: universality, violability and ranking.

In section 5, I introduce the types of phenomena to be discussed in the last sections, making their relevance explicit.

In section 6, I show that ALIGNFOCUS is operative even in
languages where it is low-ranked (English). The empirical scope of this section will be the distribution of PP complements and the behavior of adverbs discussed in chapter 2.

In section 7, it will be demonstrated that high-ranked constraints differ from positively set parameters. The empirical scope of this section will be Heavy NP Shift in English and the behavior of complements of ditransitive verbs in Portuguese.

The conclusions of section 7 will be strengthened in section 8 by contrasting Portuguese with Hungarian.

The discussion in this chapter will force me to be more specific about the nature of the input in OT-syntax. Considerations on the role played by the input in OT-syntax will be made in section 9.

Although the primary goal of this chapter is mainly theoretical, it will become clear that achieving this goal will lead to looking at new empirical cases.

2. Soft vs. absolute constraints: how to decide?

In this section, I will briefly sketch the main differences between absolute parameters and soft constraints, emphasizing violability as the main distinguishing factor.

2.1. Absolute constraints

In all stages of the evolution of syntactic theory from the 50s until now, in spite of the evolution in the formulation of the constraints (from rules to principles to the minimal set of operations Move and Merge in Chomsky (1995)), a key factor has been that constraints are not violable. That is, independently of the context in which a certain constraint is supposed to apply, if it is operative for a certain language, it has to apply. In Government and Binding theory, the issue of violability does not really arise: principles are universally available, but this does not mean that all languages equally use all the alternatives.

More recently, Chomsky (1989, 1993) has suggested that, at the
level of LF, there must be a uniform derivation independently of the language. This has led to formulations of parameters in binary terms, and in terms of feature strength: if a movement of operation takes place overtly in a given language, the moved constituent has strong features. If the same type of movement does not take place in another language, it is assumed that the same type of constituent has weak features, and moves in covert syntax. Crucially, the movement operation takes place even in the latter, and the principle driving movement is satisfied.

Sometimes evidence in favor of something being operative is hard to find. For instance, it is often difficult to find evidence for covert movement. This has led in recent approaches to mechanical tricks in order to satisfy a specific constraint in spite of the lack of evidence. The clearest case of this is the Move-F approach for covert movement, advocated in Chomsky (1995). This proposal makes sure that, say, Case features are moved to the position where they have to be satisfied, in spite of the absence of evidence for movement.\footnote{Locality facts are accounted for under the move-F approach, however the same facts were accounted before with the LF-category-movement approach.}

There are at least two major problems for with type of solution. The first is empirical, and it is acknowledged in Chomsky (1995): if only the features need to move, why should there be overt movement in some cases? Chomsky solves this in terms of phonological pied-piping, stipulating that, at PF, categorial and phonological features may not be apart. The second problem is conceptual: this hypothesis is difficult, if not impossible to falsify. Since categorial features do not have existence outside the theory, their autonomous behavior cannot be independently argued for. The same reasoning holds for the solution found by Chomsky for the empirical problem, which relies on a claim about properties of the features.

Another strategy used to explain cases of apparent violations of constraints appeals to other mechanisms available in the grammar to solve the problem. That is, this type of solution resorts to some kind of configuration or operation independently needed and applies it to the case under observation. For instance, in Rizzi (1982), it is suggested that subjects that do not move to Spec,IP receive case under government. A\footnote{Evidence might come from scopal facts, but phonological and semantic features are stranded in the base position.}
major advantage of this type of strategy is that it generalizes and provides additional evidence in favor of a given mechanism. But, on the other hand, it adds machinery and makes the overall formulation of syntactic principles less trivial and more complicated, weakening the elegance of the model of grammar. Crucially, it does not explain why languages vary. It just describes different structures without explaining why one option is not available for other languages.

There are thus two crucial aspects about non-violable constraints that I would like to criticize and take as the basis for comparison with soft constraints:

a) **Universality** – if there are uniform LF structures, the principles motivating movement must be universal. How can universality be maintained in cases in which there is no evidence for it?

b) **Inviolability** – a positively set parameter must always show its effects. Is this true? What about the reverse? Is a switched off parameter always inactive?

### 2.2. Soft constraints

A new view on the nature of constraints has emerged in the 90s with the work developed within Optimality Theory (Prince and Smolensky 1993). According to OT, all constraints are universal, and the lack of evidence for their application is the result of the major property of constraints: they are violable. Criticism on this view has argued that, if that is the case, then a single output should always be the result of the evaluation of candidates: the one satisfying all constraints (cf. Chomsky 1995). More specifically, Chomsky claims that since optimization is involved, outputs involving the least number of violations should be the only ones to emerge. However, this criticism misses one of the crucial claims of the theory: constraints interact, and violability is forced by the effect of other constraints (see McCarthy and Prince 1994 for a reply to Chomsky’s criticism). Thus, the fact that the output of one constraint conflicts with the output of another constraint forces violation of one of
them.

OT encodes which candidate is the winner by attributing cross-linguistic variation to different rankings between constraints.

The crucial difference between an Optimality-theoretical approach and an approach which excludes violability is that the predictions either approach makes in cases of conflict are different. The OT-approach predicts that, if two constraints are in conflict, there will always be a possible output, which corresponds to the optimization of the constraint that is ranked higher. The approach defending that constraints are absolute and inviolable, on the other hand, predicts that in case of conflict, there will be no output: ungrammaticality is predicted.

The crucial questions in predictions regarding universality and violability for OT are thus the following:

a) **Universality** – constraints are supposed to be universal. What is the difference between a low-ranked constraint which is always violated and a negatively set parameter? If they are notational variants, why change the theory?

b) **Violability** – Constraints are violable. However, in some languages, they appear to be operative all the time. Is there any difference between a high-ranked constraint and a positively set parameter?

As I presented them, it almost seems that the two approaches are notational variants. It is important to know whether there is a way to decide between these two approaches. I would like to show that this is an empirical issue, and provide tests for choosing between both approaches.

What is necessary as evidence for a soft-constraint-approach? First, I need to identify a case of conflict as in chapter 5 and 6. Furthermore, I must show that this conflict is not expressed in any obvious way in a theory that does not allow for encoding constraint dependency. Also, I need to show that the optimization of a conflict is not the consequence of a deeper difference between languages¹. Finally, I need to look for evidence that the constraints under discussion are both

¹ See the discussion of macro-parameters in Baker (1996).
operative and violable in the same language.
This is the work to be developed in the following sections.

3. Information focus vs. Case: conflicting constraints.

In chapter 5, based on the descriptions made in chapter 2-4, I identified a case of conflict between constraints. At the syntax-discourse interface, there seems to be constraints imposing contradictory requirements on a single output. Let me briefly recapitulate the situation of conflict exemplified before.

A focused constituent must be rightmost in a given sentence. This is illustrated in the following set of examples from Portuguese, repeated from above:

(4) a. O que é que o Paulo fez?
what did P. do?
a’ O Paulo [partiu a janela].
Paulo broke the window
a” #Partiu o Paulo a janela.
a”” #Partiu a janela o Paulo.

b. Ninguém partiu nada.
No-one broke anything
b’ Partiu [o Paulo a janela].
b” #O Paulo partiu a janela.
b”” #Partiu a janela o Paulo.

c. O que é que aconteceu?
What happened?
c’ [O PAULO\o Paulo partiu a janela].
c” #Partiu a janela o Paulo.

d. A quem é que deste o livro?
to whom did you give the book
d’  Dei o livro [ao Paulo].
gave-I the book to Paulo
d”  #Dei ao Paulo o livro.

c  O que é que deste ao Paulo?
what did you give to Paulo?
c’  Dei ao Paulo [o livro].
gave-I to Paulo the book
c”  #Dei o livro ao Paulo.

The explanation for this behavior is simple: it follows from the fact that focus has to bear phonological prominence (Jackendoff 1972; see also Ertshik-Shir and Lappin 1984), and that the rightmost position of the sentence is the place where the sentence nuclear stress falls (cf. e.g. Cinque 1993 for a theory in terms of syntactic embedding, Nespore and Vogel 1986 for a theory in terms of prosodic structure and linearization).

I have argued that, for English, this constraint seems to be inoperative: in (5), even if the object is the focus, it is the adverb that occupies the rightmost position, and in (6), even if the subject is the focus of the sentence, it appears in sentence-initial position:

(5)  a  Which language does John speak well?
a’  John speaks French well.

(6)  a  Who broke the window?
a’  John broke the window.

b  No-one broke anything.
b’  John broke the window.

As mentioned above, the fact that subjects can move overtly to Spec,IP in Portuguese challenges a description of the problem in terms of feature-strength (Barbosa 1995, among others). The same point was made for object-shift in Icelandic: objects conveying new information do not shift; previously referred to objects do move to a case-related position.

Assuming the descriptions made above, one needs to formulate
the principle behind Case-movement. I will not be committed to an implementation in terms of feature strength, but any non-violable principle must be formulated as in (7) or (8):

(7) Move NPs to Case position, unless they are focused.

(8) Move NPs to Case position:
   a) overtly if they are not focused
   b) covertly if they are focused.

Both formulations express a dependency between the actual manifestation of the surface position and the role of the NP with respect to the information structure of the sentence.4

However, both of them run into problems if they are expressed in a framework like Principles and Parameters. Let me start with (7): the problem with this formulation is the *unless*-clause. As it appears in the formulation of the constraint, this clause is not more than a description of the facts. Moreover, there is no formalism in the theory that allows for formalizing this type of exception. Therefore, it appears in the theory as a mere stipulation of the facts. In other words, Principles and Parameters does not permit a formalization of dependency between constraints, hence (7) is not a potential satisfactory formulation within this framework.

The *overt/covert* movement distinction provides a way of expressing the *unless*-clause (as in (8)). However, it runs into problems of a different nature. First, it still does not give us the dependency between constraints in an independent way, not allowing the condition on Case to be formulated independently of discourse. Note that this is relevant, since Case is a purely syntactic constraint, which should be defined independently of focus. Likewise, Focus applies over several types of categories, hence it should be defined independently of the definition of

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4 One alternative formulation, which does not spell out the dependencies between principles, is to have a system predicting optionality (e.g. Roberts and Roussou 1997), allowing the different options to express different discourse functions. This type of explanation fails however in explaining the fact that in context neutral sentences (e.g. *what happened*-contexts) arguments appear in the position complying with the purely syntactic constraints (cf. chapter 6).
Case. The conflict/dependency between the two formulations should follow from the coincidence of scope of the two principles.

A second problem with the overt/covert distinction is that it runs into empirical problems. As it stands, the rule in (8) only refers to the focused NP, and not to any other element of the sentence. This is problematic, since as (9) shows (cf. chapter 6) that not only the discourse-role of the NP has to be evaluated, but also the role of the other elements in the sentence:

(9) a Partiu a janela [o Paulo]
   broke the window Paulo

   b [O Paulo partiu a janela]
   Paulo broke the window

In both sentences, Paulo is part of the focus-set of elements. The relevant difference is whether or not the other elements of the sentence are in focus. Now, the constraint formulated in (8) predicts that independently of the discourse-role of the other elements, subjects always stay in Spec,VP if they are focused, since (8) cannot distinguish between Focus on the NP itself and focus on the NP as part of a larger constituent.

Of course, it must be possible to rewrite the constraint in order to ensure that all cases are covered. But again this implies adding complex stipulative conditions to the formulation. Hopefully, this type of complexity can be avoided.

Before showing that the constraint may be kept as simple as possible, let me indicate that there is another problem with it. As it is formulated in (7) or (8), the constraint makes wrong predictions for languages of the English type, since it predicts that subjects in English will stay low, which is obviously not true.

It thus seems that these preliminary formulations are problematic for several reasons:

a) conceptually, they are formulated in a way that may not be formalized within the Principles and Parameter approach;

b) they make wrong predictions within the same language (Portuguese) cross-linguistically (English);
c) attempts to solve this problem by reformulating the constraint seem to add stipulative complexity.

In the next section, I will argue that the assumption that constraints are violable avoids these problems.

4. Formalizing the dependency between constraints

In the previous section, I tried to formulate the work carried out in the previous chapters in terms of inviolable principles and argued that this seems a difficult goal to achieve. This is because the constraints on Case and focus impose conflicting requirements on NPs: namely, focus requires NPs to stay in situ for sentential stress assignment, while Case requires the NPs to move to a case-licensing position.

In the most desirable scenario, the constraint on focus and the constraint on case are to be formulated separately (since there may be Case without focus, and focus without Case).

In this section, I will recapitulate the analysis presented in chapter 5, emphasizing how the analysis proposed follows from the premises of Optimality Theory, and explicitly spelling out the differences between those premises and the approaches not involving violability of constraints.

The constraints on Case and Focus used in chapters 5 and 6 are repeated in (10) and (11):

(10) **CASE:** NPs are licensed at the specifier position of AgrPs
    a   **OBJ-CASE:** nominal objects are licensed in Spec,AgrOP
    b   **SUBJ-CASE:** subjects are licensed in Spec,AgrSP

(11) **ALIGNFOCUS**
    The (prosodically unmarked) focus of the sentence is the rightmost constituent in accordance with the recursivity pattern of the language.

This is the simplest formulation, since each formulation does not refer to
notions that are independent of the constraint itself. This allows for making clear predictions of what a sentence universally would look like if there were no other constraints playing a role.

However, other constraints do interfere, as demonstrated before. If the theory only contained the constraints as defined in (10) and (11), it would clearly make wrong predictions, since it imposes contradictory requirements on NPs and does not state how conflicts are to be solved. In other words, if (10) and (11) would be all, there would be no way to capture the interaction between these constraints.

As crucially emphasized in chapter 1, Optimality Theory is a theory about constraint interaction. The premises of the theory are given in (12) (from McCarthy and Prince 1994):

(12) **Principles of Optimality Theory:**

a. **Universality**: UG provides a set \( C_{or} \) of constraints that are universal and universally present in all grammars.

b. **Violability**: Constraints are violable; but violation is minimal.

c. **Ranking**: The constraints of \( C_{on} \) are ranked on a language-particular basis; the notion of minimal violation is defined in terms of this ranking. A grammar is a ranking of the constraint set.

d. **Inclusiveness**: The constraint hierarchy evaluates a set of candidate analyses that are admitted by general considerations of structural well-formedness.

e. **Parallelism**: Best-satisfaction of the constraint hierarchy is computed over the whole hierarchy and the whole candidate set. There is no serial derivation.

Of these properties, three are crucial for the present discussion: universality, violability and ranking.

### 4.1. Universality.

Universality allows the simplest form of definition of constraints.
This principle states that constraints are universal. They are true for all languages. This differs from parameters in the sense that it makes sure that there is no language-specific setting for a constraint. Whatever constraint is proposed, it has to be general enough to be considered universal. The empirical discussion of the difference between a constraint being high-ranked or a parameter being switched off in a certain language will be discussed in the following section.

4.2. Violability.

Violability is the key for deriving the cases in which the effects of a given constraint are not visible. There is a crucial difference between saying that a constraint is violable and postulating a violation of a constraint for cases in which its effects are not visible. The difference is that, within OT, violation of a constraint is forced upon it for the sake of satisfying a higher ranked constraint. This makes it necessary to examine why each constraint is violated. That is, violability is not a way of encoding the absence of the effects of a constraint, but rather it is a consequence of the fact that constraints interact.

In other words, violability is not free nor stipulated. It is forced upon a constraint by the requirements of another constraint. This is crucial for a comparison between absolute parameters and soft constraints: a positively set parameter must be always active, a violable constraint may be violated only in a given context.

4.3. Ranking.

Finally, ranking determines what constraint has to be satisfied in a given language, and it allows for formalizing the dependency between two given constraints: A cannot be respected because of B.

A criticism often addressed to the idea of ranking is that it is minimally different from rule-ordering, in spite of the fact that OT
eschews serial derivation. However, I believe it can be shown that the difference is quite substantial.

First, rule-ordering presupposes a derivational model of grammar in which the application of a rule determines intermediary outputs on which new rules are applied. Optimality Theory explicitly denies the idea of serial derivation at the moment of evaluation of constraints.

Also, if some rule does not apply in a rule-based approach, it is because of the outcome of the application of the previous rule. In Optimality Theory, constraints are operative at all moments, but violation may be forced. The crucial difference is between vacuous application of rules because of lack of context, or violation being forced by the satisfaction of another constraint. In spite of appearances, this is not a notational variant. The predictions either proposal makes are different.

For clarity, I will demonstrate the differences in detail and check the empirical consequences: Violability is predicted for all languages in which a given ranking applies, since there is explicit conflict between two constraints; rule ordering predicts that the application of a rule is dependent on a specific context, which is possibly the output of another rule. This dependency between rules implies explicit reference to intermediate representations, for which there is little evidence. Take for instance the example given above of the interaction between Case and Focus. If the constraints are taken as violable, the following pattern for Portuguese is obtained: Focus will dominate Case, and given the contradictory requirements of these two constraints, this implies that a representation that satisfies Focus cannot satisfy Case (i.e., the conclusions of chapter 5). This is exemplified in tableau 1, in which only the subject is in focus:

<table>
<thead>
<tr>
<th></th>
<th>Align Focus</th>
<th>Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>SV</td>
<td>*1</td>
<td></td>
</tr>
<tr>
<td>*-VS</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

If constraint ranking and rule ordering were notational variants, the outcome of ordering Focus before Case should be the same. This is not

---

5 This discussion owes a lot to Johan Rooryck.
correct though as (13) illustrates:

(13) Input: V and S
    1. Focus-rule: VS
    2. Case-rule: S, V\textsubscript{1}

Let me explain (13): the input for (13) is constituted by the lexical items. In step (13.1) the rule on focus applies, leaving the subject in the sentence-final position. In (13.2), the rule on Case applies, moving the focused constituent leftwards.

The crucial difference is that rule-ordering, which entails a serial derivation, allows for satisfaction of both rules in some cases. Hence, (13) confirms Prince and Smolensky’s point that rule-ordering and serial derivations are not desirable, and it shows that rule-ordering and constraint ranking are indeed two different notions. The fact that the nature of the constraints is different (i.e. CASE is a syntactic constraint and ALIGNFOCUS is motivated in phonology) provides further evidence that the OT analysis is not a notational variant of rule-ordering, since it would imply satisfaction of a phonology based constraint before surface-structure. In OT terms, the two constraints just impose contradictory requirements on the outputs.

Another difference between rule-ordering and constraint ranking has to do with the predictions the two proposals make with respect to selection of candidates: rule-ordering predicts that if the context for application of a rule is not found, the rule will not be applied. Constraint ranking predicts that if a constraint is not satisfied, because of the structure of a given representation, it is violated once or twice depending on the representation under evaluation. The crucial difference is that multiple violations of one constraint may determine which candidate is grammatical, while non-application of a rule may not express this. This difference is schematically represented below.

<table>
<thead>
<tr>
<th></th>
<th>Constraint A</th>
<th>Constraint B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candidate 1</td>
<td>**</td>
<td></td>
</tr>
</tbody>
</table>
The situation represented in (T2) is the following: the two candidates satisfy the top-ranked constraint, and violate the other constraint twice (recall the discussion of multiple violations of STAY in the analysis of the difference between Object-shift and scrambling). The decision between the two candidates is made by the third violation of Constraint B by candidate 2. Let us now translate this into rule-ordering. Translating ranking into ordering, ranking A over B means ordering A before B. The only way to get multiple violations is to translate each violation into cyclic applications of the same rule. That is, the difference between candidate 1 and candidate 2 is that candidate 2 applies the rule once, and candidate 2 never applies it. This is schematized in (14):

<table>
<thead>
<tr>
<th>(14)</th>
<th>a. Candidate 1: Input</th>
<th>b. Candidate 2: Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rule A: X</td>
<td>Rule A: X</td>
<td></td>
</tr>
<tr>
<td>Rule B: Y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Contrasting (T2) with (14), it is possible to confirm again that constraint ranking and rule-ordering are not interchangeable. First, there is no reason why rule B should not apply in (14b), since the output of rule A is the same for the two candidates. Moreover, if candidate 2 were to be excluded due to the non-application of rule B, this would add complexity to the general mechanism, since in candidate 1 the rule is not applied twice on the same output, and yet this is the winner. In other words, it is not possible to find an equivalent of double violations of constraints in a rule-based system.

Another difference between the two approaches, maybe of a more general nature, is that a constraint-based approach allows for evaluation of each candidate with respect to constraints independently of the evaluation by other constraints. Because it presupposes a generation system, rule-ordering predicts that applications of rules may have to be dependent on the output of other rules, weakening the modularity in the formulation of the constraints.

In conclusion, ranking is a process of formalizing dependency between constraints that is not comparable with rule-ordering, since it only makes sense in a framework in which constraints are violable. As a
result, there should be no confusion between the two types of mechanisms, and the interaction between ranking and violability in the formalization of the dependency between constraints can be explicitly characterized.

4.4. Formalizing dependencies

From the three premises of the theory discussed above, it should be clear why OT offers a principled way to encode/formalize the dependencies between constraints.

Let us assume the constraints CASE and ALIGNFOCUS, as formulated above in (10) and (11). As argued in the previous chapters, these two constraints conflict, in the sense that satisfying one implies violating the other. The interactions between the two constraints come for free within OT, just by means of the three principles discussed above. Universality allows for the formulation of a constraint in the most general way (that is, without including unless-clauses or making special reference to language-particular manifestations of the requirements). Violability expresses the fact that satisfying one constraint yields violation of the other. This has the advantage of keeping the formulation of the constraint to a minimum without adding stipulative machinery to ensure its satisfaction. Ranking provides the two possible ways in which the constraints can be ranked, deriving the possible ways in which structures can be optimized:

(15) ALIGNFOCUS $\rightarrow$ CASE (Portuguese)  
    CASE $\rightarrow$ ALIGNFOCUS (English)

Just by sticking to the basic premises of the theory, it is possible to express the cross-linguistic facts, keeping with the most trivial formulation of the constraints. This contributes to the overall simplicity of the model, a welcome effect.

To conclude, looking at a theory of constraint interaction and accepting its premises makes it possible to understand how constraints relate to each other, and to reduce complexity from the formulation of constraints, keeping each of them to its minimum, independently of the
theory chosen as the basis for the formulation of constraints.

5. Constraint ranking vs. parametrization: empirical tests

At a conceptual level, there is no clear difference between proposing that a constraint is ranked very low or that a given parameter is switched off. In both cases, the effects of the constraint/parameter are not visible.

Parametrization of major differences between languages has been proposed, for instance for the difference between Polysynthetic and non-polysynthetic languages in Baker (1996), or, more relevant for the subject of this dissertation, for the difference between discourse-configurational and non-discourse-configurational languages in E. Kiss (1995).

For instance, for a language like English, it would suffice to propose that the parameter on discourse-configurationality is switched off. Prima facie, such a proposal is not different from stipulating that ALIGNFOCUS is low-ranked in this language, as I did.

This similarity leaves no clear basis for deciding between either analysis. In the remainder of this chapter, I will show that this is an empirical issue.

Let me first establish the basis for the discussion. If the constraint-based approach is on the right track, I need to find evidence for the following cases:

(16)  a. Cases of low-ranked constraints being operative within one language;

b. Cases of high-ranked constraints being violated within one language;

c. Cases of low-ranking of a constraint that is highly ranked in a different language;

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6 See Sandalo (1996), Gronemeyer (1996) and Pensalfini (1996), among others, for discussion of the status of the polysynthesis parameter as a macro-parameter. Gronemeyer (1996) actually provides evidence for the polysynthesis parameter as the result of interaction between several properties.
Comparing frameworks: Parameters vs. Soft Constraints

d. Cases of high-ranking of a constraint that is low-ranked in a different language.

Why are these cases relevant for the discussion? If cases like (16a) are found, it is possible to argue that it is not the case that the effect of a given constraint is just switched off in one language. Rather, its effects are not visible, because of a requirement imposed by a higher ranked constraint.

Cases like (16b) show that it is not the case that one parameter is decisive for all aspects of one language. That is, if instances of violation of one constraint that appears to be top-ranked in one language are found, it is possible to distinguish between a parametric approach, predicting that there will be no case for which there is violability, and the OT-analysis, which predicts that there may always be a context in which a constraint can be violated.7

Cases like (16c,d) will allow to verify the validity of adopting the Optimality-Theoretic approach for language variation.

The next sections will present one empirical example for each case:

(17) a. PPs and adverbs in English will exemplify the situation described in (16a) (section 6)

b. Heavy NP Shift in English and binding effects on focused constituents in Portuguese and Russian will exemplify (16b)(section 7)

c. The reverse effects of binding in Hungarian will provide evidence for (16c) and (16d) (section 8)

Each of the cases to be discussed will hopefully prove the empirical superiority of the OT-approach defended in the previous chapters over a

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7This is a recursive problem, and ultimately, there will always be a top-ranked constraint for every language. The violability of such constraint can only be proven by looking at other grammars.
parametric approach.

6. Operative low-ranked constraints.

6.1. The low-ranking of ALIGNFOCUS in English

In the preceding chapters, I have proposed that the proper description of argument distribution in English requires the following ranking between CASE and ALIGNFOCUS is necessary:

(18) CASE » ALIGNFOCUS

This ranking differs from the one proposed for Portuguese (19), which states that in spite of violations of case, the information status of the constituents will be represented in the structure:

(19) ALIGNFOCUS » CASE

The ranking proposed for English predicts that, independently of the status of NPs with respect to information structure, they will always move to the position where Case is licensed. This captures the fact that English is mainly a non-discourse-configurational language.

6.2. The satisfaction of ALIGNFOCUS by PP complements

In chapter 5, analyzing English, I mentioned on several occasions that PPs are a good test case for the OT-analysis, since they exhibit the effects of ALIGNFOCUS in this language.

In the light of the goal of this chapter, the role played by PPs becomes more evident: their behavior will distinguish between the parametric approach and the OT-approach.

The ranking in (18) and the definition of CASE predict that the only categories that will violate ALIGNFOCUS for the sake of satisfying CASE are NPs, since these are the only categories for which the requirements imposed by CASE are relevant. This allows us to observe
the role of ALIGNFOCUS even in English, a language where this constraint is low-ranked.

Remember that both in Portuguese (20 and 21) and in English (22 and 23), focused PPs stay in situ and defocused PPs scramble to the left of an adverb:

(20) A: Com quem é que o Paulo falou cuidadosamente?
    to whom did Paulo talk carefully?
        Paulo talked carefully with his mother
    b. #O Paulo falou com a mãe cuidadosamente.

(21) A: Como é que o Paulo falou com a mãe?
    How did Paulo talk to his mother
    B: a. #O Paulo falou cuidadosamente com a mãe.
        Paulo talked carefully to his mother
    b. O Paulo falou com a mãe cuidadosamente.
        Paulo talked to his mother carefully

(22) A: Who did John talk carefully to?
    B: a. John talked carefully to his mother.
    b. #John talked to his mother carefully.

(23) A: How did John talk to his mother?
    B: a. #John talked carefully to his mother.
    b. John talked to his mother carefully.

Recall that, in spite of the different rankings, the similarity in behavior of PPs in both languages follows naturally from the analysis proposed in this dissertation: PPs vacuously satisfy CASE. As a consequence, independently of the ranking between CASE and ALIGNFOCUS, it will be possible to satisfy the latter. This is represented in the following tableaux (from chapter 5), in which I will ignore the fact that the subject in Spec,IP satisfies CASE, for the sake of simplicity:

(T3) English (PP is the focus)

<table>
<thead>
<tr>
<th></th>
<th>CASE</th>
<th>ALIGNFOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These tableaux illustrate that ALIGNFOCUS is active. This active nature of ALIGNFOCUS becomes evident whenever the constraints that make its effects invisible are vacuously satisfied. This situation illustrates another case of Emergence of the Unmarked, as discussed in chapter 6.

Crucial for the discussion in this chapter is that the behavior of PPs shows that it is not the case that ALIGNFOCUS is not relevant for English, since English behaves like Portuguese when CASE is not relevant.

The ability to see the effects of a dominated constraint favors the constraint ranking approach over the parametric approach, since it provides evidence in favor of the relative relevance of violable constraints rather than an absolute partition of languages with respect to the activity of a parameter. If the parameter that determines structural sensitivity to the discourse function focus were just switched off in English, its effects should not be visible with PPs.

PP complements in English thus seem to show that ALIGNFOCUS is a violable constraint rather than an irrelevant parameter.

The behavior of PPs provides the first empirical evidence that the
constraint-based approach is superior to the parametric approach.

6.3. English adverbs satisfy ALIGNFOCUS

In chapter 2, the word order variation of adverbs first led me to look at interactions between discourse and syntax.

An analysis was proposed for the distribution and interpretation of adverbs following the framework of Barbiers (1995). The implementation of his model to account for the syntax of adverbs correctly predicted the unmarked position of adverbs. However, at the end of that chapter, I emphasized Frota’s (1992) observation that placing the adverbs in positions not respecting their syntax does not yield ungrammaticality, as long as prosodic markedness is involved.

Below, I repeat the relevant contrasts:

(24) Manner adverb:
   a. John had read the book quickly.
   b. John had run quickly to the end of the track.
   c. *John quickly had run to the end of the track.
   d. John QUICKLY had run to the end of the track.

(25) Subject-oriented adverb:
   a. John cleverly had stolen a car.
   b. *??John had cleverly stolen a car.
   c. John had CLEVERLY stolen a car.

Manner adverbs appear without any problem adjacent to VP (24a,b). If the adverb is adjoined to a high node (IP) the sentence degrades. This is shown in (24c), where the adverb surfaces in the pre-auxiliary position. This position does not lead to absolute ungrammaticality, since the adverb may appear in that position if it is prosodically marked (24d), in accordance with Frota’s observations.

Consider now the paradigm in (25), in which the adverb is a subject-oriented one: the best position for the adverb is the pre-auxiliary one. In chapter 2, I characterized this position as involving adjunction to
TP. The post-auxiliary position is more marked (25b), unless the adverb is prosodically marked (25c).

Since I want to explain this behavior of adverbs in Optimality-theoretical terms, the constraint on the syntax of adverbs must be formulated. Leaving aside the prosodic markedness effects, a formulation of the constraint regulating adverb distribution as in (26) appears to be sufficient:

(26) **ADJACENCY**: Adverbs have to be adjacent to the constituent they lexically modify.

Although, as expected, I will adhere to the analysis of adverb placement presented in chapter 2, I formulate the constraint in these quite general terms in order to keep it compatible with any of the approaches in (27), which have in common the derivation of unmarked positions for adverbs under adjacency:

(27) a  Determining the meaning of the Adverb under adjacency  
  (Ernst 1984)  
  b  Modification under sisterhood (Jackendoff 1972, Travis 1984, Bowers 1993)  
  d  Modification under immediate c-command (Costa 1997, chapter 2, following Barbiers 1995)

There are two reasons for me to formulate the constraint in these quite general terms. First, it reinforces the claim that the format of the constraint is independent of the way it interacts. In other words, adopting an OT-analysis is independent of the type of theory chosen for formulating the constraint. OT only makes predictions concerning the way the constraint interacts (see chapter 1). Secondly, for the purposes of this chapter, it does not really matter what type of theory of adverb placement is chosen, as long as it derives the adjacency effects. I will

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8 As noted in chapter 2, speakers’ judgements vary from markedness to full ungrammaticality. All speakers agree that the pre-auxiliary position is better, if the two positions are contrasted.
adhere to my own analysis, given the arguments presented in chapter 2, but I do not want to create the impression that the conclusions of this chapter depend on that specific analysis. The goal of this section is to show that ALIGNEDOCUS is operative in English. It just happens that the behavior of adverbs exemplifies the operative nature of ALIGNEDOCUS, and so the OT-analysis solves one of the problems of chapter 2. However, to the extent that the problem left unsolved in chapter 2 is common to other theories of adverb placement, the solution to be presented here should be viewed as independent of my own analysis.

The only caveat I must make regarding the generality of the constraint is that some reference to lexical specification is necessary, which makes it incompatible with theories that try to derive meaning from syntactic structure. Under the theory adopted here, this resort to lexical specification should not come as a surprise, since within OT, any syntactic parse is based on an input where lexical information is represented (cf. Grimshaw 1997 and Bresnan 1996).

As mentioned in chapter 2, lexical specification is necessary independently of the format of OT, because of two factors: 1) ambiguous adverbs have a default meaning that can be predicted independently of structure (Ernst 1984); 2) There is cross-linguistic variation with respect to adverb-attachment sites, as the distribution of yesterday vs. ante as (28) and (29) illustrates:

(28) English:
(yesterday) Paul (*yesterday) had (*yesterday) talked (*yesterday10) to his mother (yesterday)

(29) Portuguese:

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* For instance, Frota (1992)'s generalization on the complementarity between syntactic licensing and prosodic markedness is based on Ambar's (1989) analysis of adverb placement.

10 Grammatical if the PP is extraposed.
(ontem) O Paulo (ontem) tinha (ontem) falado (ontem) com a mãe (ontem).
yesterday Paulo yesterday had yesterday talked yesterday with the
teacher (yesterday)

Since the two adverbs have the same meaning in the two languages, the
distribution can not be inferred from meaning nor can the meaning be
deduced from the distribution. In the absence of a better explanation, I
will assume that the attachment site of each adverb is lexically
determined.

These considerations allow us to come back to the debate in
chapter 2 regarding the relation between lexical meaning and syntactic
structure. In chapter 2, I tried to combine Barbiers’ (1995) framework on
the syntactic determination of meanings with Ernst’s (1984) loose-fit theory
of adverb meaning. I proposed that adverbs without a fixed lexical
meaning get preferential interpretations in certain syntactic
configurations. At that stage of this study, I basically claimed that the
syntactic structure determines the meaning of the adverb. The data
considered here on prosodic markedness and marked positions show that
this relation between meaning and structure must be implemented
differently. Adverbs may surface in positions different from where they
should be. This may be reinterpreted in the following terms: the meaning
of adverbs is lexically determined (in the case of ambiguous adverbs,
there are two possible meanings associated with one word, as Ernst
(1984) suggests). Each meaning is parsed in a given syntactic
configuration, as Barbiers’ model predicts. The new assumption I am
making here is that the constraint regulating the mapping of meanings
onto syntactic structures may be violated.

Note that this type of approach still permits keeping the
advantageous part of Ernst’s approach: the reduction of homonymous
adverbs. Adverbs with only one meaning are parsed in one possible way.
Ambiguous adverbs may be mapped onto two different syntactic
structures, depending on the intended meaning.

Returning to the adjacency constraint, by now it should be clear
that this constraint has a crucial property for an OT-analysis: it is violable.
Instances of its violability were given in (24) and (25).
(24) and (25) illustrate the violability of ADJACENCY. However, so far nothing seems to force ADJACENCY not to be satisfied. The first striking fact is that prosodic markedness is involved in all cases of violation of ADJACENCY. Constructing contexts in which violability of ADJACENCY is favored, it can be observed that these are contexts in which focus is involved.

(30) and (31) illustrate the point I am making. I must note that the quality of the data is weak. Speaker’s judgements are not very strong, since there is too much material in these sentences. It is difficult to draw conclusions on the basis of these data. However, all speakers agree that the given context favors the ‘misplacement’ of the adverb. Even those speakers who do not really like (30c) and (31c) report that they are better than (30a) and (31a):

(30) *Manner adverbs:*
   a.  Context: null
       #John SLOWLY had run to the end of the track.
   b.  Context: null
       John had run to the end of the track slowly.
   c.  Context:
       A: John is a loser...How could he possibly get a prize last year? He has done everything slowly...
       B: That’s not true! You’re being unfair. (?)(??) John SLOWLY had written his report. The rest he had done pretty fast!

(31) *Subject-oriented adverbs:*
   a.  Context: null
       #John had STUPIDLY told the news to his mother.
   b.  Context: null
       John carefully had told the news to his mother.
   c.  Context:
Chapter 7

A: John is a monster. His father won the lottery and he knows that his mother’s heart is not very strong. So, it was really stupid of him to tell her the news and take her to the hospital afterwards.

B: That’s not fair. John had STUPIDLY told her the news. But he had VERY THoughtFULLY taken care of all the rest, including taking care of her insurance.

The contrasts in (30) and (31) show that, if the sentences are judged out of context, the unmarked position for adverbs is preferred. The short dialogues in (e) illustrate that the sentences improve if the adverb plus everything that follows it are contrasted with another adverb of the same class and another continuation, and if what precedes the adverb is previously referred material.\footnote{A note on the elicitation of the data is necessary here. I gave speakers the sentences with and without the preceding fragment of discourse and asked them to judge the sentences. For all cases, a sentence was also presented containing an adverb that was not contrasted. In these cases as well, the sentences were dispreferred. As mentioned above, there is some speaker variation with respect to these sentences, but speakers agree that the context favors the marked position for the adverb.}

Recall the definition of focus-set of constituents, based on Reinhart (1995), presented in chapter 4:

(32) **Focus-set of constituents:**
The prosodically most prominent constituent plus everything it e-
commands.

In the study of potential permutations of subject, verb and object done so far, I argued that these permutations take place so the sentence can be interpreted in accordance with (32). In this sense, satisfying the constraint ALIGNFOCUS implies compliance with (32).

The ordering of constituents in (30) and (31) thus follows the requirement in (32). In both cases, the following word order is obtained:

(33) Stressed adverb + new elements,
The adverbs are the contrasted element in this sentence. For instance, in (31), the VPs are contrasted with respect to the adverbs. If that were not the case, and the emphasis were put on the VP, for instance, the adverbs could surface in their unmarked position, as in (34) where the emphasis is put on what John did, rather than on the adverbs).

(34)  A:  John has run away slowly.
     B:  That’s not true. He just entered the house very quickly.

This behavior of adverbs is slightly different from the behavior of other elements under the scope of ALIGNFOCUS. In particular, so far, I had not attempted to explain cases of contrastive focus as consequences of the effects of ALIGNFOCUS. However, since both information focus and this type of contrastive focus involve a rearrangement of word order in order to establish the right focus-set of constituents, I will assume that ALIGNFOCUS is responsible for the distribution of adverbs in the marked cases.

The conclusion therefore seems to be that in English the effects of ALIGNFOCUS undermine the requirements of ADJACENCY. This is summarized in the tableaux below, where two candidates are considered: one with the adverb in the position where it is adjacent to the modified constituent, another one with the adverb in the position where it commands the other new elements. The inputs in (T7) and (T8) do not contain any focus-information leading to vacuous satisfaction of ALIGNFOCUS\(^\text{(12)}\). (T9) and (T10) illustrate cases of contrast:

\(^\text{(12)}\) This oversimplified description needs clarification. Among the unmarked positions for adverbs, sentence-final is the most unmarked:
(i)  John ran to his house quickly.
According to the analysis presented in chapter 2, this implies that there must be VP-movement in the most unmarked case. The analysis presented here offers no explanation to this fact, since I am not considering VP-movement in the candidates under discussion. I believe the explanation has to be found in a detection of inherent focal information of adverbs. That is, since adverbs are optional elements, the best thing to do if they are old information is to leave them out. Hence, whenever they appear in a sentence, they introduce new information. Since they almost necessarily introduce new information, it is expected that the best position for them is sentence-final. In other words, I am trying to suggest that even in unmarked contexts some elements may be more prominent than others with respect to their relevance to the
Chapter 7

(7) Manner adverb, null context:

<table>
<thead>
<tr>
<th>Structure</th>
<th>ALIGNFOCUS</th>
<th>ADJACENCY</th>
</tr>
</thead>
</table>
| \[
\text{IP} \text{ S} \text{ Aux} [\text{VP} \text{ Adv} [\text{VP} ...]]
\] | \textit{via} | *         |
| \[
\text{IP} \text{ S} [\text{IP} \text{ Aux} [\text{VP} ...]]
\] | \textit{via} | *         |

(7) shows that in out-of-the-blue contexts, the adverb may surface adjacent to VP, since no requirement is imposed by ALIGNFOCUS (which is vacuously satisfied).

The same is true for subject-oriented adverbs, with the difference that these adverbs appear adjoined to TP. In (8), the role of ALIGNFOCUS is again irrelevant, hence the constraint on adverb positioning alone will determine the distribution of the adverbs.

(8) Subject-oriented adverb; context: null

<table>
<thead>
<tr>
<th>Structure</th>
<th>ALIGNFOCUS</th>
<th>ADJACENCY</th>
</tr>
</thead>
</table>
| \[
\text{IP} \text{ S} \text{ Aux} [\text{VP} \text{ Adv} [\text{VP} ...]]
\] | \textit{via} | *         |
| \[
\text{IP} \text{ S} [\text{IP} \text{ Aux} [\text{VP} ...]]
\] | \textit{via} | *         |

Consider now cases in which the context is not null: when a manner adverbs is involved, ADJACENCY requires it to surface next to VP. However, for contrast purposes, the adverb should surface in a position where it e-commands the auxiliary and the whole VP. This is done by adjoining the adverb to IP, violating ADJACENCY. This is illustrated in (9):

(9) Manner adverb; context: contrast adverb + auxiliary + VP

<table>
<thead>
<tr>
<th>Structure</th>
<th>ALIGNFOCUS</th>
<th>ADJACENCY</th>
</tr>
</thead>
</table>
| \[
\text{IP} \text{ S} \text{ Aux} [\text{VP} \text{ Adv} [\text{VP} ...]]
\] | *          |           |
| \[
\text{IP} \text{ S} [\text{IP} \text{ Aux} [\text{VP} ...]]
\] | *          |           |

A possible way of solving the conflict between the two constraints would

information structure of the sentence, and that these hierarchies may trigger orderings even in unmarked contexts. Exploring this hypothesis is well beyond the scope of this work. For now, it is enough to note the contrast between adjacent and non-adjacent adverbs, ignoring further distinctions.
be to propose that the adverb is indeed generated in the VP-joined position, but that it is moved to the IP-joined position, because of focus. At a previous stage of the derivation, the ADJACENCY constraint would therefore be satisfied.\(^{13}\)

However, such a solution may be disconfirmed. The case of subject-oriented adverbs provides evidence in favor of the analysis defended here. It is possible to create contexts in which the adverb surfaces lower than the position where it should be for complying with ADJACENCY, as we have seen above. In order to ensure satisfaction of ADJACENCY by movement, one would have to assume some kind of lowering operation, in order to move the adverb from the IP-joined position to the VP-joined position. Since this type of operation is generally assumed to be impossible, I take it that the movement analysis cannot be the solution for this problem, and will therefore adhere to the proposal made above. The analysis of subject-oriented adverbs is represented in (T10):

\(\text{(T10) Subject-oriented adverb; context: contrast everything but the subject and auxiliary}\)

<table>
<thead>
<tr>
<th>Structure</th>
<th>ALIGNFOCUS</th>
<th>ADJACENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\text{[IP, } S \text{ Aux [VP Adv [VP ...]]]})</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>(\text{[IP, } S \text{ Aux [IP, Aux [VP ...]]]})</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

In (T10), I propose that, in spite of the violation of ADJACENCY, the low position for the subject-oriented adverb is optimal, since it does not violate the higher ranked constraint ALIGNFOCUS.

Summing up, I have presented in this section a case of a low-ranked constraint being operative in a specific domain. As proposed before, ALIGNFOCUS is low ranked in English, as opposed to Portuguese. Nevertheless, its effects are not just absent. When the behavior of adverbs is examined, ALIGNFOCUS arguably does play a role. This is therefore superior to a parameter-based approach in which some version of ALIGNFOCUS would simply be switched off in

\(^{13}\) Analyzes involving movement of certain adverbs have been proposed by Cinque (1995) among others.
English. As a result, such an approach would have no principled explanation for the facts in which adverbs and prosodic markedness are involved.

6.4. Conclusion.

To conclude, the behavior of PPs and adverbs differentiates the theoretical status of a low-ranked constraint and a [-parameter], though in different ways:

a) The effects of ALIGNFOCUS are visible in the distribution of PPs, since this category is not affected by the constraint dominating ALIGNFOCUS;

b) The effects of ALIGNFOCUS are visible in the distribution of adverbs, since this constraint is ranked higher than the one conditioning adverb syntax.

In both cases, an analysis in which low-ranked ALIGNFOCUS is treated as a [-discourse-configurational] parameter does not predict the observed effects, since the setting of a parameter is not supposed to vary depending on the category involved.

7. Violable high-ranked constraints.

In this section, two cases of violability of high ranked constraints will be presented:

a) The violability of CASE in English;

b) The violability of ALIGNFOCUS in Portuguese.

The relevance of these cases for the present discussion is to show that, in spite of the apparent obligatory compliance with these constraints, there are contexts in which their violation is forced. This behavior constitutes strong support for proposals that consider these constraints to be
violable like any other constraint.

7.1. Violation of CASE in English through weight effects.

In chapter 5, I compared Portuguese and English and argued that a proper analysis of the behavior of English arguments requires a high ranking of CASE, since the effects of this constraint are very strong in this language. I argued that discourse effects may not force a violation of CASE. One may wonder whether this means that CASE is to be taken as an absolute constraint. In this section, I will claim that weight effects may force a violation of CASE in English, in the context of Heavy NP Shift.

Heavy NP Shift (HNPS) in English is the process by which an NP is moved rightwards across an adverb. This is illustrated in (35b):

\[(35)\]
\[
\begin{align*}
    a & \quad \text{He read all the books written by his favorite author yesterday.} \\
    b & \quad \text{He read yesterday all the books written by his favorite author.}
\end{align*}
\]

As the name of the phenomenon indicates the crucial property that makes the NP shift is its weight: the NP must be heavy. This explains why (36) is bad:

\[(36)\] *He read yesterday books.

Given this dependency between heaviness and syntactic position, some authors propose that the condition for HNPS is to be identified in phonology. Following this line of research, Zec and Inkelas (1990) have proposed that HNPS may only occur if the NP contains at least two phonological phrases. Rochemont (1990) and Zubizarreta (1995) note that heavy stress on the NP also licenses HNPS:

\[(37)\] He read yesterday some BOOKS.

Crucial for the argument I am developing is that the adjacency between
the verb and object discussed in chapter 2 may be broken if weight is involved.

As Guasti and Nespor (1997) correctly observe, the constraint making heavy NPs shift is not the same constraint that makes focused constituents stay in the rightmost position in Romance, since the interpretations that arise are different: Heavy NP Shift triggers contrastive focus readings, while the effects of ALIGNFOCUS give rise to information focus. The distinction made by Guasti and Nespor (1997) is important. Only when it is observed that the type of focus on the shifted NP is different from information focus is it possible to differentiate a constraint I will call WEIGHT from ALIGNFOCUS.

I will assume that the constraint on HNPS is not ALIGNFOCUS and that this constraint is ranked higher than CASE in English. Since the constraint crucially involves weight, I will call it WEIGHT and define it as follows:

(38) WEIGHT: Adjoin heavy object NPs to the right of V/CP.

For the mechanism underlying the effects of the constraint WEIGHT see Zec and Inkelas (1990), Frotz and Vigário (1996), Guasti and Nespor (1997) among others for phonological analyses, and Rochemont and Culicover (1990) and Larson (1988) among others for a syntactic analysis of HNPS.\(^{14}\)

The hypothesis that, in Heavy NP Shift constructions, the effects of WEIGHT force a violation of CASE is summarized in (T11):\(^{15}\)

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\(^{14}\) Of course, ranking WEIGHT over CASE may trigger the same type of question again: is WEIGHT to be considered a violable constraint? That is, are there any instances of violability of this constraint? The absence of HNPS in Dutch and German may indicate that this constraint is indeed to be treated as a violable constraint as well:

\(^{15}\) The following assumptions have to be made for the relevant reading of the tableau: the sentence is to be judged out of context, and there is no focus on the adverb. Focus on the adverb might make it heavy (by virtue of bearing heavy stress), allowing it to satisfy WEIGHT, and the Heavy NP to satisfy CASE. This is maybe the context in which non-shifted heavy NPs are acceptable.
According to (T11), a construction with a shifted Heavy NP is better than one in which the NP is moved to a case position, because of the effects of WEIGHT.

This constitutes a case in which the violability of CASE becomes visible in English, reinforcing the claim that CASE is to be taken as violable constraint rather than a hard parameter in English. If this analysis is correct, it also demonstrates that top-ranking one constraint is by no means a notational variant of assuming it to be inviolable.

An alternative derivational analysis would be able to make sure that the two constraints are satisfied: in a first step, the NP would move to Spec,AgrOP satisfying CASE; after that, it would be rightward moved, satisfying WEIGHT. The basic assumption of such a proposal would be that CASE is satisfied at an intermediate level of representation. This alternative analysis may be contrasted with the OT-approach.

If the NP were moved to Spec,AgrOP and then rightwards, it is expected that HNPS displays properties of A- and A-bar movement. It is known that there is an asymmetry in English between NP-movement and A-bar movement with respect to licensing of floating quantifiers.\footnote{That this asymmetry is not universal was shown in chapter 3, following McCloskey (1995) and Doetjes (1992) among others.} (39) and (40) illustrate this contrast:

(39) The books were all read by John.

(40) *Which boys did all come to the party?

If object movement to Spec,AgrOP exists in English, as argued in chapter 2, floating quantifiers should surface after the objects. Recall that, in chapter 2, I refuted Sportiche’s view on floating quantifiers, according
to which floating quantifiers are stranded in the base position of extracted NPs. I presented some arguments in favor of the view that floating quantifiers are adverbs (following Doetjes 1992, 1997). Irrespective of the actual position in which floating quantifiers are generated, their relevance for this section is whether they can be used as a diagnostic for the presence of A-movement. In other words, I claim that floating quantifiers are adjuncts, but, in English, they only surface in A-movement environments.

In chapter 2, I showed that floating quantifiers may follow nominal complements. However, this is only true if the floating quantifier does not stand alone: it must be phonologically dependent on something else or it bear a heavy stress. This is shown in (41):

(41)  a. *I read the books all.
     b. I read the books ALL.
     c. I read the books all very quickly.

HNPS does not license floating quantifiers:

(42)  *I read all yesterday the books recommended by the professor.

This is true even if the floating quantifier may phrase with the adverb following it:

(43)  *I read all very quickly the books that the professor recommended.

Under the derivational approach, nothing would prevent the trace of the NP in Spec,AgrOP from licensing the floating quantifier. This would be done in the first step of the derivation. Within the OT analysis, the ungrammaticality of (43) has to do with the fact that the violation of CASE involves the non-existence of the configuration under which the floating quantifier is licensed.

The lack of movement to Spec,AgrOP, as attested by the non-licensing of floating quantifiers provides evidence for the OT-analysis defended here: a violation of CASE is forced by weight effects. This is important to distinguish the OT-analysis for Case from an analysis defending the position that Case is not violable at all in a language like
Comparing frameworks: Parameters vs. Soft Constraints

English.

7.2. The violability of ALIGNFOCUS in Portuguese.

Another case showing the superiority of the constraint-based approach over the parametric approach is the fact that ALIGNFOCUS, which is always top-ranked in Portuguese in the cases discussed above, appears to be violable in Portuguese when it interacts with binding. Consider the following question-answer pairs:

(44) A: A quem é que deste o livro?
to whom did you give the book
B: Dei o livro [_, ao Paulo]
(1) gave the book to Paulo.
#Dei ao Paulo o livro.

(45) A: O que é que deste ao Paulo?
what did you give to Paulo
B: Dei ao Paulo [_ o livro],
(1) gave to Paulo the book
#Dei o livro ao Paulo.

The sentences above show that the usual word order pattern emerges with complements of ditransitive verbs. The focused constituent is the rightmost one: if the focus is on the indirect object, the word order is V DO IO (cf. 44). If the focus is on the direct object, the word order will be V IO DO (cf. 47). This is just an effect of the constraint ALIGNFOCUS. Leaving the focus in a position that is not rightmost yields an infelicitous answer, unless a pause is added between the two complements.

Consider now the following sentences:

\footnote{See also Nespor and Guasti (1997) for an analysis of focus effects on ditransitive verbs.}
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(46) A: A quem é que deste os livros?
   to whom did you give the books?
B: Dei [a cada autor] o seu livro.
   (I) gave to each author his book.
   >/Dei o seu livro a cada autor.
   (I) gave his book to each author

(47) A: O que é que deste aos autores?
   what did you give to the authors
B: Dei [a cada livro] ao seu autor.
   (I) gave each book to its author
   >/Dei ao seu autor cada livro.
   (I) gave to its author each book

The sentences in (46) and (47) differ from the ones presented before in that the focused constituent does not appear in the rightmost position. The crucial difference between the two cases is in the type of constituent involved. The Indirect Object in (46) and the Direct object in (47) not only function as foci in the sentences, but also are the antecedent for an anaphor contained in the non-focused constituent.

This behavior of complements of ditransitive verbs may be explained in the following terms: complements of ditransitives obey the constraint on focus-alignment, unless they have to bind an anaphor contained in a non-focused constituent. In that case, establishing surface c-command is more important than obeying the constraint on focus.

This behavior of complements of ditransitives proves two points:

a) Like in English, ALIGNFOCUS is a violable constraint in Portuguese. More specifically, it can be violated if the focus constituent has to c-command an anaphor. That is, the constraint of binding theory that requires bindees to be c-commanded (call it C-COMMAND) dominates ALIGNFOCUS in Portuguese.  

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18 I am calling this constraint C-COMMAND to make sure it is descriptive enough to explain its effects, and general enough not to be compromised with a particular version of Binding Theory. The name of the constraint should not be confused with a
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b) The behavior of complements of ditransitive verbs constitutes evidence for a representational view of the conflict between ALIGNFOCUS and syntactic constraints over a derivational approach according to which constraints would be satisfied at different steps of the derivation. This is because ALIGNFOCUS has been defined in prosodic terms. Accordingly, its effects must be visible at the phonological level of the grammar. Hence, it cannot be the case that the focused constituent has occupied the position where it satisfies ALIGNFOCUS before the visible surface position. This would imply compliance with a phonological constraint at an invisible level of derivation.

The analysis of the behavior of the complements of ditransitive verbs is presented in the following tableaux:

(T12) Input: V(x, y, z), Focus = y, z = anaphoric

<table>
<thead>
<tr>
<th></th>
<th>C-COMMAND</th>
<th>ALIGNFOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>V DO IO</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>V IO DO</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

(T12) represents the case of focus on a direct object that has to bind into the indirect object. The order V IO DO is dispreferred, even though it does not violate ALIGNFOCUS.

(T13) represents the case of focus on an indirect object that scopes over a direct object for binding purposes. Here the pattern is the reverse.

(T13) Input: V(x, y, z), Focus = z, y = anaphoric

<table>
<thead>
<tr>
<th></th>
<th>C-COMMAND</th>
<th>ALIGNFOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>V DO IO</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>eV IO DO</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

Proposal in which the configuration c-command is violable. As in any other approach, the configuration exists independently of the specific uses. For instance, the same configuration is relevant for the definition of ADJACENCY. In this context, C-COMMAND just appears as a constraint stating that anaphors must be c-commanded by their antecedents.
(T14) and (T15) illustrate a case in which no anaphoric form is involved, making C-COMMAND vacuously satisfied. (T14) contrasts with (T12), (T15) contrasts with (T13):

(T14) Input: V(x,y,z), Focus= y

<table>
<thead>
<tr>
<th>C-COMMAND</th>
<th>ALIGNFOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>V DO IO</td>
<td>vac</td>
</tr>
<tr>
<td>eÄ V IO DO</td>
<td>vac</td>
</tr>
</tbody>
</table>

(T15) Input: V(x,y,z), Focus= z

<table>
<thead>
<tr>
<th>C-COMMAND</th>
<th>ALIGNFOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>eÄ V DO IO</td>
<td>vac</td>
</tr>
<tr>
<td>V IO DO</td>
<td>vac</td>
</tr>
</tbody>
</table>

Summing up, the data in which binding interacts with focus seem to constitute evidence for the claim that ALIGNFOCUS is violable in Portuguese.

The conclusions drawn from the violability of ALIGNFOCUS in Portuguese, together with the conclusions on Heavy NP Shift in English, constitute conclusive tests for differentiating a constraint-based approach from a parametric approach. Only the constraint-based approach is able to predict that violability of a constraint may be uncovered by looking at new contexts. This is where a top-ranked constraint crucially differs from a positively set parameter.

8. C-COMMAND and ALIGNFOCUS: reverse ranking in Hungarian.

Further evidence for the OT-analysis of the interaction between binding and focus comes from the fact that the c-command requirement is not necessarily satisfied in other languages. This is exemplified by the Hungarian examples in (48):
(48) (from É. Kiss 1995):
  a  Ma bemutattam minden diákr, a pro, témavezetőjének.
      today introduced-I every student-ACC the his advisor-DAT
  b  Ma bemutattam a pro, témavezetőjének minden diákr.

(49) (from É. Kiss 1995):
  a  Elhozta minden anya, a pro, gyerekét.
      brought every mother-NOM the her child-ACC
  b  Elhozta a pro, gyerekét minden anya.

In (48b) and (49b), the pronominal forms are not c-commanded by their antecedents.

As referred to in chapter 4, É. Kiss (1996) notes that information foci are always rightmost in Hungarian. It is then legitimate to suppose that the rightmost constituents in (48) and (49) are information foci. In other words, this means that ALIGNFOCUS is operative in Hungarian.

Putting together these observations, it is possible to suppose that the distribution of the arguments in (48) and (49) is the result of C-COMMAND being able to be violated for the sake of satisfying ALIGNFOCUS. Independently of the presence of anaphors, foci are rightmost. In terms of ranking of the two constraints involved, this would mean that Hungarian has the reverse ranking of Portuguese:

(50) ALIGNFOCUS » C-COMMAND

The reverse effects on binding in Hungarian provide some further evidence for the OT-approach developed here. On the one hand, Hungarian and Portuguese are alike, since in both languages precedence or c-command are necessary for establishing binding relations. Given the strict order of quantifiers in Hungarian in the preverbal domain studied by Szabócsk (1997) among others, it may not be claimed that C-COMMAND is irrelevant for Hungarian. Also, according to Kiss (1996), information focus is rightmost in Hungarian, just like described for Portuguese in the preceding chapters. The only difference between the two languages arises when the two constraints conflict. Hungarian has a constraint ranking favoring the configuration satisfying Focus, while
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Portuguese has a constraint ranking favoring the configuration which conforms to the binding requirement. The OT approach allows for explaining the regular patterns in equal terms (when there is only binding or only focus), and predicts that there may be differences in output in cases of conflict.

This analysis is simpler than an approach stipulating that reconstruction is a mechanism available only in Hungarian, and not in Portuguese. Such an approach would not explain why a given mechanism is only available in one of the languages. The way I explained the difference between the two languages, however, follows from one of the premises of the theory.

This analysis also allows for an alternative view on Kiss's proposal on the structure of VP in Hungarian. It does not make it necessary to propose that VP is flat in this language. The flat–VP analysis was motivated by the binding data. Since order is irrelevant to establish binding, E. Kiss proposed that there is mutual e-command between all VP-constituents as a consequence of the flat structure of VP. The postulation of a special type of VP structure for Hungarian is not necessary, if the OT approach is correct. VPs may have the same structure in Portuguese and Hungarian. Reverse binding effects arise because C-COMMAND is violable.


In the previous section, I have proposed that there is a constraint on binding, which, as any other constraint in OT, is violable. This implies that the relevant configuration for binding is not established, when its effects are undermined by the effects of a higher ranked constraint, as is the case in Hungarian.

A non-trivial issue raised by type of analysis is the following: if the

---

19 Kiss (1991,1995) discusses other factors intervening in binding in Hungarian: besides e-command, thematic hierarchy also seems to play a role. I am abstracting away from this further distinction for the sake of simplicity.
binding interpretation does not arise from a given structural relation, how is binding established under this theory? The data discussed above show that c-command is relevant for binding in both languages. This is attested for Portuguese by the fact that binding forces a violation of ALIGNFOCUS, and for Hungarian by the strict order of constituents in the preverbal domain. As mentioned above, the type of framework adopted cannot claim that reconstruction at LF is an option in Hungarian but not in Portuguese, since this would require postulating that some operation is not universally available. Such a postulation goes against the principle of Universality, a premise in Optimality Theory. On the other hand, reconstruction seems to be available in Portuguese. Reconstruction effects are visible in sentences where a moved wh-phrase contains an anaphor. This is illustrated in (51):

(51) Que fotografia de si, é que o Paulo, comprou?
which photo of SE Paulo bought
"Which picture of himself did Paul buy?"

Further evidence that reconstruction at LF should not be invoked as a universal solution for cases in which the surface c-command configuration is not established comes from Turkish. The distribution of information focus is discussed in Kural (1992). He shows that focused constituents surface in the rightmost position to the left of the verb. This is what is expected from the algorithm discussed in chapter 4, since Turkish is a head-final language. Crucial for the discussion of this chapter, like in Portuguese, focused constituents never reconstruct for binding purposes:

(52) (from Kural 1992):
   a  Adamlar, birbirlerini, görmüş
      man-plr-agr each other-agr-acc see-pst-agr
      "The men saw each other"
   b  *Birbirlerini, adamlar, s, görmüş
      co-agr-acc     man-plr-agr see-pst-agr

Kural (1992) suggests that the impossibility of reconstructing the object into the base position at LF has to do with the fact that focus must be
identified relationally. That is, a constituent is identified as focused because of its ordering relation with the other constituents of the sentence. If the order is altered, the interpretation of focus changes. This description is quite similar to the description made for Portuguese in the preceding chapters of this dissertation. It seems, thus, that the behavior of focused constituents also falls within the scope of ALIGNFOCUS, since this constraint refers to relative position in a sentence (rightmost).

Like in Portuguese, it cannot be argued that reconstruction is just unavailable in Turkish. Kural shows that a non-focused element may reconstruct:

(53) (from Kural 1992):
   a  Adamlar, birbirlerini, dün görmüş
      man-plr-agr each other-agr-acc yesterday see-pst-agr
      “The men saw each other”
   b  Birbirlerini, adamlar, tı, dün görmüş
      co-agr-acc man-plr-agr yesterday see-pst-agr

The difference between (53b) and (52b) is that the focused constituent in the former is the adverb dün/yesterday. In other words, in this case, binding and focus do not conflict.

Note that I am using the Turkish data as an argument to exclude reconstruction as an option to analyze Hungarian. I must point out, however, that the Turkish pattern does not follow from the OT account presented here. According to the analysis presented above for the contrast between Hungarian and Portuguese, if the antecedent of an anaphor is focused, either a sentence with a rightmost anaphor and a focus in the ‘wrong’ position (vis-à-vis Portuguese) or a sentence with the antecedent in the rightmost position not respecting e-command should be optimal. However, in Turkish, no optimal output arises: if the antecedent does not e-command the anaphor, the sentence is ungrammatical; if the antecedent does e-command the anaphor, it cannot be interpreted as focus. Nevertheless, the Turkish data show that reconstruction does not necessarily go together with focus.20

\[20\] See also Kennelly (1997) for further arguments to this effect in Turkish.
From the discussion above, it is possible to conclude that reconstruction may not be used as a mechanism to ensure the binding readings in the languages where surface c-command is not obtained.

I would like to suggest that a potential way to solve this problem can be found theory internally. So far, I have been more or less neutral about the role played by the Input in the theory. I referred its importance in connection to the problem of determining the meaning of adverbs, and basically presented it as a list of information concerning argument structure, information structure, and other types of information (tense, aspect, scope, etc).

This view on the input is also assumed in Grimshaw (1997), Legendre et alii (1995) among others. In these works inputs consist of more or less unstructured lists of semantic information that need to be parsed in a syntactic structure.

For instance, in Legendre et alii (1995), the Universal input for a direct object question is the one in (54):

(54) (from Legendre et alii (1995)):
[Q, [...wh,...]]

From this input, several outputs can be generated, depending on the specific language-particular ranking of the constraints:

(55) (from Legendre et alii (1995)):

a [Q, [...wh,...]]
b [wh, [...t,...]]
c <Q> [...DP/<wh>...]

Similarly, in Grimshaw and Samek-Lodovici (1995) from the input in (56), the structures in (57) (among others) may be generated:

(56) (from Grimshaw and Samek-Lodovici (1995)):
<sing(x), x=topic, x=he>, Tense=present perfect

(57)
a [ip has sung]
b [ip he has [t, sung]]
c [ip has [t, sung] he]
Given the similarity of topics addressed in Grimshaw and Samek-Lodovici and in this work, I adopted their type of input structure without questioning it.

Bresnan (1996) proposes a notational variant of the input structure in (56), according to which the input to be analysed/parsed is a set of lexical heads and an f-structure (in LFG terms) relating the lexical heads to each other. For instance, for the sentence in (58), the input would be (59):

(58) Who did John see?

(59) (from Bresnan 1996):
\[
\begin{align*}
&\text{PRED} \ '\text{see}(x,y)' \\
&\text{GF}_1 \ [\text{"John"}], \\
&\text{GF}_2 \ [\text{"who"}], \\
&\text{TNS} \ '\text{past}'
\end{align*}
\]

In spite of the differences between all these input representations, they all have one thing in common: they contain the lexical and semantic information to be parsed in the syntactic analysis. This implies that this information is independent of the specific syntactic structure where it is found. That is, thematic relations, tense information, information structure are not interpreted because of a given syntactic configuration.

The T-model of the grammar (Chomsky 1986) assumes that the level of non-lexical semantic information (LF) is post-syntactic. That is, semantics interprets syntactic structures. Semantic information is a consequence of the syntactic configuration. The OT-system forces the reverse view on the problem: semantic information is represented in the input, and must be parsed in a specific syntactic configuration. That is, syntax is a projection of semantic information. Comparing the two models, this means that LF has to be represented in the input. This is a point stressed in Legendre et alii (1995).

Let us consider a specific example: in the cases discussed above, focused elements are not interpreted as focus just because they are rightmost in the sentence. Instead, given the input specification, elements that constitute the focus of the sentence have to be rightmost. The
advantage of this approach is that it makes sure that foci that are not right-aligned (e.g. English subjects) are still interpreted as foci.

Under this view, a post-syntactic LF is not necessary in OT-syntax, since it would duplicate the information of the input.\(^{21}\)

Considering the relation between binding and c-command, a similar conclusion may be drawn. If the input contains semantic information, co-reference is established in the input. Such a relation has to be represented in the syntactic structure under c-command. The only difference between the OT approach and other approaches is that the c-command requirement is not obligatorily met, since it is violable.

The constraint on c-command operates then as a correspondence rule between the input and the syntactic structure. A similar view on the relation between co-referent meanings and syntactic structures is presented in Jackendoff (1997).

Jackendoff (1997) argues that a definition of binding in syntactic terms is not sufficient, since structurally similar sentences may express binding or not, depending on whether or not a binding relation is established in some level of conceptual structure.\(^{22}\) A clear example of this is given in the following contrast:

(60) (from Jackendoff 1997):

\textit{Context:} Ringo Starr is walking through the Wax Museum and comes across the statues of the Beatles. Ringo stumbles and falls on one of the statues, in fact

\textbf{Ringo falls on himself.}

(61) (from Jackendoff 1997):

\textit{Context:} Ringo Starr is walking through the Wax Museum and comes across the statues of the Beatles. I stumble and bump against two of the statues so that John falls on the floor, and

\(^{21}\) Similar conclusions regarding the duplication of information at LF were reached in chapter 4.

\(^{22}\) See also Rooryck and Vanden Wyngaard (1998) for observations on the relevance of semantic types of antecedents for establishment of binding.
*Ringo falls on himself.*

Jackendoff points out that there is no syntactic difference between the two sentences. Yet, binding is possible in (60) but not in (61). Jackendoff argues on the basis of these examples that compliance to a given syntactic requirement is not sufficient to establish whether there is binding or not. He argues for another level of representation (*conceptual structure*) where the binding relation is established.

The argumentation of Jackendoff is important for the discussion of the status of binding in the analysis I am developing. The data discussed show that a co-reference reading is not dependent on syntactic structure only. The role Jackendoff attributes to conceptual structures is parallel to the role I am attributing to the input: it is a level where semantic information is represented which is independent of syntactic structure. Jackendoff's argument is the reverse of the my proposal for Hungarian: in Hungarian, I suggested that there may be binding without a syntactic structure. In Jackendoff's examples, there is no binding independently of the fact that the relevant syntactic configuration is met. Crucially, both cases show that co-reference and the syntactic parse of co-reference exist independently of one another.

Note that nothing in this discussion hinges on the exact representation of the input structure. The input may be formalized in any formula where the binding relation between elements is expressed without syntactic e-command. This can be done in many formalisms: LFG as in Bresnan (1996); the representations given in Grimshaw (1997) and in Grimshaw and Samek-Lodovici (1995); or formulas of the type presented in the work of Categorial Grammar where binding is established in the surface structure, like in Steedman (1996), etc. In other words, any monostratal semantic model where co-reference relations may be established may be adopted for representing the input.

Summing up, the argument that ALIGNFOCUS is violable based on the interaction with a constraint on binding does not predict that, when C-COMMAND is violated, binding is not established. In this system, binding is done independently of the syntactic configuration. The constraint C-COMMAND imposes conditions on how to represent the
10. Conclusion.

The goal of this chapter was to provide a comparison between the Optimality-theoretical analysis developed before and a parametric approach based on inviolable constraints. Comparisons between approaches are important not only to decide on the empirical superiority of one over the other but also to determine to what extent the two approaches exclude each other or may be combined.

In this chapter, I have made the following claims:

✓ Accepting the descriptions of chapters 2-4, the definitions of CASE and FOCUS have similar scopes. The Principles and Parameters framework does not have a formalism to express this dependency between two principles.

✓ The way CASE and ALIGNFOCUS interact follows from three of the premises of Optimality Theory: universality, violability and ranking.

✓ I argued that proving the efficiency of a constraint-based approach requires finding:
   a) Cases of operative low-ranked constraints;
   b) Cases of violated high-ranked constraints;
   c) Cases of low-ranking of a constraint that is highly ranked in a different language;
   d) Cases of high-ranking of a constraint that is low-ranked in a different language.

✓ The behavior of prepositional complements in English shows that ALIGNFOCUS is operative in this language, in spite of its low-ranking.

✓ The interactions between prosody and syntax described in chapter 2 could finally be accounted for. I argued that a constraint on adverb syntax (ADJACENCY) is ranked lower than ALIGNFOCUS. Accordingly, the effects of ALIGNFOCUS are visible in the
distribution of adverbs.

✓ The operative nature of ALIGNFOCUS differentiates between a constraint-based approach and a parametric approach stipulating that English is [-discourse-configuration].

✓ Heavy NP Shift in English forces a violation of CASE. This proves that CASE in English is not necessarily satisfied, as a parametric approach would predict.

✓ ALIGNFOCUS is violated in Portuguese, in spite of its high-ranking. This is visible when focus and binding interact, conditioning the distribution of the complements of ditransitive verbs. The violability of ALIGNFOCUS is not predicted by a parametric approach, stipulating that Portuguese is [+discourse-configuration].

✓ The reverse ranking between the constraint on binding and ALIGNFOCUS may explain the reconstruction effects in Hungarian.

✓ The violability of binding constraints enables some clarification about the role of the input in this framework. If meaning is not conditioned by syntax alone, it must be represented somewhere else. I argued, following classical Optimality-theoretical syntax, that all semantic information must be represented in the input, regardless of the formalism adopted to express it.

One aspect of the comparison between approaches made here is that I would like to emphasize is that OT appears to be conceptually and empirically superior to a parametric approach, just because I have been looking at cases in which there is a conflict between different principles. This however does not mean that all of parametric theory must be dispensed with. In fact, comparison between the two models was only possible because I used many of the mechanisms of the Principles and Parameters theory for the definition of the constraints.

By comparing the frameworks, I was able to come back to the problem left unsolved in chapter 2 of how prosody and syntax interact in regulating the distribution of adverbs. This shows that comparison of frameworks is important not only from a conceptual perspective but also empirically.

I hope to have shown in this chapter that at least in some domains Optimality Theory is superior to a parametric approach, since it provides
a clear way of formalizing dependencies between principles, and since it
is possible to find evidence for the violability of certain constraints.
8 Summary and conclusions


In this dissertation, I have investigated several manifestations of word order variation, attempting to propose an analysis that would not resort to optionality in the grammar. The leading idea has been that free variation does not exist: it arises from the tension between conflicting syntactic and discourse-related constraints. Such conflicts follow from formalisms in which violability of constraints is adopted, such as Optimality Theory (Prince and Smolensky 1993).

In chapter 2, I discussed the behavior of certain adverbs. I argued that a proper identification of the surface position of arguments requires that not all adverbs be taken as diagnostic. More particularly, I claimed that monosyllabic adverbs are a reliable mark of the left edge of VP. Accordingly, elements appearing to their right may be analyzed as VP-internal, while elements appearing to their left may be claimed to be in a VP-external position. Taking monosyllabic adverbs as an indication for the left-edge of VP, I provided evidence for Pesetsky’s (1989) claim that nominal complements in English obligatorily move out of VP to a Case-licensing position (Spec,AgrOP). I contrasted the distribution of verbs, nominal complements and adverbs in English with their counterparts in French and Portuguese, and argued that V moves to the highest functional projection in French (AgrS), undergoes short-verb-movement in Portuguese (to T), and moves to the first functional projection dominating AgrOP in English. For the argument based on monosyllabic adverbs to work out, it is crucial that these adverbs are not right-adjointed. In itself, this looks like a stipulation. In the second part of this chapter, I provided empirical arguments based on the distribution of manner and subject-oriented adverbs for a ban on right-adjunction for adverbs in general. This claim makes it possible to undermine the apparently exceptional behavior of monosyllabic adverbs, and at the same time reduces some of the optionality traditionally assumed to exist in the
syntax of adverbs. The arguments against right-adjunction were based on interpretive asymmetries between sentence-medial and sentence-final positions for ambiguous adverbs. If right-adjunction were permitted, there is no reason for the meaning of adverbs to differ depending on whether the adverb is left- or right-adjoined. To derive the apparent right-adjunction effects, I adopted Barbiers' (1995) model for the relation between configurations and meaning. In his framework, right-adjunction is not permitted, and qualification or modification relations are syntactically represented under immediate c-command between the modifiers and the modifieds. I demonstrated that applying Barbiers' framework could derive the unmarked positions for adverbs: subject-oriented adverbs appear adjoined to TP, while manner adverbs appear adjoined to VP. In this chapter, I did not provide an explanation for cases in which adverbs appear outside of their licensing position. This is possible, provided that adverbs are prosodically marked (Frota 1992).

The link between word order variation and prosody was further explored in chapter 3. In this chapter, I described the distribution of arguments (more specifically, subject and object) in simple declarative sentences. I claimed that postverbal subjects are in Spec,VP in Portuguese. Preverbal subjects were argued to be in Spec,IP (=Spec,AgrSP), following Ambar (1992) and Duarte (1987). This analysis involving movement to Spec,IP was compared to Barbosa's (1995) alternative approach, according to which preverbal subjects are left-dislocated. I provided arguments against such a view. Data were presented showing that the option between leaving the subject in Spec,VP or moving it to Spec,IP is not free. The position of the subject is contingent on its discourse-function. If the subject yields new information, it stays in Spec,VP (except if the whole sentence introduces new information). If it yields old information, it may move to Spec,IP. New information and old information were referred to in terms of \textit{focus} and \textit{topic}, respectively. The correlation between syntactic positions was established following Reinhart's (1995) claim that topicalization is a syntactic operation, while focus marking must be done in the phonological component of the grammar. Accordingly, the correlation between the postverbal position and focus interpretation follows from algorithms on sentence stress assignment determining that rightmost elements receive default stress (Nespor and Vogel 1986). When V and, in the appropriate context, its complement move out of VP, a subject left behind in Spec,VP is rightmost, receiving sentence neutral stress. Also in
chapter 3, the behavior of objects was investigated. I argued that, like in
the case of subjects, the free distribution of objects is only apparent. Two
cases of postverbal objects were studied in detail: pre-adverbial position
and post-adverbial position. Based on a comparison with Dutch and
German, I suggested that the pre-adverbial position involves leftward
scrambling of the complement, creating a configuration in which the
object is left-adjoined to VP. Complements in pre-adverbial position have
properties similar to those of scrambled complements in Germanic. I
followed Vikner’s (1994) distinction between scrambling as A-bar
movement and object-shift as A-movement. The latter is attested
obligatorily in English and ‘optionally’ in Icelandic. It was demonstrated
that scrambling is also discourse-conditioned, following Reinhart’s (1995)
suggestions. Focused objects stay in their base-position, to the right of
adverbs left-adjoined to VP, where they receive sentence nuclear stress.
Objects scramble to escape sentence stress and to allow adverbs to be in
the position where stress is assigned. The existence of scrambling in
Portuguese is important, since it falsifies the idea that this construction is
characteristic of OV languages. This phenomenon also shows the
uniform behavior of arguments in Portuguese: they may optionally move
out of their base-position. This option is however discourse-conditioned.
Portuguese thus appears to be a discourse-configurational language.
The conclusions of this chapter allowed for the formulation of several cross-
linguistic questions. An explanation needed to be sought for why the
option of leaving arguments in their base-position is available in
Portuguese, Dutch and Icelandic, but not in English. Moreover, it
remained to be explained why scrambling and object-shift are in
complementary distribution.

In chapter 4, I clarified my assumptions regarding the
representation of focus. In the previous chapter, it was proposed that the
reason for constituents to stay in VP-internal positions was to be
rightmost and receive the sentence nuclear stress, enabling them to be
interpreted as new information. This is a prosodic view on focus. In the
literature, there are several proposals regarding a syntactic representation
of focus. According to most of these proposals, focused constituents
move (overtly or covertly) to the specifier position of a left-peripheral
discourse-related functional projection. For a language like Portuguese,
assuming the description offered in chapter 3, such a view requires that
focused constituents move to this functional projection covertly. In this
chapter, I contrasted the two hypotheses, and argued that the analysis
involving movement is conceptually superfluous and empirically inadequate. First, the analysis was shown to be conceptually superfluous. As described in chapter 3, there are several word order rearrangements taking place for the sake of identifying and defining the focus set of constituents of a sentence. These operations must take place overtly, since they are done in compliance with a prosodically defined algorithm. If the reason for moving constituents to a left-peripheral projection is the identification of focus, this operation is redundant. It will just duplicate the process of identifying new information already established in overt syntax. The movement analysis for focused constituents also proved to be inadequate empirically. On the basis of the description made in chapter 3, it was argued that c-command between the prosodically most prominent element in the sentence, and the other constituents is relevant for the identification of the focus set of constituents. LF-movement of the focused constituents would undo the c-command configuration created overtly. Cases of alleged overt focus-movement were discarded as potential evidence for the LF-movement approach. The discourse function of proposed elements is radically different from the function of in-situ focused elements. The results of this chapter were important to clarify the notion of focus, and to strengthen the idea that focused elements in a language like Portuguese do stay in their base-position. If that were not the case, there would be alternative analyses of the distribution of focus, involving no conflict with the requirement that makes NPs move to case-licensing positions. Only under the assumption that focused constituents must stay in their base position at all putative levels of representation does it make sense to invoke an Optimality-theoretical analysis for the interaction between Case and focus. If that were not the case, there would be no conflict between the requirement for focused constituents to be rightmost and for NPs to be moved leftwards.

In chapter 5, I formalized the conflicts between Case and Focus within the framework of Optimality Theory. It was claimed that, in a discourse-configurational language like Portuguese, the constraint regulating the distribution of focused elements (named ALIGNFOCUS, after Grimshaw and Samek-Lodovici 1995,1996) is ranked higher than the constraint stating that NPs license Case in designated positions. For English, where subjects always surface in Spec,IP, I proposed the reverse ranking (CASE >> ALIGNFOCUS). The same rankings predict the uniform behavior of nominal complements in both languages: in English,
they obligatorily move to Spec,AgrOP; in Portuguese, they may stay in their base position when focused. The difference between scrambling and object-shift was explained based on the conflict between CASE, ALIGNFOCUS and a constraint on economy of movement (STAY). I proposed that languages where ALIGNFOCUS is dominant may exhibit two patterns of object-movement, depending on the relative ranking of the other two constraints. If CASE outranks STAY, objects will be A-moved to AgrOP when not focused. If STAY outranks CASE, objects will be scrambled, adjoining to VP. The former grammar predicts the behavior described for Icelandic, while the latter predicts the behavior described for Portuguese and Dutch. The grammar in which CASE dominates the other two constraints predicts that nominal complements move obligatorily to Spec,AgrOP, independently of the ranking between the two dominated constraints. This accurately derives the behavior of English objects described in chapter 2. The OT-analysis appears to solve some of the issues left unresolved in chapter 2-4. It provides an account for cross-linguistic variation without language-specific changes in the formulation of the principles. It explains why discourse-configurationality or the apparent free word order variation is not applicable in English. Crucially, OT provides a formalism for formalizing the dependencies between Case and focus described in the previous chapters. It permits expressing the fact that these two constraints impose contradictory requirements on a single output, because of a coincidence of scope in their definitions: ALIGNFOCUS applies to phrases and CASE applies to Noun Phrases.

In chapter 6, I extended the analysis presented in chapter 5 to other languages. The goal of the work developed in this chapter was twofold. First, it showed the efficiency of the type of analysis developed by deriving other word order factors. Second, it was designed to explain cross-linguistic variation in unmarked contexts. I argued that variation at the base followed from one of the crucial distinguishing factors between Optimality Theory and other frameworks: the Emergence of the Unmarked (McCarthy and Prince 1994). I argued that in sentence-focus contexts, ALIGNFOCUS is satisfied by any word order, provided that stress falls on the rightmost constituent. This predicts that the role played by the dominated constraints in this context is crucial for the selection of optimal candidates. Accordingly, the difference between SVO unmarked word order, exemplified by Portuguese and a variety of Spanish, and VSO unmarked word order, exemplified by Greek and another variety of
Spanish, was determined by the role played by the constraints dominated by ALIGNFOCUS. I proposed that an SVO language is a language where SUBJ-CASE, requiring NPs to move to Spec,IP, is ranked higher than STAY, requiring representations to be economical. The reverse ranking, STAY >> SUBJ-CASE predicts that subjects stay in Spec,VP. The same rankings together with an independently motivated constraint on the structural position of topics (TOP-FIRST) predict that, in SVO languages, subjects move to Spec,IP, while in VSO languages they are left-dislocated. This difference between the two types of languages allowed for testing the explanatory power of OT as a theory of language variation. A minimal difference between two genetically related languages was explained under a minimal reranking of constraints. Since OT predicts that cross-linguistic variation is a consequence of different rankings of a constant set of constraints, this is a desirable result. The same claim that unmarked word orders emerge whenever ALIGNFOCUS and TOP-FIRST are vacuously satisfied permitted deriving the SVO word order of Italian. The difference between Italian and Portuguese is that VSO is not permitted in the former. Postverbal subjects only appear in VOS orders. This difference between the two languages was also explained under a minimal reranking of constraints. I followed recent claims in the literature that complements in Italian obligatorily move to Spec,AgrOP, like English complements. In terms of ranking of the constraints at play, this means that, in English and Italian, OBJ-CASE is ranked higher than ALIGNFOCUS. This result was a first step toward demonstrating that discourse-configurationality may not be defined in absolute terms. There may be violations of the discourse-related constraints even in languages where the distribution of arguments is generally discourse-conditioned. The discussion of Portuguese, Spanish, Greek and Italian allowed for checking the proposal made in the previous chapter that discourse-configurationality arises in languages where discourse-related constraints dominate syntactic constraints. The corollary of this prediction is that rigid word orders arise in languages where syntactic constraints outrank the discourse-related constraints. This accounts for the rigid word order in English. The validity of this analysis was checked in other languages with rigid word orders. I looked at the obligatory VOS word order in Malagasy and assumed that the structure of VOS in this language is similar to VOS in Italian: the subject is VP-internal and the object obligatorily moves to Spec,AgrOP. The difference between the two languages is that in Malagasy, independently of context, subjects never move out of VP. This difference was captured
in the following terms: like in English, the discourse-related constraints are low-ranked and OBJ-CASE is ranked higher than STAY. This forces object-movement to Spec,AgrOP. Like in Greek and Spanish B, STAY outranks SUBJ-CASE, ruling out candidates involving movement of the subject to Spec,IP. Another obligatory word order looked at was VSO in Celtic. As in English and Malagasy, discourse-related constraints are low-ranked in Celtic. The grammar of Celtic differs from that of Malagasy in that objects do not move out of VP. The results obtained in this chapter are crucial as a test for the main hypothesis of the dissertation. They show that the type of analysis defended here is powerful enough to cover a wide range of language types. Moreover, the analysis in terms of Emergence of the Unmarked provides a formal answer to the question as to why there is cross-linguistic variation of unmarked word orders: it is a consequence of conflicts between different types of syntactic constraints.

In chapter 7, I compared the OT analysis developed throughout the dissertation with a parametric approach to the same type of problem. A comparison of frameworks is necessary for the evaluation of new analyses. I established criteria to differentiate a top-ranked constraint from a positively set parameter and a low-ranked constraint from a negatively set parameter. Cases that provide evidence for such a differentiation include operative low-ranked constraints (i.e. additional cases of Emergence of the Unmarked); instances of violation of high-ranked constraints; and instances of reverse rankings for proposed grammars. The case of operative low-ranked constraints was illustrated by two phenomena: the distribution of PP complements in English, and the interaction between syntax and prosody in the distribution of adverbs discussed at the end of chapter 2. PP complements in English scramble when not in focus and are stranded in their base position when in focus. This is similar to the behavior of all types of complements in e.g. Portuguese. In terms of our analysis, this means that PPs in English satisfy ALIGNFOCUS, a low-ranked constraint. This behavior is expected since CASE is the constraint forcing the violation of ALIGNFOCUS in English. Since CASE does not interfere with PPs, this category is distributed in accordance with the requirements of ALIGNFOCUS. The effects of ALIGNFOCUS in English are also visible in the distribution of adverbs. In chapter 2, I presented Frota’s (1992) observation that adverbs may appear outside their domain of modification, provided that they bear a heavy stress. This observation was finally explained in chapter 7. The constraint on adverb syntax called
SUMMARY AND CONCLUSIONS

ADJACENCY is ranked below ALIGNFOCUS. Hence, if discourse favors the misplacement of the adverb, ADJACENCY is violated, and the effects of ALIGNFOCUS are visible. These results permit distinguishing between the approach treating ALIGNFOCUS as a violable, low-ranked constraint in English and a parametric approach stating that English is [-discourse-configurational]. If the latter approach were correct, discourse-configurationality should never emerge, independently of the category or construction at stake. The case of a violated high-ranked constraint was also illustrated by two other cases. I claimed that English Heavy NP Shift is a construction which involves violation of CASE, in spite of the high-ranking of this constraint in English. I proposed that the constraint responsible for the extraposition of heavy material is ranked higher than CASE. This proposal was compared to a derivational one, according to which the NP would have passed through Spec,AgOP before extraposition. Evidence from floating quantifiers disconfirmed this hypothesis. The behavior of Heavy NP Shift in English thus distinguishes the OT view on Case from an approach stating that Case is an absolute constraint in English. The second case illustrating the violability of a high-ranked constraint concerns the distribution of complements of ditransitive verbs in Portuguese. In the regular cases, complements of ditransitive verbs are distributed in accordance with ALIGNFOCUS: the focused complement is rightmost. However, I showed that a violation of ALIGNFOCUS arises if the focused complement must bind an anaphor contained in the other complement. The emerging word order is the one in which the binder c-commands the anaphor. This behavior is not predicted in a grammar that would simply state that Portuguese is [+discourse-configurational]. The reverse case of this situation was exemplified by the distribution of postverbal elements in Hungarian. Following the work of Kiss (1996), it seems that Hungarian focused constituents are rightmost independently of binding into the other complement. I suggested that this difference between Portuguese and Hungarian may be captured under different rankings of two constraints: ALIGNFOCUS and C-COMMAND. This account is superior to an approach stipulating either that VP is flat in Hungarian or that reconstruction is a legitimate mechanism to obtain binding in Hungarian but not in Portuguese. The discussion of the violability of the syntactic configuration for binding allowed me to be more precise about the role of the input in Optimality Theory. If binding readings may not be read off the syntactic structure, they must be represented somewhere else in the grammar. In OT-syntax, the input is
Chapter 8

assumed to contain all the lexical and semantic information to be parsed syntactically. If that is the case, binding relations may also be expressed in the input. This makes a post-syntactic semantic level superfluous. The comparison between frameworks developed in this chapter enabled not only establishing criteria for comparison between two competing views on cross-linguistic variation, but also to show some empirical domains for which Optimality Theory is superior.

2. Further issues.

At the end of this dissertation, I would like to discuss some of the issues left unsolved and indicate potential directions for future research.

2.1. Functional projections in OT.

Throughout the dissertation, I have resorted to functional projections as landing sites for arguments and adjunction sites for some adverbs. For instance, I claimed that nominal objects in English always move to Spec,AgrOP, and subjects in Portuguese, Spanish A and English move to Spec,AgrOP. I also proposed that subject-oriented adverbs adjoin to TP in the unmarked case.

In the debate of whether objects move to Spec,AgrOP or not, I suggested that scrambling configurations arise when STAY outranks OBJ-CASE. A representation involving adjunction to VP rather movement to Spec,AgrOP is more economical, because AgrOP is not projected. This analysis implicitly assumes that functional structure is only projected when necessary. However, this assumption was not formalized.

Functional projections play an important role in syntactic theory to provide landing sites for material moved from within VP, especially since Pollock (1989). Since Pollock’s work, there have been many different proposals regarding the exact nature of functional projections, resorting to a wide variety of functional projections to derive several word order phenomena. However, few attempts provide a universal theory of functional projections. Grimshaw (1991) and Cinque (1997) are examples of such attempts. These two approaches are however radically different. Grimshaw proposes that functional projections are extensions of the lexical projections. They do not have an autonomous status, and are only projected if a given syntactic constraint requires it. This type of approach
explains why a verb may head any projection above VP: the functional projections above VP are just extended projections of VP, hence V may head them, in compliance with the principles of X-bar theory. Cinque (1997) proposes a universal clause structure, according to which the functional structure of the clause is constant and universal. According to this proposal, functional categories are always projected. This type of analysis predicts a universal order of adverbs and auxiliary verbs and particles.

In chapter 2, I argued that adverbs provide evidence against the idea that functional structure is always projected. As the contrast between (1a) and (1b) illustrates, adjunction of adverbs is favored by the presence of lexical heads:

(1) a. ?John cleverly had nicely talked quickly to his mother.
   b. *John cleverly nicely quickly talked to his mother.

The contrast in (1) seems to indicate that adjunction sites are dependent on the existence of a lexical head. This is difficult to capture in a framework predicting that all functional projections are uniformly present. If that were the case, the adjunction sites would be available. Under Grimshaw’s view on functional projections, this type of data follows. Functional categories are only projected when strictly necessary. If there are auxiliary verbs in the sentence, they must head a projection, creating an adjunction site for adverbs. If there are no lexical heads, no structure is created, precluding adjunction.

Since I did not investigate the nature of V-movement within Optimality Theory throughout the dissertation, I decided to assume landing sites for verbs in the functional domain without questioning the need of projecting all the structure. Also, I adhered to an Agr-based theory of Case, which made it impossible to translate each of the Agr categories into an extended projection of V. For this reason, I was not able to integrate a formalization of the view on functional projections defended here, and was limited to mentioning it in the discussion of scrambling vs. object-shift. I would nevertheless like to present a potential direction of research for achieving a formalization of this problem.

Optimality Theory assumes that input structures are mapped onto output structures. The relation between inputs and outputs is regulated by markedness constraints and faithfulness constraints (McCarthy and Prince 1994). In phonology, faithfulness constraints are used to penalize
deletions and insertions, for instance. Faithfulness constraints in syntax are not used very often, since the structure of the input is not as clear as in phonology.\footnote{See however Keer and Bakovic 1997 for work on faithfulness constraints in syntax.} I would like to suggest that the projection of functional structure is penalized by input-output faithfulness. If, following Grimshaw (1991), functional projections do not have autonomous existence, and are just a consequence of the need to create landing sites for moved items, functional categories will not be represented in the input. They will just be represented in the output structure for the sake of satisfying structural constraints. In this sense, any time functional structure projects, a violation of FAITH occurs. In a language where subjects must move to Spec,IP, FAITH will be violated for the sake of satisfying Subj-CASE. This is illustrated in (T1):

\begin{center}
\begin{tabular}{l|c|c}
 & SUBj-CASE & FAITH \\
\hline
a. \[\text{Spec} S \rightarrow [\text{VP} t_k V O] \] & & * \\
b. \[\text{VP} S V O \] & *! \\
\end{tabular}
\end{center}

A candidate containing empty functional structure would fatally violate FAITH. This is illustrated in (T2), where a candidate with an additional layer of functional structure is added:

\begin{center}
\begin{tabular}{l|c|c}
 & SUBj-CASE & FAITH \\
\hline
a. \[\text{Spec} S \rightarrow [\text{VP} t_k V O] \] & * \\
b. \[\text{VP} S V O \] & *! \\
c. \[\text{Spec} [\text{VP} S \rightarrow [\text{VP} t_k V O]] \] & **! \\
\end{tabular}
\end{center}

Languages in which FAITH is top-ranked would correspond to languages in which there is no movement of syntactic constituents. This may be the case of polysynthetic languages, as suggested by Bresnan (1996).

Faithfulness constraints in OT thus provide a formalism to express the ban on projection of unnecessary functional structure. In a formalism without constraints on the identity between underlying and surface forms, this formalization does not follow as naturally from the premises of the theory.
A verification of the hypothesis of formalization I am suggesting here implies a reevaluation of the format of the constraints I have assumed, and an identification of the contexts in which specific functional projections are active (see Gonçalves 1997, in preparation). For this hypothesis to work out, no reference to specific functional projections may be made.

2.2. The universal nature of ALIGNFOCUS.

In investigating the interactions between focus and Case, I assumed that information focus must always be right-aligned. This followed from an algorithm on sentence stress assignment. Ladd (1996) and Frola (in preparation), among others, show that focus may be represented in several ways in different languages. Crucially, not all languages display sensitivity to the rightmost position. This is not a problem for the analysis I proposed, since the constraint seems to be operative in the languages I studied. Moreover, it is predicted by Optimality Theory that effects of ALIGNFOCUS are invisible in other languages if higher ranked constraints undermine its effects.

However, it is an interesting research question to incorporate into the type of analysis developed here finer distinctions between types of focus assignment, and between different algorithms for assigning stress. I mentioned occasionally that some lexical categories are more likely to yield new information than others. In future research, it would be worthwhile to investigate a proper characterization of the constraints at play in identifying focus. As in chapter 7, it could be demonstrated that the several types of constraints identified are operative and violable within the same language. In Samek-Lodovici (1998), mixed patterns of focus alignment are studied investigating the interaction between rightmost focus with other focus-alignment constraints. Given the focus put on the syntactic characterization of the several word orders in this work, I decided to leave a finer characterization of the constraints on focus for future research.

Another important issue that I have not addressed systematically is whether information focus may be combined with other types of focus. That this is the case is explicitly argued in Ambar (1998), who shows that some focused elements may be preverbal:

(2)   A: Quem comeu o bolo?
who ate the cake
B: O Paulo comeu... (os outros não sei).
Paulo ate the other I don’t know

The answer in (2) is legitimate, but it does not only yield new information. It implies that nothing is asserted about the other elements which might constitute answers to the question. Ambar’s data show that information focus may surface in positions other than sentence-final position. This was also demonstrated in chapter 7 for the interactions between focus and binding. An interesting research question is to develop a set of tests permitting identify mixed discourse functions and try to define the constraints responsible for each function and relative rankings between them. For instance, the constraint responsible for movement of the subject in (2) is higher ranked than ALIGNFOCUS, otherwise the subject would stay in Spec, VP. A proper characterization of the constraint forcing this movement is called for.

2.3. LF in OT.

At several stages of the work developed here, I suggested that LF as a post-syntactic level was unnecessary. I argued that covert movement of focused constituents was empirically inadequate in chapter 4. It was also claimed that the c-command constraint on binding is a constraint on the representation of meaning expressed in the input (chapter 7). Importantly, adopting the idea that constraints are violable makes it possible to eliminate LF-movement. For instance, it is not necessary to move subjects to Spec,IP covertly in a theory accepting the violability of the requirement forcing subjects to move. In short, I argued at several points that, within OT, meaning is expressed in the input. This raises the question as to whether LF as a post-syntactic level is necessary in a theory like OT. The question does not arise for models postulating an independent semantic level where meaning is expressed. Such a semantic level is necessary for formalizing the input within OT. Future research on this issue may go into two different directions. On the one hand, it must be demonstrated that post-syntactic LF representations are compatible with an Optimality-theoretical view of the grammar. This implies evaluating competing LF-representations with viable constraints. This type of work is carried out by Pesetsky (1997). On the other hand, the sufficiency of surface structures for determining meaning must be
demonstrated. This requires comparative work on languages where Quantifier Raising applies overtly, like Hungarian (Szabolcsi 1997), and languages where it does not, determining what constraints force quantifiers not to raise in the latter. It further implies providing alternative explanations for subjacency and ECP effects in structures without overt movement (cf. May 1985, Huang 1982). Only a comparison of the results of these two types of work will make it possible to decide whether LF is redundant within OT. If the redundancy of LF proves true, OT may be seen as another mechanism to formalize the idea defended in Barbiers (1995) that syntax creates structures associated with a given meaning.
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Samenvatting in het Nederlands

In dit proefschrift worden een aantal aspecten van variatie in constituentenvolgorde onderzocht. Betoogd wordt dat deze variatie in en tussen talen in veel gevallen begrepen kan worden als het resultaat van de wisselwerking tussen syntactische condities en discourse-condities. Deze wisselwerking wordt in dit proefschrift geformaliseerd met het theoretische apparaat van de Optimaliteitstheorie (OT; Prince and Smolensky 1993).

Het onderzoek begint met de syntactische distributie van adverbia, omdat adverbia een betrekkelijk vrije distributie hebben. In hoofdstuk 2 geef ik, op basis van de distributie van monosyllabische adverbia, een aantal argumenten tegen de analyse van Pollock (1989). Volgens die analyse is er in het Engels geen V-verplaatsing en evenmin overte objectverplaatsing. Ik vergelijk de landingsplaats van V-verplaatsing in verschillende talen en concluder op grond daarvan dat het Engels en het Portugees korte V-verplaatsing hebben. Het Engels heeft bovendien verplichte overte verplaatsing van nominale objecten naar Spec,AgrOP. Monosyllabische adverbia leveren een betrouwbare test voor het optreden van V-verplaatsing, omdat hun distributie aan sterkere beperkingen onderhevig is dan die van andere adverbia. Een opmerkelijk eigenschap van monosyllabische adverbia is dat zij kennelijk niet rechts geadjugeerd kunnen worden. Ik verklar dit met behulp van de aanname dat adverbia nooit rechts geadjugeerd kunnen worden. Argumenten die deze aanname ondersteunen zijn gebaseerd op interpretatieve asymmetriëën bij adverbia die ambigu zijn tussen een subject-georiënteerde en een hoedanigheidslezing. De effecten van schijnbare

De relatie tussen prosodische gmerkteerdheid en constituentenvolgorde wordt nader onderzocht in hoofdstuk 3. In dit hoofdstuk staat de schijnbaar vrije constituentenvolgorde in het Europees Portugees centraal. In deze taal zijn de volgende volgordelen van subject, object en werkwoord grammaticaal: VSO, VSO, VOS, OSV en OVS. Ik beargumenteer dat in de volgorden met subject-werkoord inversie het subject in zijn basisposie blijft, Spec,VP. Preverbale subjecten staan daarentegen in Spec,IP. Deze twee conclusies vormen samen een serieus probleem voor analyses waarin de positie van het subject verklaard wordt met behulp van sterke en zwakke kenmerken. Het verschil tussen VSO en VOS wordt geanalyseerd als het gevolg van object scrambling; in de VOS-volgorde wordt het object over het subject heen naar links verplaatst. De argumenten voor deze analyse zijn gebaseerd op overeenkomsten tussen het Portugees en Germaanse talen die zichtbare object scrambling hebben. Ik laat zien dat scrambling in het Portugees A-bar verplaatsing is; het object eindigt als adjunct aan VP.


De identificatie van constituenten in focus in prosodische termen, en het verband tussen zinsfinale positie en focus roept een aantal vragen
op met betrekking tot bestaande theorieën over de syntactische representatie van gefocuste constituenten. Sinds Chomsky (1976) en Brody (1990) wordt vaak aangenomen dat gefocuste constituenten gelicenseerd moeten worden in een specifieke syntactische positie, veelal in de linkerperiferie van de zin. Het licensiëren van gefocuste constituenten kan in de overte en in de coverte syntaxis gebeuren. Als een dergelijke analyse juist zou zijn voor het type focus dat centraal staat in deze dissertatie, informatiefocus, dan zou dit een probleem zijn voor de resultaten in hoofdstuk 3, want de strikte relatie tussen focus en zinsfinale positie gaat zo verloren. In het Portugees zou een constituent met focus in situ op LF moeten verplaatsen naar een positie waar focus gelicenseerd wordt. Hoofdstuk 4 evalueert een dergelijke hypothese. Op grond van de distributie van gefocuste constituenten in het Portugees wordt betoogd dat identificatie van de verzameling constituenten in focus (de focus set) de enige drijfveer voor herschikking is. Voorts wordt betoogd dat c-commanderen in de overte structuur een noodzakelijk voorwaarde is voor de identificatie van focus. Verschillende denkbare representaties worden besproken die het resultaat zijn van LF-verplaatsing. Ik laat zien dat in deze representaties de configuraties vernietigd worden die gecreëerd waren ter identificatie van de focus set. Voorts wordt betoogd dat LF-verplaatsing voor de identificatie van focus een oneconomische operatie is, omdat focus reeds correct geïdentificeerd is in de overte syntaxis. Focus-constructies in het Portugees die wel eens geanalyseerd zijn als vooropplaatsing zijn niet relevant, omdat deze een andere interpretatie hebben. Ook de relevantie van overte focusverplaatsing in het Hongaars wordt ter discussie gesteld, in navolging van Kiss (1996). Volgens Kiss moet overte focusverplaatsing in het Hongaars vergeleken worden met elef-constructies in andere talen, niet met focus in situ.

Het verschil tussen talen met een flexibele constituentenvolgorde en talen waarin de constituentenvolgorde constant is ongeacht de discourse-context vraagt om een nadere verklaring. Evenzo moet de onderlinge afhankelijkheid van de syntactische structuur en de discourse-context, zoals beschreven in de hoofdstukken 3 en 4, nog verklard worden. In hoofdstuk 5 wordt een analyse voor deze twee problemen voorgesteld in een OT-kader. De keuze voor dit theoretische kader
berust op de observatie dat een syntactische constituent onderhevig kan zijn aan tegengestelde eisen: casus dwingt linkswaartse verplaatsing van NP af, maar focus dwingt NP naar een zo rechts mogelijke positie. OT is een theorie over tegenstrijdige eisen (constraints) en biedt een oplossing voor dit typen conflicten zonder verdere stipulaties. Het verschil tussen het Engels en het Portugees volgt uit de onderlinge rangschikking van de constraints CASE en ALIGNFOCUS. In het Engels is CASE hoger gerangschikt dan ALIGNFOCUS. Dit verklaart de verplichte verplaatsing van constitutuinen in het Engels. De contextafhankelijkheid van constitutuinenvolgorde in het Portugees is het gevolg van een hogere rangschikking van ALIGNFOCUS. Drie patronen van distributie van nominale constitutuinen worden vergeleken: verplichte verplaatsing (Engels), A-verplaatsing om aan focus te ontsnappen (IJslands), of adjunctie aan VP om aan focus te ontsnappen (Portugees/Nederlands). Deze drie patronen volgen uit de mogelijke rangschikkingen van de constraints CASE, ALIGNFOCUS, en STAY, een constraint die zegt dat niet verplaatsen economischer is en daarom de voorkeur verdient boven wel verplaatsen.

Hoofdstuk 6 gaat over de vraag waarom talen van elkaar verschillen in constitutuinenvolgorde in ongemarkeerde contexten, als alle constitutuinen in focus zijn. De verklaring die ik hiervoor geef is dat in zo'n geval alle kandidaten gelijkwaardig voldoen aan de discourse-constraints, zodat de syntactische constraints de constitutuinenvolgorde geheel bepalen. Met andere woorden, dit is een verklaring in termen van het uit OT bekende begrip Emergence of the Unmarked. Het verschil tussen SVO-talen (Portugees, Spaans A) en VSO-talen (Grieks, Spaans B) wordt verklaard met behulp van de rangschikking van de constraints STAY en SUBJ-CASE. In SVO-talen is casus belangrijker dan een economische representatie, terwijl in VSO-talen een economische representatie belangrijker is. Deze spanning tussen STAY en SUBJ-CASE heeft gevolgen voor de representatie voor preverbale subjecten in de twee taalgroepen. Voor SVO-talen voorspelt de rangorde SUBJ-CASE » STAY dat preverbale subjecten in Spec,IP staan. Voor VSO-talen voorspelt de omgekeerde rangorde STAY » SUBJ-CASE dat preverbale subjecten links-gedislokeerd zijn. Dat VSO onmogelijk is in het Italiaans wordt uitgelegd als een gevolg van verplichte verplaatsing van het object naar
Spec, AgrOP. Voor verplichte woordvolgordepatronen zoals VSO in Keltische talen en VOS in het Malagasy geef ik een tentatieve verklaring.

Conform de resultaten voor het Engels in het vorige hoofdstuk zouden deze patronen het gevolg kunnen zijn van een lage rangschikking van discourse-constraints. Samengevat: dit hoofdstuk geeft antwoord op de vraag waarom er variatie is op ongemarkeerd niveau, en formaliseert het onderscheid tussen ongemarkeerdheid en universaliteit.

In hoofdstuk 7 worden twee theoretische kaders expliciet met elkaar vergeleken in relatie tot de problemen die in dit proefschrift worden besproken. De OT-benadering wordt vergeleken met de parametrische benadering. De OT-benadering blijkt superieur, want er zijn gevallen waarin een hoog gerangschikte constraint schendbaar is (Heavy NP Shift in het Engels, en Focus-schendingen in het Portugese; die Focus-schendingen zijn nodig omdat in het Portugese de op grond van bindingstheorie vereiste c-commandeerrelaties op oppervlaktestructuur gerealiseerd moeten zijn). Als een hoog gerangschikte constraint hetzelfde zou zijn als een parameter met een positieve waarde, zouden we niet verwachten dat dergelijke gevallen konden bestaan. Verder zijn er, in overeenstemming met hoofdstuk 6, gevallen waarin laag gerangschikte constraints zichtbare gevolgen hebben. FOCUS heeft zichtbare gevolgen voor de beregeling van de distributie van adverbia in het Engels (hetgeen een formalisering mogelijk maakt van de wisselwerking tussen focus en syntaxis besproken in hoofdstuk 2). Soortgelijke effecten van de FOCUS-constraint zijn zichtbaar in de distributie van prepositionele complementen. Als deze constraint hetzelfde zou zijn als een parameter met een negatieve waarde zouden we niet verwachten er ooit consequenties van te kunnen waarnemen.

In dit laatste hoofdstuk wordt ook verduidelijkt welke rol OT kan spelen. Het is geen alternatief voor bestaande theorieën, maar een mechanisme om te bepalen hoe onnauwkeurig gemotiveerde principes met elkaar interageren. De voorgestelde specifieke criteria om theoretische kaders met elkaar te vergelijken kunnen helpen bij het nemen van theoretische beslissingen over concurrerende analyses en de compatibiliteit van theoretische kaders.
Resumo em português

Esta dissertação trata alguns fenómenos de variação de ordem de palavras. Defende-se que, em vários casos, a opcionalidade na ordem de palavras encontrada dentro de uma só língua reflecte uma interacção entre princípios de natureza sintáctica e princípios de natureza discursiva. Esta interacção é formalizada em Teoria da Optimidade (Prince e Smolensky, 1993).

A distribuição dos advérbios, categoria com uma distribuição bastante livre, é o ponto de partida deste trabalho. No capítulo 2, são apresentados argumentos com base na distribuição de advérbios monossilábicos contra a análise de Pollock (1989), segundo a qual, em inglês, não existe quer movimento do verbo quer movimento visível dos complementos nominais. Através de uma comparação de várias línguas, relativamente a potenciais locais de poiso para o verbo, é proposto que o inglês e o português sejam línguas com movimento do verbo para uma projecção funcional intermédia e que, em inglês, os complementos nominais sejam obrigatoriamente movidos para Spec,AgrOP. Os advérbios monossilábicos constituem um teste conclusivo sobre a existência de movimento do verbo, dado que a sua distribuição é bastante mais restrita do que a de outros advérbios. Um aspecto peculiar da distribuição deste tipo de advérbios é a aparente impossibilidade de serem adjungidos à direita. De forma a excluir esta peculiaridade desta subclasse de palavras, é proposto que a adjunção à direita seja impossível para todos os advérbios. Os argumentos para a exclusão de adjunção à direita são baseados em assimetrias de interpretação na distribuição de advérbios ambiguos entre leituras de modo e orientação para o sujeito. Os efeitos
de adjunção à direita são derivados através de movimento para a esquerda do advérbio dos constituintes por ele modificados, numa implementação do modelo de Barbiers (1995), de acordo com o qual movimento pode ser motivado pela necessidade de criar estruturas interpretáveis. No final deste capítulo, é notado, de acordo com observações de Frota (1992), que algumas das posições de advérbios preditas agramaticais pela análise sintáctica não o são, desde que os advérbios sejam marcados prosodicamente.

A relação entre marcação prosódica e ordem de palavras é desenvolvida no capítulo 3. Este capítulo trata a aparente ordem livre de palavras do português europeu. Nesta língua, são gramaticais as seguintes ordenações entre sujeito, verbo e objecto: SVO, VSO, VOS, OSV, e OVS. São apresentados argumentos para a derivação de ordens apresentando inversão sujeito-verbo como estruturas em que o sujeito se manteve na sua posição de base: Spec,VP. Esta análise, aliada à conclusão de que sujeitos pré-verbais se encontram em Spec,IP, compromete seriamente uma análise baseada na dicotomia forte-fraco de traços categoriais. A diferença entre VOS e VSO é explicada em termos da presença e ausência, respectivamente, de scrambling do objecto para a esquerda do sujeito. A argumentação para esta análise baseia-se na observação de semelhanças entre o português e línguas germânicas, nas quais scrambling é mais facilmente detectável. Defende-se que scrambling em português é um movimento com propriedades A-barra, sendo o local de poio do objecto uma posição de adjunção a VP. De forma a permitir estabelecer uma ligação entre este estudo de variação de ordem de palavras em português e marcação prosódica, os contextos em que cada ordem de palavras pode ser apropiadamente usada são descritos. A conclusão da descrição é que, em português, há uma correspondência bidirecional entre ordens de palavras e contextos. Os padrões observados permitem afirmar que elementos focalizados tendem a aparecer na posição mais à direita da frase, enquanto elementos topicalizados tendem a aparecer na periferia esquerda da frase. A relação entre a posição mais à direita da frase e foco é explicada em termos prosódicos, seguindo propostas como as de Nespor e Vogel (1986), Cinque (1993), Zubizarreta (1995), entre outros.

A identificação de elementos focalizados em termos prosódicos e a
relação entre posição final de frase e foco levantam várias questões, quando confrontadas com propostas recentes quanto à representação sintática de elementos focalizados. Para vários autores, desde Chomsky (1976) e Brody (1990), elementos focalizados devem ser licenciados numa posição sintática específica, geralmente representada na periferia esquerda da frase. O licenciamento sintático de elementos focalizados dá-se ou em sintaxe visível ou em LF. Se este gênero de análise for mantido para o tipo de foco estudado nesta dissertação – foco informativo, os resultados do capítulo 3 levantam alguns problemas, dado que é perdida a associação estrita entre foco e posição final de frase. Um constituinte focalizado in-situ em português deveria ser movido para uma posição licenciadora de foco em LF. Esta hipótese é avaliada no capítulo 4. Observando novamente a distribuição de constituíntes focalizados em português, defende-se que as variações de ordem de palavras envolvidas são feitas para a identificação apropriada do conjunto de constituíntes em foco numa dada frase. Argumenta-se ainda que c-comando visível é uma condição necessária para a identificação de foco. Várias representações envolvendo movimento de constituíntes focalizados em LF são construídas. Mostra-se que, na maior parte destas representações, as configurações criadas para a identificação do conjunto de constituíntes em foco são destruídas. Com base nesta observação, defende-se que o movimento de constituíntes focalizados em LF não é uma operação econômica, dado que foco é correctamente identificado nas estruturas superficiais. Neste capítulo, são ainda discutidas construções que alegadamente envolvem a anteposição de focos. É defendido que estas construções são irrelevantes para esta discussão, dado que a interpretação dos constituíntes antepostos é diferente da interpretação envolvida em construções de foco in-situ. A relevância de movimento visível de constituíntes focalizados em húngaro também é refutada, de acordo com os resultados de Kiss (1996), que mostra que esta construção em húngaro deve ser comparada com estruturas elivadas noutras línguas, não devendo ser unificada com construções de foco in-situ.

Até aqui, fica por explicar a diferença entre línguas com ordem de palavras flexível e línguas com uma ordem de palavras rígida. Da mesma forma, a dependência entre sintaxe e discurso observada nos capítulos 3 e 4 foi descrita sem ter sido formalizada. No capítulo 5, é proposta uma
explicação para estes dois problemas. O formalismo adoptado para análise é a Teoria da Optimidade. A escolha deste modelo prende-se com a observação de que princípios contraditórios podem ser impostos sobre uma só categoria sintática: Caso força o movimento de NPs para a esquerda, enquanto Foco requer que os NPs focalizados se mantenham na posição mais à direita da frase. Dado que a Teoria da Optimidade é um modelo sobre solução de conflitos entre restrições contraditórias, este quadro teórico parece oferecer uma solução para esta interacção de restrições. A diferença entre inglês e português deriva da hierarquização relativa entre as restrições CASE e ALIGNFOCUS. O movimento obrigatório de constituintes em inglês é apresentado como uma consequência da hierarquização elevada de CASE. A dependência em relação a um determinado contexto discursivo em português é explicada como uma consequência da importância de ALIGNFOCUS na hierarquia. Também é feita uma comparação entre três padrões de distribuição de complementos nominais: podem ser movidos obrigatoriamente (inglês), podem ser deslocados num movimento-Á, quando não estão em foco (íslândês) ou podem adjungir a VP quando não estão em foco (português\holandês). Estes três padrões são explicados como uma consequência das possíveis hierarquizações entre as restrições CASE, ALIGNFOCUS e STAY, uma restrição sobre economia.

Com base nos resultados atingidos no capítulo anterior, o trabalho desenvolvido no capítulo 6 tenta descobrir porque se encontra variação interlingüística em contextos não-marcados, nos quais todos os constituintes de uma frase são focalizados. Defende-se que, neste contexto, qualquer ordem de palavras satisfaz as restrições discursivas, sendo que a decisão relativa à escolha de ordem de palavras é feita apenas pelas restrições de natureza sintática. É feita, portanto, uma análise em termos de Emergência do Não-marcado. A diferença entre línguas SVO (português e espanhol A) e VSO (grego e espanhol B) é explicada em termos da hierarquização crucial entre STAY e SUBJ-CASE: em línguas SVO, é mais importante satisfazer Caso do que obter uma representação económica, enquanto em línguas VSO é mais importante obter uma representação económica. Esta tensão entre SUBJ-CASE e STAY reflecte-se na representação dos sujeitos pré-verbaís nos dois grupos de
Resumo em Português

linguas: em linguas SVO, a hierarquização Subj-Case » STAY prediz que os sujeitos se encontrem em Spec,JP; a hierarquização inversa prediz que os sujeitos sejam deslocados à esquerda. A impossibilidade de obter VSO em italiano é explicada como uma consequência do movimento obrigatório do objecto para Spec,AgrOP. Padrões de ordem de palavras obrigatórios como VSO em celta e VOS em mlagche recebem uma abordagem superficial em termos da pouca relevância das restrições de natureza discursiva na hierarquização. Os resultados deste capítulo permitem explicar porque há variação em contexto de foco frásico e formalizar a distinção entre não-marca e universal.

No capítulo 7, é proposta uma comparação explícita entre modelos. A abordagem no âmbito da Teoria da Optimidade é comparada com uma abordagem paramétrica para os mesmos problemas. A abordagem em Optimidade apresenta-se mais vantajosa, uma vez que é possível identificar casos de violação de restrições elevadas na hierarquia (Heavy NP Shift em inglês e violações de foco em português para a criação de estruturas compatíveis com os requisitos da teoria da ligação). Estes comportamentos não são esperados, se uma restrição dominante for equiparada a um parâmetro com um valor positivo. Da mesma forma, são apresentados casos em que restrições dominadas são operacionais: foco é operativo na determinação da distribuição de advérbios em inglês (permitindo uma formalização das interações foco-sintaxe observadas no capítulo 2) e na distribuição dos complementos preposicionais, também em inglês. Se esta restrição mais não fosse do que um parâmetro especificado para o valor negativo nesta língua, a sua operacionalidade não seria predita.

Este último capítulo permite clarificar qual pode ser o papel desempenhado pela Teoria da Optimidade. Esta não surge como uma teoria alternativa, mas apresenta-se como um mecanismo para determinar a forma como princípios independentemente motivados interagem. A proposta de critérios específicos para a comparação de modelos viabiliza decisões teóricas no que diz respeito a análises em competição ou à compatibilidade entre modelos.