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**Licensing Conditions
on Head Movement**

by

José Lema

**B.A. Simon Fraser University (1976)
M.A. Simon Fraser University (1978)**

**A thesis
presented to the University of Ottawa
in fulfillment of the
thesis requirement for the degree of
Doctor of Philosophy
in
the Department of Linguistics**



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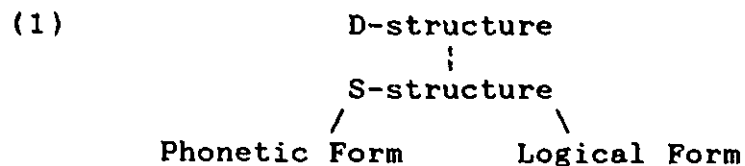
Chapter 1

Introduction

1.0 Introduction

1.1 General Framework

The present work is framed within the theory of Government and Binding originally presented in Chomsky (1981), and developed in later work. The model of Universal Grammar (UG) subsuming the theoretical framework, has four relevant levels of representation organized as in (1).¹



D-structure is the level where argument structure and grammatical functions are represented. S-structure is the interface linking D-structure with P(honetic) F(orm) and L(ogical) F(orm), both of which also act as interfaces, the first with the anatomic and acoustic media of language, the second with peripheral cognitive systems. The mapping between the four levels of representation in (1) is carried out by means of the rule known as Move- α , which is essentially a movement operation that affects heads and phrases.

¹ Chomsky and Lasnik (1977) originally proposed this model. Instead of D-structure, the term used there was Deep Structure.

UG is organized into the modules or sub-theories (2), which operate and interact within the limits set by (1).

- (2) (i) X-bar or Projection theory.
- (ii) θ -theory.
- (iii) Government theory.
- (iv) Case theory.
- (v) Bounding theory.
- (vi) Binding theory.
- (vii) Control theory.

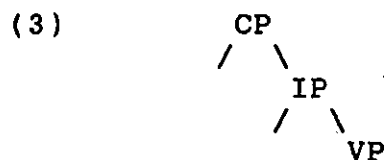
Each module includes a finite set of principles that determine the universal properties of language. Some of these principles may realize themselves according to fixed parameters, allowing for a certain degree of cross-linguistic variability. Parametric values are set during the process of language learning. The aim here, however, is to rely as little as possible on grammatical parameters. Instead, we aim at explaining linguistic variability as a product of the interaction between the principles of UG and language specific properties of lexical items.

The Lexicon contains all formatives. Two basic types of features specify their syntactic behaviour. The Categorical Features determine the form and label of the structure projected by formatives. The Selectional Features dictate how different syntactic units interact with each other in the grammar. On the basis of these features, grammatically relevant classes are defined. The chief categorical features specify the lexical and functional status of formatives. As will be argued, lexical formatives have "descriptive content", i.e. thematic and/or aspectual properties. If thematic, the lexical elements enter into

θ -defined relations. For example, verbs and their arguments participate at the two ends of the process of θ -role assignment. If aspectual, they play a dual role. On the one hand, they interact with other lexical items, setting, among other things, selectional restrictions (Van Voorst (1988) and Tenny (1987)). On the other hand, they combine with functional T(ense) to specify the referential properties of syntactically framed propositions. Functional categories serve to "identify" or "designate", they constitute a heterogeneous group containing operators and deictics at least. Functionality and lexicality are not poles of the same opposition.

1.1.1 X⁰-Movement between Lexical and Functional Positions

The most evident structural effect of the distinction between lexical and functional categories is the split between the lexical and functional layer of the sentence. The simplified representation (3), set in the Barriers model (Chomsky, 1986b), can serve to exemplify this point.



The layer below IP, the structure contained by VP in (3), is lexical.² Its content corresponds to a proposition with a subject and a predicate,³ sensitive to modification by the elements in the functional layer, above VP. For example, T situates the proposition in a particular temporal locus in relation to that of the moment of speech, (or in relation to the temporal characteristics of a higher clause in cases of subordination). Functional modification applies to the proposition in its entirety.

The general purpose of this dissertation is to characterize some of the properties of the interaction of functional and lexical elements. Of particular interest are the items located at the periphery of the functional and lexical layers. Next to the prototypical lexical V and functional T, the status of Asp(ect) and Neg with respect to the lexical-functional dichotomy is not at all obvious. For example, aspectuals and Neg may surface between a Modal in T and V, obscuring the boundary between the two layers in question:

(4) He should [not have been] playing with fire.

² If NPs are complements inside DPs, as proposed by Abney (1987), then some subparts of VP are "non-lexical". This does not appear to affect the present characterization and discussion.

³ The impossibility of dissociating a subject from its predicate is congruent with a view that subjects are VP-internal elements at D-structure. See, Contreras (1976), Fukui and Speas (1986), Kitagawa (1986), Koopman and Sportiche (1987), Speas (1986), Sportiche (1986) and in particular Zagana (1982). Following Stowell (1981, 1983), Diesing (1988), and Lema (1988a, 1989), subjects can be placed in the specifier of VP.

Determining whether items like these are lexical or functional, is part of our investigation. This is far from being a straightforward task. The limit separating the categories situated on the edges of the two relevant layers becomes clouded when some of the properties of these categories span across the limit. Moreover, we see that functional positions often become lexicalized. Defining some of the basic properties of the four categories T, V, Asp and Neg, as well as the role of 'selection' and 'complementation' between these different elements is one major enterprise this thesis is devoted to. Essentially, we will demonstrate that two sets of features [$\pm$ Lex(ical)] and [$\pm$ Fun(ctional)] are required to properly characterize syntactic formatives.

A parallel and most important endeavour of the present investigation is to examine the different forms of X^0 -movement that involve lexical and functional elements. Above all, we are set to determine why the requirement, generally derived from the Head Movement Constraint (HMC) (5), that X^0 s move only to the nearest head above, (6), is not regularly observed when X^0 s cross the functional-lexical limit.⁴

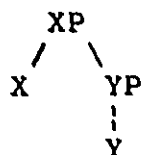
⁴ In derivations with variables like in (6) in the text, Heads are represented by means of uppercase letters; when they move, their original and intermediate positions are depicted by means of the corresponding lowercase letters.

(5) Head Movement Constraint (Travis, 1984: 131)⁵

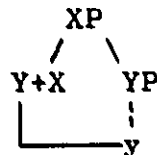
A Y^0 may only move into the X^0 which properly governs it.

(6)

a.

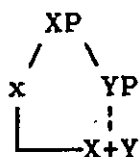


b.

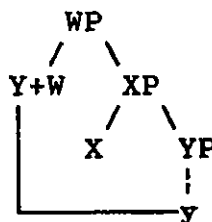


For example, lowering derivations involving X^0 s like (7), have long been proposed to account for the distribution of affixes in certain languages, (cf. Chomsky (1955)). Also, X^0 Raising over intermediate X^0 s, as in (8), has been lately discovered to apply under very specific conditions. These facts seriously question the adequacy of the HMC, as well as its status in UG as a ruling condition on X^0 -movement in general (cf. Lema and Rivero, 1989, 1990a). We will contend that the HMC is a derivation-specific constraint, and that as such, it is an inadequate explanatory device. X^0 -movement must be accounted for in terms of true general conditions of UG.

(7)



(8)



⁵ Some of the relevant content of the Head Movement Constraint can be traced back to Emonds' (1970, 1976) Structure Preserving Condition, a condition which requires that moved elements be related to targets of equivalent syntactic status. It is found in a more specific form in Baltin (1982) under the name of the Like-Attracts-Like Constraint (LALC), here Phrases are related to Phrasal targets, and Lexical elements (X^0 s for us) are related to lexical targets.

French (9), English (10), and Slovak (11), illustrate respectively, the three forms of X^0 -movement proposed in the literature: Short Head Movement (SHM) (6), Affix Lowering (7), and Long Head Movement (LHM) (8), the moved element being underlined.⁶ As we will see, whether affixes do actually lower unto a verbal host in (10), is a question of secondary importance that is subordinate to a more interesting property of English finite verbs, their *inertness*, when compared with those exemplified in (9) and (11).

(9) Le conducteur chante souvent "Nessun Dorma".

(10) The driver often sings sings "Nessun Dorma".

(11) Napísal som list
 Write:Part have:Pres:1s letter:the
 'I wrote the letter'

The three phenomena that will be examined in this thesis -SHM, verbal inertness and LHM- are briefly discussed directly, each will be the main topic of Chapters 3 to 5.

1.1.1.1 Verb-Raising

Emonds (1979), Pollock (1989) and others, have argued that languages may resort to different strategies to form finite elements. According to Pollock, the asymmetries between French and English observed in (13)-(16) (examples (2)-(5) from Pollock), can

⁶ Slavic T and Asp auxiliaries are regularly glossed as 'have', though 'be' may be a better gloss in some instances.

be explained if the two languages have in common the basic structure (12) (Pollock's (1)), and if the grammar of French contains a verb-raising operation that English lacks.

(12) [_{IP} NP I ([_{Neg} not/pas) [_{VP} (Adv) V...]]

Briefly, Pollock explains that the French verb is prenegative, as in (13b), because it raises from its basic position in (12) to the left of Neg, in I; English does not allow verbs to precede not, as proved by (13a), because they remain unaffected by movement, in their basic position to the right.⁷

- (13) a. *John likes not Mary.
b. Jean (n')aime pas Marie.

If subject-verb inversion is analyzed as movement from I to C, then only French, where verbs raise to I, should allow this type of construction:

- (14) a. *Likes he Mary?
b. Aime-t-il Marie?

"VP Adverbs such as often/souvent, seldom/rarement, hardly/à peine" (Pollock:366) are skipped by V in French, and thus appear to the right, (15b) vs. (15d); in English, they must appear to the left, (15a) vs. (15c):⁸

⁷ Pollock observes that Have and Be do raise to I, this question is examined at length in Chapters 2, 3 and 4.

⁸ The following two examples show that this type of adverb surfaces in a position to the right of I, they follow the tensed auxiliary, as well as modals.

- (15) a. *John kisses often Mary.
 b. Jean embrasse souvent Marie.
 c. John often kisses Mary.
 d. *Jean souvent embrasse Marie.

Pollock, adopting Kayne's (1975) analysis of floating quantifiers, whereby these are supposed to move into adverbial positions, also explains the fact that tous is postverbal in French, and preverbal in English as an effect of the V-movement vs. V-inertness contrast between these languages. French V moves to the left of the quantifier in (16b), English V remains to its right in (16c):⁹

-
- (i) a. John has often kissed Mary.
 b. John must often kiss Mary.

If examples such as (ii), with often to the left of the tensed auxiliary are grammatical, then this type of adverb can occupy two distinct positions -VP and IP-.

- (ii) John often has kissed Mary.

Given the availability of (ii), (15c) in the text cannot prove of itself that the verb has not moved, for it could be in IP, and the adverb to its left. Nonetheless, (15a) shows that V cannot be in T when the adverb is to its right in VP. The contrast between (15a) and (i) is the piece of evidence that supports Pollock's analysis.

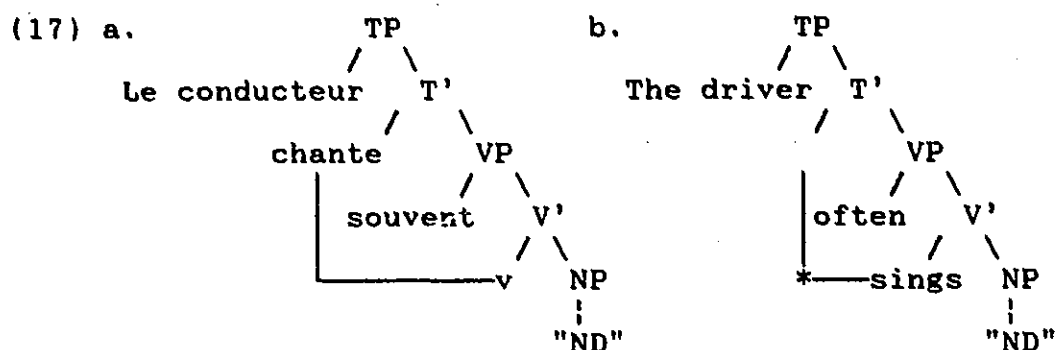
⁹ The analysis of floating quantifiers proposed by Sportiche (1988) differs from Kayne's, but serves just as well to support a V-movement analysis of the French data. In his analysis, the quantifier is structurally related to the VP internal subject, as in (i), and the subject has the option of raising to IP without the quantifier, as in (ii). Because the verb in VP also moves to I, see (iii), the quantifier, though preverbal at D-structure, surfaces to the right of the finite verbal element.

- (i) [_{VP} [_{tous} [_{les enfants}]] [_{VP} chanter]]
 (ii) _{les enfants}_i [_{VP} [_{tous} _{t_j}] chanter]
 (iii) _{les enfants} chantent_j [_{VP} [_{tous}] _{t_j}]

Within this framework, the English order in examples similar to the boys all sing, with the verb to the right of the quantifier, would be derived simply as (ii). V-raising -as in (iii)- would not apply.

- (16) a. *My friends love all Mary.
 b. Mes amis aiment tous Marie.
 c. My friends all love Mary.
 d. *Mes amis tous aiment Marie.

To portray the manner by which the different word order between French and English is obtained in (14), (16) and (12), I present the derivation (17a) of (9), and a simplified S-structure representation of English (10) in (17b).¹⁰



1.1.1.2 Verb Inertness

The location of T-Agr affixes in English differs crucially from that observed in languages like French. While French finite forms surface either in the location of T, as observed in (13b), or in a higher C position, as in (14b), English finite forms may surface in VP, i.e. in a position lower than that of T. Sentences (18), with the finite verbal form to the right of the adverb often and of the quantifier all, exemplify this property.

- (18) a. The driver OFTEN walks to work.
 b. The drivers ALL enjoyed their lunch break.

¹⁰ We use the label TP instead of IP.

Nonetheless, T and Agr affixes do not regularly surface in VP. In sentences with auxiliaries, such as those in (19), the order between the finite form and the items often and all shown in (18) is reversed, matching that of French (15b) and (16b).

- (19) a. The driver is OFTEN sleeping.
b. The drivers are ALL sleeping.

Further evidence supporting the movement of auxiliaries in English which also parallels the behaviour of French tensed elements, is provided by the fact that finite forms may also surface in C in subject-inversion constructions:

- (20) a. Is the driver often sleeping?
b. Are the drivers all sleeping?

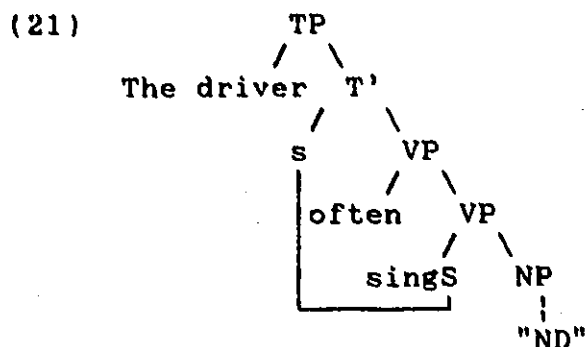
The asymmetric distribution of T and Agr affixes seen between (18) and (19) requires a more complex analysis than that proposed by Pollock for French, where only X^0 -raising is needed to account for the relevant properties of both finite verbs and auxiliaries.¹¹

For English, we need to consider the fact that finite forms (and affixes) surface sometimes in VP, sometimes in TP. While the same analysis proposed for French is adequate for structures with finite auxiliaries, it is necessary to describe alternatively those like

¹¹ Pollock in fact proposes a two step VP-to-AgrP-to-TP movement. I adhere to the position argued by Iatridou (1990) that Pollock's proposal for the existence of an intermediate AgrP position are weak, if not incorrect, and thus refer here to V-to-T or Aux-to-T movement as a one step operation.

(18), where the finite Verb is inert, and most likely surfaces in its basic VP position.

As mentioned above, the amalgamation of affixes to inert verbs has been accounted for by means of an Affix Lowering operation¹² that can be portrayed as in (21):



As we will see in Chapter 4, the inclusion of Affix Lowering in the description of English is highly problematic from a theoretical point of view. If affixation in (21) is carried out by means of a lowering operation, then we face a violation of Government and Binding constraints on movement. Within this theory movement is restricted by means of Move- α , an operation leaving a trace that must be in the scope of a higher coindexed antecedent at S-structure. Whereas this principle is complied with, for example, by French V-movement in (17a), and presumably also by English auxiliary movement in (19) and (20), a derivation such as (21) violates this constraint by leaving the trace in a position higher than the moved affix. We will discuss this problem in some detail

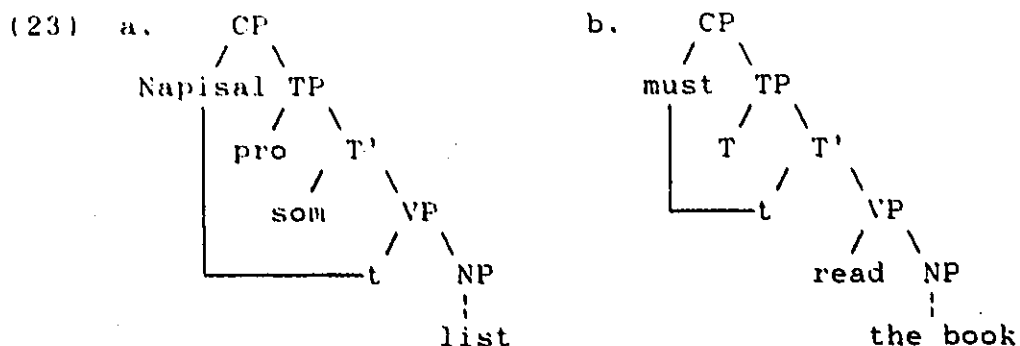
¹² Chomsky (1955, 1957, 1981, 1988), Pollock (1989) among many others.

in Chapter 4, and evaluate the consequences of admitting lowering operations within the Grammar. Alternative proposals, along the lines, for example, of Iatridou's (1991) where some of the affixes are generated in VP and not in the functional layer, will be considered in order to account for the occurrence of inflectional affixes within VP in English. The analysis of Verb Inertness in this language, will not decisively resolve the origin and manner by which forms such as those in (18) are formed.

1.1.1.3 Long Head Movement

LHM takes the form of V or Aux-raising over an intervening X^0 . A detailed examination of LHM will be presented in Chapter 5. It is convenient, nonetheless, to present here some of the more general properties of this form of movement, because we will refer to it throughout the thesis. We identify two cases of LHM. The first is found in Medieval Romance (except French), in some dialects of modern Portuguese and Galician, and in most Western and Southern Slavic languages. Its earmark is the movement of a non-finite X^0 over a tense bearing element, as observed in the Slovak example (11), portrayed in (23a). Slovak LHM (23a) contrasts with typical forms of Germanic SHM of finite elements to C, as in the English example (22), with the simplified representation (23b).

(22) Must I read the book?



The second case of LHM that will be discussed is movement by English auxiliaries over Negation in sentences like (24). These are discussed by Chomsky (1988) and Pollock (1989). The analysis will require a discussion concerning the status of negation in English; we will argue that the element NOT in (24) is an X^0 , that derivations of this form -as well as that in (23a)- are potential counterexamples for the Head Movement Constraint, and that an alternative licensing mechanism must be proposed for LHM phenomena.

(24) John has_i NOT t_i read the book.

The basic contrast between the two forms of LHM derives from the landing site of the moved X^0 , C in (23a) and T in (24). On a par with some forms of Germanic movement to C, Romance and Slavic LHM is a root phenomenon; in contrast, English LHM over Neg is not restricted to root sentences. The Bulgarian examples (25) and (26) portray the Root vs non-Root asymmetry typical of Germanic. (25a), similar to Slovak (11), presents the non-finite lexical verb procel to the left of the temporal auxiliary sum in a main sentence; (25b)

shows that the word order in embedded contexts is reversed, with the tensed element above the non-finite verb. These facts can be interpreted as effects of movement to C by the non-finite verb in main sentences, and the lack of it in embedded contexts where C is occupied by the complementizer ce.

- (25) a. PROCEL sum knigata
 READ have:ls book:the
 'I have read the book'
- b. Znam [_{CP} ce sum PROCEL knigata]
 Know-ls that have:ls READ book:the
 'I know that I have read the book'

Ungrammatical (26a), when compared with (25a), shows that the particular word order where the finite element precedes the non-finite one, is restricted to main sentences. The contrast between (26a) and (25b) also lends support to the idea that the landing site of procel (26a) is C and not another X⁰ position between T and C. Example (26b) completes the picture, showing that movement in root sentences like (25a) is obligatory.

- (26) a. *Znam [_{CP} ce PROCEL sum knigata]
 Know-ls that READ have:ls book:the
 'I know that I have read the book'
- b. *sum PROCEL knigata
 have:Pres:ls READ book:the
 'I have read the book (completely)'

English LHM differs substantially from the above case. Because movement by the finite auxiliary is to T, and not C, the phenomenon is observed in both main and embedded sentences:

- (27) a. John has_i NOT t_i read the book.
 b. He says that John has_i NOT t_i read the book.

We will show that the two instances of LHM can be correlated with the morphological and semantic nature of the elements involved. In particular we will argue that the skipped element cannot be an affix, and that it has limited semantic content, basically that of an operator.

A striking characteristic of the movement underlying the formation of sentences such as (25a) is the fact that the verbal projection that can be raised to the left of the temporal element is limited to the X⁰ level. In this type of structures, only the verb can be moved, the object cannot be carried along with the verb. Examples (28) show that VP preposing -whether the VP is VO or OV- is not allowed.

- (28) a. *PROCEL knigata sum
 READ book:the have:Pres:1s
 b. *knigata PROCEL sum
 book:the READ have:Pres:1s
 'I have read the book (completely)'

The situation in the Bulgarian examples contrasts radically with forms of verbal preposing that are superficially parallel to (25a), and which are found, for example, in Spanish. Sentence (29), like (25a), has a non-finite form -a participle- to the left of the finite auxiliary, while the object la lotería surfaces to the right, perhaps in its basic position.

- (29) ... y comprado había la lotería.
 and bought had:3s the lottery.
 '... and bought the lottery he had'

Despite the apparent parallelism between (25a) and (29), the movement by the participle cannot be equated with LHM phenomena. In contrast with (28), the moved X^0 can carry the object along with it, as seen in (30a). Another relevant contrast with LHM structures is the fact portrayed in (30b): participial movement is not restricted to root sentences, it can also apply in embedded contexts.

- (30) a. ... y comprado la lotería había.
 and bought the lottery had:3s.
 '... and bought the lottery he had'
- b. ... y dijo que comprado habría la lotería.
 and said that bought would:have:3s the lottery.
 '... and she said that bought the lottery he would have.'

1.1.1.4 On the Generation of Affixes

There are two principal manners of conceiving the relationship between affixes and their morphological bases, i.e. the grammatical items on which they surface attached at S-structure. The first alternative, originally proposed by Chomsky (1955, 1957) to account for the distribution of person, tense and aspectual morphology in English, is grounded on the idea that affixes and bases occupy different D-structure positions, and that these are united by means of syntactic movement operations. The second possible account of the relationship between affixes and bases is that it is lexically

determined, and that these elements form a unit at the basic level of representation. Di Sciullo and Williams (1987), in particular, have embraced a strong version of this theory, proposed that all morphological processes are lexical, and reached the conclusion that there is no motivation to distinguish between inflectional and derivational morphology. In this work we adhere to the first position and attempt to account syntactically for the relationship between affixes and bases. The selection is made on theoretical and empirical grounds.

In his early Phrase Structure model, Chomsky proposed that PS-rules must not be context sensitive. Lexical insertion had to observe only the category of the terminal symbol in order to properly situate lexical formatives at the basic level of representation. Within this framework, sentences such as (31) were to be considered grammatical, despite their apparently deviant semantic status. In Chomsky (1965), however, the restriction on PS-rules was relaxed, and lexical insertion became partially sensitive to the syntactic context by the inclusion of subcategorization features, frames and restrictions in the Grammar. Within this later model, sentences such as (31) were to be marked as ungrammatical for they violated the selectional properties of formatives.

(31) Colorless green ideas sleep furiously.

Whether the relation between affixes and their bases is lexically or syntactically defined, rests on two principal considerations. The first is akin to the relaxation of the constraint on context

sensitiveness adopted between Syntactic Structures and Aspects, and basically involves choosing whether context sensitiveness is a property of syntactic operations or part of the functions enclosed within the lexicon. Consider the examples (32) to illustrate this question. The underlined affix en in these sentences appears now on the auxiliary BE -(32a)-, now on the main verb eat -(32b)-; the ungrammaticality of (32c,d) indicates that the occurrence of this affix must be correlated with the presence of the auxiliary HAVE in the sentence, and not with that of the element on which it is attached on the surface.

- (32) a. John had been eating
 b. John had eaten
 c. *John been eating.
 d. *John eaten.

Chomsky's 'affix-hopping' analysis of the facts in (32) is delineated in greater detail in the following Chapter, in section 2.1.1.1; it is perhaps sufficient, for now, to mention that in his syntactic account, the formative en is located in the same position as HAVE, and syntactically moved and attached to the first element to its right by a transformation. This analysis explains why en always appears on the item directly to the right of HAVE, and never in its absence. Basically, this solution to the problem does not require endowing the lexicon with context sensitiveness properties. Alternatively, the distribution of en could be conceived as a lexical process, without recourse to syntactic movement. In order to do this, a lexical rule paraphrased as (33), would be needed:

- (33) Attach en to BE or to a main V when directly to the right of HAVE.

It may seem, on the basis of the previous discussion, that syntactic and lexical explanations of grammatical facts are both possible, basically equivalent, and perhaps even notational variants of each other. Nonetheless, choosing between the two alternatives is possible on empirical grounds; the Romance version of LHM provides the appropriate test for these competing theories.

Medieval Spanish structures with futures and conditionals such as those in (34) observe the same Root vs. non-Root sentence word order asymmetry discussed in relation with Slavic (25) repeated below. In (34) we see within the same sentence two distinct word order formations of an otherwise equivalent future form. In (34a), partially parallel to (25a), the capitalized non-finite lexical verb appears to the right of the clitic and to the left of the temporal element án 'future third person plural', which acts as an affix; in (34b), the counterpart of (25b), the non-finite element appears to the left of the clitic and separate from the element an, which behaves like an auxiliary.

- (34) -Amigos, porque beades que la palabra del Evangelio es
 Friends for you:see that the word of:the Gospel is
 verdadera, fazet catar el corazón a este omne et
 true have search the heart to this man and
 yo vos digo
 I you tell

- (a) que non lo FALLARán en el cuerpo suyo
 that not it FIND:will in the body his

(b) let FALLARlo an en el arca que tenia el su tesoro.
 and FIND:it will in the arch that had the his treasure
 (Lucanor, 109)

"Friends, so you'll see that the word of the Gospel is true, have search for this man's heart and I tell you that you will not find it in his body and that you will find it in the arch where he kept his treasure.

- (25) a. PROCEL sum knigata
 READ have:Pres:ls book:the
 'I have read the book (completely)'
- b. Znam [cp ce sum PROCEL knigata]
 Know-1s that have:ls READ book:the
 'I know that I have read the book''

The detailed analysis of these structures will be carried out in Chapter 5. For the purposes of our present discussion, it is perhaps sufficient to say that the form in (34b), in a root structure, is formed by means of LHM to C, to the left of the clitic, whereas (34a) is formed by means of SHM by V incorporating into the temporal element which surfaces as an affix. In essence, the property that differentiates Romance LHM from Slavic LHM is that the surface realization of temporal elements alternates between syntactically free forms and affixes, whereas in Slavic, the temporal elements are always free auxiliaries. The burden of further motivating a syntactically based LHM analysis of data such as (25) and (34) is left for Chapter 5, for now we present some of the inadequacies of analyzing affixation as a lexical process.

A lexically based analysis of the distribution of the form an in (34a,b) will require syntactic information of a sort that is

qualitatively distinct from that utilized in the wording of (33). While (33) needs to include information concerning the presence or absence of particular formatives and their order at D-structure to place affixes on the appropriate element, a lexical rule for the distribution of an in (34), would require information concerning the type of sentence the element will appear in, and be worded somewhat like (35):

- (35) Realize an as an auxiliary in Root Sentences and as an affix on the main verb in Embedded Sentences.

A lexically based analysis becomes further complicated by the fact that other factors enter in the realization of the forms under consideration. Though root sentences such as (36) generally exhibit the LHM order, root sentences with a thematized element, such as the object grand ondra in (37) do not.

- (36) Si yo vivo, doblar vos he la soldada
 If I live double to:you will:I the wages
 'if I live, I shall double your wages' (Çid, 80)

- (37) Si del campo bien salides, grand ondra AVRedes vos
 if from:the field well come out great honour HAVE+will you
 'If you exit well from the field, great honour you shall have' (Çid, 3565)

To interpret these facts lexically, the rule (35) would have to be reformulated as (38):

- (38) Realize an as an auxiliary in Root Sentences and as an affix on the main verb in Embedded Sentences and in Root Sentences when an object is thematized.

As can be seen, a lexical explanation of affixation for the facts presented requires endowing the lexicon with very powerful machinery. Context sensitiveness must be extended beyond information concerning the presence and location of elements at D-structure, it must be able to know the type of sentence where the element is inserted, and have access also to S-structure information concerning whether a phrase is topicalized or not. As we will attempt to show in this thesis, the distribution of Medieval Spanish future and conditional morphology can be adequately accounted for by syntactic means.

1.1.1.5 Goal of the Study

The variety of X^0 -movement strategies available in the demarcation area between the lexical and functional layers, contrasts sharply with the accessibility only to SHM inside the lexical layer dominated by VP.¹³

A unified account of these seemingly unrelated forms of X^0 -movement will be developed here, and shown to respond to the same underlying principles and conditions of UG. Thus, although languages have equal access to these diverse strategies for the movement of X^0 s, the emergence of any one in a particular grammar,

¹³ But see Kayne (1989) and others after him who, assuming Romance clitics to be X^0 s, propose that these raise and skip an intervening verb. The implication being that SHM is not necessarily the rule within the lexical layer. But see also Sportiche (1990), and Treviño (1990), who argue that clitic climbing is a complex process involving both XP and X^0 -movement, thus, the movement over the verb is of XP-type and not an instance of LHM.

is contingent upon the presence and the specific properties of lexical items, as dictated by The Lexical Parameterization Hypothesis (Manzini and Wexler, 1987: 424).

(39) Lexical Parameterization Hypothesis

Values of a parameter are associated not with particular grammars but with particular lexical items.

Baker's (1988) argument that the HMC can be reduced to the Empty Category Principle (ECP) -to be discussed in 1.2.3.2- is a first yet not sufficient step needed to account for X^0 -movement phenomena. It is true that the ECP is a broad notion that can encompass the HMC and thus, account for SHM. Nevertheless, as it stands, the ECP cannot account for LHM phenomena. We will see that among the general constraints placed on derivations by UG, cf. (1)-(2), two conditions play a capital role in the application of X^0 -movement. The Affix Condition (based on Lasnik's (1981) insight that heads move to satisfy a morphological requirement of affixes), which specifies the appropriateness of each X^0 -movement strategy in a particular situation.¹⁴ The semantically motivated Feature Minimality Condition, which is sensitive to the lexical content of

¹⁴ The Affix Condition may be, conceivably, a subpart of a more general morphological condition on Incorporation which requires one or both heads involved, to be lexically specified with a slot to be syntactically filled. See Baker (1988), and Rizzi and Roberts (1989) for proposals along these lines.

formatives, complements its morphological counterpart, and defines the local properties of X^0 -movements.¹⁵

1.1.2 Organization of the Thesis

1.1.2.1 Chapter 1

The first Chapter, is an introductory chapter with a two-fold purpose. One, to present the global characteristics of the problem to be explored; two, to define the relevant aspects of the theoretical framework to be adopted in the thesis.

1.1.2.2 Chapter 2

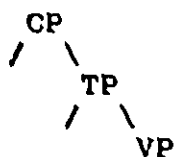
The concern of this chapter is to examine some of the syntactic properties of Aspect. The characterization of its structural and semantic relations with functional T and lexical V will serve, among other things, to situate the discussion on Head Movement. The presentation will focus mainly on the behaviour of Perfective HAVE and of Progressive BE in English. Some of the facts will be compared against those of French and Spanish, in order to enhance the properties of the English auxiliaries.

Firstly, a historical overview is presented. It is shown that since Chomsky (1955), the general tendency has been to consider

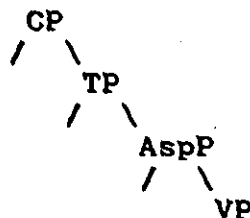
¹⁵ Similar attempts to define a Condition based on lexical rather than purely architectural properties, can be found in Lema's (1988a) 'Minimality Condition on Case Assignment Domains'; Roberts' 'Thematic Minimality' (1988), and 'A/A-bar X^0 -minimality' (1990); Lema and Rivero's notion of 'Lexical Complexity' (1990a); and Baker and Hale's Functional vs. Lexical Relativized Minimality' (1990).

HAVE and BE part of VP, therefore, inside the lexical layer. The idea that these elements are lexical will be shown to be correct and is further adopted here. Nevertheless, because the semantic structure of HAVE and BE is not argumental like that of verbs in general, we are forced to set the two classes apart. As a consequence, the concept of Lexicality is redefined to comprise the two basic notions of Thematicity and Aspectuality. Chomsky's structure (3) is redefined as (40), with a lexical AspP intervening between TP and VP. Thus, the lexical layer is extended upwards beyond VP, to include AspP.

(3)



(40)



The lexical aspect, however, partly characterizes the nature of Asp. Since it interacts with T defining sentential referentiality, it also carries a functional role; therefore, Asp is also [+Fun]. This is a good example to show that a category like Asp eclipses the lexical-functional limit.

1.1.2.3 Chapter 3

The discussion in this chapter focuses on the nature of the morphological constraints that affect X^0 -movement. A detailed

account of SHM is developed, and its characteristics are defined on the basis of the behaviour of V, Asp and T within the structure (40). Its interaction with Neg is postponed until Chapter 5, where it will be better understood in the light of LHM phenomena.

The Affix Condition, based on the notion of morphosyntactic freedom, is fully worked, as all the applications of SHM to be examined involve affixes. Both, the Affix Condition and the Feature Minimality Condition (already introduced in 1.1.1), will be shown to interact in such a way as to determine the properties of λ^0 -movement in general. The Feature Minimality Condition will be fully discussed in Chapter 5 where its role, licensing LHM, is more evident. A typological characterization of SHM phenomena is forwarded on the basis of the morphological properties of T-Asp systems. Instead of defining a parameter to determine whether SHM applies in a language or not, it is argued that children learn whether T-Asp systems are comprised of free or bound formatives, and that it is this morphological property which ultimately dictates whether SHM applies.

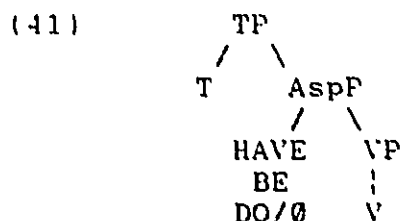
1.1.2.4 Chapter 4

This chapter is in charge of examining the phenomenon of verbal inertness in English. The possibility that languages may resort to Affix Lowering operations is evaluated, and the nature of this sort of phenomenon is considered in the light of the Affix Condition. The Affix Condition is formulated in such a manner to account for

all cases of affixation regardless of the direction followed by the X^0 -movement. Contrary to Chomsky (1988) and Pollock (1989), we argue that the contrast between languages with V-movement and those with inert verbs is not parametrically determined. Rather, cross-linguistic choices of different strategies to constitute finite forms follow from differences in the lexical specification of T-Asp systems. In fact, the (highly) idiosyncratic character of English which sets this language aside from most other languages, suggests that a lexical characterization of the phenomenon rather than a parametric one is the correct approach to the problem. Furthermore, Verbal Inertness is correlated with another morphosyntactic process peculiar to English: the DO/ $\emptyset$ alternation generally referred to as "DO-Support". It will be here suggested that English DO/ $\emptyset$ is an aspectual auxiliary parallel to Perfective HAVE and Progressive BE. The behaviour of DO/ $\emptyset$ is examined in the light of its interaction with T and Asp. It is concluded that DO has the aspectual properties generally identified with Aorists, and that these become more evident in the manner in which DO modifies temporal reference. To further support the aspectual characterization of DO/ $\emptyset$, it is shown that the interpretation of the lexical aspect (Aktionsart) of certain classes of verbs, is particularly affected by this auxiliary.

The inert character of English verbs is explained to follow from the fact that AspP, in this language, is saturated. By this we understand that non-copulative sentences always have an

aspectual auxiliary: if HAVE and BE are not in AspP, then the position is obligatorily occupied by either explicit or null DO:



V-SHM does not apply in (41) because there are no affixes in Asp to motivate the movement. In essence, V in English is inert because an aspectual auxiliary always separates it from the position of T. The Affix Condition is then satisfied in two possible manners. If AspP contains HAVE, BE or explicit DO, then Asp-raising to T applies. If, instead, the aspectual is the /Ø/ version of DO, the Affix Condition cannot be satisfied by SHM, and the grammar opts for an alternative mechanism to attach the affixes onto V. If Affix Lowering does in fact exist, it must be considered a low-level operation -probably a PF operation- that is blind to empty categories such as null DO.

1.1.2.5 Chapter 5

LHM, the third type of X⁰-movement studied, is the central figure of chapter 5. LHM is seen to obey very strict conditions. It too, takes place to comply with morphological conditions. They need not be however, the Affix Condition. The two instances of LHM to be examined are exemplified in (11), repeated below, and in (42). The

movement of the verb in (11) is triggered by a constraint that bars morphologically light auxiliaries like some from occupying a CP-initial position, cf. Chapter 5. Aux-movement over Neg in English (42), is realized to meet the Affix Condition.

(11) Napisal_i some t_i list
 Write:Part have:Pres:1s letter:the
 'I wrote the letter'

(42) John has_i not t_i read the book.

Semantic factors are revealed to tightly restrict the form and domain of LHM. The Feature Minimality Condition which is sensitive to the features [$\pm$ Lex], is shown to correctly account for LHM phenomena in general.

A diachronic study of the formation of the Spanish Future and Conditional tenses is carried out. Two main reasons justify this. First, these tenses help to further typify LHM phenomena; second, they illustrate in a clear manner the relationship between T-Asp auxiliary and affixal formatives. The analysis shows how the formatives used in the formation of the two tenses are intricately involved in a double alternation: as auxiliaries, they undergo LHM, as affixes, SHM.

1.1.2.6 Chapter 6

Finally, in chapter 6 we round up the main findings encountered in the investigation and the general conclusions derived from it.

1.2 Theoretical Background

In the remaining of this chapter, certain general theoretical notions needed to carry out the proposed analysis, are presented.

1.2.1 Phrase Structure

As stated by Stowell (1981), a Phrase Structure Theory must contain the principles listed in (43).

(43) X-bar Theory (Stowell, 1981: 70)

- a. Every phrase is endocentric.
- b. Specifiers appear at the X'' level; subcategorized complements appear within X' .
- c. The head always appears adjacent to one of the boundaries of X' .
- d. The head term is one bar-level lower than the immediately dominating phrasal node.
- e. Only maximal projections may appear as non-head terms within a phrase.

These principles are formalized in the X-bar template (44). Phrases are constructed at D-structure by the interaction between (44) and the lexical content of X^0 s. Leaving aside directional factors, the template defines two levels above a head where phrases branch out: an X' for complements, and an X'' for specifiers.

(44) X-bar Theory (Chomsky, 1986: 4)

- a. $X' = X^0 \ Y''^*$
- b. $X'' = Y''^* \ X'$

Speas (1990) has suggested replacing the templatic version of X' -theory by a theory based entirely on feature projection. In her

model, the intermediate X' level is discarded, and phrases reduced to two levels: X^0 and X^{max} . The nature of Move- α seems to support the adoption of such a theory. As Travis (1984) has argued, this rule applies only to heads and phrases, and does not recognize X' .¹⁶ It can be added here that Rizzi's RM also lends support to this view: government relations are only observed at the X^0 or X^{max} levels. In the present work, however, intermediate X' is not eliminated. Instead, projection will be dissociated into two types: categorial and thematic. The former is argued to be relevant at the categorial X^0 and X^{max} levels, the latter for the intermediate thematic X' level.

1.2.1.2 Syntactic Categories

We define syntactic categories according to the two binary features [$\pm$ Lex] and [$\pm$ Fun]. In this respect, we differ from the bipolar distinction 'lexical vs. functional' as in the works of Abney (1987), and Fukui and Speas (1986). In our view, syntactic categories enter into more fine-grained relationships than it can be obtained by means of a single binary opposition. An in-depth and exhaustive inquiry into such a hypothesis though, goes beyond the limits of this project. However, a consistent and descriptively

¹⁶ Van Riemsdijk (1988) argues that X' -movement can account for some word order properties of Dutch. Platzack (1990) analyzes Icelandic Stylistic Fronting as movement of an X' . Lema and Rivero (1990b) have also argued that Medieval Spanish Participial Inversion is X' -movement, a type of operation that shares properties of both X^0 and XP movement, yet distinct from both.

appropriate analysis for the purposes of this investigation is elaborated throughout. The two sets of features allow a basic four-fold contrast among possible natural categories. These, lead to the following classes:

- (45) a. +Lex b. +Lex c. -Lex d. -Lex
 -Fun +Fun +Fun -Fun

The categories best represented by the combination (45a) are rich in "descriptive content", e.g. Verbs, Nouns, and Adjectives. The more suitable elements to be defined by (45b), are Aspectuals, Modals, and, perhaps, Prepositions. Although, all these have descriptive content, this is limited, unlike members of class (45a). In addition, they also have clear functional properties. The group under (45c) serves to classify Tense, Negation, and functional operators. Conjunctions, and maybe Complementizers too, fit in the characterization of (45d). This classification is incomplete, but it draws certain subtle distinctions which are otherwise inaccessible in other systems such as Chomsky's (1970) [$\pm N$, $\pm V$] two-feature system. For example, we can distinguish between thematic verbs and aspectual auxiliaries. They both share certain properties, and as such are generally assumed to head VP; nonetheless, they also differ, for one is argumental and the other qualifies Tense. Still another distinction made available by the proposed classification is between Tense and Modals. Both are assumed to head TP, both serve to refer sentences to possible worlds, and yet they are different: Tense has minimal semantic

content, specifying only moments in time relative to that of speech, e.g. Past and Present; Modals have descriptive content, denoting for example, 'possibility', 'obligation', and so forth, e.g. may, might, ought.

1.2.1.3 Lexical Projection

X⁰s contain distinct types of features. The present discussion is concerned only with architectural features, these determine the categorial and branching properties of phrases. Among these, two basic types can be identified: Categorial and Relational features. The former have a taxonomic role. They are used to label and classify syntactic units. For example, the features <±N> and <±V> identify the thematic categories of N(oun), V(erb), P(reposition) and A(djective), and label their phrasal projections. The latter are varied and less well known. They are often identified with their selectional properties. They can be thematic roles, functional or referential features such as those found, for example, in Neg, T, Asp or D(eterminers). The choice of complements can often be predicted on the basis of these features. The term "relational" is used here in a broad sense, to indicate that different types of interaction are rooted on the presence of these features. Feature projection is constrained by the Projection Principle (46).¹⁷

¹⁷ Lieber (1980) proposes that the category of morphological compounds is defined by feature percolation in the lexicon. The ideas presented here are similar in most respects, though we work at the syntactic level. As will become evident in 1.2.4.3 and in Chapter 3, the principles for the determination of the

(46) Projection Principle (Chomsky, 1981: 29)

Representations at each syntactic level (i.e., LF, D- and S-structure) are projected from the lexicon, in that they observe the subcategorization properties of lexical items.

As stated, this principle emphasizes the role of features having an effect on branching. It does not refer explicitly to categorial features. In a way, the Projection Principle presupposes a more general operation which we label as the Feature Projection Principle (47). This version can be interpreted to underlie the projection of both branching and non-branching features.

(47) Feature Projection Principle¹⁸

Heads project their lexical content.

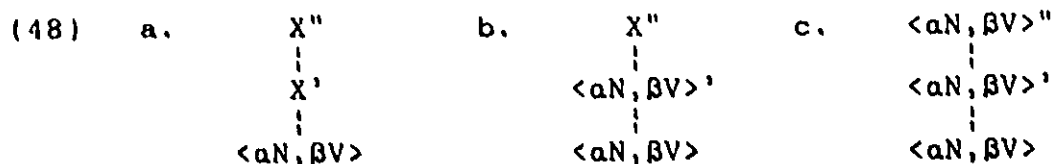
Given the X-bar template furnished by (44), categorial features like $\langle \pm N \rangle$ and $\langle \pm V \rangle$ are projected by (47) as exemplified in separate stages in (48). First, in (48a), as in the Lexicon, the features $\langle \alpha N \rangle$, $\langle \beta V \rangle$ are exclusively found in the X^0 -element. They are then transmitted to the X' level and then to X'' :¹⁹

syntactic category of X^0 s (and phrases) under inflectional processes are, however, different, for we allow syntactic categories to be redefined under incorporation.

¹⁸ Speas rule Project α (i) is different from our rule (23).

(i) PROJECT α : a word of syntactic category X is dominated by an uninterrupted sequence of X nodes.

¹⁹ I use α and β as variables ranging over the values - and +. The X^0 level is represented as X .

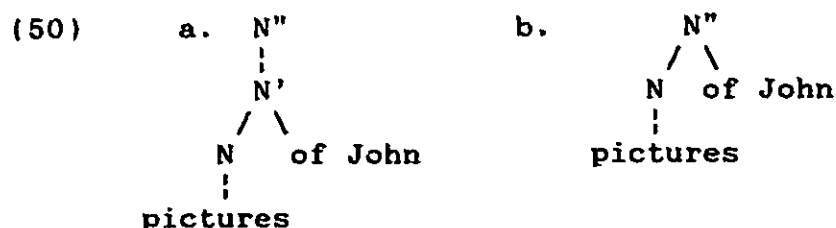


The projection of categorial features, as in (48), guarantees the operation of principle (43a) -endocentricity-. The same categorial features are found at both the X^0 and X^{max} levels. As observed, these features do not play a branching role, they only serve to label independently generated nodes. The discussion of these is postponed until section 1.2.1.5.

1.2.1.4 A Branching Paradox

Chomsky (1986b: 4), discusses the problem posed by structures lacking a specifier like (49), represented arboreally in (50).

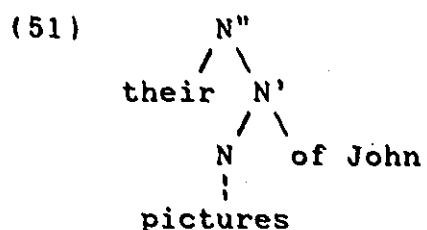
- (49) a. $[_{N''} [_{N'} [_{N'} \text{ pictures}] [\text{ of John}]]]$
 b. $[_{N''} [_{N'} \text{ pictures}] [\text{ of John}]]$



Basically, (49a), with the complement branching at the X' level, is doubly problematic. On one count, the non-binary branching node N'' does not maximize binary branching.²⁰ On another count, N'' is

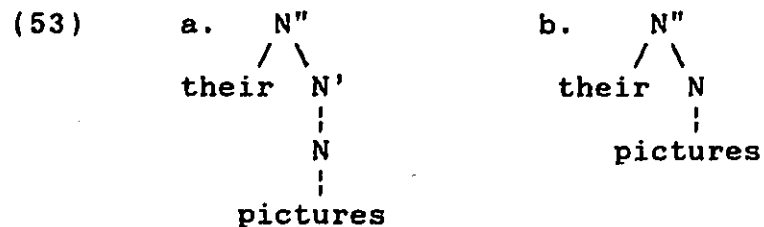
²⁰ Kayne (1984) proposes that a Binary Branching Condition should be placed on syntactic representations.

redundant, for it only serves to specify a category independently set at X'. Faced with this problem, Chomsky proposes (49b) to correct the two problems. This requires, however, the complement to branch out from a maximal N'', and not from an N', as dictated by (43b). According to Chomsky, X' is only present if the specifier is occupied as in (51):



Leaving this question aside for now, the issue to discuss is the status of (43b) and (44), the X-bar theory restrictions on the location of specifiers and complements within a phrase. To better evaluate the branching paradox posed in (49), it is convenient to examine the closely connected type of structure (52) represented as (53) which has a specifier but lacks a complement.

- (52) a. [_{N''} their [_{N'} [_N pictures]]]
 b. [_{N''} their [_N pictures]]



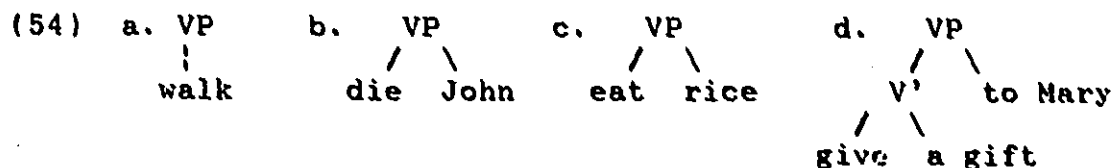
In (52a), as in (49a), there is a non-branching node in the configuration. While in (49a) N'' does not branch, here we have N' . To circumvent this problem, and in order to maximize binary branching, (52b), without the non-branching intermediate level of projection, can be introduced.

The crucial question to address is the incompatibility of binary branching maximization with the correlation between syntactic functions and particular X-bar levels -cf. (43b)-. The role of the X^{max} level is paradoxical; it may split sometimes into a head and a complement, as in (49b), and sometimes into a specifier and a head, as in (52b). The nature of the intermediate level X' contrasts with that of X^{max} . The X' level is restricted to complements, though it is only required in phrases having both a complement and a specifier. In a sense, there is a tension between determiners and complements which has an effect on the function of the X^{max} node, and on the need for an intermediate X' level in some structures. Chomsky's explanation that specifiers force the use of X' is one-sided, as this does not occur in phrases lacking a complement, like (52). The X'' level will serve separate purposes, sometimes linking a specifier with the element specified, sometimes a head with its complement. The asymmetry between X'' and X' is that the latter can only serve to link heads with their complements. Pursuing Chomsky's branching convention concerning (49), and extending it to (52), leads to the consequence that branching phrases must be represented minimally with two levels, one an X^{max} ,

the other an X^0 . In the next section we argue that these two levels are basic in any syntactic representation.

1.2.1.5 Feature Minimality

Consider the four typical types of VP represented in (54).



At one extreme, the unergative intransitive (54a) does not branch out. At the other end, binary branching is observed at all levels in (54d). Notice that specifiers are not the only elements that may license the X' level. Structures with two complements also require it. In this case, two relational θ -features belonging to the same X^0 create similar effects to those that result from the tension between determiner and complement seen in (51). In this section the effect of features on Phrase Structure is examined in some detail. The aim is to correlate features, labels, and branching in a principled way.

The interrelation between Projection and Phrase Structure can be viewed in terms of the different contribution made by the two types of syntactically relevant features defined here, categorial and relational features. The categorial features $\langle +V, -N \rangle$ determine that the X^0 s in (54) belong to the same category V, and that this is also the category of their maximal projections. Categorial

features have no effect on branching, only on the label of maximal phrasal nodes.²¹ The second type of features, relational features, determine the degree of internal complexity of syntactic units.

Categorial feature projection is a process independent of relational complexity. All X^0 -elements head phrases. In fact, a primitive notion of grammar may be that all X^0 s are inherently associated to an $X^{\max}$ like that in (55):

$$(55) \quad \begin{array}{c} X^{\max} \\ | \\ X^0 \end{array}$$

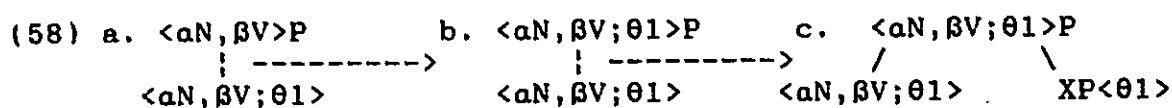
It is part of the nature of syntactic atoms that they have both a head and a maximal projection, that is, a nucleus and an outer shell. The property formalized as (55) expresses some of the content of X-bar Theory (43) or (44). Projection of categorial features in structures like (55) can be alternatively seen as the sharing of features between the two primary constituting levels of the syntactic unit. The Categorial Feature Projection Convention (56) serves to make the previous notions explicit.²²

²¹ Fukui (1986), Fukui and Speas (1986), and Speas (1986) have proposed that functional categories project maximally X'' while lexical categories project maximally X' . Categorial features may be allowed to head different types of phrases but not to produce different branching effects.

²² Notice that Endocentricity, defined as the requirement that a phrase and its head have the same syntactic category can be derived from the CFPC (31).

feature $\theta 1$ in (57b), a subcategorizational feature, will license a set of representations distinct from that associated with (57a). In other words, the presence of a complement in a structure associated with (57b) will comply with the subcategorizational frame of this item, whereas the presence of a similar complement in a structure associated with (57a) will violate (46).

Among the structures that can be associated with (57b), one will have the lexical item syntactically linked by means of a branching structure to a complement. There will be a syntactic path linking the X^0 -level $\theta 1$ feature in (57b) with a complement. Given the structure (57b) repeated as (58a), the non-branching X^{max} node, i.e. $\langle aN, \beta V \rangle P$, will be the path chosen to syntactically link the head and its complement, as proposed in relation to (49b) above. An intermediate X' level is not necessary here given that the phrase does not have both a specifier and a complement.²⁴

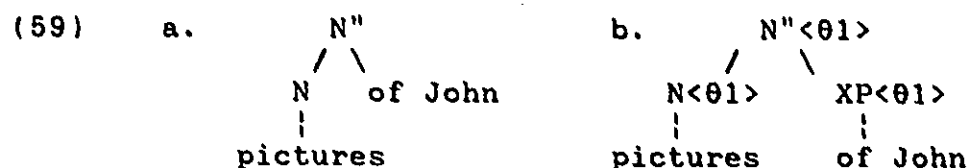


The feature $\langle \theta 1 \rangle$ percolates up -or is projected- to the first potential branching node -(58b)-, and from there "cascades" down to the selected complement -(58c). We assume the projection path of $\langle \theta 1 \rangle$ to be uninterrupted. In other words, there must not be something blocking the path of the relational feature from the head

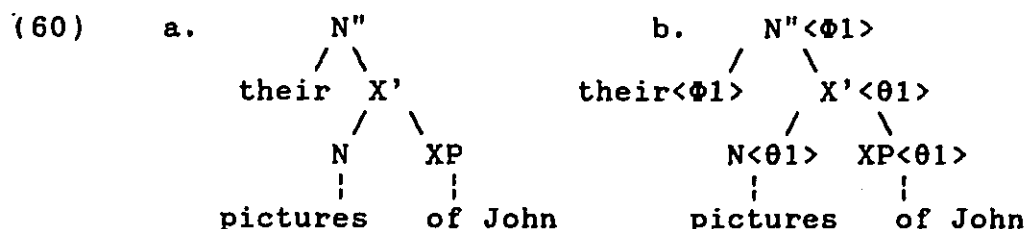
²⁴ However, inclusion of a specifier would dictate projecting an X' level for the complement.

to the complement.

Let us return to Chomsky's structural paradox discussed in relation to (49). (49b) is reproduced as (59). The noun pictures selects a complement. Its relational feature is represented as $\langle\theta 1\rangle$. The path followed by the feature is as in (58).



Consider now (51), repeated in (60). The presence of two branching elements, a specifier and a complement, forces the construction of an intermediate branching level for the complement of N. This can be understood in terms of a notion definable as Feature Minimality. Basically, the path of two "relational" features must not cross. Determiners like the possessive their in the example project a feature $\langle\Phi 1\rangle$. Because $\langle\Phi 1\rangle$, a specifying feature, is assigned to N", N" is occupied by $\langle\Phi 1\rangle$ as seen in (60b); for N to assign $\langle\theta 1\rangle$ to a complement in compliance with the Projection Principle, an intervening X' must be built to create the proper path.



Notice also that assigning a categorial label with values for the features $\langle aN, \beta V \rangle$ to the intermediate level X' in (60b) is

questionable. This intermediate projection has a status entirely distinct from that of categorial X^0 and X^{max} . Its presence is licensed by non-categorial selectional features, and effected by the tension and interplay between two relational features in (60), one originating in the determiner occupying the specifier, i.e. $\langle\Phi\rangle$, the other belonging to the head noun of the phrase, i.e. $\langle\theta\rangle$.

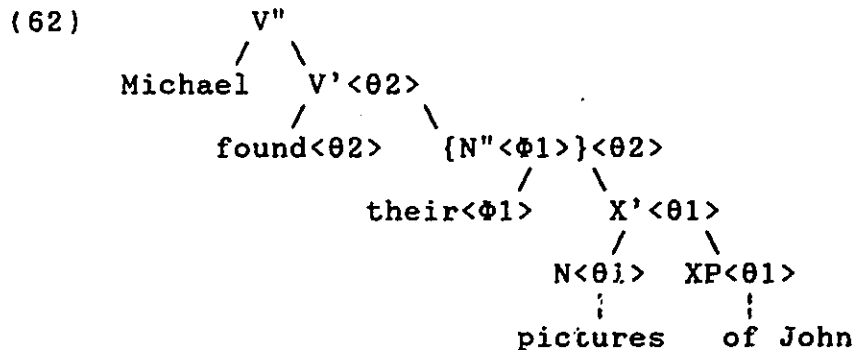
On the basis of this brief discussion Phrase Structure can be seen as the result of the interaction of the lexical properties of two level $-X^0$ and X^{max} - syntactic atoms, with the Projection Principle. A notion of Feature Minimality, as formulated in (61), can serve to complement the proposal.

(61) Feature Minimality

Within the same cycle, if $\{P1\}$ and $\{P2\}$ are the sets of nodes on the paths of the relational features $\langle F1 \rangle$ and $\langle F2 \rangle$, then $\{P1\} \cap \{P2\} = \emptyset$.

The features located at X^0 are projected. Relational features (functional and thematic, among others) are assigned via paths to maximal projections. Two of these features must not occupy the same node, this is exemplified by means of (60). Notice also that Feature Minimality serves to obtain similar results as Kayne's Binary Branching Convention; the fact that $\langle\Phi1\rangle$ and $\langle\theta1\rangle$ cannot share the maximal node X^{max} ensures that ternary branching will not be a recourse available for the construction of syntactic representations.

Feature Minimality (61) is constrained by the notion of 'cycle' in order to account for more complex constructions than those discussed thus far. Following Chomsky (1973) and Rizzi (1978), we assume that NP must be considered a cyclic node. The relevance of establishing this constraint can be observed in the following example (62), where the phrase their pictures of John is the complement of another head, a verb in particular. In the first cycle, the NP cycle, feature linking proceeds as in (60) above. At the end of the cycle the structure is interpreted. Curly brackets are utilized to mark the bounds of the structure interpreted. In the following cycle, the one including the higher V", a feature <02> is assigned from V to the N" complement. N" can receive a feature from outside because all the relational feature paths have been set in an independent cycle. Feature projection within VP, which involves the notion of 'composition' is discussed in the following section.

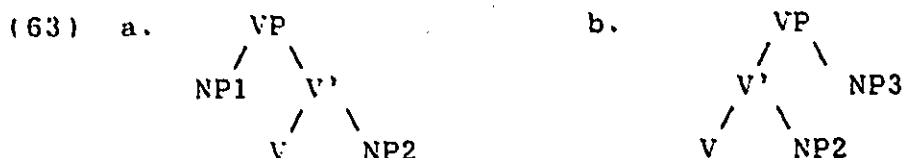


Categorial features do not fall under Feature Minimality as defined in (61). However, as will be seen in 1.2.4.3, a similar condition derived from the CFPC (56) applies to them. The interaction between

categorial and relational features offers a first example of Relativized Feature Minimality: because they are functionally independent, they may occupy the same node in a manner distinct from that discussed in relation to (62).

1.2.1.6 Subjects, Indirect Objects and Feature Minimality

Subjects and Indirect Objects are the two most obvious apparent counterexamples to Feature Minimality (61). In (63), NP1 stands for a subject in [Spec,VP];²⁵ NP2 stands for Direct Objects, and NP3 for Indirect Objects in a complement position defined as in (49b). The subject has been left out in (63b) to simplify the discussion.



If verbs select two of the NPs in each of these structures, it is clear that V' will be in the path of two selectional features in apparent violation of Feature Minimality. These are not, however, counterexamples. Consider (64) as a device to classify potential cases of feature cooccurrence. Including (64) in the Grammar will prove to be unnecessary.

(64) Feature Cooccurrence

Functional features {F1, F2...Fn} can cooccur at X^n , if they cooccur at X^{n-1} .

²⁵ The present argument can be extended to [Spec,TP] subjects. The relevant question is that the thematic content of two separate NPs originates in the same X^0 .

Ultimately, (64) allows two or more features to occupy the same node if they are projected from the same head, i.e. these features do not cross paths. If the features assigned to NP1 and NP2 in (63a) and to NP2 and NP3 in (63b) do coexist in X^0 , they may coexist at other levels.

Suppose that cooccurring theta roles are not linearly arranged and that their organization encodes information corresponding to the grammatical function borne by their corresponding arguments, as argued by Rappaport and Levin (1988). Rather than representing the three thematic roles of a predicate such as PUT ordered as in (65) (Stowell's (1)), these could be organized as in (66) (Rappaport and Levin's (5)).

(65) PUT: <Agent, Theme, Location>

(66) PUT: Agent <Theme, Location>

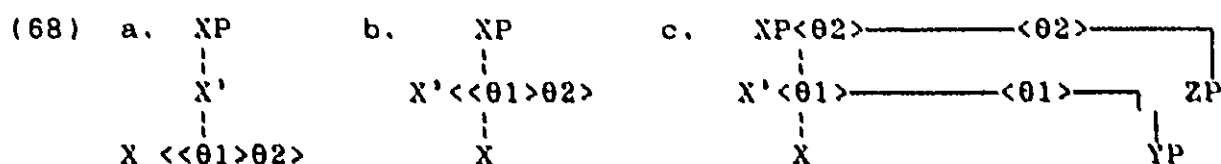
Two types of diacritics are employed in (66) to make explicit three forms of association between thematic roles and arguments. The angled brackets separate the more embedded internal arguments Theme and Location from the role of Agent linked to the external argument corresponding to the subject. Within the bracketed space, underlining is used to distinguish the direct internal argument from the secondary object. In the following discussion, we adopt a variant of the notation in (66) which maximizes the notion of

embedding to represent the thematic content of predicates, and their relationship with syntactic positions. The role corresponding to the direct internal argument is most embedded in this representation. The role corresponding to the secondary object appears in the next level of embedding, and the role of the external argument is the least embedded:²⁶

(67) PUT: <Agent <<Theme> Location>>

Given thematic structures of the form represented, in (67), their mapping onto syntactic structure can be conceived to proceed as in (68). The abstract thematic bundle in (68a), with the thematic role <01> corresponding to the direct internal argument more embedded than <02>, projects to the first node above X^0 , as in (68b). Within a two levelled syntactic structure, the features dissociate; the internal feature is linked to the argument attached at this level, and the external feature proceeds to the next level up, as in (68c). Each feature is linked with the syntactic position branching at its level. A feature assigned at a level 'n' to a complement, is no longer projected upwards; remaining features continue to the next level up. Feature Minimality is observed in (68c), corresponding to D-structure, only one thematic feature occupies each syntactic node.

²⁶ Whether the linear order of thematic roles in representations such as (67) is relevant, and must correspond to that of syntactic constituents is left unanswered here. The discussion that follows addresses only the fact that certain empirical phenomena are more adequately described if thematic representations are arboreal and are mapped onto mirroring syntactic structures.



Subjects and indirect objects exhibit thematic properties that are symptomatic of feature cooccurrence, and of a structured organization in relation with direct objects. The use of a formal device somewhat equivalent to that in (68) is, thus, supported. To begin, thematic roles assigned to subjects are componentially defined. Consider the examples (69), similar to those given by Marantz (1983).

- (69) a. The cop threw a baseball
 b. The cop threw a boxing match.
 c. The cop threw a party.
 d. The cop threw a fit.

The thematic role of the subject in all these examples is defined partly by the verb, partly by the object chosen. For example, the subject in (69a) is an agent, whereas in (69d) it is an experiencer. In a sense, the verb throw has a thematic effect on both its object and subject, yet the value of the θ -role that is ultimately assigned to the subject is not preset in the lexicon. The object must be selected before the value of the subject's role can be determined.

As illustrated in (70), similar effects are observed with Indirect Objects. The complement his wife is differently affected depending on the nature of the object given by the mayor. In this

sense, as with subjects, the thematic nature of the Indirect Object is set in part by the verb, and in part by the object.

- (70) a. The mayor gave his wife a look.
 b. The mayor gave his wife an address.
 c. The mayor gave his wife a kiss.
 d. The mayor gave his wife a fatal wound.

If it is the rule that feature cooccurrence due to selection of more than one complement by an X^0 , gives rise to compositional phenomena such as those observed in (69) and (70), Feature Minimality (61) can then be rescued without resorting to (64). Such cooccurring features are essentially different: one has its value defined from the onset, the other is left partly unspecified until the complement is selected.²⁷ The derivation (68) may be better represented as (71). A partly specified θ -role is projected from X^0 to X' in (71b). At this level it is componentially defined, then it proceeds to the XP level in (71c).

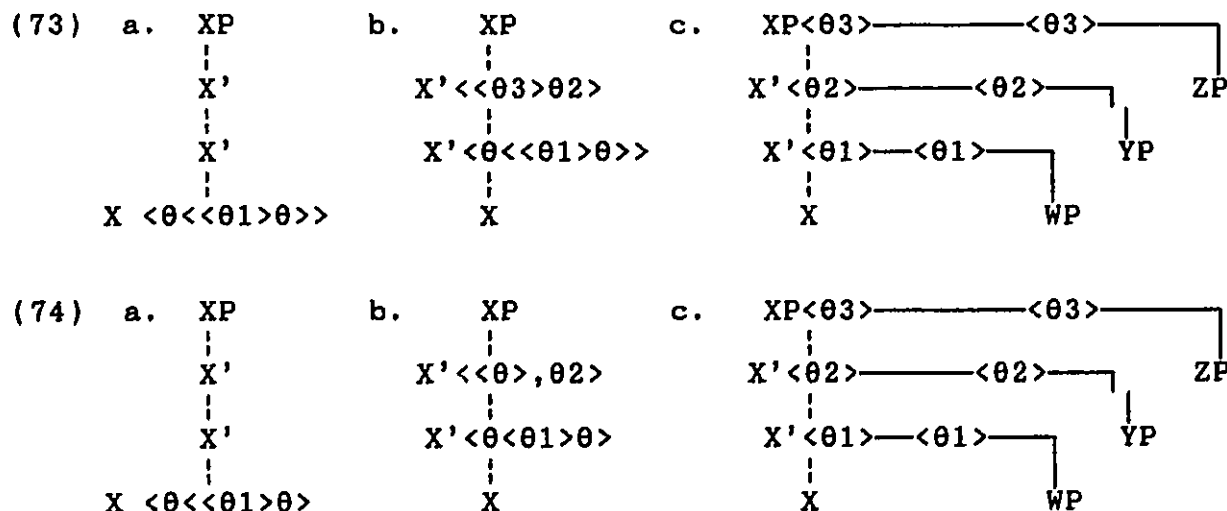
- (71) a. $\begin{array}{c} \text{XP} \\ | \\ \text{X}' \\ | \\ \text{X} \langle \langle \theta 1 \rangle \theta \rangle \end{array}$ b. $\begin{array}{c} \text{XP} \\ | \\ \text{X}' \langle \langle \theta 1 \rangle \theta \rangle \text{---} \langle \theta 1 \rangle \\ | \\ \text{X} \end{array}$ c. $\begin{array}{c} \text{XP} \langle \theta 2 \rangle \text{---} \langle \theta 2 \rangle \\ | \\ \text{X}' \langle \theta 1 \rangle \text{---} \langle \theta 1 \rangle \\ | \\ \text{X} \end{array}$

²⁷ Paul Hirschbühler has pointed out to me that the notion of complex features may be a better alternative to feature-embedding. The complex feature interpretation allows $\langle \langle \theta 1 \rangle, \theta 2 \rangle$ in (XY) to have a value "a" at X^0/X' , and a different value "b" at the XP level. The idea of embedding features presupposes that $\langle \theta 1 \rangle$ and $\langle \theta 2 \rangle$ are independent semantic features; $\langle \theta 2 \rangle$, however, is not fully specified until after the complement bearing $\langle \theta 1 \rangle$ is chosen, and thus cannot be an independent (primitive) semantic notion.

To complete this exposition, it is convenient to describe the projection of thematic features in complex three argument structures. The examples (72) serve to illustrate this point, in particular because the thematic roles of both the subject and indirect object are componentially defined taking into consideration the particular choice of direct object. The indirect object of (72a) is not affected while that of In (72b) is; the subject of (72a) is an Experiencer, that of (72b) is an agent.

- (72) a. Peter gave his neighbour a look.
 b. Peter gave his neighbour a blow with an axe.

There are two alternative ways to conceive how the unspecified thematic roles of the indirect object and subject are composed. These are portrayed in (73) and (74). The difference between them is whether the thematic role of the subject is defined at the same level of projection as that of the indirect object, as in (73b), or whether it remains unspecified at this level, as in (74b), and obtains its value only at the next level of projection, (74c).



The difference between these two potential derivations is whether the value of the subject's thematic role is defined on the basis of the object $-(73)-$, or on that of the indirect object $-(74)-$. Examples (75) attest that direct object is clearly involved in the determination of both $\langle\theta 2\rangle$ and $\langle\theta 3\rangle$, and that their sole presence in the sentence is sufficient to determine the nature of the subject as either an Experiencer or an Agent. On the other hand, the absence of an object, as in (76), renders the sentence unacceptable.

- (75) a. John gave a look.
 b. John gave a blow with an axe.

(76) *John gave Mary.

These examples suggest that a derivation such as (73), with the two unspecified thematic roles defined at the node where $\langle\theta 1\rangle$ is present and linked to its argument, could be sufficient to account for the definition of the two unspecified roles. However, this derivation ignores the fact that there are two sets of brackets separating $\langle\theta 1\rangle$ from $\langle\theta 3\rangle$ in (73b). If compositionality is to be considered in terms of percolation, we should expect each thematic role to be specified on the basis of information present in the syntactic node directly below, and thus for the subject's role $\langle\theta 3\rangle$ to be defined on the basis of the indirect object, as in (74). There is no paradox between the fact that the nature of the direct

object is ultimately responsible for the thematic role of the subject, and our attempt to define the latter in terms of the indirect object. The definition of the subject's role on the basis of the choice of object in examples like (75), can be considered as a transitive process using the indirect object as an intermediary. In essence, the value of the thematic role of the subject can be derived from the nature of the indirect object in a structure like (74c). If the indirect object is unaffected, as in (72a), the subject will be an Experiencer, if, however, the indirect object is affected, as in (72b), the subject will be an Agent. The derivation (74), is congruent with the idea that compositionality should be carried out orderly, i.e. node by node. An implication derived from this model of compositionality is that a certain degree of congruence should be expected between the different thematic roles linked to a common predicate. As such, we should not expect to find a predicate that takes simultaneously an affected object and as subject an Experiencer.

Feature Minimality complements the Feature Projection Principle (47). It is not enough for features to project. They need a principled mechanism to establish their domain and govern their paths in syntactic structures. Feature Minimality accomplishes these two tasks. Every feature of a particular type requires a path of its own. Once transit via a particular node is established, the path of other features of an equivalent type via the same node is blocked. The operative notion of equivalent feature must be clarified. However, setting a table of equivalences is not

necessarily an appropriate endeavour here. The notion can be dealt with, for now, at an intuitive level. Further in the discussion, this idea will be taken anew, and empirically exemplified.

1.2.3 Government

1.2.3.1 Head and Antecedent Government

For the purpose of this thesis, Government can be divided into Head and Antecedent Government. Except for (77i) Rizzi's (1990) definitions are reproduced.²⁵

(77) Head Government (Rizzi, 1990: 6)

- (i) X is an X^0 .
- (ii) X m-commands Y
- (iii) no barriers intervene.
- (iv) Relativized Minimality is respected.

(78) Antecedent Government (Rizzi, 1990: 6)

- (i) X and Y are coindexed.
- (ii) X c-commands Y
- (iii) no barriers intervene.
- (iv) Relativized Minimality is respected.

The notion of Barrier will be discussed in section 1.2.3.3; that of coindexation in 1.2.4.1. Chomsky's (1986b) definition of M-command (79) is presupposed by (77);²⁹ (78) requires Reinhart's (1976) c-command (80).

²⁸ Rizzi identifies X with A, N, P, V, Agr and T.

²⁹ This definition is equivalent to Aoun and Sportiche's (1983) notion of c-command.

(79) M-command (Chomsky, 1986b: 8)

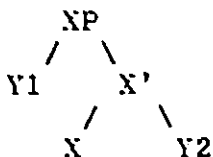
X m-commands Y iff X does not dominate Y and every Z, Z a maximal projection, that dominates X dominates Y.

(80) C-command (Chomsky, 1986b: 8)

X c-commands Y iff X does not dominate Y and every Z that dominates X dominates Y.

According to (79), both Y1 and Y2 in (81) are m-commanded by X. Notice that the domain defined by m-command is coextensional with that established by categorial projection. All the material m-commanded by X is dominated by a node with the same label as X, the m-commanded domain is basically coextensional with the unit X(P).³⁰

(81)



In contrast with (79), the value of Z is not specified in (80). If X is an X⁰, it c-commands Y2 in (81), but not Y1. The domain of c-command contains only material dominated by the first branch above X. In terms of X⁰s, c-command domains follow thematically defined paths.

M-command is defined for Head Government. Whether phrases can m-command may be a trivial question. In contrast, Antecedent Government applies both at the X⁰ and XP levels.

³⁰ The elements Y1 and Y2 in (41) m-command each other, and X.

1.2.3.2 ECP and Proper Government

One of the characteristics of the rule Move- α is to leave a trace in the positions syntactic elements move from and through. Traces must be properly governed in compliance with the ECP (82). Proper Government is equated here with Rizzi's Antecedent Government (78).

(82) ECP

Traces must be antecedent governed.

Move- α characteristically applies only to categorial X^0 and XP elements, not to selectionally projected X's.³¹ The sentences in (83) exemplify the application of Move- α at the two levels of categorial structure. (83a) shows Head-Movement, (83b) XP-movement.

- (83) a. Le voisin parle_i souvent t_i de son pays natal.
 'The neighbour often talks about his homeland'
- b. [_{PP} A qui]_i parle-t-il souvent t_i.
 'Who does he often talk to?'

These two examples differ in many respects: among others, the level of the items involved, their position prior and after the movement, and the nature of their traces. Leaving these issues aside, both must satisfy the ECP: the traces must be c-commanded by a coindexed antecedent.

³¹ But see note 10.

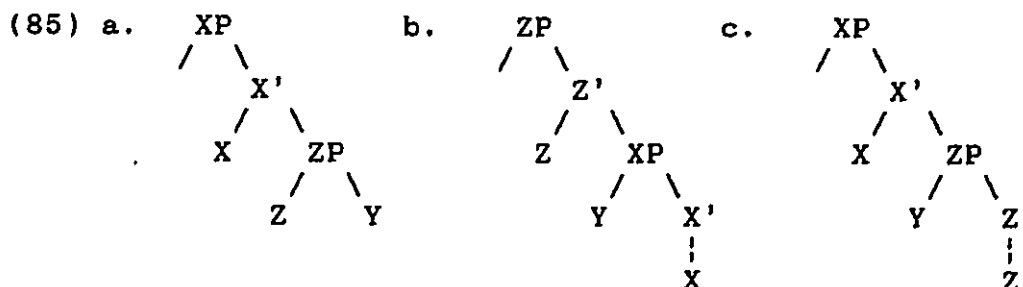
1.2.3.3 Barriers and Relativized Minimality

Government must meet certain locality conditions. In simple terms, there must not be any syntactic elements -or Barriers- in the syntactic configuration to prevent the government relation between two elements. The basic content of Rizzi's Theory of Relativized Minimality can serve to address the issue of Barriers.

(84) Relativized Minimality (Rizzi, 1990:7)

- X α -governs Y only if there is no Z such that
 (i) Z is a typical potential α -governor for Y.
 (ii) Z c-commands Y and does not c-command X.

The value of α in (84) varies over both Head and Antecedent government. In the case of Head Government, where X is an X^0 and Y an X^{max} , there must not be a Z, Z an X^0 potential head governor of Y. This gives rise to the three situations portrayed in (85). Only in the first does X not head govern Y. In this case, the two clauses in (84) are satisfied: there is a potential head governor Z of Y in the construction, and Z c-commands Y but not X.



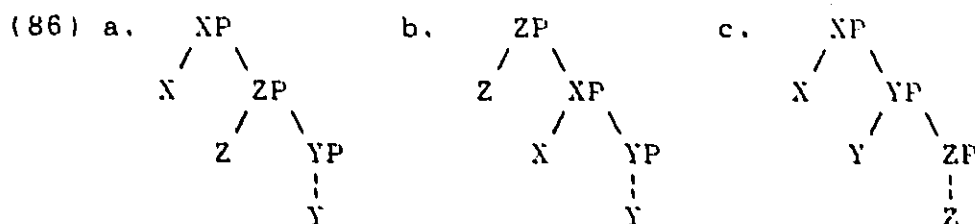
In contrast, in (85b) and (85c), X does head govern Y. In both cases X and Z are potential Head Governors of Y. In the former, Z c-commands both Y and X. In the latter, Z does not c-command either Y nor X. Basically, Head Government is disrupted only by a locally intervening governor, as in (85a).

There is, however, evidence that suggests making RM sensitive to the feature content of X^0 s along the lines of Feature Minimality (61).³² Basically, situations similar to (85a) where head-government holds between X and Y can be found. These will be discussed in Chapter 5, where Feature Minimality will be reconsidered in detail. It is preferable now to examine the interpretation (84) in the light of antecedent government.

As mentioned in 1.2.3.1, Antecedent Government can hold between two heads or two phrases. Rizzi's RM places XP-level and X^0 -level antecedent-government relations on separate tiers. In terms of α -movement, the relation between a moved X^n and its trace can be potentially altered only by other elements of type X^n . Head Movement is not affected by phrases, and vice versa.

Consider the structures (86), similar to those in (85), though designed to exemplify Antecedent Government relations between X^0 s.

³² Roberts (1988) holds the view that Rizzi's Relativized Minimality should be made sensitive to θ -structure. The difference between Robert's proposal and the present one, is that θ -minimality is only a subcase of feature minimality in general.



As in (85), only in the first case -(86a)- does X not antecedent-govern Y. There is an intervening Z, by definition of same X-bar level as X and Y, which c-commands Y but not X.³³ In the other two cases, X does antecedent govern Y. The other potential governor Z c-commands both X and Y in (86b) and neither of X or Y in (52c). Rizzi's (p.11) examples serve to understand (84) in relation to head movement:

- (87) a. They could have left
 b. Could_i they t_i have left?
 c. *Have_i they could t_i left?

(87b,c) result from X⁰-movement to C. In (87b) there is no intervening X⁰ between the trace and the antecedent could; the sentence is grammatical. In (87c), the aspectual have skips the modal auxiliary and the sentence is ungrammatical. The explanation offered is that could is a potential governor intervening between have and its trace. LHM is an evident counterexample for Rizzi's RM. Reconsider Slovak (11) in the light of the present discussion.

³³ The omission of the X' level creates a visual problem for the interpretation of c-command.

- (11) Napísal_i som t_i list
 Write:Part have:Pres:1s letter:the
 'I wrote the letter'

The derivation of (11) is parallel to that of (87c). The lower verbal element napísal raises skipping the intervening auxiliary som, yet antecedent government is not disrupted by the intervening X⁰. The contrast between (87c) and (11) will be examined at length in Chapter 5. For now it is sufficient to mention that the asymmetry is due to the fact that the lexical content of the two elements is different. A feature of the modal could blocks the antecedent government relation, whereas nothing in the lexical specification of Slovak som does.

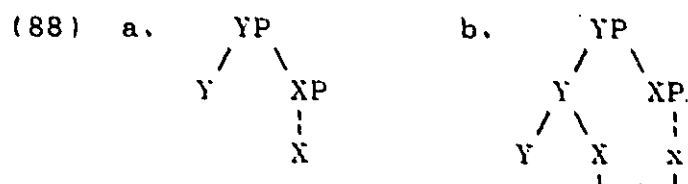
1.2.4 X⁰-Geometry

Before concluding this introduction, a word must be said on the morphology of Incorporation. As with XP-movement in general, two alternative forms of X⁰-movement have been thought up: Adjunction and Substitution. Baker (1988) considered adjunction to be the general form assumed by Incorporation. Chomsky (1986b, 1988) follows this idea, and mentions that substitution can also be considered a viable form of X⁰ movement, though restricted to apply only in movement to positions occupied by null operators. On the other hand, Lema (1988a, 1989) proposes under the label of Category Switching, a form of X⁰-substitution to be discussed in 1.2.4.3. Also, Rizzi and Roberts (1989) have discussed a form of

substitution which we will show to be an alternative form of adjunction in 1.2.4.2.

1.2.4.1 Adjunction

X⁰-Adjunction assumes the form shown in (88). A head X moves to the 0-level element Y above. The lowest projection of the host Y is duplicated, and X adjoins itself by the created branch.



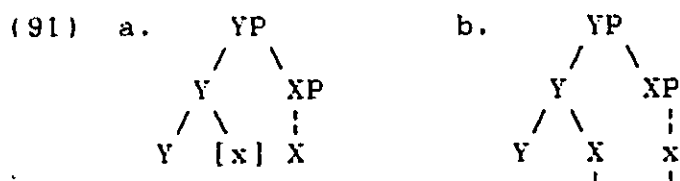
X becomes a morpheme of the compound of category Y. Adjunction is conceived of as a structure-building operation.

1.2.4.2 Rizzi and Roberts' Substitution

Rizzi and Roberts (1989) have presented an alternative to (88) to account for the formation of incorporation compounds. Their proposal makes explicit that incorporation must satisfy certain morpholexical conditions in order to apply. In essence, contiguity between two heads is not sufficient a reason for incorporation to apply. Thus for example, the fact that a Nahuatl object can incorporate into a verb, as in (89) does not imply that under similar syntactic conditions, an English noun should also incorporate into a verb, as in (90).

- (89) a. Tiyaanquis-co ni-c-naamaca in tlaxcal-li
 market-LOC 1-it-sell D tortilla-ABS
 'I sell tortillas in the market'
- b. Tiyaanquis-co ni-tlaxcal₁-naamaca t₁
 market-LOC 1-tortilla-sell
 'I sell tortillas in the market'
- (90) a. I sell tortillas in the market.
 b. *I tortilla-sell in the market.

Clearly, Nahuatl verbs must be lexically specified to take nominal morphological complements. English verbs, in contrast, do not have a similar specification and do not act as incorporation hosts. Rizzi and Roberts propose that incorporation assumes the form in (91), where Y corresponds to V and X to N in (89). Potential hosts, like the formative Y, are lexically specified with an empty slot marked with the category ([x]) of the complement required. A head meeting this categorial requisite moves and fills it, as in (91b). Incorporation is therefore substitution of an "empty slot".



A second important consequence of Rizzi and Robert's insight is that two sorts of incorporation emerge. One type satisfies subcategorizational requirements of the host, the other is a form of incorporation not determined by the host, and probably at play when the moved element is the one that has to fulfil some demand.

Perhaps the second type can be identified with most instances of syntactic cliticization.³⁴ We agree with the view that incorporation is predetermined by the host, though probably also by the moved X^0 . Nevertheless, expressing the category of the item that incorporates in the compound is somewhat redundant, for independent structural conditions on X^0 -movement determine which X^0 is susceptible to move.³⁵ A categorially neutral feature based on the notion of syntactic freedom, may be sufficient to identify which formatives enter into incorporation processes, and which roles they play. This hypothesis will be contemplated in Chapter 3.

Despite our adoption of the basic tenet of Rizzi and Roberts' proposal, we will formulate incorporations as adjunctions due to a geometric feature of their model. Notice that an X^0 created by substitution is geometrically identical in all respects with one created by adjunction at S-structure, and LF, cf. (91b) in comparison with (88b). The relational distinction between

³⁴ Uriagereka (1988) reinterprets Jackendoff's (1987) Argument Substitution principle, defining it as (i), and extends it to apply to incorporation, of which determiner -pronominal- cliticization is considered a particular instance.

(i) Argument Substitution (Uriagereka, 1988:52)

For each indexed position in the matrix of a head, substitute the reading of the syntactic constituent in the sentence that satisfies the co-indexed position in the head.

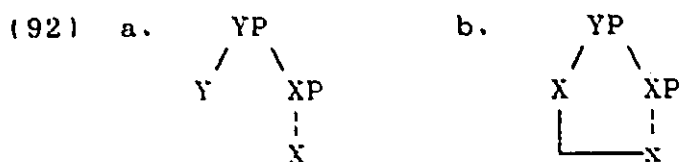
If Uriagereka is correct, the distinction made by Rizzi and Roberts is lost, all forms of incorporation serving to satisfy some lexically implanted feature of the head.

³⁵ Redundant in two counts, for the XP headed by the X^0 that can move is independently selected by the host at D-Structure.

subcategorized and non-subcategorized subparts of X^0 s is lost at the derived levels. We propose in the following section a different interpretation of the notions of substitution and adjunction that has effects on the structure at S-structure and, presumably, at LF.

1.2.4.3 Substitution and Category Switching

In formal terms, substitution should be something like (92), where a head X moves to the position of Y and replaces it. It is possible that an operation similar to this may accompany movement to C in V-second and LHM-to- C languages, for example.

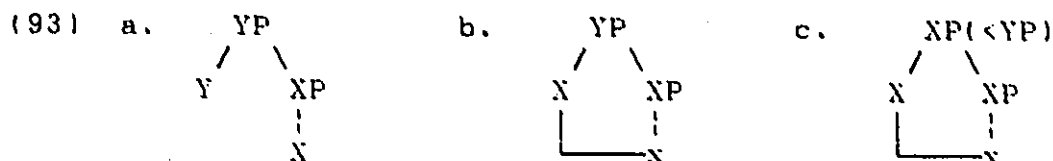


The generally held view of X-bar Theory or Projection Theory is that Endocentricity applies at all levels of representation.³⁶

Within the present framework, the head and maximal projection of syntactic units such as $X(P)$ and $Y(P)$ in (92a) are an extension of each other. Exocentricity is therefore impossible to achieve. X^0 -substitution must create a syntactic unit that ensures Endocentricity. This can only be achieved by altering either the category of the head or that of the phrase: either X takes the category of Y after substituting it, or YP alters its category and becomes XP . The latter option seems to be more congruent with

³⁶ Stowell (1981) assumes this, Chomsky (1986b) mentions it explicitly.

Feature Projection, after all heads determine the category of phrases and not *vice versa*. Substitution (92) must take the form of (93), where (93b) is presented only for clarity. Substitution and Category Switching must be simultaneous.



Category Switching causes the category of the hosting position to change after an X^0 -movement by adopting the features of its guest. As a consequence, both the X^0 and the XP levels undergo a categorial change in harmony with the Feature Projection Principle (47), which ensures Endocentricity. A most important effect of Category Switching is that V-second constructions such as that in (94b), where the modal has moved to C, do not produce exocentric phrases.

- (94) a. They must sign their name with blood.
b. How must_i they t_i sign their name?

Intuitively must is a modal in both (94a) and (94b). This auxiliary cannot be considered to switch its modal category for that of C in (94b) in order to save Endocentricity. Moreover, must in (94b) is the antecedent-governor of a modal trace, if X^0 traces are anaphors, as proposed in Chomsky (1986b) and also argued here in Chapter 3, a relation of identity must hold between the antecedent

and the anaphoric trace. Among the properties that the two elements must share, we count their Syntactic Category. The item must in C, as well as its trace, must both have the modal category. It is incongruent that a complementizer and the trace of a modal should be considered identical. The opposite alternative, changing the category of D-structure CP, does not create this sort of problems and also satisfies Endocentricity.³⁷

A substitution operation based on adjunction can be proposed to solve this problem. The examples (9) and (10), repeated here, can serve to understand this concept. Recall that the formation of finite elements in French and English is different. The verb chante in (9) has raised to the position of T; the verb sings maintains its basic VP-position, and according to recent analyses by Pollock and Chomsky, affixes are supposed to lower.³⁸

(9) Le conducteur chante rarement "Nessun Dorma".

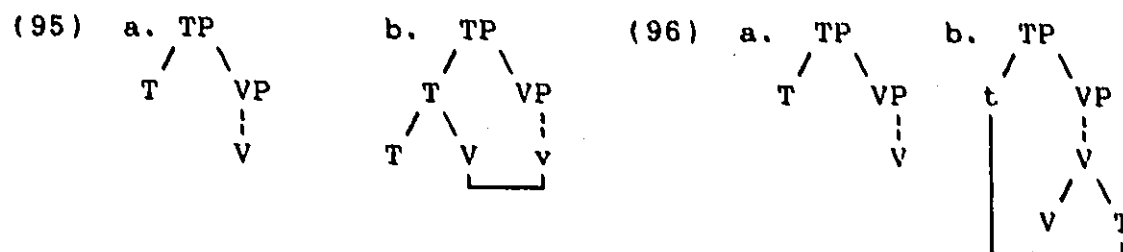
(10) The driver seldom sings "Nessun Dorma".

Because inflected verbs, whether produced by V-movement or Affix Lowering, are morphologically complex forms with a verbal base and inflections, an operation similar to adjunction (91), and not like substitution (92)/(93), must be the type of mechanism underlying

³⁷ It is possible that the phrase where verbal elements move in V-second languages is not a CP at all. Since there is never a complementizer in such structures, there is no evidence that a CP is ever projected. The only evidence we have for C(P) in V-second languages is in embedded sentences, where the presence of C inhibits movement by the verbal element.

³⁸ Syntactic evidence for Category Switching is presented in Lema (1988a, 1989); for another version see Roberts (1990).

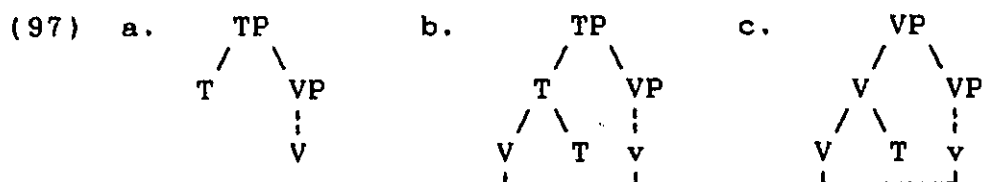
the derivation of (9) and (10). Chomsky's (1988) proposal for V to T adjunction is portrayed in (95), that for T to V in (96):



Notice that in this proposal, the compound created under T in (95b) bears the category T, whereas that in (96b) has that of V. In other words, chante in (9) has the category T and sings in (10) that of Verb. These results contrast with Chomsky's (1986b) proposal concerning the categorial effects of V to T raising. There the element formed was considered to be an inflected verb V_1 and not a T. In a sense, Chomsky's V_1 , though formed by Raising corresponds to the structure (96b), where he proposes a lowering adjunction. Chomsky's (1988) position that different syntactic procedures followed to form inflected verbs can produce different morphological outputs is derived from the automatic application of adjunction indifferently of the direction of the movement. A weakness of his proposal is that no arguments are offered that will allow us to evaluate his conclusions. Faced with two options, that of considering French verbs such as chante a T or a V_1 , we choose follow the latter, and maintain that after the incorporation of V to T, the element formed continues to be basically a verb, though

inflected. In section 3.3 we will evaluate our proposal. We will see there that the hypothesis that categories can switch after incorporations like that of V to T, may have some interesting syntactic consequences. Nonetheless, some problematic areas will also be discussed.

In order to maintain cross-linguistic categorial parallelisms, the derivation of French inflected verbs should be as in (97) instead of (95). Adjunction of V to T must be followed by Category Switching so as to produce the actual substitution of the host-head of the phrase. The alteration of the syntactic category of a host, must ensue in the actual situation where the host is morphological, rather than a putative null position like Y in the example (93a). Percolation Theory must include a convention to enable lexical X^0 s to project their categorial features to substitute those of non-lexical heads, basically as a lexicalization operation.



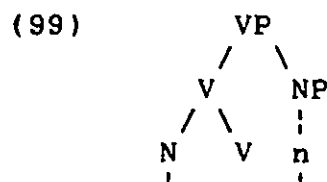
The compound in (97c) has a verbal base and a temporal affix, and its category is V. This is the expected morphological analysis of the compound which is identical to that of (96b). The derivational contrast between (96) and (97) is based on the hypothesis that lexical features $\langle \alpha N, \beta V \rangle$ transcend functional features such as those of T. While V-movement to T alters the category of the host,

T-movement to V does not. In terms of Feature Minimality (61), the categorial features of V and T must be qualitatively different: $\langle -N, +V \rangle$ may transit via the higher T node in (97b).

In contrast with the cases under examination, incorporations of the type discussed by Baker (1988), involving only lexical heads cannot give rise to Category Switching. Incorporation by a Noun into a Verb, like in the Nahuatl example (89b), repeated as (98), does not alter the category of the verb.

- (98) Tiyaanquis-co [ni-tlaxcal_i-naamaca] t_i
 market-LOC I-tortilla-sell
 'I sell tortillas in the market'

The structure (99) corresponds to that of the VP in (98). Because both N and V have features of the type $\langle \alpha N, \beta V \rangle$, the higher node V^o acts as a minimal barrier for the percolation of features from the noun, and Category Switching is prevented.



Category Switching after X^o-movement has important configurational effects, the label of certain phrases being altered from D to S-structure. Some of these will be described in Chapter 3.

1.3 Limitations of the Study

The forms of X⁰-movement that this thesis deals with all involve affixes. Incorporations where two lexical heads interact are not discussed. It is conceivable that the analysis be extended in certain ways, but this endeavour is beyond the aims of the present work.

As the framework adopted here is based on the idea that flexional affixation is performed in the Syntactic Component, an alternative explanation of some of the processes in lexical terms is not systematically entertained. Though it is conceivable that a lexical account of the phenomena discussed produce an adequate explanation for some of them, such as Affix Lowering, it is not apparent that it provide an adequate account of LHM.

There are two syntactic alternations discussed in terms of LHM which are given a unitary explanation, where a non-unitary account might have also been adequate in some respects. This concerns the two alternations observed in (100) and (101). Both of these alternations involve a syntactically free form he and not on one side, and an affixal form é and n't on the other.

- (100) a. Lo cantaré b. Cantar lo he
 It will:sing:1s Sing it will:1s
 'I will sing it'

- (101) a. John hasn't often worked at the mill.
 b. John has not often worked at the mill.

Though it could be argued that the affixal forms in the a versions are lexically generated on the morphological bases where they surface, while their synonyms in the b versions are not, we prefer to view the alternation as syntactic motivated.

Chapter 2
Some Lexical and Syntactic
Properties of Aspect

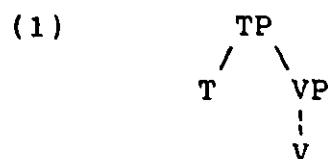
2.0 Introduction

This chapter presents some of the properties of sentence structure and of the elements involved in X^0 -movement between its lexical and non-lexical layers. The description is not exhaustive, it is intended to provide a basic structure to frame the relevant forms of X^0 -movement, and to define some of the main properties of the elements involved. This discussion is necessary to recognize the structural and functional properties of the implicated elements and their relationships.

This chapter is organized in two main sections. The first is historical in part. It recounts some of the central views and discussions pertaining to the nature of the verbal and auxiliary system of English since Chomsky (1955). The emphasis is put on the categorization and location of T and Agr, and of modals, aspectuals and verbs. The structure of syntactic representations is discussed, and the evidence leads in Section 2 to maintain the existence of an AspP between TP and VP, and thus to define sentence structure - excluding CP- in three principal layers, namely TP, AspP and VP. Some of the properties of T, Asp and Aktionsarten -or lexical

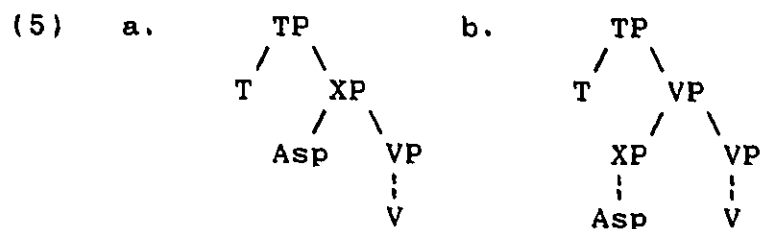
aspect-, and their role in setting the referential properties of sentences are then discussed in order to justify the analysis. It is shown that the structural location of Asp between TP and VP is harmonious with both its role as complement of T, and its effects on the selection and interpretation of verbal Aktionsarten. The model will prove adequate and necessary for the analysis of X⁰-movement carried out in the remainder of the thesis.

Finite element formation involves minimally the two elements T and V portrayed in (1).



As discussed in 1.1.1, the main proposals in the literature accept that V and T may unite by Raising V, but that the nature of the process underlying the synthesis between V and T in languages such as English where V is inert remains controversial. Whether affixes lower, or whether they are generated lexically within VP is controversial. In Chapters 3 and 4 an in-depth discussion of each of these strategies is presented. For now, it is sufficient to mention that V-raising can account for the formation of inflected verbs in French (2a); and that T-lowering has been proposed to be an option for that of the corresponding English example (2b). The structure (1) serves to contextualize the general problem concerning this thesis, that is X⁰-movement between lexical and

Other than the position between V and T, many of their properties are not as clear. Setting aside the fact that the strong version of X-bar or Projection Theory adopted here requires Asp to project an X^{max} , two important questions must still be answered. First, it must be determined whether Asp is related to T and V as in (5a) or (5b): does Asp head a sentential phrasal layer comparable to TP and VP, or is it confined to adjunction and specifier positions, on a par with adverbs for example. The option (5a) will prove to be the correct one.



The second issue to address concerns the phrasal category projected from Asp. For English, XP in (5) has been most generally situated inside VP. Asp has been argued by some to be a specifier of VP, by others to head a VP projection. Arguments to set English aspectuals as an independent category with the neutral label of Aux(iliary) have been presented by Akmajian, Steele and Wasow (1979) among others. Recently, Ouhalla (1990) has proposed that Asp projects an AspP as in (5a). The existence of a similar phrase will also be maintained here.

Postulating a category Asp(P) forces us to consider whether it is a lexical or non-lexical. Analyses defining Aspect as head

of VP, have assumed it to be lexical. Contrariwise, Ouhalla has claimed that it is functional in nature. It will be argued here that aspectuals are non-thematic elements like T, but that unlike T, they share semantic properties with verbs that uncover their lexical character. The notions of thematicity and lexicality are shown not to be equivalent. While thematic categories are lexical, lexical categories need not be thematic. In the final analysis, the commonly observed inclusion of Asp inside VP, is congruent with the fact that Asp is lexically related to verbs. Nevertheless, aspectuals are also functionally distinct from verbs, and must be distinctly identified.

2.1 Sentence Structure: Lexical and Non-Lexical Constituents

The dissociation of inflection from verbal and auxiliary elements at D-structure, and their amalgamation at S-structure via movement strategies, have been complementary notions since Chomsky (1955). In all cases, inflectional elements have been placed higher in the tree than V and Aux. However, the label, the position in the syntactic tree, and the internal structure of the elements in question have all undergone many important modifications. A brief historical overview of some of these questions is pertinent, albeit in a somewhat oversimplified fashion.

2.1.1 A Historical Perspective of Sentence Structure

2.1.1.1 Aux in Syntactic Structures and Aspects

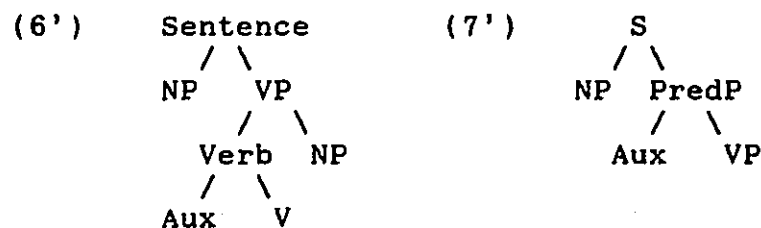
The relevant subparts of the P(hrase) S(tructure) systems in the models of Chomsky (1957) and Chomsky (1965), are defined as (6) and (7), respectively. In these early models, the category Aux comprised items of different morphological types: Inflections, Modals and Aspectual Auxiliaries. In (6d), the symbol $\bar{Q}$ stands for the third person singular agreement morpheme /s/.¹ Notice that this agreement element is absent in (7c), and that in contrast, T is explicitly mentioned only in the later model. As far as the position and relationship between Aux and verbal elements is concerned, there is an important change that is better appreciated in the primed representations of (6) and (7).

(6) Syntactic Structures (1957)

- a. Sentence $\rightarrow$ NP+VP
- b. VP $\rightarrow$ Verb+NP
- c. Verb $\rightarrow$ Aux+V
- d. Aux $\rightarrow$ C (M)(have+en)(be+ing)(be+en)

(7) Aspects (1965)

- a. S $\rightarrow$ NP[^]Predicate-Phrase
- b. Predicate Phrase $\rightarrow$ Aux[^]VP (Place) (Time)
- c. Aux $\rightarrow$ Tense (M) (Aspect)



¹ The rule that dictates its realization as /s/ or / $\emptyset$ / is not relevant to our present discussion.

The status of Aux evolves from that of being a sister to V inside VP, to that of being a sister to this category. This change epitomizes the long-standing debate surrounding the 'categoryhood' of the elements grouped under Aux: are they inside or outside VP; are they members of the category V or rather of something like T, and so forth. Because Aux contains items of different types, changes like that between (6) and (7) may be adequate for some elements, yet too radical for others.

2.1.1.2 Aspectuals as Independent Projections

Ross (1967), opposing the arbitrariness and heterogeneity of the material included under Aux, split its content into two separate classes. He restricted the label Aux to T, and analyzed auxiliaries as Main Verbs. The separation of inflections from auxiliaries, although an appropriate step in retrospective, was too drastic, and created a problem not encountered before in Chomsky's proposals (6) and (7). While in Aspects -(7)- Chomsky distinguished auxiliaries and modals from verbs with argumental structure, placing auxiliaries outside VP, Ross unified in one category distinct from Aux all temporalizable elements regardless of semantic type and syntactic function. As a result, auxiliaries came to be considered similar to verbs despite their lack of argumental structure or thematicity.

Chomsky (1965) presents, besides (7), the alternative set of PS-Rules (8). The main difference between the two is the omission

of the category PredP from the latter. As a result, S has three separate branches instead of two, one dominating Aux. The content of this category remains, however, the same as in (7).

(8) $S \rightarrow NP^{\wedge} Aux^{\wedge} VP$

(8')

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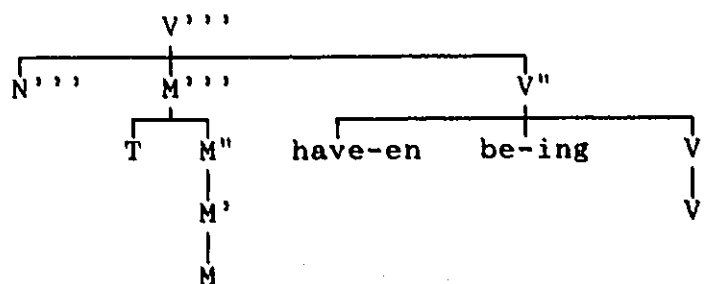
      S
     /| \
    NP Aux VP
  
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The suggestion made by Ross concerning the status of auxiliaries as main verbs, and Chomsky's later proposals contain intuitions that are later substantiated principally by Emonds (1976). Before examining some of the arguments supporting this position, and in order to keep with the chronology of the development, it is pertinent to examine a different view of auxiliaries which considers these elements as specifiers of V rather than as independent heads of projection.

2.1.1.3 Aspectuals as Specifiers

Jackendoff (1977), under his Uniform Three-Level Hypothesis version of X-bar theory, proposed that V -corresponding closely to argumental verb- is dominated by three levels of projection, as in (9). Within this scheme the various constituents previously contained in Aux are separated. V''' is equivalent to S.

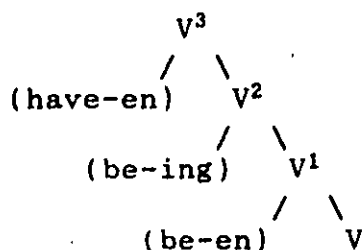
(9)



Modals are distinguished from aspectuals and verbs. They head M''' , a maximal modal projection also containing T . Auxiliaries are distinguished from argumental verbs. They are restricted to the V'' level while V is the sole item contained within V' . Despite the attempt to distinguish aspectual auxiliaries from verbs, they branch out directly from V'' , they do not project a phrasal category of their own, and they are therefore not Main Verbs as conceived by Ross. They are in a sense V'' specifiers.

Also positing a layered VP, Akmajian, Steele and Wasow (1979) define all auxiliaries as specifiers, and subcategorize them according to the level of V projection where they attach. In (10), we see their proposed VP structure. As with Jackendoff, auxiliaries do not project a phrasal category and are thus not Main Verbs. The nodes from which they branch out are not their projections; they belong to the argumental element V .

(10)

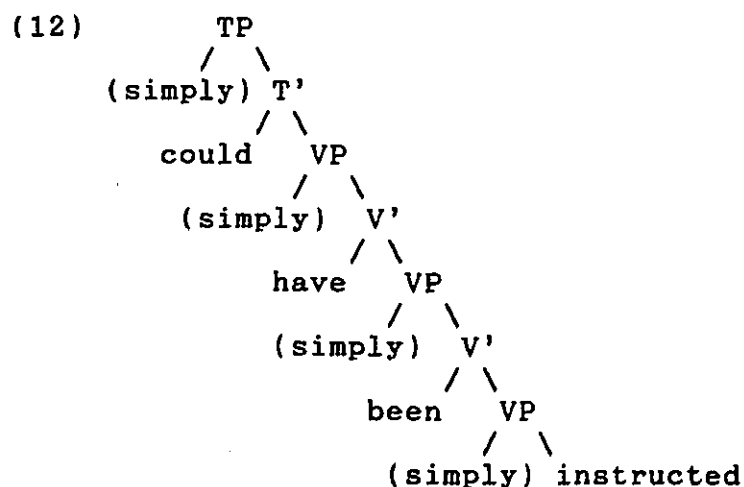


2.1.1.4 Auxiliaries as Heads of Maximal Projections

Emonds (1976) presents evidence that auxiliaries must be considered heads of maximal projections rather than specifiers. In particular he shows that there is a set of Adverbs -specifiers- that can appear with any of a series of auxiliaries, a fact which must be interpreted to indicate that for every auxiliary there is a specifier position. Thus, example (11) shows that adverbs of the type of scarcely may appear to the left of any auxiliary.

- (11) a. Oscar could have been simply instructed on this matter.
 b. Oscar could have simply been instructed on this matter.
 c. Oscar could simply have been instructed on this matter.
 d. Oscar simply could have been instructed on this matter.

The behaviour of the adverb in (11) indicates that there must be a position for the adverb to occupy at each level where auxiliaries appear. The partial representation (12) can account for the location of adverbs and for their relation with the different auxiliaries in sentences such as (11).



The representation in (10), with all auxiliaries in specifier positions cannot account for data such as that in (11). In order to accommodate adverbs as well as auxiliaries, the VP in (10) would require to be expanded into a seven level structure. The correlation between phrasal level and the nature of the auxiliaries would be lost, for it may vary depending on the presence and location of adverbs. In (11a) been appears at the V2 level, whereas in (11b,c,d) it is found at the (V1) level. The problem becomes complex when different specifier positions are occupied. If quantifiers occupy specifier positions, as argued by Kayne (1975), and Emonds (1976), sentences such as (13) would see the number of specifier positions, and the correspondence between phrasal levels and grammatical category complicated even further.

(13) They could simply have all been instructed on this matter.

A consequence of the present framework, where the higher of a series of auxiliaries moves to T in structures such as (14), is that auxiliaries must be X^0 elements that move in a Head-to-Head fashion from the head of their own projection to that of the following Phrase. In a sense, Emonds' proposal is partly compatible with the present approach despite obvious differences concerning the inclusion of movement operations here.

- (14) a. They could simply have all been instructed on this matter.
 b. They had_i simply t_i all been instructed on this matter.
 c. They were_i simply all t_i instructed on this matter.

2.1.1.5 Infl and VP

The structure of S in Chomsky (1981), partially reproduced in (15) and represented as (15'), is ternary branching like (8) and (9).

(15) S → NP INFL VP (10, p.52)

(15')

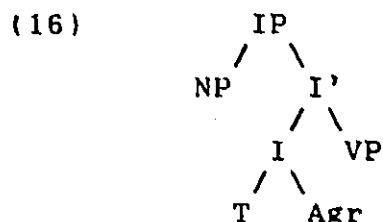
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      S
     /| \
    NP INFL VP
  
```

In spite of the apparent structural similarities between (8') and (15'), the content of the Aux and Infl nodes is quite different. Like in all previous proposals since Ross', inflections and auxiliaries are separated. The category Infl (instead of Aux) contains T and Agr; modals are not discussed, although (Chomsky, 1981:180) suggests that they are probably also in Infl as in Jackendoff's proposal. Finally, auxiliaries are included in VP, yet no explicit treatment of them is offered.

Jackendoff's view that the category of the sentence be that of one of its constituents, namely V, is an interesting conceptual innovation which has remained part of Syntactic Theory. Chomsky (1981:52) too considers S to be projected from a sentential constituent. For him the head of S is the functional item Infl, not the lexical V. The Category Switching Hypothesis allows us to conceive that the category of S need not remain constant throughout a derivation, but that it reflects categorial changes undergone by its head, as discussed in 1.2.4.3. It may thus be of category Inf at one level, and V at another.

In (15), [NP,S], Infl and VP are equivalent branching sisters and there is no formal way to single out Infl and characterize it as the head of S. Adopting Kayne's (1984) Binary Branching Hypothesis allows formalization of this idea in Chomsky (1986b). In (16), I(nfl) is the 0-bar level element from which IP (=S) is projected. The two other branches of (15), i.e. NP and VP, are respectively the subject and object of I, and are not involved in the categorial definition of IP.



2.1.1.6 Dissociating Infl

The D-structure dissociation of complex surface forms, e.g. the ramification of inflected verbal elements into Infl (which contains T and Agr) and V, has recently led to a reconsideration of the status of Infl, and to further dissociate T and Agr from I. Pollock proposes two separate phrases TP and AgrP in (17), each with its own functional head. Lately, after Belletti (1991), Chomsky (1988) and Rizzi (1990) have reversed the order in (17) between (Subject) Agr and T as in (18). This move is motivated in part to observe Baker's (1985a) Mirror Principle, which requires the order of morphemes to reflect the order of the derivation. Thus, in Romance, tense morphemes are internal to agreement morphemes in

of parametric properties of X^0 -movement. In contrast, the unvarying status of Agr will prove to not have any perceptible effects.³

Given the development of Chomsky's (1957) heterogeneous Aux into the Infl represented in (16), it can be ascertained that Asp is situated outside IP. Nonetheless, it still has to be determined whether aspectuals are part of VP or head a projection of their own. The question has important implications. If aspectuals are part of VP, then how do they differ from argumental verbs. If, however, they are not, the nature of their projection must be determined. As will become clear, examination of the formation of finite aspectuals is a proper point to initiate the discussion in the next section. Prior to this, it is adequate to discuss the status of Modals.

2.1.1.7 Modals

The situation of Modals has not been affected by the changes undergone by the model since Chomsky (1957). While most other items generated under Aux in that early model are now situated outside Infl, English modals are considered to occupy the same syntactic position as T (and Agr), as observed, for example in Jackendoff's

³ Iatridou (1990) presents several arguments against Pollock's split version of IP. It is possible that some of her arguments may be used to dismiss also model (19). Our view of the problem is different. It is based on the fact that T, Asp and Modals are seen to be sometimes realized as affixes, sometimes as free auxiliaries in language. In virtue of the latter possibility, it seems adequate to consider them as X^0 s that can head their own maximal projections. Agreements do not seem to realize themselves as a free formatives.

model (20) above.⁴ Among the arguments that support this, are the fact that modals cannot appear to the right of auxiliaries (*John had must go); modals are in complementary distribution with agreement (*John musts go), and tense -if actually existent in modal constructions-is embodied within the modal itself (John can/could go); modals do not have an infinitival version formed by means of to, an element which is apparently generated under Infl and in apparent complementary distribution with inflections (Stockwell, Schachter and Partee, 1973; Akmajian and Wasow, 1975; Emonds, 1976); Fiengo, 1980; Stowell, 1981) the future tense in English is formed with WILL and SHALL, and has therefore modal rather than temporal qualities, in contrast to that of languages like French, where it is temporal. This view of Modals is followed here.⁵

2.1.2 Aspectuals BE and HAVE

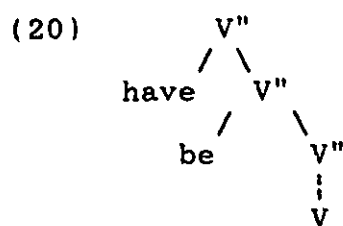
2.1.2.1 Asp-movement

Since Ross (1967), auxiliaries have been considered to be syntactically independent from T and Agr. Their separation from inflections and modals did not, however, automatically establish

⁴ Pullum and Wilson (1977), Akmajian, Steele and Wasow (1979), Fiengo (1980), Lasnik (1981), Chomsky (1981), Pollock (1989), among others, have adhered to this position.

⁵ It is arguable that Modals head a ModP distinct from TP. In English, MP and TP appear in complementary distribution. See Ch. 5, where it is argued that Slovak requires a C(onditional)P above TP to account for the independent status of conditional and temporal auxiliaries.

their nature or syntactic location. Subsequent to the Aspects model, HAVE and BE have been part of VP. It has been argued that HAVE and BE belong to a category Aux distinct from V (Kaisse, 1983; Akmajian et al., 1979).⁶ Although Akmajian, Steele and Wasow, cf. (10), and perhaps Jackendoff, cf. (9), have treated them as specifiers without their own maximal projection, it has been maintained since Emonds (1976) and Zagana (1982, 1988), that aspectual auxiliaries are not specifiers and that they each head a maximal VP (or V") projection, as in (20). The basic contents of this proposal will be adopted here, though with the very important difference that aspectuals head their own maximal AspP and not a VP like argumental verbs.⁷ Despite superficial resemblance, (20) must be differently interpreted from (10): here aspectuals are not specifiers, but heads, each, of their maximal V projection.

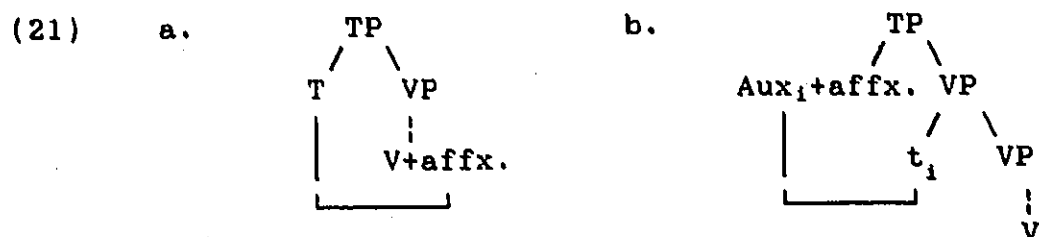


The more reliable evidence that BE and HAVE project phrasal categories, as in (20), and are not specifiers of VP, is derived

⁶ Pullum (1981) has argued that the syntactic category AUX is not part of UG. We agree with this view, but only because the term Aux is a morphological label and not appropriate to refer to a grammatical category. Modals, aspectuals and temporals may realize themselves as auxiliaries. The fact that there is no category Aux does not imply that Mod, T and Asp are not proper syntactic labels.

⁷ Zagana (1988) presents very clearly a series of arguments that support this position.

from the fact that English auxiliaries raise to T, as proposed originally by Klima (cf. Jackendoff, 1977; Emonds, 1979; Pollock, 1989). In the light of our present knowledge of Head Movement, the arguments that finite aspectuals are not formed by Lowering, but by means of Raising, as in (21b), proves that they are X⁰s.



As proposed by Jackendoff, the double analysis (21) required for English explains a series of contrasts between the position of verbs and auxiliaries in relation to some adverbs and negation. For example, adverbs like never, seldom, and often appear to the left of the verb as in (22a). These are arguably attached to VP since they also appear to the right of finite auxiliaries in examples like (22b). The ungrammaticality of (22c) and (22d) is explained if the verb differs from auxiliaries and cannot move to a position to the left of the adverbs, namely to T.

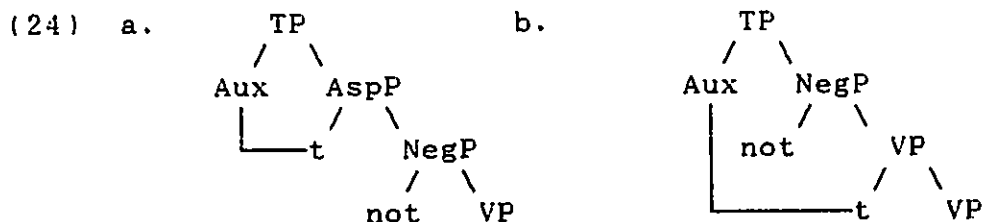
- (22) a. John [_T [_T] [_{VP} never works at his desk]]
 b. John has never worked at his desk.
 c. *Never John works at his desk.
 d. *John works never at his desk

2.1.2.2 Asp-Raising and Negation

Sentences with negation also show that finite aspectuals surface in Infl, and not in VP as do argumental verbs. (23a) shows that argumental verbs cannot raise to Infl over a negation, while (23b,c) shows that auxiliaries do.

- (23) a. *John works not at his desk.
 b. John is not working at his desk.
 c. John has not been working at his desk.

As mentioned in 2.1.0, Ouhalla (1990), based on evidence such as that in (23), argues that while verbs are located inside VP, auxiliaries head a projection distinct from VP, an AspP.⁵ Ouhalla further proposes that AspP is situated above NegP, as in (24a), in order to circumvent the apparent HMC and ECP violation that should result from movement by the aspectual X^0 over the X^0 negation in Chomsky's (1988) analysis (24b) -irrelevant details omitted-.



As will be shown in Chapter 5, however, (24b) is basically correct. Aux-movement over negation in English is a form of LHM, which puts the HMC and Rizzi's RM in question.

⁵ This view is similar to that of Lema and Rivero (1989, 1990a), where aspectual auxiliaries are situated in an AuxP distinct from VP.

Some of the strongest evidence showing that aspectuals are not part of TP is that their basic position is argued to be below negation and VP-adverbs like those in (25). If Ouhalla's claim underlying (24a) were correct, then it should be possible to postulate these elements as part of a heterogeneous node Aux like Chomsky's (1957). Aspectuals would again find themselves situated with modals and inflections. Suppose also, that if AspP and TP are kept separate above negation as in (24a), it can no longer be determined whether finite aspectuals are formed by raising them to T or by lowering T to AspP. If Affix Lowering is independently present in English, generalizing this operation could be suggested. There is evidence, however, that amply supports an analysis along the lines of (24b) instead of (24a). Sentences with two aspectuals like (25a), left out in Ouhalla's work, show that the basic position of Progressive BE must be below that of not. In situations like this, only the higher auxiliary of the two, the one that becomes finite, surfaces above the negation. (25b,c,d) prove that if Infl is occupied by a modal, both HAVE and BE remain below the negation.⁹

⁹ Ouhalla (1990: 209, fn.14), in replying to a case like (i) below, suggests that the auxiliary in (i) may be an expletive comparable to that found in Do-support constructions, and that it is inserted to support the participial affix -en which cannot lower onto the already inflected verb.

(i) I had not been invited.

If this sentence is a passive, and passives are transformed actives, then the appearance of BE can perhaps be analyzed as BE-insertion. Nevertheless, Ouhalla's explanation cannot account for examples like (25) in the text, where BE is not the predicative or passive BE, but an aspectual.

- (25) a. John has not been working at his desk.
 b. John shall not have worked at his desk.
 c. John shall not be working at his desk.
 d. John shall not have been working at his desk.

The evidence supports the analysis of English aspectuals as X^0 s whose position is above that of argumental verbs, and below negation. An aspectual auxiliary will move to T if this position is not occupied by a modal.

2.1.3 A note on Headless Phrases

Given that sentences consist of a series of hierarchically organized layers, each bearing a different categorial label, we must inquire as to the status of these phrasal layers whenever

Ouhalla also contends that a sentence like (ii) is not a counterexample to his theory either because it alternates with (iii). According to him, the order between Neg and HAVE can be altered by an optional PF rule. His conclusion rests, however, on an unfortunate choice of modal.

- (ii) He may not have been sleeping.
 (iii) He may have not been sleeping.

Notice that (iv) and (v), with could instead of may, have different meanings that are due to differences in the scope of the negation.

- (iv) The president could not have signed the document.
 (v) The president could have not signed the document.

In (iv) someone other than the president may have signed the document. In (v) this reading is not available, and the president could have abstained from signing the document. Because differences of scope are computed for LF at S-Structure and not after the application of stylistic rules in PF, Ouhalla's account of (ii)-(iii) is problematic. In Chapter 5, I will examine examples such as (ii) -(v) in detail.

their potential head is absent. For instance, English sentences like those in (25) are assumed to have a NegP below TP. A relevant question to ask is whether a NegP is obligatory in all sentences, or only in negative ones; alternatively, if phrases like NegP must be postulated in the absence of an evident head. We will argue, in line with the version of Projection Theory delineated in Chapter 1, that in the absence of an X^0 to project the phrase, the sentential layer must be omitted.

This is not a suggestion that ECs do not exist, nor that they are unable to project Phrases. Nonetheless, some requirements must be placed on the use of empty phrases. In 2.1.3.1, Chomsky's (1964) notion of Substantive Universals is reconsidered to restrict categorial inventories, and thus to prevent the postulation of $X(P)$ s for which there is no language specific positive evidence. This general constraint is supplemented in 2.1.3.2, by a structure specific constraint which disallows ECs without "recoverable" content and/or observable behaviour. In the final analysis, these restrictions are a direct consequence of a strong Theory of Projection.

2.1.3.1 Constraining Categorial Inventories

Pollock's (1989) analysis of Aux-raising in English can serve to frame the present discussion. Before proceeding, we must recall that Pollock separated French IP into TP and AgrP on the basis of

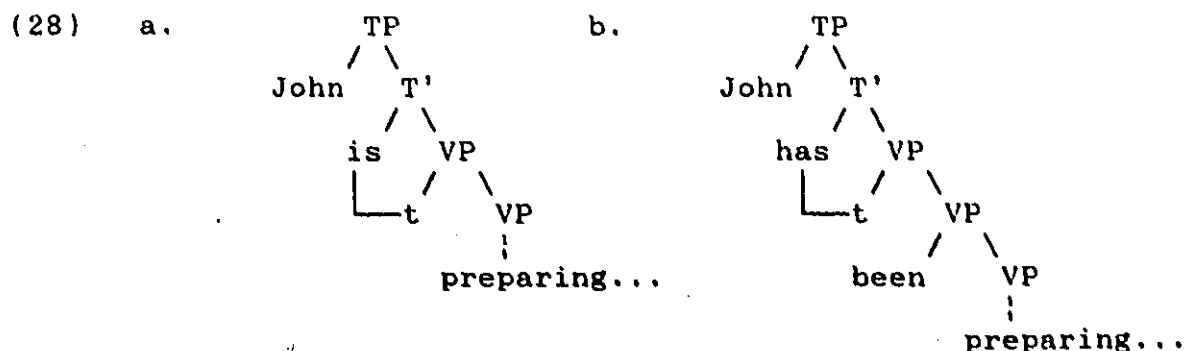
by any item to be potentially part of a natural language, it does not require, however, that all such items be found in any one language. A set of possible syntactic categories is determined by UG, each language chooses its specific subset.

If functional categories are substantive universals, positive evidence is the most direct means available to determine whether a specific category is present in a language. This general idea is congruent with Projection Theory. If there is a relation of necessary cooccurrence between an $X^{\max}$ and the X^0 from which it is projected, a particular syntactic construction will contain an $X^{\max}$ of category C iff it contains an X^0 of category C. A corollary of this is that a particular language will have an $X^{\max}$ of category C iff it has an X^0 of the same category. Since lexical items -i.e. X^0 s- are learned, only those phrasal categories for which children learn X^0 s will be part of their grammar.

2.1.3.2 Empty Aspectual Projection

The behaviour of aspectual auxiliaries serves to exemplify the relevance of a constraint on the projection of headless phrases. Assuming for now Zagana's representation (19), the sentences (27a) and (27b) must be represented as (28a) and (28b) respectively.

- (27) a. John is preparing tomorrow's lesson.
 b. John has been preparing tomorrow's lesson.



The grammar of English allows one or two aspectual auxiliaries to appear in a sentence. However, the fact that (28b) has three VPs should not serve to justify the generation of three VPs in (28a), one being empty. For one thing, there is no sense of perfectivity (27a), and thus to recoverable EC. Similarly, it cannot be argued either that (29b) has two empty VPs, corresponding each to one of the potential aspectual auxiliaries.

- (29) a. John is preparing tomorrow's lesson.
 b. John prepares his lessons.
 c. *John prepares tomorrow's lesson.

Suppose, for the sake of argument, that empty phrases must be present even in the absence of aspectual auxiliaries, counter to the principles of Projection Theory. It is conceivable that an aspectual EC with content distinct from that of the normally realized Aux be generated. Thus, in the absence of [+Progr] BE in (29b), a [-Progr] aspectual EC can be posited. As observed, (29b) has a generic or habitual interpretation which excludes, as shown by (29c), exclusive reference to the moment of speech. Notice that in contrast with English, the Simple Present of languages like

French, allows two types of reference, generic or habitual, (30a) parallel to (29b), and reference that can select exclusively the moment of speech, (30b) parallel to (29c):¹¹

- (30) a. Jean prépare ses leçons.
b. Jean prépare la leçon de demain.

In a sense, this EC is "recoverable". Postulating an EC with aspectual content is thus possible in (29b) to substitute that of (29a). The question is whether the [-Progr] reading allowed by (29a) is the effect of an underlying aspectual EC, or simply the default interpretation obtained from the absence of aspectual elements, the latter case being parallel to the obtention of an affirmative interpretation in the absence of a negative. It will be contended in Chapter 4 that the [-Progr] reading permitted by (29b) is produced by an underlying aspectual element, and therefore that an "empty" -though not a headless- phrase is present in sentences like (29b).

¹¹ The value of the two forms of temporal reference expressed by the French examples (30) in the text can be better understood in the following manner. (30a), Jean prépare ses leçons has a habitual reading, it indicates that an event is reiterated within a broad temporal segment; and though the moment of speech is included within this referential frame, there is no implication linking any particular performance of the event to the moment of speech. The truth value of the proposition expressed does not hinge on whether Jean may or not be preparing his lesson at the moment of speech, it does only on the habitual performance of the event denoted. In contrast, (30b), Jean prépare la leçon de demain, pinpoints the moment of speech as that where the proposition is temporally anchored. Examples such as Einstein works here must be interpreted like (30a), though he habitually works here, there is implication that he may be doing so at the moment of speech, he could well be abroad on a holiday. Though similar to (30b), *Einstein works on tomorrow's presentation, with expressed reference to the moment of speech, is not acceptable.

Spanish contrasts with English in one respect that exemplifies the second possibility allowed by our framework. Basically, there is no evidence in Spanish to postulate an aspectual EC in the absence of phonetically explicit aspectuals. Consider the following examples:

- (31) a. Jerónimo está escribiendo una carta en este instante.
 'Jerónimo is writing a letter at this instant'
- b. Jerónimo escribe una carta en este instante.
 'Jerónimo writes a letter at this instant'

(31a) contains the progressive aspectual SER which corresponds to English BE, (31b) lacks it. The absence of an auxiliary with the feature [-Progr] in (31b) does not make it [-Progr]. In contrast with (29b), this example can be interpreted to refer to an action in progress at the moment of speech. Notice also that it is compatible with an adverb that has direct reference to the moment of speech.

Projection Theory excludes generating empty phrases, that is, phrases projected from / $\emptyset$ /, but allows projection from an EC. This theory serves to express a general constraint on categorial inventories, and also makes structure particular statements about the nature of syntactic representations. The principled exclusion of null phrases is consistent with a view that the inventories and structure of language be based on positive evidence. Consider that in order to allow headless phrases in a representation, a grammar

must include PS-rules or some equivalent formal device.¹² Including mechanisms of this type is a major theoretical setback. Confronted with the direction set by Stowell (1981) and the work carried along these lines -cf. for different alternatives Chomsky (1986a) and Speas (1990)-, the option is counterintuitive.^{13,14}

2.2 Semantic and Syntactic Properties of Aspect

2.2.1 Lexical and Functional Content of Aspect

Zagona (1982, 1988) proposed that the category of the phrase headed by the aspectuals BE and HAVE is a VP. This position is maintained by Chomsky (1986b, 1988) and Pollock (1989), among many others. Alternatively, auxiliaries may be considered to belong to a category distinct from V; if so, this category can be defined in at least two ways. First, the phrase may either be an AuxP, or second, it may be an AspP, (Ouhalla, 1990). I will maintain that the notion of 'auxiliarity' is morphological and not syntactic, and that Asp is the category of Perfective HAVE and Progressive BE. Like verbs, aspectual auxiliaries may bear T and Agr features; however, unlike verbs, these auxiliaries are non-argumental and

¹² Recall that Emonds (1976) required a "DELTA" to head empty phrases, and that these had to be obligatorily filled prior to S-structure.

¹³ The only problem we face concerns the motivation to generate empty Comp for Germanic V-second movement, and some forms of LHM, as we will see in Ch.5.

¹⁴ Pollock (1987, 1989), Laka (1989), Johnson (1989) argue that negation projects an independent phrase NegP or Pol(arity)P. We will follow Pollock's view, and resort to a NegP. In accordance with Projection Theory, this phrase will not be generated in non-negated sentences.

non-thematic. Despite the difference with verbs, aspectuals should not be considered purely functional, as claimed by Ouhalla. Lack of thematic structure does not make a category purely functional, as is apparently the case of T, C and D, (Abney, 1987). It is worth noting the dual role Asp plays in the grammar. On the one hand, aspect interacts with and modifies tense; thus it takes part in the operation of referring the proposition contained in a sentence to a particular moment in time.¹⁵ On the other hand, its aspectual content interacts with that of verbs and predicates, that is, with their Aktionsarten, adding to the lexical characterization of the proposition. Aspectuals share their non-thematicity with Tense, and their lexicality with verbs.

2.2.2 English HAVE and BE: Feature Specification

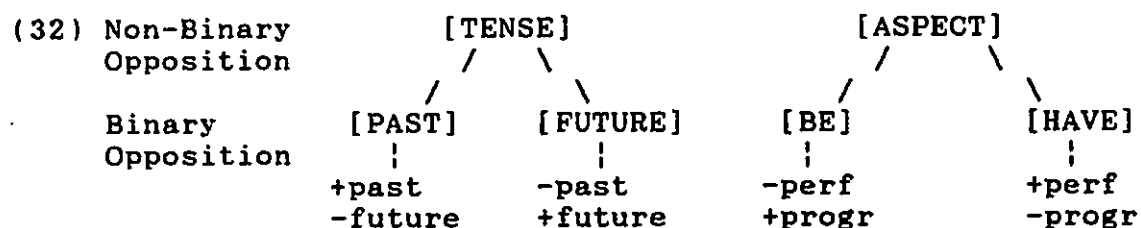
Lexical categories have been characterized since Chomsky (1970) by means of the two binary features [+/-N] and [+/-V]. Because their possible combinations limit the number of categories to four - Nouns, Verbs, Prepositions and Adjectives-, aspectuals cannot be treated as a separate lexical class. Intuitively aspectuals are close to verbs, and as such have been traditionally coalesced with them. Nevertheless these two features do not allow a distinction

¹⁵ Jespersen (1924), discussing the position of perfective HAVE in the temporal system of English, distinguishes between Tenses and Expanded Tenses, the former serve to identify the main divisions of time, i.e. Past, Present and Future, the latter "to form a time-frame round something else that they often denote a transitory as contrasted with a permanent state which for its expression requires the corresponding unexpanded form (p.277)". "The expanded form makes us think of time limits, whereas the simple forms do not (p.279)".

to be made between V and Asp, hence our proposal in Chapter 1 section 1.2.1.1, to introduce a four-fold contrast on the basis of the features [$\pm$ Lex] and [$\pm$ Fun], to capture more subtle distinctions between syntactic categories.

Our contention is that Asp is lexical, though not thematic; thus it must have the feature [+Lex]. Asp is also functional, for it interacts closely with T to establish sentential reference, and can, in some languages, play a more important role than T in this respect. The feature [+Fun] captures its functional character. Asp intersects with both lexical and functional elements. It has a dual nature which must be reflected by its feature specification.¹⁶

Some functional categories may be further subdivided by means of binary features to specify their members. Tense, for example, contains different elements which can be identified by features such as [$\pm$ Future] or [$\pm$ Past]. Analogously, within the category [ASPECT], as seen in (32), the distinction between items like HAVE and BE can be similarly captured by a set of binary features.



¹⁶ Use of the features [$\pm$ Lex] and [$\pm$ Fun] does not preclude necessarily [$\pm$ V, $\pm$ N]. Aspectual auxiliaries may well have features in the order of [+V, -N], which makes the category akin to V.

Defining and thus labelling the maximal projection of HAVE and BE as AspP instead of AuxP, allows us to restrict the notion of Auxiliarity to syntactically free non-thematic items. Aspectuals and temporals, for instance, surface in languages either as bound affixes or as free forms -i.e. as auxiliaries-.¹⁷ To illustrate the relevance of this distinction, consider the case in Medieval Spanish (to be treated in detail in Chapter 5), of the auxiliary underlined in "cantarlohe" 'I will sing it' which is temporal, while that in "lo he cantado" 'I have sung it' is aspectual. The first heads TP, the second AspP. If the label AuxP were -wrongly- used to comprise both elements, the categorial distinction between T and Asp would be lost.

Aspectual formatives differ morphologically from argumental verbs. While verbs are characteristically realized in language as syntactically free forms, aspectuals often assume the form of affixes. In Spanish, the imperfect is realized as the affix /ba/ in verbal forms such as canta+ba+mos 'we used to sing', and differs thus from the syntactically free perfective and progressive.

In languages with several aspectual elements, two (or more) may combine. In English and Spanish, the category AspP appears to be recursive despite clear combinatorial restrictions. Consider (33), (34) and (35):

- (33) a. John has walked.
b. Juan ha caminado.

¹⁷ In the following Chapter, in section 3.2, it will be shown that a typology of languages can be constructed on the basis of the morphological contrast affix vs. auxiliary.

- (34) a. John is walking.
b. Juan está caminando.
- (35) a. John has been walking
b. Juan ha estado caminando.
- (36) a. *John is having walked.
b. *Juan está habiendo caminado.

Example (33) has a [+Perf] auxiliary, (34) a [+Prog] auxiliary, and (35) the [+Perf]>[+Prog] combination. Example (36) shows that [+Perf] must have scope over [+Prog]. Although French has only the perfective AVOIR, comparable to English HAVE in (33a) and Spanish HABER in (33b), there is a progressive periphrastic construction ÊTRE EN TRAIN DE + INFINITIVE which has identical combinatorial restrictions as (36):¹⁶

- (37) a. Jean avait été en train de marcher.
b. *Jean était en train d'avoir marché.

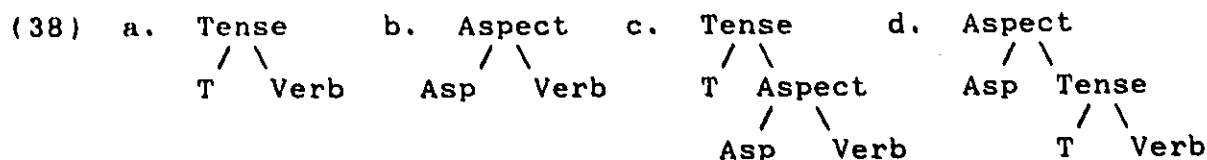
Categorizing syntactic formatives by means of the two features [+Lex] and [+Fun] permits classifying aspectuals together with lexical elements like V, while allowing the possibility of making explicit also the differences. As has been traditionally

¹⁶ Roberts (1987) suggests that the combinatorial constraint may be due to the fact that HAVE, retransmits the θ -role from the VP to the subject. This explanation is not entirely adequate, it implies that BE does not retransmits θ -roles. (34a) shows that BE has identical behaviour as HAVE and does also retransmit θ -roles. Example (35a) shows that retransmission operates over several aspectuals. The restriction in the order of aspectuals may perhaps be better stated in terms of the scope and possible forms of modification between these elements and T itself.

ascertained, aspectuals share many properties with verbs; nonetheless, they differ in two important respects, they do not have a thematic content, and they play a functional role.

2.2.3 Selectional Properties of Tense and Aspect

Aspect is considered here a category with dual status. On the one hand, it is non-thematic and functional, thereby similar to T; on the other hand, it is conceived that it shares properties with the lexical category Verb. There is an apparent gradation between elements bearing temporal and aspectual content: Tense is located above items with aspectual content -auxiliaries and verbs-; aspectual auxiliaries, in turn, are situated above V. T and Asp can take direct verbal complements, as formalized in (38a,c). The representation (38b) is perhaps adequate for infinitival clauses if these do not project a TP. English, (38c) depicts the three level structure, with T complemented by Asp, and Asp complemented in turn by V. The hierarchical order between T, Asp and V can be expressed according to the selectional properties of these elements. In essence, (38a) and (38c) express that T takes complements with aspect as the unifying property, the labels "lexical aspect" and "aktionsarten" being generally used to refer to the aspectual attributes of verbs. (38b) acknowledges that aspectuals take verbs as complements, and as observed in 2.2.2 aspectuals can also complement each other.



Aspectuality allows both Asp and V to complement T. Two factors intervene to determine the order (38c) between the three categories when all present. First, Tense establishes a temporal frame of reference, within it aspectual elements feature specific facets. Aspect complements the referential function of Tense. Second, though verbs and the auxiliaries in question both have aspectual content and must fall in the scope of Tense, the fact that verbs take thematic arguments as complements, excludes non-argumental auxiliaries from the position of their complement, as depicted in (38d).¹⁹

Alternatively, we could speculate that the selectional bond between [+Lex] items, such as that between Asp and V, is reflected in structural contiguity. The reason why T does not intervene between Asp and V may lie, not in the fact that it selects Asp, as suggested above, but rather in that it is never selectionally licensed to appear in between (bonded) lexical positions. Following the hypothesis to its limits, we see that [+Lex] items intertwine conforming the lexical layer; being T inactive in this

¹⁹ An examination of T-Asp systems, cf. Chapter 3, shows that Asp is generally lower than T at S-structure. This fact is compatible with the idea endorsed here that Asp complements T semantically, nonetheless, the generalization is not true: Slavic languages, exhibit LHM by an aspectual auxiliary over the temporal element, and thus an aspectual element may surface above T. See Chapter 5 for this discussion.

form of selection, it is altogether excluded from this layer.

The location of Asp between T and V suggests that it interacts with the two. The function of T is to refer an event to a moment in time -to a particular time interval- relative to the moment of speech; once this locus is determined, Asp imposes a qualification on the interval itself or in the manner the event is viewed within this interval. Asp also interacts with the lexical content of V; it may produce complex aspectual nuances, or even semantic clashes, as in *I am knowing the truth.

2.2.4 *[Asp...[T]]: A Scope Constraint on Movement

The postulation of Tense above Aspect at D-structure is not controversial given that this is the order generally observed by the elements in question at S-structure. Besides the fact that placing aspectual elements above temporal ones at D-structure would be an unwarranted complication of syntactic derivation, for we would require a syntactic operation to reverse their order by S-structure, there seems to be a constraint on the order between these elements at LF. In our view, Tense determines frames of reference where events are set; Aspect, when present, imposes a qualification on the temporal frame of reference. If we take, for example, the relationship between the elements Past, Present and Future and the Perfective aspectual auxiliary in Spanish, cf. (39), (40) and (41), we can see the relationship between the two types of elements.

- (39) a. Oscar cantó en la Scalla.
'Oscar sang in the Scalla'
- b. Oscar había cantado en la Scalla.
'Oscar had sung in the Scalla'
- (40) a. Oscar canta en la Scalla.
'Oscar sings in the Scalla'
- b. Oscar ha cantado en la Scalla.
'Oscar has sung in the Scalla'
- (41) a. Oscar cantará en la Scalla.
'Oscar will sing in the Scalla'
- b. Oscar habrá cantado en la Scalla.
'Oscar will have sung in the Scalla'

In all these examples, the temporal elements define the point of reference: in (39a), the event of singing is previous to the moment of speech; in (40a), it is referred to an interval that includes the moment of speech; in (41a), it is set at a point subsequent to that of speech. There are no qualifications on the form the event takes. The event may have lasted or not, been repeated or not. We only know its location in time depending on the situation of the point of reference in relation to that of speech. The corresponding b sentences, with the aspectual HABER, impose a further restriction on the form the event takes. In all cases, we understand the act of singing to have been completed before the point of reference. The qualification brought by the aspectual element is constant, and its interpretation in relation with the moment of speech is dependent on the nature of the temporal item. Perfective has a temporal correlate which can be observed in the b sentences above,

in all cases, because the event is defined as complete or finished at the moment expressed by the Point of Reference, it is placed in the Past in relation to this particular moment. Aspect acts as complement of Tense, and if it has an effect on the location of the event in time, it depends on the previous constraint set by Tense.

The organic structural relationship between Tense and Aspect can also be observed in the order observed between Aspectual elements themselves. Languages such as English and Spanish, having two aspectual auxiliaries allow only one particular order between them, as demonstrated by the contrast between (42) and (43).

- (42) a. Oscar hubo estado cantando en la Scalla.
b. Oscar had been singing in the Scalla.

- (43) a. *Oscar estuvo habiendo cantado en la Scalla.
b. *Oscar was having sung in the Scalla.

In these examples, set in the Past by Tense, we observe a scope contrast between two aspectual elements where the Perfective element must be situated above the Progressive one. Whereas Perfectivity implies completion of an event by the Point of Reference, Progression implies cooccurrence of the event with the Point of Reference. In sentences (42), Tense defines the Point of Reference in the Past, the perfective element establishes that the event must have been completed by this time, which is, in a sense, the definition of a secondary Point of Reference. Given this complex temporal frame, the Progressive item can bring a further qualification, defining the event in progression at this secondary

point. Examples (43) are not possible because the effect of the Progressive element above the Perfective item creates a paradoxical frame of reference. After Tense sets the Point of Reference in the Past, the progressive auxiliary sets cooccurrence with this Point as a constraint on the event, and once cooccurrence is established, a further qualification, defining the event as completed or past, is impossible.

The ordering between temporal and aspectual elements can in fact be considered to reflect a general constraint on the scope relation between these items. This constraint can be considered to apply at LF, that is at the level where temporal reference is established. We formulate this constraint in (44), and consider it to hold at LF.

(44) *[Asp...[T]]

The effect of (44) can be observed to play an important role in movement operations, a case in point being VP-preposing in English.

The operation known as VP-preposing can serve to exemplify (44). This operation is the movement of constituents headed by verbal and auxiliary elements to a position above that of the element bearing Tense. For example, in (45a), the VP headed by a gerund is moved to a position to the left of the subject and of the element bearing Tense. As shown by Akmajian, Steele and Wasow 49(1979), this VP-preposing is restricted to non-aspectual auxiliaries and verbs. As observed in (45b,c), preposing of

Progressive BE and of Perfective HAVE produce ungrammatical results.

- (45) Mary said they were cooking beans,
 a. and [cooking beans] they may have been [].
 b. *and [been cooking beans] they may have [].
 c. *and [have been cooking beans] they may [].

Whereas aspectuals cannot be preposed, other auxiliaries may be. In (46b) we see that copular BE, in contrast with Progressive BE, may be moved to a position above Tense. Perfective HAVE -(46c)- may not be moved.

- (46) Mary said they would have been happy,
 a. and [happy] they might have been [] indeed.
 b. and [been happy] they might have [] indeed.
 c. *and [have been happy] they might [] indeed.

Similarly, the Phrase headed by Passive BE may be preposed, see (47b), but not that headed by the aspectual auxiliary, (47c).

- (47) Mary said the lobsters would have been cooked by noon,
 a. and [cooked] they might have been [],
 b. and [been cooked] they might have [],
 c. *and [have been cooked] they might [],
 had it not been for the weather.

Evidence that the restriction on the movement of constituents headed by aspectual elements is due to the scope constraint (44), may be adduced from the asymmetry between VP-preposing and VP-elision in English.

Consider the examples of VP-elision presented in (48b,c,d). These sentences are characterized by the presence of an empty category that is coreferential with a previous verbal or auxiliary

constituent. (48b) is parallel to the VP-preposing example (45a): in both cases we observe a gap that is coreferential with the antecedent cooking beans. Sentences (48c,d), however, do not find a parallel in VP-preposing structures, the corresponding (45b,c) are ungrammatical.

- (48) Mary must have been cooking beans,
 a. and John must have been cooking beans too.
 b. and John must have been [] too.
 c. and John must have [] too.
 d. and John must [] too.

The asymmetry between VP-preposing and VP-elision structures seems mysterious if we do not resort to an explanation based on the constraint (44). The two types of structures have several properties in common. For example, they both allow a gap that is coindexed with an antecedent headed by a verbal or auxiliary element, and neither allow movement or elision of the tensed element; nonetheless, VP-elision is freer than VP-preposing for it allows, as in (48c) and (48d), aspectual auxiliaries to be omitted. Although the difference between the two types of structures could be accounted for in terms of the nature of the gap, this would be a complication of the notion of Proper Government. If we assume, for example, a definition of Proper Government such as Chomsky's (1981), to account for (48d), we can conclude that the gap in this sentence is properly governed by a lexical head, namely the modal must. If this explanation is given to account for gaps such as this, the contrast with (45c) becomes difficult to explain, for we also have here a gap governed by a similar modal element, and the

sentence is ungrammatical. The notion of Proper Government could be split into two in order to account for the contrast observed, and different conditions could be established for gaps like that in (45c) and that in (48d). However, this complication is not necessary, the constraint (44) allows us to account for the asymmetry between the two types of structures as an effect of the more obvious distinction between the two sets of examples, that is the fact that one is created by movement, and the other not. Under VP-preposing, an aspectual element is moved above Tense, and the scope relation between the two items is reversed. In contrast, under VP-elision, there is no such movement, and there is no violation of (44). The nature of the empty category in the two sets of structures is different.²⁰

The inclusion of constraint (44) in the Grammar allows us to distinguish Functional Aspect from Aktionsarten. Although we have argued here that these two notions interact lexically, that is that they observe certain selectional restrictions, only Functional Aspect interacts with Tense in terms of (44). The contrast between (49a) and (49b) shows that Progressive BE can cooccur with verbs of action but not with verbs depicting states. This selectional

²⁰ If VP-preposing is similar to Wh-movement, the antecedent is found in an A-bar position, perhaps adjoined to IP, and the empty category is a variable. Example (i) shows that VP-preposing may move a phrase into a higher, just like Wh-movement:

(i) ...and [eaten beans] he said that John had.

VP-elision never has the antecedent within the same sentence, which shows that the empty category in these structures is probably a pronominal element.

restriction is set in accordance with the aspectual content of the two elements involved, the aspectual auxiliary and the verb.

- (49) a. John is walking to work.
 b. *John is knowing the answer.

Whereas Aktionsarten interacts with Aspect, as observed in (49), there are no comparable restrictions between Aktionsarten and Tense. Examples (50) show that verbs depicting activities and states can be found in the Present, Past and Future. In our view, the difference between (49) and (50) is explained by the fact that the interaction between Aspect and Aktionsarten is lexical in nature, thus involving features of similar nature, whereas the interaction between Tense and Aktionsarten involves categorially different features, the functional features of T and the lexical features of V.

- (50) a. John walks/walked/will walk to work.
 b. John knows/knew/has known the answer.

The contrast observed in VP-preposing structures such as those in (51) supports our analysis. While the aspectual auxiliary cannot raise over the Tense, as proved by the ungrammaticality of (51b), there is no restriction on raising elements containing Aktionsarten over Tense, see (51a).

- (51) John wanted to bring the package...
 a. and bring the package he would have
 b. *and have brought the package he would
 ...had he not forgotten it.

In summary, The aspectual content of auxiliaries enters into two sets of relations, it interacts with Tense and with Aktionsarten. One relation is functional in our terms, the other lexical. Aktionsarten however, interacts with Aspect, but not with Tense.

2.2.5 Referential properties of Tense and Aspect

The purpose of this section is to depict some of the more relevant properties and forms of interaction between T and Asp that can serve as guidelines to view and justify some aspects of our syntactic analysis. The characterization is not intended to be a comprehensive study of Tense and Aspect, though the componential character of the relation between these categories will be emphasized. The presentation will serve to evaluate and support the proposal that a projection Asp(P) is available in Syntax, and to portray the role it plays in the movement of X⁰s.

The Tense of the verbal forms in (52) is generally referred to as the Simple Present, because it is not formed with an Aspectual Auxiliary. It is also generally agreed that there is no aspectual affix in the verb. The referential expression of these forms is not, however, identical. The reading of the English example (52a) differs from that of the corresponding Spanish and French examples; it is more constrained and can only be assigned a generic interpretation, whereas the Spanish and French examples allow reference to the moment of speech besides the generic reference.

- (52) a. John sings. (generic)
 b. Juan canta. (generic and speech-time)
 c. Jean chante. (generic and speech-time)

I suggest that the broader referential capacity of the Simple Present in (52b,c) is the basic or default semantic expression of the Tense "Present", and limit the discussion in this chapter to the Romance version of the Simple Present. Characterization of the relation between T and Asp on the basis of the more transparent examples will prove to be more productive. Despite the apparent morphosyntactically simple make-up of the English version (52a), it will be shown in section 4.2, to be morphosyntactically and semantically complex, and its restricted referential properties will be thereby explained.

In general terms, Present Tense refers to a time interval including the moment of speech. As long as the event referred to is true during the interval that includes the moment of speech, the grammatical Tense will be appropriately used.²¹ The content of the Present, as expressed by the French and Spanish Simple Present, can be schematized as in (53). The curly brackets serve to delimit the time interval of reference, which in the case of Present includes the moment of speech (M-S). The margins of the interval extend into Past and Future, and are essentially unrestricted. The only constraint is that M-S be included within the domain of the

²¹ Discussions of Tense are generally conducted either within an "Interval Semantics" or an "Instants Semantics" framework. The former is proper of Hamblin (1971), Bennett and Partee (1978), Taylor (1977) and Dowty (1982, 1986) among others; the latter is exemplified by the work of Reichenbach (1947), Hornstein (1981), Van Voorst (1988) among others. Our analysis falls perhaps within the "Interval Semantics" framework, though choice of either is not crucial to us, but see note 25 below.

brackets. The position of the Event itself may vary within the margins of the defined interval. The limits of variation will be set by elements like Aspect, Temporal and Aspectual Adverbs, Context, Discourse.²²

(53) {.....}.....
 Past M-S Future

For example, the ambiguous interpretation of (52b,c) is due to different manners of locating the Event within the interval set by Present Tense. The two referential meanings -generic and speech-time- can be isolated and brought about by including specific deictic elements in sentences (54) and (55). The temporal reference of these examples can be represented as in the corresponding primed diagrams below.

- (54) a. Juan canta todos los días (pero ahora duerme).
 b. Jean chante tous les jours (mais dort en ce moment).
 'John sings everyday, (but is asleep right now)'

²² Reichenbach (1947) uses three primitive notions to express temporality. These are the Moment of Speech (S), a Reference Point (R) and the Event (E). The content of Tenses is defined according to the manner these instants are associated and ordered within the time line. The Simple Past, Present, and Future, are represented as in (i):

- (i) a. E,R_S Simple Past. 'Jean alla'
 b. S,R,E Simple Present. 'Jean va'
 c. S_R,E Simple Future. 'Jean ira'

The three Simple Tenses are characterized by the association of E and R. In the Present, represented as S,R,E, the three primitive notions are coextensional. Notice that the representation of the Present does not allow a distinction to be made between generic, repetitive, durative readings on one hand, and the speech-moment reading -which is essentially punctual- on the other hand. This is perhaps a weakness of Reichenbach's "Instants Semantics" model in front of certain versions of the "Intervals Semantics" framework.

- (55) a. Canta en este instante (pero no es su costumbre).
 b. Il chante en cet instant (mais ce n'est pas son habitude).
 'He sings right now, (but he does not have the habit)'

The generic reading in (54) can be interpreted to mean that John carries out repeated events of singing. There is no requisite that there be one such event at M-S, as can be seen if the parenthesized material is included. The unique restriction is that the intervals corresponding to each of the events referred to be located within the broader interval containing M-S. Still however, at M-S, singing is part of John's nature.²³

(54'){.>E<...>E<...>E<...>E<..}.....
 Past M-S Future

The "speech-time" reading present in (55), indicates that John carries out a singing event at M-S. There is no requirement that he do this more than this time, as seen if the parenthesized material is included. The potential semelfactive reading of the Present gives rise to reference to M-S in French and Spanish.

(55'){.....>E<.....}.....
 Past M-S Future

The fact that Present Tense allows the two readings (54') and (55') does not indicate that one morphological form has two distinct semantic contents. The contention here is that Present is only

²³ The symbol E for Event is used only for clarity, and could be omitted from the representations. The angled brackets > and < delimit intervals where the E takes place. In their absence, the E is situated in the temporal interval delimited by { and }.

required to refer to the interval defined in (53); other properties of the event, such as the generic and semelfactive readings, can be subsequently extricated by the inclusion of supplementary deictic elements. The two potential readings are not self-exclusive, they may surface together if unconstrained. Both the (56a,b) examples mean that John always sings well, and that he is doing so at M-S.

- (56) a. ¡Juan canta tan bien!
 b. Jean chante tellement bien!
 "John sings so well!"

In addition to the functional role played by Aspect, setting the reference of Tense and complementing it in a sense, it also interacts with the lexical content of V.

2.2.6 Aspect and Aktionsart

Besides the elements belonging to Asp(P), verbs also convey aspectual information. They have inherent lexical properties that can impose interpretational restrictions on temporal frames. For example, the two verbs in (57) refer to actions concerned with viewing, they are different in the fact that the action in (57a) is understood to last longer than that in (57b).

- (57) a. L'homme observe l'horizon.
 'The man observes the horizon'
 b. L'homme remarque l'horizon.
 'The man notices the horizon'

Verbs have a role similar to that of aspectuals. Tense sets the general referential properties of a sentence, aspect then qualifies it. In (57), the action takes place in the present, the lexical aspect or Aktionsart of the verb qualifies the sentence in such a manner that (57a) is seen as "durative" next to a "punctual" (40b). The precise characterization of lexical aspect is not our present concern.²⁴ The point that is important to us is that Tense is qualified by Aspect, be it brought by an aspectual form or by a verb. Tense and Aspect are perfectly compatible. There are no restrictions on the use of an aspectual auxiliary with a particular Tense. Thus, for example, the Spanish progressive can be used with a Past, Present or Future, as in (58).

- (58) a. Melquiades estuvo escribiendo.
 'Melquiades was writing'
- b. Melquiades está escribiendo.
 'Melquiades is writing'
- c. Melquiades estará escribiendo.
 'Melquiades will be writing'

Similarly, there are no temporal restrictions on the use of any particular verb due to its aspectual content. There do not exist verbs that cannot be put, for example, in the future or the present. In essence, Tense and Aspect, are perfectly complementary.

²⁴ There is a long standing tradition dating back to Aristotle which deals with the semantic properties of lexical aspect. Jacobsohn (1933), Vendler (1967), Dowty (1979), Tenny (1987), Verkuyl (1989), represent different approaches to this question.

In contrast, there are cooccurrence restrictions between certain aspectual elements and particular types of verbs. A known example, presented in (59), pertains to certain stative verbs like know which cannot be used in a progressive form.

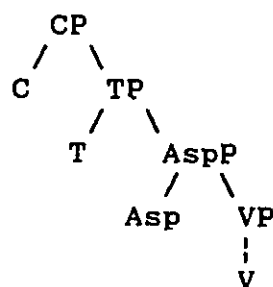
(59) *The student is knowing the answer.

These effects are due to the fact that Aspect and Aktionsart have basically similar semantic status, though their function and manner of realization vary greatly. There are other interesting effects that result from particular aspectual combinations. Some of these will be seen in 4.2.4, where they will serve as a tool to determine the aspectual value of the English Simple Present.

2.3 Conclusion

This chapter has served to establish the basic configuration (60), with a [+Lex, +Fun] category Asp(P) intervening between TP and VP.

(60)



Both the syntactic and semantic properties of Asp(P) were examined in some detail. This was done in part to validate the postulation of a category with lexical-aspectual content distinct from V, despite its closeness to it. It was shown that Aspect,

whether present in an aspectual or a verb, interacts with Tense. The lexical specialization and apparent poverty of aspectuals emphasizes their functional role complementing Tense, yet this does not place them on a par with T.

The claim that only the four X^0 positions depicted in (60) are relevant for the study of Head Movement will be substantiated in the rest of this work. Basically, complementizers in CP, modals and temporals in TP, aspectuals in AspP and verbs in VP will prove to be the active participants in X^0 -movement phenomena. The nature and position of Negation was not explicated, Chapter 5 will deal with these questions. Nevertheless, it was seen that in English, Neg is between Asp(P) and T(P). This is expected because Neg is a [-Lex, +Fun] element, it is excluded from the lexical layer, and thus minimally above AspP. It will be seen that it can be situated above TP in other languages. The position and status of Agr was not equated with that of the other X^0 s represented in (60).²⁵

²⁵ Agr -when present in a language- is generally affixal. If it were an X^0 , we would expect to find Agr auxiliaries in some languages parallel to temporal and aspectual auxiliaries. Moussa Ndiaye has pointed out to me that there exist in Wolof, agreement elements that may be analyzed as auxiliaries. See section 3.2.1.4.

Chapter 3

Short Head Movement

3.0 Introduction

The present chapter is concerned with patterns of syntactic α -movement that are generally thought to conform to the HMC. Chomsky's (1986b) reformulation is presented in (1).¹ The analysis is narrowed down here to movement involving lexical and non-lexical heads. Hence, the focus is placed on the interaction between verbal, temporal and aspectual X^0 s, as defined in Chapter 2.²

(1) Head Movement Constraint

Movement of a zero level category β is restricted to the position of a head α that governs the maximal projection τ of β , where α θ -governs or L-marks τ if $\alpha \neq C$.

It will be argued that the HMC inaccurately accounts for different types of X^0 -movement, and that a constraint based solely on the morphological properties of heads, the Affix Condition (hereafter the AfC), can correctly explain all movements generally subsumed

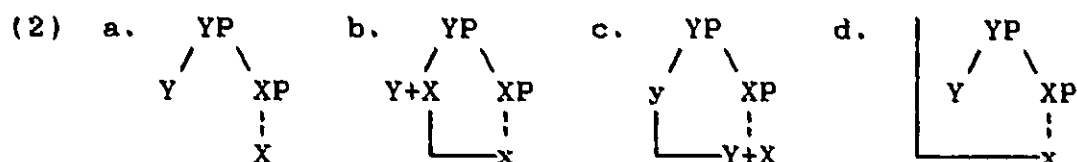
¹ Different formulations of the HMC are found in Travis (1984), Baker (1985b, 1988) and Chomsky (1986b). Though the three are equivalent, the latter is chosen for the discussion because it is more explicitly stated.

² Although the analysis is restricted to lexical/non-lexical interactions, the model presented accommodates all types of movement generally subsumed under the HMC, in particular the more general cases of Incorporation that involve only lexical items described by Baker (1988).

under (1). The idea that X^0 -movement applies due to morphological factors is based on Lasnik's (1981) view that affixes trigger the operation. One of the central goals of this chapter is to demonstrate that the condition on morphological well-formedness stated as the AfC is preferable to the HMC (1). Although equivalent to the HMC for the description of SHM, the AfC is superior as far as Affix Lowering is concerned. (A detailed analysis of Affix Lowering is elaborated in Chapter 4.) To account for LHM, as well as for the locality properties of X^0 -movement in general, a semantic condition, based on the notion of Feature Minimality seen in 1.2.1.5, and termed the Feature Minimality Condition (FMC), is laid out. The proper description of LHM phenomena and of the semantic condition will be left for Chapter 5.

In Section 3.1, the AfC and the FMC are introduced and their connections with syntactic α -movement and principles of Binding Theory are explored. It is claimed that the interactions between morphological and semantic conditions constrain and determine the form assumed by X^0 -movement. The status of SHM (2b), Affix Lowering (2c) and LHM (2d) in relation to these constraining factors is defined. The reasons why SHM is the most commonly observed X^0 -movement strategy are related to the fact that syntactic α -movement

is the first means available in a derivation to satisfy the AfC.³ The discussion of Affix Lowering (2c), or rather verbal inertness in English is left for Chapter 4. It is argued that if languages do in fact resort to this type of operation, that it is an auxiliary strategy that may apply only in those instances where SHM is blocked by independent conditions. The application of LHM (2d) -the main topic of Chapter 5-, is shown to be independent of the AfC, though it also serves to satisfy the morphological requisites of some types of morphemes and is similarly constrained by semantic factors.⁴



In section 3.2, T and Asp are shown to surface in languages either as syntactically bound or free forms. In the first case, they have the properties of affixes, in the latter they act as auxiliaries. The Raising strategy (2b) is the default option for the formation of finite elements; any alterations of this basic pattern are produced by the language particular choice of morpholexical

³ Pesetsky (1991), proposes an "Earliness Principle" to account for the fact that SHM applies prior to Affix-Lowering. The status of it as an independent principle of UG is unclear though. At least in regards to SHM, this is carried out in the syntactic component, while Affix-Lowering never is. In fact the latter belongs at PF, as we argue in Chapter 4.

⁴ Uppercase is used to symbolize the location of heads of Phrases at derived levels of representation -S-structure, PF and LF-, lowercase to mark their original and intermediate positions. Whether the latter correspond to traces is unimportant for the question at hand.

specifications for T and Asp. Other available alternatives are considered, and a typological profile of SHM is presented. Section 3.3 addresses the question of V or Asp-movement in languages like Spanish where direct evidence similar to that obtained in languages like English and French cannot be found. It is shown, however, that postulating V-SHM in this language as the default mechanism for the formation of finite elements, explains a number of interesting syntactic properties. In general, the hypothesis that SHM is morphologically induced, contrasts with recent conceptions that V-movement is motivated by syntactic or semantic requirements (cf. Koopman (1984), Chomsky (1988), and Pollock (1989)). In Section 4, these different views are examined and compared against the present one; ours appears to be simpler and more adequate to handle the relevant data.

3.1 Conditions on Head Movement

The purpose of this section is to investigate the mechanisms and constraints that condition X^0 -movement. It is shown that the HMC and RM fall short of describing the three types of movement we are concerned with; and that the two independent conditions, the morphological AfC, and the semantic FMC, proposed instead, provide a unified account of SHM, LHM, and of Affix Lowering if included in the Grammar.

3.1.1 Morphological and Semantic Conditions

An adequate theory on the formation of finite elements must include an explanation of the disparity observed between (3) and (4). The position to be maintained here is that the ungrammatical effects of (4a) and (4b) have a common source. Basically, the unattached affixes violate a morphological well-formedness condition, that is, the AfC (formalized in (5) below).⁵ The AfC will prove to be sufficient to account for all the relevant facts in a principled manner.⁶

- (3) a. John existed.
b. Jean existait.

- (4) a. *John -ed exist.
b. *Jean -ait exist.

⁵ The AfC is in the same spirit of Baker's (1988: 140) "Stray Affix Filter" (i), but differs in one important respect.

(i) Stray Affix Filter

*X if X is a lexical item whose morphological subcategorization frame is not satisfied at S-Structure.

The AfC is a positive condition that motivates affixation, it does not filter out or mark morphologically deviant derivations as ungrammatical at S-Structure. The AfC does not prevent unattached affixes from reaching PF; if affixes fail to be attached to a host in the Syntax, then a PF mechanism will apply to satisfy the condition.

⁶ The free vs bound contrast between auxiliaries and affixes is a necessary idealization. Clear counterexamples to this dichotomy will be discussed in Chapter 5. It will be shown that a third alternative is possible: the behaviour of certain formatives can alternate between the two poles. In some constructions the element surfaces as a free auxiliary while in others it is an affix. (See Chapter 5). See also Rivero (1990) for examples in Albanian; and Brandi and Cordin (1990) for theirs in Fiorentino.

The AfC must be closely scrutinized since it establishes a common underlying morphological cause for facts that are otherwise differently derived. Basically, the question to answer is why English (3a), and French (3b), resort to separate grammatical strategies to form finite verbs -namely, Affix Lowering and V-raising-, if in so doing, they ultimately perform similar morphological functions. The establishment of a common contingency at the basis of different grammatical processes of finite element formation, is conducive to postulating the existence of a unique catalyst for such grammatical processes. To support this hypothesis, the AfC must be considered to operate at all levels of representation, and to induce α -movement applications; it must be active throughout an entire derivation, forcing the application of the two different operations in (3). The choice between Raising and Lowering depends on which of the two strategies is available at the stage of the derivation where the conditions contained by the AfC can be met.

This view differs, for example, from Pollock's (1989), where the two movements exemplified by (3) are differently motivated. In his model, the application of V-raising is semantically triggered, while Affix Lowering responds to morphological factors. To explain V-raising, Pollock claims that T is an operator and that it has the quantificational requirement of binding a variable at LF. Thus, T must c-command a variable and be coindexed with it at LF. Pollock further proposes that V moves to provide the trace-variable required by T, and that coindexation is a by-product of the

incorporation produced by V-to-T.^{7,8} According to Pollock, because there is no syntactic V-raising in English, T and Agr are not affixed to V prior to S-structure, only after, do they lower.⁹ A consequence of Pollock's dual interpretation of finite element formation is that the ungrammaticality of French (4b) should be more marked than that of English (4a), the reason being that (4b) fails to satisfy both the semantic condition of the T-operator and the morphological constraint on stray affixes, while (4a) violates only the latter. Remember that according to Pollock's hypothesis, the auxiliary DO and its phonetically null variant satisfy the semantic requirement in English in structures without Aux-Raising, a fact that reduces the ungrammaticality of (4a) to the morphological level. French, however, since it does not have an auxiliary element equivalent to DO to satisfy the semantic condition of the T-operator, should differ from English and have a compounded ungrammaticality.¹⁰ Nonetheless, the ungrammaticality

⁷ To our knowledge, there is no a priori reason why Logical Operators should obligatorily bind variables. While quantifiers have this requirement, operators such as negation, conjunction disjunction and implication need not bind a variable. If Tense is conceived of as an operator, it may belong to the latter type, and not require to bind a variable.

⁸ See Eng (1986, 1987), and Partee (1973, 1984) for the view that T is (pro)nominal.

⁹ It can be deduced from Pollock's discussion that he situates Affix-Lowering at PF. This is the position taken here. Notice the difference with Baker's Stray Affix Filter which requires affixes not to stray at S-structure.

¹⁰ The satisfaction of the quantificational requirement of T in English is done, according to Pollock, by a null auxiliary DO. This question is treated in detail in Chapter 4 below.

of (4b) does not appear to be more complex than that of (4a). The two examples in (4) are equally ungrammatical independently of how the corresponding finite forms in (3) are achieved. Because the ungrammaticality of the two examples is analogous, it must be either exclusively morphological, or both morphological and semantic, but in either case equivalent. Further justification for this position will be presented in section 3.2, where the relevant properties of languages with inert T, Asp and V, X^0 s, are examined. If temporal reference is possible in languages without any movement, then T need not have the universal requirement of binding a trace-variable at S-Structure and LF.

The AfC, assumed to hold in the formation of flexional compounds, is tentatively formulated in (5).

(5) Affix Condition

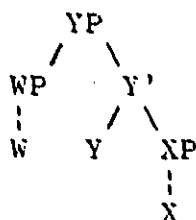
In the configuration [... X^0 ...Z... Y^0 ...], where there is no Z, Z a 0-bar level element, X and Y incorporate if X and/or Y are affixes.

Similarly to the HMC, the AfC affects and conflates contiguous heads. However, (5) differs from the HMC in that it states a morphosyntactic condition whereby one of the heads affected be a not-free affixal form. Recall that the HMC is defined in terms of (structural) government relations.¹¹

¹¹ It must be noticed that the contents of the Affix Constraint do not require one of the forms to be an affix, it must simply be "not-free". Nahuatl nouns, for example, when not incorporated into a verb, must bear an absolutive suffix; without it the sentence is ungrammatical. In a sense, the noun tlaxkal in (ii) is not-free, and the Affix constraint can thus be extended to all cases of incorporation as suggested below in section 3.

The concept of Government assumed in Chomsky's formulation of the HMC, presented in (1) above, implies the notion of m-command, hence the "local" character of X^0 -movement which affects only contiguous heads. The HMC dictates that only a head having its maximal projection governed by Y in (6) be allowed to move.

(6)



Since Y governs WP and XP, it potentially allows both W and X to move to the position of Y. The HMC and the AfC explicitly require that there not be a head intervening between any two that will ultimately fuse.

The HMC imposes a second syntactic condition by asking the moving item to be θ -governed or L-marked by Y. Because phrases in a specifier, e.g. WP in (6), are not θ or L-marked by Y, movement is restricted to the head X of the XP complement. The AfC does not make a similar claim; it would thus appear to incorrectly allow subject incorporation. However, this is not the case. If X^0 a-

-
- (i) a. niknamaaka in tlaxkal-li
 1s-it-sell D tortilla-abs
 b. ni-tlaxkal-namaaka
 1s-tortilla-sell
 "I sell tortillas"
- (ii) *niknamaaka in tlaxkal

movement is an instance of A-movement, (Chomsky (1986b)), then the trace of V in (2b) above is subject to Principle A of Binding Theory, and must be bound by a c-commanding antecedent.¹² The anaphoric status of the trace left by α - X^0 -movement implies that government relations at this level are defined in terms of c-command and not of m-command. Pertinent to X^0 -movement, Proper Government is equivalent to Antecedent Government. As a consequence, the anaphoric status of X^0 -traces restricts all potential movement in a structure like (6) to that of X to Y. W is excluded because it does not enter into a c-commanding relation with either X or Y.

The AfC states basically the morphological information required to identify the formatives that are pertinent in its sphere of application, and leaves all operative details to independent principles of grammar.

As well, the directionally neutral formulation of the AfC (5) distinguishes it from the HMC, which explicits the direction of the movement. If Affix Lowering is included in the Grammar, as an instance of X^0 -movement available to satisfy a morphological requirement, then the AfC will induce the operation. The HMC does

¹² Following general GB principles, a consequence of Pollock's theory - identifying the trace of V as a variable- is that Infl must be an A-bar position. That all X^0 -traces are anaphoric may be brought into question by movement of V-to-C, considered by Roberts (1990) an A-bar position. Perhaps distinguishing A vs. A-bar heads is irrelevant, (also Sportiche (1983)), and all X^0 -traces are anaphors as we argue.

not motivate such derivations, it prevents their occurrence within the syntactic component, and places no restrictions on their form if they apply at other levels of representation. As will be argued in Chapter 4, if Affix Lowering does in fact apply in English, as suggested by Chomsky and Pollock among others, it is simply an alternative mechanism accessible to language to satisfy the AfC.

Excluding directionality from the AfC is congruent with the "Economy of Derivations and Representations" framework outlined in Chomsky (1988). In principle, the AfC holds at all levels of grammatical representation. It must therefore apply at any point in a derivation where its conditions are met. Since syntactic α -movement is the first grammatical operation available after the construction of D-structure, it is responsible for most examples of X^0 -fusion encountered across languages. The operation takes the form of Raising because the trace left by X^0 α -movement is an anaphor, and only upward movements produce proper Binding conditions. Affix Lowering operations though, if performed as syntactic α -movement, would generate traces violating the Binding Principle A. Affix Lowering must, therefore, not be syntactic or part of LF. It satisfies the AfC but, as will be argued in the following Chapter, it takes place in PF and thus, satisfies the requirements of affixes at this level.

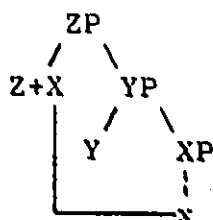
The AfC is also superior to the HMC in that it handles data involving LHM, as (2c). The HMC is too strong a constraint and forbids this form of movement; it asks all X^0 -movement to be

strictly local, ie., head-to-head. The AfC applies only in situations where morphological support is needed; it is not concerned with the behaviour of syntactically free heads. The AfC is consistent with the fact to be discussed in Chapter 5, that LHM applies over syntactically free X^0 s. In loose terms, the AfC allows syntactically free heads to move skipping other free heads. Nevertheless, X^0 -movement is not anarchic, there is a semantically based condition that specifies which heads may skip X^0 s, and which X^0 s may be skipped.¹³ Although this question will be considered in detail in Chapter 5, it is necessary to describe its general properties here, in order to justify the final formulation of the AfC.

Within the present theory, the traces produced by syntactic X^0 -a-movement are anaphors which must be properly -antecedent-governed. We propose that Feature Minimality, (cf. 1.2.1.5), be viewed in terms of RM, (cf. 1.2.3.3), to account for LHM phenomena. This will lead us to simplify the formulation (5) of the AfC. Consider the LHM situation portrayed in (7). According to Rizzi's RM -and to the HMC-, the X in (7) cannot govern its trace in XP due to the presence of an intervening potential governor Y.

¹³ Some version of Emonds' (1976) Structure-Preserving Hypothesis for X^0 s must also be in effect. The target of Head Movement must be a proper host.

(7)



If X properly governs its trace over the intervening head Y, it must be the case that Y is not a potential intervening governor. The mere fact of there being an X^0 is not sufficient to determine potential governors. There must be certain semantic properties shared by the governor and its trace. Our aim is to prove (see Chapter 5), that the lexical/non-lexical contrast between formatives is the appropriate distinction upon which to base the Feature Minimality Condition (FMC) to be fulfilled by LHM.

(8) Feature Minimality Condition

In the configuration [Z^0 [Y^0 [W^0]]], Z^0 governs W^0 if they are [aLex], they are coindexed, and the intervening Y^0 [-aLex].

Actually, LHM is restricted to movement of lexical X^0 s over non-lexical X^0 s. We can now redefine the AfC (5), excluding the qualification that the two elements involved be contiguous, for contiguity is independently defined by (8).

(9) Affix Condition

An Affix must be part of an X^0 .

For all intents and purposes, (8) restricts LHM to such an extent that affixes will most often be attached to an X^0 that is contiguous to them. However, (8) interacts with (9) in such a manner that contiguity is no longer required even to support affixes. In fact (8) allows LHM as well as SHM, to satisfy the morphological requirement of affixes. Consider the movement of auxiliaries over negation previously outlined in 2.2.2.2, and further illustrated in (10) below.

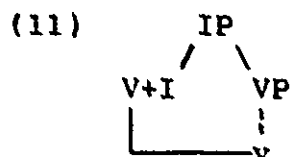
(10) John has_i not t_i been working at his desk.

The movement of the aspectual element to T satisfies the AfC, and can be considered to be triggered by it. Notice that from (8) Negation is taken to be non-lexical, and the aspectual auxiliary lexical.

In conclusion, the AfC is a morphological condition which satisfies the requirement of affixes to have morphological support. This condition applies at all levels of representation. At S-structure it is satisfied by (Raising) X^0 -movement; at PF by Affix Lowering. The locality conditions of X^0 -movement are set by an independent semantically based condition, the FMC, which bears on the contrast between lexical and non-lexical heads. The two constraints also interact with other principles of grammar such as Principle A of Binding Theory to determine the properties of Head Movement.

3.1.2 Phrasal Barriers and X^0 -Movement

Some of the discussion on Head Movement has concentrated on determining the bounding properties of the nodes crossed by the movement. Particularly relevant to our discussion is the status of VP. In the Barriers' model (Chomsky, 1986b), VP is defined as an inherent barrier to government. A direct consequence of this is that in a configuration like (11), the moved head should not be able to govern its trace giving rise to an ECP violation.



Nevertheless, V-movement does not violate the ECP. There are two plausible explanations for this. The first is that some property of the elements involved, or of the structure, alters the bounding status of the intervening maximal projection, and allows government to proceed. The second is that VP is not an intrinsic barrier to V-movement, (a position consistent with RM). To show correctness of the latter position, it is necessary to review the relevant issues involved in this question.

3.1.2.1 Barriers (1986)

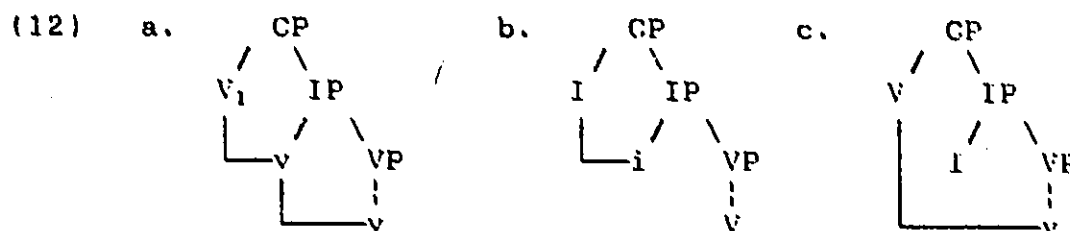
Chomsky's version of the HMC subsumes the idea that maximal projections are barriers to Head Movement. It requires that maximal barriers in the path of an X^0 be eliminated either by being θ -

governed or L-marked, unless the landing site is Comp.¹⁴ Whether VP is in fact a barrier within this model cannot be either confirmed or falsified. Hence, stating specifications such as those in (1) to void VP from its barrierhood is meaningless. In fact, θ -government is available by default when movement into lexical hosts is involved: lexical-to-lexical incorporation always originates in a complement which is θ -selected. Movement into functional heads is effected by movement into I, and movement into C. In the case of V-to-I depicted in (11), Chomsky argues that an inflected verb V_i is created. Because it is lexical, it L-marks the VP, voiding this node from its barrierhood before the ECP applies at LF. Notice that the VP node is automatically L-marked when V-movement applies, thus, its status as a barrier is subsequently nullified. Defining VP as a barrier to V-movement, is rather trivial and unnecessary. Movement to C represents a situation where the status of a maximal projection as a barrier to X^0 -movement may be actually tested, for it may theoretically involve movement by a non-lexical I-element - and thereby a non-L-marking element- into C. However, movement to C is deemed by definition to be exceptional -cf.(1)-. This proviso in the definition makes movement to C ineffectual for the purpose of testing whether an X^{max} can be a barrier to X^0 -movement. I will

¹⁴ The version of the HMC in Travis (1984) included proper government, but did not deal with the notion of Barriers as this is a later development in the theory. On his part, Baker (1988) mentions that the host must 'select' the phrase headed by the moved X^0 , where selection is divorced from its semantic and thematic content and becomes a very broad notion.

examine certain properties of movement to C, and argue that this form of movement can be used as evidence to support the position that X^{max} is not a barrier to X^0 -movement.

There are three types of movement to C, illustrated in (12). The first is cyclic movement of V-to-I-to-C. The second is movement by the head of IP to C. The third is LHM over I by V-to-C.



Derivations like (12a) are purported to account for V-second phenomena in Germanic, or Subject-Inversion constructions in French -(13a)-; (12b) represents the derivation of Aux-2 structures such as English (13b). Chomsky's rationale behind V-to-I movement can be directly extended to apply here: in the first step V_1 is formed; in the second, lexical V_1 climbs to C. From C it L-marks IP, with its trace in the head of IP L-marking VP. Neither VP nor IP stand as barriers. The exceptionality of movement into C resides in instances like (12b), not (12a). The element that raises to C in (12b) is not lexical in Chomsky's model; arguably, it cannot L-mark IP. This is the case of movement by modals to C in V-second English main clauses, (13b), and by movement of I to C in some Papago embedded complements, (13c). In this example, the underlined affixes n-t for person and tense are attached to the auxiliary in

the main sentence, and onto the complementizer in the embedded context.¹⁵ A number of explanations could be given for the possibility of movement to C despite the intervening IP. To name but one, it could be stated that IP is defective (Chomsky (1986b)), and that it differs from VP in that it is not a barrier. Circumventing the problem in this fashion is uninteresting, above all in the light of LHM. For instance, (12c) exemplified with the Czech sentence (13d), places, via LHM, the lexical V in C. Even though one could argue that V in C L-marks the IP below, or that the latter is defective, there is no manner to θ or L-mark the node VP: the element directly above VP is a non-lexical temporal auxiliary in I. Thus, VP should remain, if it is, a barrier.

- (13) a. Quand apprendront-ils à nager?
 When learn:FUT-they to swim
 'When will they learn to swim?
- b. Will they never learn to leave others alone?
- c. am a-n-t wo cikpna-d [ma-n-t hiba'i wo
 LOC Aux-1-T Adv work-Imprf Comp-1-T there Adv
 kii-ka-d]
 live-Stat-Imprf
 'there I'll work where I'll be living'
- d. predstavil jsem se mu
 introduced have:Pres:1s me him
 'I have introduced myself to him'

¹⁵ Papago is a V-second language similar in some respects to German. The main sentence of the example can be analyzed as the effect of movement to C by the finite auxiliary, the SPEC of CP, which is regularly filled by a phrasal element, is occupied in this example by an adverb. In embedded contexts lacking auxiliaries, such as in the example in the text, affixes appear on the complementizer.

(13d) offers crucial proof that X^{max} is not a barrier to X^0 -movement. L-marking was introduced to account for the extraction of V out of VP, yet V can move by LHM to a position where it cannot L-mark VP. LHM supports Rizzi's basic idea based on RM that X^{max} cannot be barriers to X^0 -movement.

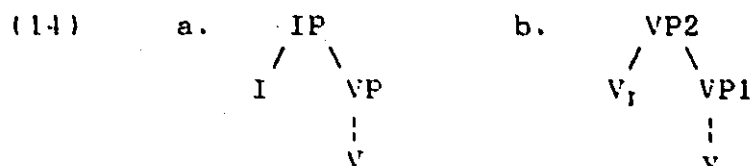
3.1.2.2 Relativized Minimality

The core idea of RM is that X^{max} and X^0 do not interact in government relations. This was demonstrated in the previous section. Basically, VP does not stand as a barrier to versions (11) and (12a) of Short V-movement. Similarly, IP does not affect I-to-C movement by non-lexical elements in (12b).¹⁶ Thus, movement to C need no longer be stipulated as exceptional. Despite the apparent superiority of Rizzi's RM over the Barriers' HMC, it can neither account for LHM (13d), where an X^0 by-passes another X^0 . The head I in (12c) disrupts the government relations between V in C and the trace in VP. As it stands RM falls short of explaining all forms of head movement. (This question was dealt with in 3.1, and need no longer detain us.)

¹⁶ Under relativized Minimality, θ -marking plays no role to account for incorporation into lexical hosts.

3.1.2.3 Extended Government Domains

A third alternative manner to address the present question can be formulated within the Category Switching Hypothesis, if V-to-I is viewed as substitution by adjunction (cf. 1.2.4.3), with the creation of a compound similar to Chomsky's V_1 at the X^0 -level, and the concomitant change at the X^{max} -level seen in (14a)/(14b). This derivation has two immediate effects: Endocentricity is safeguarded, and a geometric interpretation of barriers, based on the idea that the two maximal projections VP1 and VP2 are segments of the same VP, being projected from elements of the same X^0 chain, can be advanced.



(15) Government (Chomsky, 1986b: 9)

α governs β iff α m-commands β and there is no τ , τ a barrier for β , such that τ excludes α .

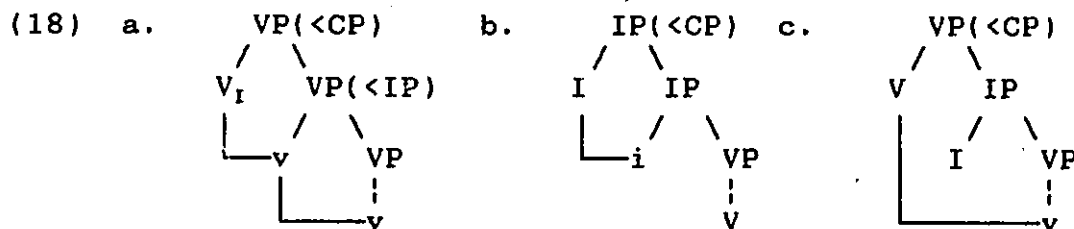
(16) Exclusion (Chomsky, 1986b: 9)

τ excludes α if no segment of τ dominates α .

(17) ... δ ...[τ ... α ...[τ ... β ...]]

If Category Switching applies, the D-structure VP in (14a) ceases to be an intervening barrier. This result is achieved because the VP in (14b) has two segments projected from elements belonging to the same X^0 -chain. If (14b) is interpreted in terms of (17), V corresponding to α , the trace of V to β , and the two VPs to the two occurrences of τ ; then, the segment VP2 of VP dominates the verb which is not excluded from VP.

In the light of the Category Switching Hypothesis, the cases of X^0 -movement to C described in (12), and represented in (18), respectively, can be readdressed.



In (18a), where sequential Short V-movement applies, i.e. from V-to-I-to-C, a three-level VP is created. None of the elements of the chain are excluded from VP, therefore, VP does not act as a barrier.

to prevent proper government between them. Likewise, in (18b), a two layered IP, which does not exclude the antecedent I, allows proper government relations to hold. Viewed in this manner, Category Switching accounts for the satisfaction of the ECP, by allowing proper government relations to hold across extended domains where (16) is observed. The 'exclusion' clause, however, is not met in the derivation (18c), ergo, government (cf. (15)) is not achieved: even though Category Switching applies in C(P), it does not create an uninterrupted extended domain, since IP remains unaltered. Yet, IP appears to be transparent to proper government relations between X^0 -elements.

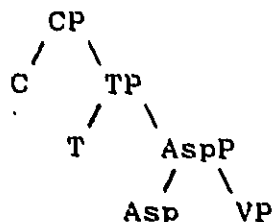
Category Switching, albeit triggered by X^0 -movement, is not relevant for licensing X^0 -movement over maximal projections. As will be seen in 3.3, Category Switching does affect government relations, though not at the X^0 level. Because the structural changes affect $X^{\max}$ s, the relations that are altered are also at the $X^{\max}$ level, as should be expected in the light of RM.

3.2 Affixes, Auxiliaries and SHM

The discussion concerning sentential construal, (cf. Chapter 2), pointed to the conclusion that the separation between T and Agrs is unnecessary. The properties of SHM can be described on the basis of (19). In fact, limiting the categories between VP and CP to those of T and Asp (and Neg), serves to isolate the factors

underlying the different patterns of SHM behaviour.

(19)



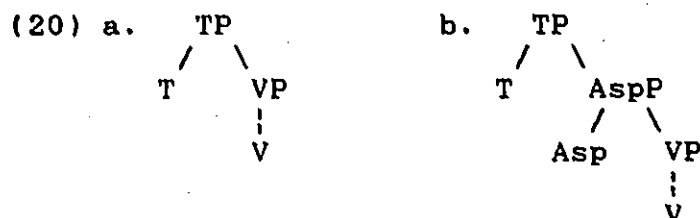
The morphological realization of T and Asp can be actualized by syntactically free or bound morphemes. If free, these forms are generally referred to as auxiliaries, if bound, as affixes. Given this morphological distinction, in this section we will examine the alternatives available in language to structure T-Asp systems, as well as the consequences on X^0 -movement across these positions.

The general hypothesis presented in 3.1, that SHM applies in order to satisfy the AfC, is tested here against languages with different T-Asp morphological systems. It is shown that cross-linguistic variation of SHM between lexical and non-lexical positions can be interpreted in terms of language particular choices of morpholexical specifications for T and Asp. As a result, a typological characterization of SHM is presented.

3.2.1 Saturated and Unsaturated AspP

T and Asp categories are distinctly realized both across languages as well as within a given language. On one extreme, there are languages that lack altogether one of these categories. Comrie (1985) has argued that languages like Bengali may lack T. This

assertion may be too strong, although it is a fact that aspectuals perform a more prominent referential role than temporals in many languages.¹⁸ The absence of an Asp(P) in languages is uncommon although better documented than that of T.¹⁹ The absence of both T and Asp in a language is not documented. Where possible, the following discussion will focus on finite sentences. The structures to be examined minimally contain a T(P), cf. (20a). Otherwise they have at least one Asp(P), cf. (20b). In 2.2.2, it was noted that English has potentially two Asp(P)s, one for HAVE and one for BE.²⁰



Typologically, the relative optionality of Aspect yields three classes of languages. Languages without Asp(P); they have (20a) as the only option. Languages with an unsaturated or optional Asp(P);

¹⁸ Austronesian languages -Cebuano, Bugis Makassar, and Hawaiian, representing the three main branches-, have Tense-Aspect systems characterized by the richness of aspectuals, and by the fact that Asp(P) tends to be saturated by free forms. The temporal contrasts between Past, Present and Future are not marked. Time references may be considered as neutral, the burden of locating events lying entirely on Aspect.

¹⁹ According to Dahl (1985), Modern Hebrew has lost the Semitic Perfective/Imperfective contrast of Biblical Hebrew, and only contrasts Present, Future and Past.

²⁰ Many languages can combine several aspectual elements. Spanish, for example, can have up to three as in había estado cantando '(he/she) had been singing', where the imperfect is affixed to the perfective HABER. Other languages do not allow aspectuals to combine. Wolof, for example, has ten aspectual auxiliaries which cannot be combined.

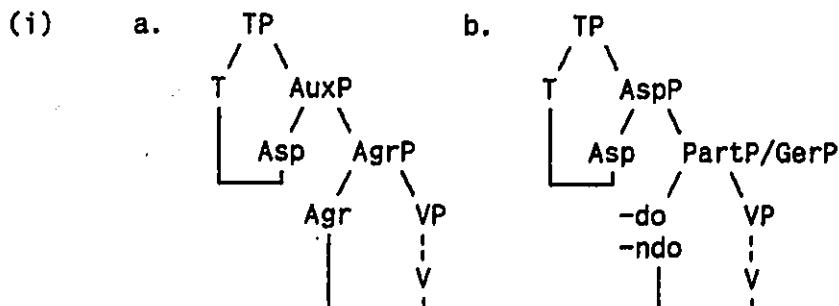
they alternate between (20a) and (20b). And languages with a saturated Asp(P); (20b) being their only alternative.

3.2.1.1 Unsaturated Asp(P)

Languages like Spanish and French have an unsaturated AspP; their structure alternates between (20a) and (20b). The Spanish Simple Present, (21a), has the structure (20a). As argued in 2.2.3.2, there is no Asp(P) in these structures, and the finite verb is derived by movement of V to T. Next to this example, (21b) presents the Spanish analytic Progressive Present, which is formed with the auxiliary SER and a gerundive verb.²¹ The verb in (21c) is a synthetic Past Imperfect; it is formed with an affixal aspect /ba/ rather than with an auxiliary.

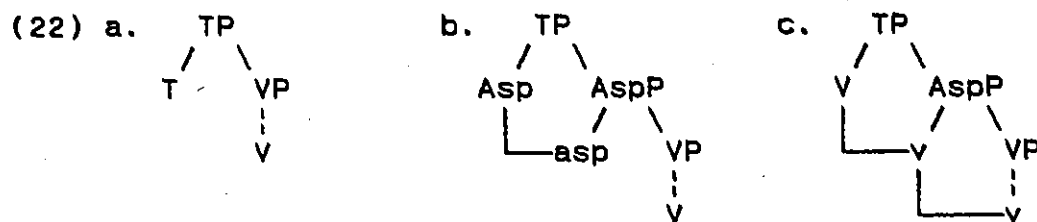
- (21) a. Los muchachos cant-a-n.
 The boys sing-theme-Pr:3pp
 'The boys sing'

²¹ The origin of the affix /ndo/ is difficult to determine. According to Belletti (1991) French and Italian participles are formed by means of two separate movements, one by Aux-to-T, and another by V-to-Agr, somewhat as in (ia). A parallel proposal can be made within an agreement neutral framework like the present one, and account for participles and also for gerunds. Participial and gerundive morphology can be coalesced in one category as in (ib). The choice of morpheme heading this phrase will depend on the nature of the aspectual auxiliary. This point is further discussed in 3.3.V.



- b. Los muchachos est-á-n cant-a-ndo.
 The boys BE-theme-Pres:3pp sing-theme-Gerund
 'The boys are singing'
- c. Los muchachos cant-a-ba-n.
 The boys sing-theme-Imp-Pst:3pp
 'The boys used to sing'

(21b) and (21c) illustrate the two morphological alternatives available for the realization of Aspect. In (22b), aspectual auxiliary moves to T. In (22) the verb reaches T via Asp.



Consider also that V-LHM to T over an intervening aspectual auxiliary is barred, as proven by the ungrammaticality of examples (23). According to the FMC (8), a lexical V in T cannot properly govern its trace in VP because of the intervening lexical aspectual auxiliary.

- (23) a. *Los muchachos cantan_i estar t_i
 b. *Los muchachos cantan_i haber t_i
 c. *Los muchachos cantan_i haber estar t_i

3.2.1.2 Saturated Asp(P)

Languages may have a saturated AspP, an overt aspectual element being required in all finite sentences. Turkish manifests this property; all finite forms have an aspectual morpheme. Tense is

restricted to [$\pm$ Past], [$+$ Past] is marked by /di/ ([di]/[ti]), as observed in (24). The temporal morpheme is always preceded by an aspectual affix. The Imperfective has the form /ir/, known as the Aorist, the Perfective (24b) has /miş/ and the Inchoative (24c) has /ecek/.²²

- (24) a. Halil çok çalış-ır-di
 Halil much work-Aorist-Pst
 'Halil used to work/would have worked very hard'
- b. Halil çok çalış-miş-ti
 Halil much work-Perf-Pst
 'Halil had worked very hard'
- c. Halil çok çalış-ecek-ti
 Halil much work-Incho-Pst
 'Halil was about to work very hard'

Notice that the Present and Future forms in (25a) and (25b) have only aspectual morphology. The Present bears the Aorist /ir/ -cf. (24a)-, the Future the inchoative /ecek/ -cf. (24c)-. These tenses have no temporal morphology, [$-$ Past] being represented as / $\emptyset$ /. Aspectual qualifications of the temporal value [$-$ Past] are used to distinguish reference made to the Present and Future. The Present

²² Dahl (1985) shows that aspectual modification in language generally correlates with the order Past > Present > Future. Languages make more aspectual distinctions in the Past than in the Present than in the Future. Languages tend to have aspectual forms modifying a) Past, b) Past and Present, c) Past, Present and Future. The same appears true of Tense, Past being less often absent than Present and Future, though Present is more often the morphologically unmarked form.

is rendered as a generic property of [-Past], and the Future as its inchoative modification.²³

(25) a. Halil çok çalış-ir-Ø
 Halil much work-Aorist-Pres
 'Halil works very hard'

b. Halil çok çalış-ecek-Ø
 Halil much work-Incho-Pst
 'Halil will work very hard'

In Turkish, the verb serves as the morphological base for T and Asp affixes in conformity with the AfC. The order of morphemes in (24) shows that V-movement is short and sequential, and that the aspectual affix is picked up prior to the temporal affix, as in (22c) above, in compliance with the FMC.

The degree of saturation of Asp(P) imposes limits on the variability of SHM between lexical and non-lexical positions. Most languages have an unsaturated Asp(P), and thus an optional AspP; the system of Spanish, with the three options in (22), is a commonly found alternative. A typology of SHM can be envisaged on the basis of the general hypothesis presented thus far. Clearly, besides the degree of saturation of AspP, a comprehensive

²³ Turkish grammars such as Underhill's (1976, 1987) define the aorist morpheme /ir/ as the "Present Tense" marking. If this were correct, then (24a) in the text should be analyzed as a sentence with two distinct temporal morphemes: /ir/ for Present and /di/ for Past. Along the same lines, (24c) should also be analyzed with two tenses: /ecek/ for Future and /di/ for Past. This is clearly incongruent. What sentences (24d) show is that /di/ is the Past Tense morpheme, and that the elements preceding it, are aspectuals. What is of interest is that the Turkish T-Asp system does not have a "Simple" Present Tense paradigm. The Aorist paradigm is not semantically equivalent to the Spanish Present discussed in 2.3.4, for example. It is not purely temporal, it is always aspectually modified, and has generic-like properties.

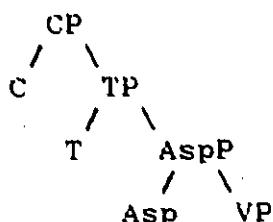
typological description of SHM must take into consideration whether AspP is occupied by morphosyntactically free auxiliaries or by bound affixes. Notice that the absence of V-movement in Spanish (21b), represented as (22b), is due to the presence of an aspectual auxiliary in AspP instead of an affix, as in (21c). As will become evident, the morphosyntactic status of T being either free or bound, has also interesting effects on the behaviour of the other elements in the limit between the lexical and non-lexical layers of the sentence.

3.2.2 Towards a Typology of SHM

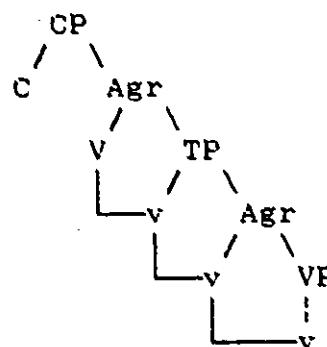
In languages with non-vacuous Asp(P), movement to T differs according to the morphosyntactic status of the elements in Asp(P). If these are lexically specified as bound affixes, V-movement will apply to Asp and then to T, cf. Spanish (21c), and Turkish (24). If they are free auxiliaries, as the Spanish ESTAR in (21b), then V will be inert, and Asp will move to T instead. Like Asp, the lexically determined morphological status of T also enters into play in the determination of X^0 -movement between lexical and functional positions. Like Asp, T may also surface as a bound affix or as a free auxiliary. Affixal T will force movement by another element to comply with the AfC, auxiliary T will not. A representation such as (19), repeated below, is appropriate for the description of the cross-linguistic distinctions observed in the application of X^0 -movement between lexical and functional

positions. The representation (26), where specification of agreements takes precedence, will not serve to account for the aforementioned patterns of X^0 -movement. As portrayed, V-movement will always be triggered in these structures because Agr regularly surfaces across languages as an affix, and AgrP serves as a thoroughfare for X^0 s. Since Agr has no discernible effects on the typology of SHM, (19) with the non-trivial categories, is adopted.²⁴

(19)



(26)



Finite sentences (with one TP and one AspP) may render four possible types depending on whether Tense and Aspect are affixes or auxiliaries. Both T and Asp heads may be affixes, (27a); one may be an affix and the other an auxiliary, (27b,c); or both may be auxiliaries, (27d). Table (28), equivalent to (27), replaces morphological labels by a morphosyntactic feature [$\pm$ Free].

²⁴ The fact that Agr is never realized as a free auxiliary strongly supports our view that it is morphologically different from T and Asp. Perhaps Agr is not an X^0 , but an affix at all levels of representation.

(27)

	Tense	Aspect
a.	Aff	Aff
b.	Aff	Aux
c.	Aux	Aff
d.	Aux	Aux

(28)

	Tense	Aspect
a.	-Free	-Free
b.	-Free	+Free
c.	+Free	-Free
d.	+Free	+Free

Theoretically, (27)-(28) typify the morphology of T-Asp systems. These tables suggest the existence of four uniform types of languages, with regular temporal and aspectual paradigms where all X^os are either [+Free] or [-Free] forms. Though such languages do exist, few systems can be classified on the basis of (27). In fact, most languages have morphologically irregular paradigms, and belong to one of the five mixed types shown in tables (29) and (30). Normally, a language will have both [+Free] and [-Free] X^os to realize one or both of the two categories.²⁵

(29)

	Tense	Aspect
a.	Aff	Aux/Aff
b.	Aux	Aux/Aff
c.	Aux/Aff	Aux/Aff
d.	Aux/Aff	Aff
e.	Aux/Aff	Aux

(30)

	Tense	Aspect
a.	-Free	±Free
b.	+Free	±Free
c.	±Free	±Free
d.	±Free	-Free
e.	±Free	+Free

²⁵ To complicate matters more, auxiliaries can become affixes in the course of linguistic change. This gives rise to synchronic situations where a morpheme acts both as [±free], and where it alternates between the two possible forms of realization. See Chapter 5.

In the following subsections, I will characterize some of the morphosyntactic attributes on which to sort languages according to (27) and (29). Typological classification is, as always, approximative. Morphological uniformity is hard to attain; languages generally belong to one of the types in (29), but often have characteristics that show a tendency towards one of the regular types in (27). Rather than examining the prototypes illustrating each of the nine potential types, it seems more profitable to examine the basic properties of T-Asp systems, and explain them in terms of the interaction between the AfC and the lexically determined morphological status of T and Asp X^os.

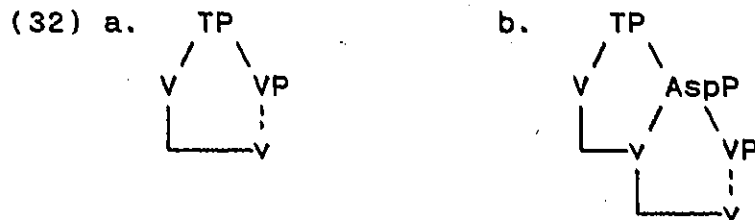
3.2.2.1 Agglutinative Tense-Aspect Systems

The earmark of Type (27a) is that all aspectual and temporal morphemes are affixes fused on a verbal base. Agglutinative languages like Turkish -(24) and (25) above- where segmentation and identification of all morphemes is possible, represent excellent examples. These agglutinative forms are produced by V-SHM ending up in T irrespective of whether Asp(P) is saturated or not. Nahuatl has tensed verbs without aspectual morphology, (31a), and a tensed verb with the aspectual durative particle /on/, (31b).²⁶ The

²⁶ The Nahuatl system, like that of several Mesoamerican languages has a rich locative and directional morphology on the verb which modifies temporal reference and the aspectual content of verbs. The basic "Durative" semantic contribution of the Nahuatl form /on/ is modified according to the choice of verb, and can be interpreted as duration, intensity or length.

derivation (32a) of (31a) is direct movement of V-to-T; (32b) corresponds to the movement of V-to-Asp-to-T underlying (31b).

- (31) a. Mostla ni-kim-itta-s in te-tepe-'
 Tomorrow I-them-see-Fut D Redupl-mountain-pl
 'I will see the mountains tomorrow'
- b. Mostla ni-kim-on-itta-s in te-tepe-'
 Tomorrow I-them-Asp-see-Fut D Redupl-mountain-pl
 'I will observe the mountains tomorrow'



3.2.2.2 Agglutination vs Synthesis in T-Asp fusion

The contrast between agglutinative and synthetic morphological types is normally viewed as the possibility or impossibility of correlating the content of each morpheme with a particular sequence of phonological segments. In the Nahuatl agglutinative example, the morphemes corresponding to subject and object agreement, and T and Asp, are all clearly demarcated. In synthetic languages, fusion of affixes is such that it is impossible to identify and disentangle the morphemes. Latin is generally cited as a paramount example of syntheticity: the ending /o/ in forms such as leg-o 'I read' means simultaneously "First Person Singular Subject" and "Active Present Indicative". Despite its marked synthetic character of Latin, T and Asp stand in an agglutinative morphological relation like in

Turkish.²⁷ An examination of the six conjugational paradigms in the indicative mood of a typical Latin verb such as deleo 'destroy' illustrates the agglutinative character of T and Asp in a "synthetic" language.

Latin had the two aspectually unmodified paradigms in (33),

(33) a. Present b. Future

dele-o	dele-b-o
dele-s	dele-bi-s
dele-t	dele-bi-t
dele-mus	dele-bi-mus
dele-tis	dele-bi-tis
dele-nt	dele-bu-nt

and the four aspectually modified conjugational paradigms in (34):

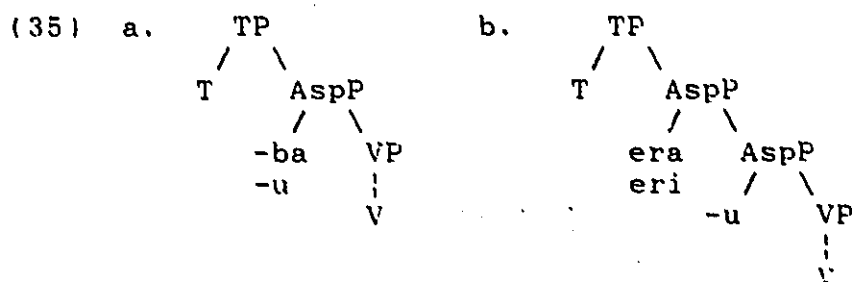
(34) a. Imperfect b. Perfect c. Pluperfect d. Future Anterior

dele-ba-m	dele-ui	dele-u-era-m	dele-u-er-o
dele-ba-s	dele-ui-sti	dele-u-era-s	dele-u-eri-s
dele-ba-t	dele-ui-t	dele-u-era-t	dele-u-eri-t
dele-ba-mus	dele-ui-mus	dele-u-era-mus	dele-u-eri-mus
dele-ba-tis	dele-ui-stis	dele-u-era-tis	dele-u-eri-s
dele-ba-nt	dele-ue-runt	dele-u-era-nt	dele-u-eri-nt

The Imperfect is marked with the aspectual affix /ba/ showing no signs of synthesis with T or any other inflection. The other three forms have the perfective morpheme /u/ right next to the verbal base. Imperfective /ba/ and perfective /u/ are the two [-Free] aspectuals of Latin, located in AspP in structures like (35a). The morphological forms to the right of /ba/ and /u/ in (34) are

²⁷ Interestingly synthesis occurs most often between the elements of IP, that is tense, agreement, mood and voice. Aspect shows here its lexical affinity. It is closer to verbs, and does not amalgamate into a single morphological unit with inflections.

unanalyzed synthetic forms which must occupy a TP position above AspP. The other two aspectual conjugations (34d,c) may be parsed as seen in (35b), with a two layer AspP, the lower containing the perfective /ui/, (which loses the /i/ when followed by a vowel), the higher one with imperfective and future forms of esse 'BE'. Incidentally, the latter attest the analytic origin of these forms, and the evolution of auxiliaries into affixes.



3.2.2.3 Isolating Asp-T Systems

Opposite to the agglutinative type, languages may choose the option (27d), where both T and Asp surface as syntactically free units. This is the isolating type exemplified by Slovak. The Past Tense shown in (36a), is formed with the finite present tense version of the auxiliary byt' 'be/have' and the past participle of the verb.²⁶ (36a) differs from the aspectually modified Pluperfect -(36b)- by

²⁶ The past participle *na+pisal* has the perfective prefix /na/. It does not appear that Slavic perfective/imperfective prefixes should be considered to head an AspP. They can probably be better analyzed as derivational morphemes. Bulgarian has the Indo-European Aorist/Imperfect forms alongside the newer Slavic perf./imperf. prefixes. This fact could be construed to distinguish Slavic "aspectual" prefixes from the aspectual elements that interest us.

placing the past participle of byt' between the tensed auxiliary and the argumental verb.²⁹

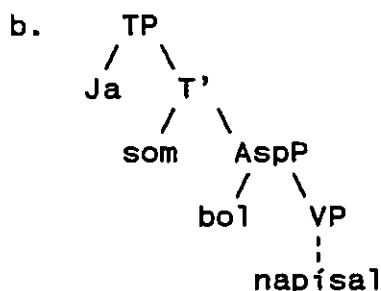
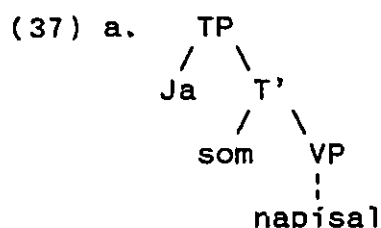
(36) a. Past

Ja som napísal list
I have:Pres write:Part letter
'I wrote the letter'

b. Pluperfect

Ja som bol napísal list
I have:Pres have:Part write:Part letter
'I had written the letter'

In the light of the present theory, (36a) and (36b) can be analyzed as (37a) and (37b) respectively, with the finite auxiliary heading TP, and the auxiliary with perfective meaning in AspP. In both instances the verb remains in VP.³⁰ Notice that nothing appears to undergo SHM in these structures.



²⁹ Interpreting the status of the different auxiliaries that surface in Slavic conjugations is a very complex matter. To ease the task, an overt pronominal subject is used in all the examples. The presence of this element prevents the application of LHM, which would otherwise apply automatically over certain auxiliaries and obscure their basic order. These data will be examined more closely in Chapter 5.

³⁰ Belletti (1991) proposes that a Part(icipial)P(hrase) dominates VP, and that participles are formed by raising V to Part. If this is correct, Slavic languages will require PartPs above VP and above AspP. It is our view that infinitives and gerunds are perhaps also formed by movement.

As well, the Conditional (38a) and the Past Conditional (38b), which is in fact a perfective conditional, are analogous to the examples in (36) except for the presence of the invariable (conditional) marker by to the left of the finite auxiliary.

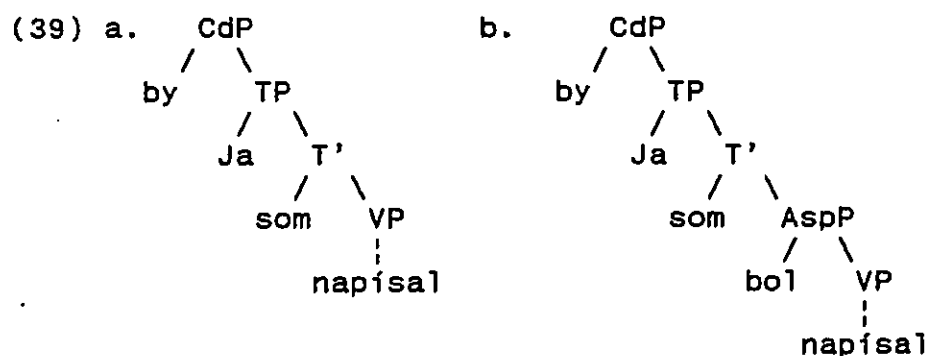
(38) a. Conditional

Ja by som napisal list
I Cond have:Pst write letter
'I would write a letter'

b. Past Conditional

Ja by som bol napisal list
I Cond have:Pres:ls have:Part write:Part letter
'I would have written a letter'

Following the Slavonic grammatical tradition, de Bray (1980) considers by an auxiliary. If this perception is correct, the item must head a Conditional Phrase (CdP) of its own above TP, since it surfaces above the finite auxiliary som.³¹



³¹ Alternatively, by may be a specifier of T, but this would drive us to place the subject in a phrase of its own above TP. In either case a phrase must be postulated above TP. Because subjects may precede auxiliaries in embedded clauses, the subject cannot be in CP.

The principal characteristic of the T-Asp system of Slovak is that, except for the synthetic present tense, there are no movements by X^0 s between the positions defined as V, Asp and T. This language typifies what we have defined under the isolating AspP-T systems.

The typology developed here makes reference only to the morphosyntactic status of V, Asp, and T: other -perhaps more obvious- morphological properties of the languages presented have been ignored. Thus, for example, Slovak has been classified here as a prototype of the isolating type, but it is also highly agglutinative in terms of the richness of agreement in the verbal system, and of its nominal declensions. While an agglutinating language may have an isolating T-Asp system, the opposite can also be true. Mandarin Chinese is often portrayed as the prototype of isolating languages, and yet, its AspP-T system is not comparable to the Slovak one, it has agglutinating properties.

Mandarin Chinese lacks T presumably, though sentences like (40) support the postulation of a TP for some modal-like elements with temporal function.

- (40) a. Quaming yao du shu
 Quaming will/want read book
 'Quaming will read a book'
- b. Quaming lai du shu
 Quaming come read book
 'Quaming has read a book'

Next to the apparent isolating properties of (40), Asp is a bound element, as seen in the two examples in (41).³²

- (41) a. wo chi-le san-wan miàn
 I eat-Perf three-bowl noodle
 'I have eaten three bowls of noodles'
- b. wo chi-zhe san+wan miàn
 I eat-Progr three+ bowl noodle
 'I am eating three bowls of noodles'

Thus far, we have discussed how the morphological distinction between affixes and auxiliaries, is correlated with SHM between T, Asp, and V X⁰-positions. A typology of T-Asp systems can be accomplished on the basis of a parameter stemming from the morphological specification of T and Asp. At the two extremes of the classification rest the agglutinating system of Turkish, and the isolating system of Slovak. Agglutinative T-Asp systems - 3.2.2.1- have generalized V-movement; isolating T-Asp systems - 3.2.2.3- have structures where X⁰s remain inert. Languages with regular systems falling into one of these pure types are, nevertheless, difficult to come by. The Asp-T systems of most languages exhibit mixed properties.

³² Xu Daming has pointed out to me that (41a) is correct in the dialect spoken in Taiwan but not in Beijing, where the perfective /le/, contrary to the progressive /zhe/, is a low-level clitic rather than an affix, and attaches itself to the VP, not to V:

- (i) wo chi san-wan miàn+le
 (ii) *wo chi san-wan miàn+zhe

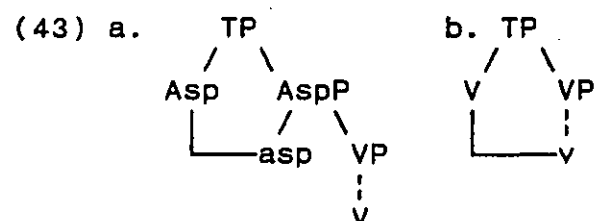
3.2.2.4 Mixed Types

In what follows, two contrasting languages, Wolof -West Atlantic Niger-Congo- and Papago -Northern Uto-Aztecan- are presented to complement the possibilities offered by (27-28). Quantitatively, both languages have a rich Asp and a relatively poor T.

Wolof belongs to type (27b). It has aspectual auxiliaries, and a temporal affix. The pertinent characteristics of this language are exemplified in (42). In (42a) the aspectual raises to the affix in T and V remains in situ in (42b) the verb raises to T because there is no intervening aspectual auxiliary. The aspectual system of Wolof is not saturated, if it were, V would never raise to T.³³

- (42) a. d-oon naa lekk ceeb bi
 Asp-Pst is eat rice D
 'I had eaten the rice'
- b. lekk-oon naa ceeb bi
 Eat-Pst is rice D
 'I ate the rice'

The diagrams in (43) represent the two types of derivations that involve T, Asp and V in Wolof, corresponding to (42a) and (42b) respectively.



³³ If Agr is in fact separated from the element in T to their left, and is not affixes, it is interesting for the general theory of LHM. Notice that it is placed below TP, and that V-movement in (36b) skips it. Samb (1983) considers them affixes that bear agreement.

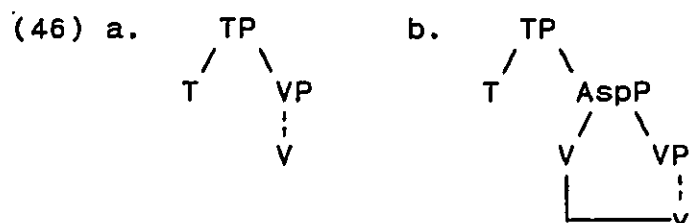
Papago closely typifies the alternative (27c); it has free modal or temporal auxiliaries in T, and affixal aspectual elements. In (44), there is a bare modal auxiliary in T that bears agreement features: the verb appears to its right in VP.

- (44) am a-ñ c'ikpan
 there MD-1s work
 'I work there'

The examples in (45) have the 'Remote' tense marker on the modal auxiliary in T. The Imperfective (45a), and the Perfective (45b) aspectual affixes, are attached to the verb.

- (45) a. am a-ñ-d c'ikpn-ahim
 there MD-1s-Remote work-Imperf
 'I had been working there'
- b. am a-ñ-d c'ikpn-ok
 there MD-1s-Remote work-Perf
 'I had worked there'

The two Papago structures (44) and (45) are represented in (46a) and (46b), respectively. In (44)/(46a), V is presumably inert. In (45)/(46b), V raises to AspP. In neither case does V reach T.



There is an interesting contrast between Wolof (43a) and Papago (46b) due to the status of Asp as an auxiliary in the former, and

as an affix in the latter. In Wolof, V is inert and Asp raises to T; in the Papago derivation, V raises to Asp, and does not need to go any further when T is a syntactically free form.³⁴

3.2.2.5 Some Consequences

The AfC and the analysis of temporals and aspectuals in terms of [$\pm$ Free] forms, permits to set a basic typological picture of SHM between lexical and non-lexical positions. Such an analysis is based purely on morphological notions. Bound forms require morphological support and trigger X^0 -movement. Free forms do not induce this movement, and X^0 s remain in situ. There is no justification in positing extra-morphological reasons to explicate SHM phenomena of the type(s) discussed here. Various attempts at seeing X^0 -movement as the main motivation to activate extra-morphological features such as Case-assignment to subjects, e.g. Koopman (1984), or of providing a suitable variable for Tense, e.g. Pollock (1989), can be seriously questioned.

³⁴ Lema (1987b) suggests that Papago is a V-second language with Germanic-like movement to C in structures like (44) and (45) in the text. In the non-modalized Present Tense, exemplified in (i), there is V-to-T-to-C movement. We lack examples where Present Tense cooccurs with aspectuals, so that V-to-Asp-to-T-to-C cannot be illustrated. An interesting property of Papago is that besides the Germanic type movement to C, the weak modal auxiliaries trigger LHM of the Romance or Slavic type when XPs are not topicalized, see (ii).

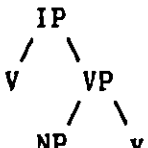
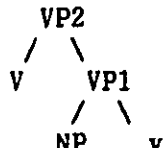
(i) k maak g ĉ-ioĵ g gogs g ĉuukhug
 Introducer give D man D dogs D meat
 'the man gives meat to the dog'

(ii) huhu'id o g ĉuuw-i g ban
 chase MD:3 D hare D coyote
 'the coyote is chasing the hare'

In Koopman's model, a subject in [Spec, IP] prompts the appearance of a verb in I to be sent Nominative Case; presumably, some lexical property of V is necessary for the activation of Nominative Case. Clearly V or Asp-movement is not required for Case to be assigned to a subject.³⁵ Many languages have free temporal X⁰s that prevent movement by lexical elements into T. English, where finite element formation is carried out by Affix Lowering, is a clear counter-example to this theory, for subjects are assigned Nominative Case when there are only affixes in T. Pollock's intuition (cf. 3.1.1), that V-movement is triggered to provide an operator in T with a variable to bind, is also debatable, specially in view of languages like Slovak, where raising to T is negligible, if at all existent.

An advantage of the theory presented here is that cross-linguistic variation is accountable solely in terms of the lexical properties of formatives. There are no special parameters (e.g. the opacity vs transparency -Pollock (189)-, or richness vs povert,

³⁵ Guilfoyle (1988) argues convincingly that V-movement in Irish is required to enable Nominative Case assignment to the subject. This is, however, for a different reason than Koopman's. It is apparently because in Irish, Nominative Case is assigned to the right, and Subjects must remain in [Spec, VP], as in (ia) to receive case. Because VP is a barrier, V must raise to L-mark the VP and thus permit the percolation of the case-feature. In our view, V raises to the position of the affixes, and switches the D-structure IP into a VP, as in (ib). VP1 ceases to exclude V, which is dominated by the segment VP2, and no longer stands as a barrier to Case assignment over it. (See Sproat (1985) for an alternative analysis of Irish based also on Case-assignment to the right).

- (i) a.  b. 

Chomsky (1988)- of Agr), dictating whether X^0 -movement can proceed or not. Children learn whether a particular morpheme in their language is an affix or not. In principle, a-movement is an option to satisfy the AfC for all languages. Because this operation leaves a trace that must be bound by a proper antecedent, raising is the form taken by the movement.

3.3 Generalized SHM

Evidence for V or Aux-movement of the sort furnished by (47) and (48) is not always as easy to tease out in many languages.

- (47) a. Jean vient rarement.
b. John seldom comes.

- (48) a. John was not writing.
b. John had not been writing.

For instance, Spanish does not have parallel cases. First, in Spanish, the position of negation is not below T, as observed in (49):

- (49) a. No escribían los muchachos a menudo.
Not write:Pst:Imp:3pl the boys often
'The boys did not often write'
- b. No habían escrito los muchachos a menudo.
Not had written the boys often
'The boys had not often written'
- c. *Habían no escrito los muchachos a menudo.

In addition, adverbs also behave differently from those of French and English. Zagana (1988:187) cites example (50a) as proof that

V does not raise over the adverb into T in Spanish. But notice that the reverse order between the verb and the adverb in (50b) is also acceptable.³⁶

- (50) a. Juan apenas conoce a su hermano.
 John barely knows his brother
- b. Juan conoce apenas a su hermano.
 John knows barely his brother

Jaeggli (1981) also questions the validity of postulating V-movement for Spanish since clearcut evidence for it cannot be found. Consider, however, that sentences (51)-(54), where different temporal and aspectual combinations are represented, have the symptomatic features of V/Asp-raising. In (51)-(52), (underlined) T appears on the higher of a series of V and aspectual auxiliaries. This distribution is replicated by the imperfective aspectual affix /ba/ in (53)-(54).

- (51) Juan camino por la calle.
 'John walked down the street'
- (52) a. Juan hubo caminado por la calle.
 'John had walked down the street'
- b. Juan hubo estado caminando por la calle.
 'John had been walking down the street'

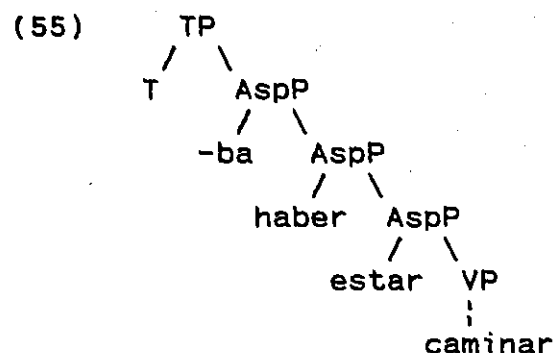
³⁶ In fact I interpret apenas in (50a) as a temporal IP adverb, and in (50b) as 'barely'. These interpretations are clear if the tense of the verb is changed:

- (i) a. Juan apenas había conocido a su hermano.
 'John had just met his brother'
- b. Juan había conocido apenas a su hermano.
 'John had know his brother very little'

(53) Juan caminaba por la calle.

- (54) a. Juan había caminado por la calle.
 'John has walked down the street'
 b. Juan estaba caminando por la calle.
 'John is walking down the street'
 c. Juan había estado caminando por la calle.
 'John had been walking down the street'

Sentence (54b) suggests that Spanish has three Asp positions:



If all elements are generated directly on the verb, how come they invariably surface on the higher of a series of lexical Asp and V. A solution based on V and Asp-movement correctly accounts for the distribution of the different morphemes. Examples (51) and (53) without auxiliaries have V-movement, the structures in (52) and (54) have Aux-movement instead. In the rest of this chapter I will present evidence in support of a generalized V-movement in Spanish. Moreover, I will argue that several syntactic properties of this language follow from the effects of V-movement on the general categorial structure of the language. I will also examine certain asymmetries between Spanish and English, and correlate them with

the fact that English lacks V-movement. The Category Switching hypothesis enhances the contrast between these two languages.

3.3.1 Syntactic Effects of Category Switching

Feature Minimality precludes the category of lexical hosts from being altered, whether the moved X^0 is lexical, as in the N-to-V incorporation in Nahuatl (56), where the object xochitl 'flowers' in (56b) shows up in (56b) inside the verb tequi 'cut',

(56) a. o-quin-tequi-que in siwa-' in xochi-tl.
 Pret-3Pl.Ob.-cut-Pl:Su D woman-Pl. D flower-Abs.

 b. o-xochi-tequi-que in siwa-'.
 Pret-flower-cut-Pl:Su D woman-Pl.

 'The women cut flowers'

or whether the moved head is the functional classifier in the Mohawk example (57), which exemplifies an Object Doubling construction.

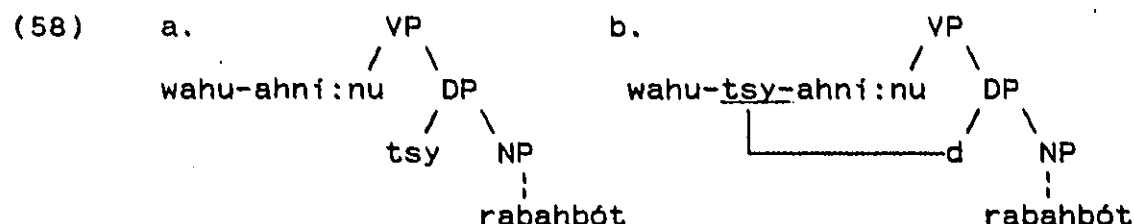
(57) a. Tohka niyohserá:ke tsi nahe' sha'té:ku
 several so:it:year:numbers so it:goes eight

 nikú:ti rabahbót wahu-tsy-ahní:nu ki rake'niha
 of them bullhead 3M:3N-fish-bought this my:father

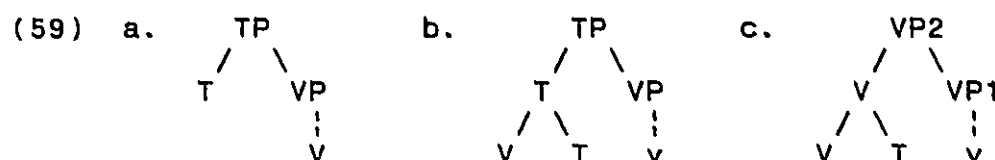
 'Several years ago, my father bought eight bullheads'

The classifier tsy located in the verb 'buy' is the general classifier for 'fish', and the preverbal object rabahbót 'bullhead' is a particular type of fish. Abney's (1987) theory of a DP may be useful to analyze sentences like (57). The classifier for 'fish' must head a DP where its NP complement is headed by 'bullhead', as

in (58a); the classifier moves and becomes incorporated in the verbal host, as in (58b).³⁷



Category Switching applies on structures involving V-to-T movement, as illustrated in (59):



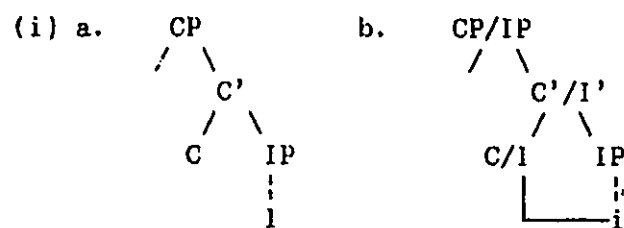
³⁷ According to Di Sciullo and Williams (1987), Baker (1983) argues that in doubling constructions the incorporated N is a copy of the non-incorporated N on the basis of examples like (i):

- (i) a. ka-nuhs-raku thiku
 3n-house-white this
 b. ka-nuhs-raku thiku ka-nuhs-a
 3n-house-white this pre-house-suf

Di Sciullo and Williams use Mithun's (1984) example (58) in the text, to argue that the two nominal elements are independent of each other. However, these items are clearly not independent of each other, either they are identical, as in (i), or the external object is hyponymous to the classifier. Rosen (1989) correctly identifies them as classifiers, though she generates them, like Di Sciullo and Williams, in the verb. Dixon (1986) claims that some types of classifiers evolve from nouns. This type of classifier will be similar in shape to their nominal reflexes in the first stages of their evolution, they may later change in shape, become fewer in number and semantically specialized. Janet Benger has shown me that most Mohawk classifiers are still identical or very similar in shape to their possible complements, that some classifiers have only one or two possible complements, and that some nouns do not have a corresponding classifier. These properties suggest that the classifiers of Mohawk are still highly lexical, perhaps [+Lex, +Fun]. This may account for the fact that in Mohawk, only objects have classifiers, and these must obligatorily become incorporated. I assume these classifiers do not assign case, and if unincorporated, they may perhaps absorb Accusative, leaving the NP without case and in violation of the Case-filter.

The categorial features of the raised V, i.e. [+V,-N], filter up via the nodes projected by T at D-structure, and redefine the D-structure TP as the VP2 in (59c). Lexical features have more weight than non-lexical features, and lexical-to-non-lexical incorporation lexicalizes the host switching its category. Consequently, non-lexical projections are lexically relabelled.³⁸ If the Category Switching Hypothesis is adopted, the incorporation of a noun into the possessive determiner in Zapotec (60) must interpreted to

³⁸ A similar proposal is found in Rizzi and Roberts (1990) and Roberts (1990). In their analyses of "Subject Inversion" in French and in a Franco-Provençal dialect, R&R propose that I-to-C, as in (ib), creates hybrid C(P) projections.



The categorial feature of the two heads project simultaneously from the complex X^0 . Within our theory, it is plausible that features from different heads in a complex X^0 percolate simultaneously to confer the phrase a complex character, nevertheless, Feature Minimality, as a constraint on the sharing of nodes by categorial features is maintained here. The example (i) is oversimplified; consider sentence (ii) below, where the element in C does not solely contain something of category I. The complex in C has several X^0 s: [Neg+N+N+V+T(+Agr)+N].

(ii) Quand Martin [ne le lui donnera-t-il] pas?

If categorial features percolate as proposed by R&R, the D-structure CP would have four or five simultaneous categories. In our view, lexical V substitutes the features of non-lexical Neg and T, switching their projections into V(P)s; Feature Minimality blocks those projected by the lexical pronominal clitics.

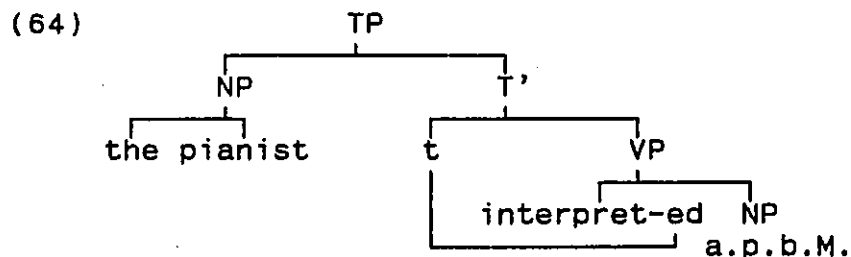
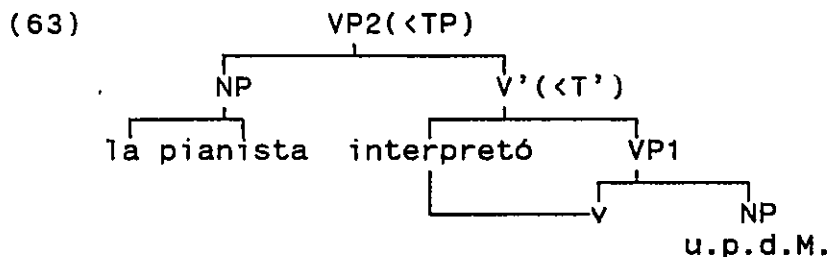
create a complex noun from the determiner-noun structure;³⁹ movement of V-to-T in (61) would result in a verb and not in a tense.

- (60) a. Ké ginni bixo-ze yoo
 Neg Neg:be father-my home
 'My father is not at home'

- (61) La pianista interpret-ó una pieza de Mozart.
 The pianist interpret-Pst a piece of Mozart
 'The pianist interpreted a piece by Mozart'

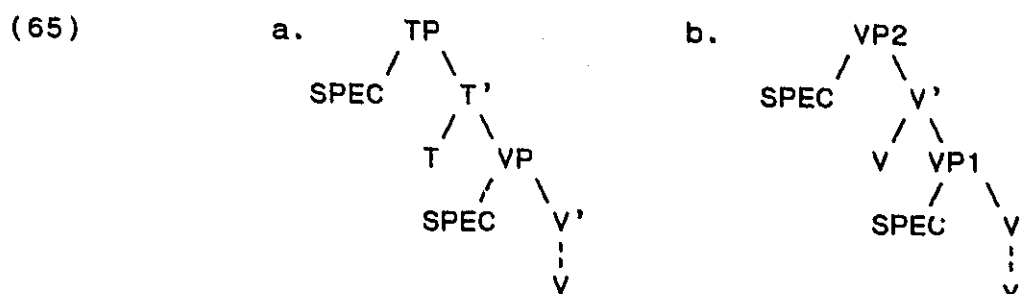
One of the consequences of the Category Switching Hypothesis is that it allows us to assign the same categorial label to the words underlined in (61) and (62) despite the fact that in (61), the verb has T for a host, while in (62), T has the verb for a host. See the derivations (63) and (64).

- (62) The pianist interpreted a piece by Mozart.



³⁹ Cinque (1990) argues that in Italian, the true complement of D is AgrP, and NP a specifier. If this claim were to hold for Zapotec (60), then the possessive morpheme is the element that moves to the noun, and not vice versa. In our view, this should not have any effects on the category of the noun.

(63) and (64) show a configurational contrast between T-to-V and V-to-T languages. The syntactic structure of simple sentences in English does not suffer major configurational alterations throughout its derivation. By contrast, Spanish substitutes the D-structure TP by an S-structure VP, developing a two-layered VP; both maximal nodes are projected from two elements of the same chain, namely, the verb and its trace. The simplified S-structure representations (65a) for English, and (65b) for Spanish will be used hereafter for the discussion.



3.3.1.1 Effects on Word Order

The word-order asymmetries exhibited by Spanish and English can now be explained as a consequence of the interaction between Case-assignment under head government and the structural properties of S-structures (65a,b) belonging to each of these languages. The two-layered VP in Spanish allows subject NPs to be Case-marked in a number of structural positions that are opaque to government by T in English. Spanish permits the three possible orders between

V(erb), S(ubject) and O(bject) exemplified in (66), while English allows only one, (67).⁴⁰

- (66) a. El huracán destruyó las cosechas. (SVO)
 b. Destruyó el huracán las cosechas. (VSO)
 c. Destruyó las cosechas el huracán. (VOS)
- (67) a. The hurricane destroyed the crops. (SVO)
 b. *Destroyed the hurricane the crops. (VSO)
 c. *Destroyed the crops the hurricane. (VOS)

The apparent freedom of Spanish word order is actually a property of subjects alone: the ungrammatical sentences in (68) uncover a subject-object asymmetry in this respect.

- (68) a. *El huracán las cosechas destruyó. (SOV)
 b. *Las cosechas el huracán destruyó. (OSV)
 c. *Las cosechas destruyó el huracán. (OVS)

From (66) vs. (67), it can be inferred that subjects are accessible to nominative Case-assignment in more structural positions in Spanish than in English. We assume that Affix Lowering does not

⁴⁰ The same pattern as in (66) in the text may be reproduced when auxiliaries are present.

- (i) a. El huracán había destruido las cosechas. (SVO)
 b. Había el huracán destruido las cosechas. (VSO)
 c. Había destruido las cosechas el huracán. (VOS)

With monosyllabic realizations of HABER, sentences such as (ib) are impossible:

- (ii) a. *Ha el huracán destruido las cosechas.
 b. Ha destruido el huracán las cosechas.

These examples must be seen in the light of Suñer's (1987) discussion. Her proposal is that these monosyllabic forms of HABER are affixal. Zagana (1988) also views sequences of short forms of HABER and a participle as incorporation compounds.

affect the Case-assignment potential of I in (65a);⁴¹ thus the lexical verb does not play a role in nominative Case-assignment in English. In Spanish, even though the verb itself does not move to assign Case, the configurational effects of V-to-T are such -cf. (65b)-, that the government domain of V_i is broadened, and subjects may be Case-marked in a number of positions not available in structures like (65a).⁴²

The subjects in the SVQ examples (66a) and (67a) are in parallel structural positions, and are similarly Case-marked. These NPs are in [Spec, TP] in English (65a), and in the corresponding [Spec, VP2(<TP)] in Spanish (65b). These positions are in the m-commanding domain of T and V_i respectively, and are thus, head-governed. To explain the asymmetry between the (66b,c) and (67b,c) pairs requires further elaboration.

The NP bearing Nominative Case in the VSO example (67b), is inside VP1 (<VP) in (65b). The contrast between the two languages follows from the fact that the English VP node is opaque to head-government by T, while VP1 in Spanish is transparent to head-government by V_i . An NP in its basic position is accessible to Case-assignment in Spanish but not in English. To make this explicit, consider the definitions of Government and Exclusion, for

⁴¹ If affixes assign Case, as Baker (1988) suggests, then Affix Lowering must be in PF for the subject in [Spec, IP] to be properly Case-marked at S-structure. This is position taken in Chapter 4.

⁴² The non-categorial features of I -Case for instance- are not blocked by Feature Minimality despite the change of IP into VP.

convenience repeated here in (69) and (70), in terms of the abstract configuration (71).

(69) GOVERNMENT (Chomsky, 1986b: 9)

α governs β iff α m-commands β and there is no τ , τ a barrier for β , such that τ excludes α .

(70) EXCLUSION (Chomsky, 1986b: 9)

τ excludes α if no segment of τ dominates α .

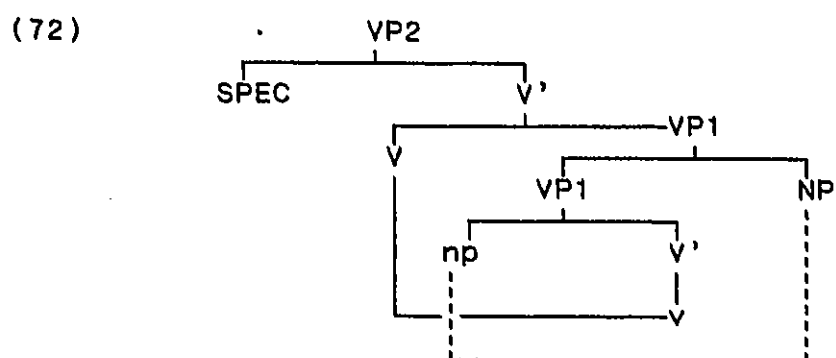
(71) ... δ ...[τ ... α ...[τ ... β ...]]

The position of the Inflected Verb in (65b) corresponds to that of the variable α in (71); the Spec of VP1 corresponds to β , and the maximal nodes VP2 and VP1 stand for the two segments of τ , which - we recall- are projected from two coindexed elements belonging to the same chain. Notice that in (71), α ($=V_1$) is not excluded from τ ($=VP$); thus, it is able to head govern β (the subject NP in the Spec of VP1). Because the notion of M-command requires every maximal projection that dominates α to also dominate β , (71) could be seen as problematic, for β is entirely dominated by τ while α is not. Nonetheless, α is not excluded from the category τ , and in a sense it is still part of τ . In our view expressed in Chapter 1, the domain of m-command is basically coextensional with the syntactic phrase or categorial unit.

In order for α to m-command β , τ above α in (71) must not be interpreted as a maximal projection, but only as a segment of one.

Y iff X does not dominate Y and every Z , Z a maximal projection, that dominates X dominates Y . Structures of category τ in (71) can be interpreted to be complex rather than distinct Phrases.

The subject NP in the VOS example (67c) could be adjoined to the right of VP, (72), along the lines suggested by Rizzi (1982), and formulated by Belletti (1988) under the Barriers model.⁴³



The expansion of the VP into a two-layered structure, also extends the government domain of V_I in Spanish, and subjects enjoy a greater freedom of movement than their English counterparts. Besides governing an NP in [Spec, VP2], V_I can reach across VP1,

⁴³ To account for VOS in Italian, Belletti proposes a language specific rule of "Romance Inversion", whereby the subject NP lowers and leaves a null expletive pronoun in the SPEC of IP, as shown in (i). Her analysis is based on the idea that subject inversion is possible due the existence of empty "pronominal" categories in Romance. We assume α -movement; the subject raises from the SPEC of VP1, leaving a properly governed trace in its basic position. French is problematic to our proposal, since there is V-movement in this language, but no inversion. Nevertheless, the difference between French and other Romance languages can be captured in terms of differences in the directionality of Case assignment. French would lack VSO and VOS word orders, showing that Case is assigned to the left. (See note 37 where Case in Irish is assigned only to the right). A third alternative, we will not elaborate on, is to consider French a pro-drop language; see Lema (1987a) and Roberge (1986).

and assign Case to an NP in structures which surface as VSO and VOS.

3.3.1.2 Effects on Wh-movement

Barriers and government domains are differently determined in English and Spanish because of their structural configurations - (65a) vs. (65b)-. These languages also follow different means to comply with the ECP, as expected, they exhibit asymmetric effects in structures where Wh-movement is involved.

The discrepancy between Spanish (73) and English (74), stems, ultimately from the different strategies employed in the formation of finite elements.

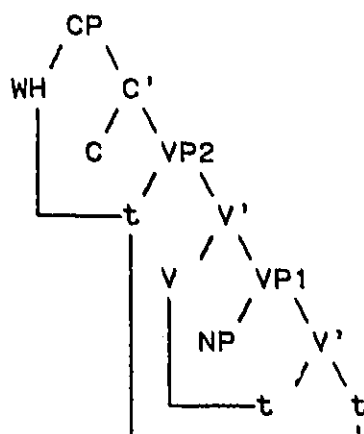
- (73) a. ¿Qué compró Juan?
 b. *¿Qué Juan compró?
 c. ¿Con qué cortó Juan el pan?
 d. *¿Con qué Juan cortó el pan?

- (74) a. *What did buy John?
 b. What did John buy?
 c. *With what did cut John the bread?
 d. With what did John cut the bread?

The subject NP to the left of the verb in WH questions, is the only possible order in English. In this language, the sole possibility for the Wh-Phrase to exit the VP, is by means of adjunction to VP, as proposed in May (1986) and Chomsky (1986b). In Spanish, however, where VP1 is not a barrier after V-movement takes place, the Spec of VP2 serves as escape hatch for Wh-Phrases; notice that even though this position is inside VP, it is not included in it, for

it is not dominated by VP₁, thus all segments of VP do not intervene between the two positions.⁴⁴

(75)



The SVO order cannot obtain in (73b) and (73d) because the subject NP is prevented from moving into the Spec of VP₂, for it is occupied by the intermediate Wh trace. If our analysis is correct, Wh-extraction via the specifier of VP₂ is preferred over extraction via adjunction to VP₁. This may be a reflex of Economy of Derivation, adjunction need not be carried out for extractions of the present sort since there is already a position via which the Wh word may exit. As observed in the previous section, adjunction to VP is welcome in inversion structures, and as we see below, this method is probably used for extraction of two Wh words.

Interestingly, the second step of Wh from [Spec, VP₂] into [Spec, CP] may in fact be unnecessary. If Diesing (1988, 1990) is correct in assuming that Spec positions like [Spec, VP₂] are A-bar

⁴⁴ Several factors seem to conspire for English not to use [Spec, IP] as escape hatch. Among them is the fact that this is the only position where subjects can be Case-marked in this language.

if the material inside them is not Case-marked, then the Wh need not move to CP. Quotative constructions like (76) suggest that Wh words can in fact surface in a position below C:⁴⁵

- (76) que qué no quería comprar Pedro?
 that what not wanted to-buy Peter
 'what was reported that John did not want to buy?'

Recourse to an adjunction strategy to extract phrases from VP, as in the English sentences (74b,d), is not necessary in Spanish because a more economical form of derivation is available via the default escape hatch. Nevertheless, in certain situations, Spanish accesses both strategies simultaneously, and two Wh-Phrases are extracted from VP, as seen in (77), creating an apparent violation of Ross's (1967) Wh-island constraint. If multiple adjunction is not allowed in languages, this will explain why only one Wh-extraction can proceed in English, as observed in (78).⁴⁶

- (77) ¿A quién_i no sabía Juan qué_j (le) había comprado Pedro t_j t_i?

- (78) *To who(m)_i did John not know what_j Peter had bought t_j t_i?

⁴⁵ Suñer (to appear) proposes that structures like these support a two-level CP analysis, where the complementizer *que* heads the higher CP, and the Wh word is in the specifier of the lower CP. These constructions are problematic. Alternatively, it could be argued that this Wh word is adjoined to IP, a position where Rochemont and Culicover (1990) place topicalized XPs.

⁴⁶ Guéron and May (1984) propose that only one adjunction may be performed at a given node.

3.3.1.3 Effects on Proper Government and Subjacency

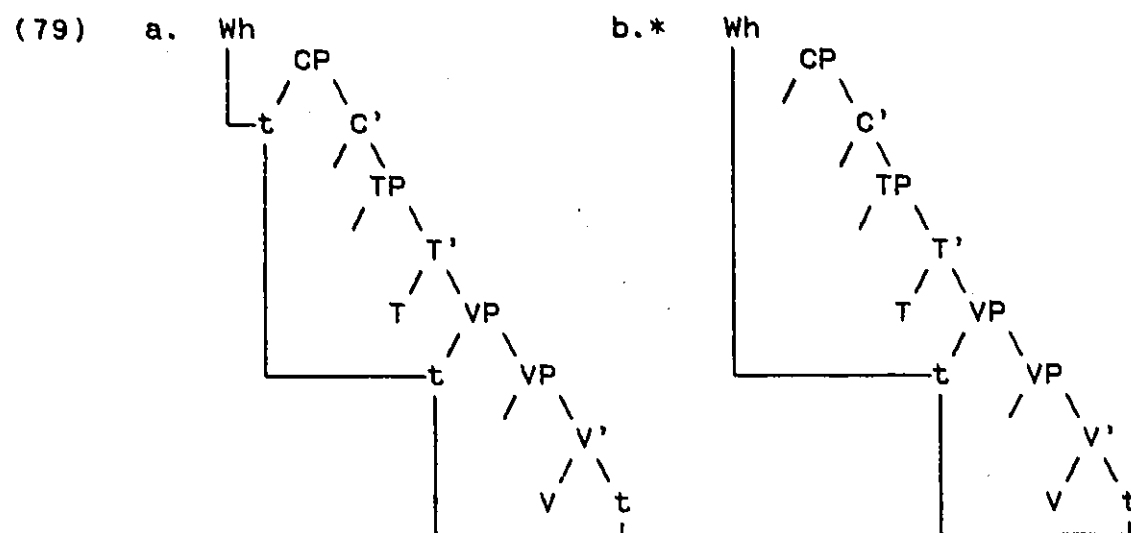
Double Wh-movement -cf. (77)- forces one of the Wh-Phrases to bypass the lower CP on its way out of the sentence, and thus to skip the typical Comp-to-Comp route discussed in Chomsky (1973). To overcome a potential violation of the Wh-island Condition, Rizzi (1978) suggested that the bounding properties of the sentential nodes S and S' varied parametrically. In brief, he showed S' (CP) to be the relevant node for languages like Italian which allowed a Wh-Phrase to skip an intermediate CP. For languages like English without the availability of double Wh-extraction, Rizzi posited S (TP) as the node relevant for Subjacency. This observation is essentially correct, but it is unnecessary to tie it to a particular parameter. The Subjacency effects in languages like Spanish may be related to a lack of a TP at the level where proper government relations are checked in Wh-movement structures. Basically, the ECP computes both CP and TP in English, but only CP in Spanish.⁴⁷

Given that the asymmetry between (77) and (78) correlates with differences in the number and nature of functional projections intervening between a Wh-word and its trace, a solution computing bounding nodes similar to Rizzi's may be appropriate. Essentially,

⁴⁷ Rizzi's Relativized Minimality cannot account directly for Wh-island violations in languages like Italian and Spanish. Double Wh-movement requires a potential A-bar governor to intervene between an A-bar Wh and its trace. Perhaps a version of Subjacency is still needed in the Relativized Minimality model.

the bounding nature of TP and CP is also affected by the bounding status of contiguous nodes such as VP.

The only manner available to extract a Wh-Phrase from CP in English is portrayed in (79a), where the Wh-word lands in the [Spec, CP] to escape the lower CP. A Wh-word adjoined to VP may skip TP, but it may not undergo Long Wh-movement as in (79b).



Contrariwise, Wh-Phrases in Spanish can be extracted either by short or long movement, as shown in (80). Two options, one via adjunction to VP1, the other through the Spec of VP2 are represented; in neither case are VP1 and VP2 barriers to government. Thus, while a direct movement into the matrix sentence in English by-passes both TP and CP, in Spanish only one functional node is skipped.

been extracted from VP by adjunction, following the dotted path "2" in (80a).⁴⁸ Our analysis predicts that when two Wh-elements move, subject preposing should not be possible, a precondition borne out by the data.

(82) a. A quién_i no sabía Juan qué_j le había regalado Pedro t_jt_i ayer
to who not know John what to-him had given Peter yesterday

b.*A quién_i no sabía Juan qué_j Pedro_k le había regalado t_jt_it_k ayer
to who not know John what Peter to-him had given yesterday

'To whom did John not know what Peter had given yesterday?

Sentences like (82a) must use both strategies (80a,b) in their derivation. One Wh-Phrase lands in the lower [Spec, CP], the other undergoes Long Wh-movement. One of the two must use the [Spec, VP2] escape hatch, thus precluding the application of subject preposing, as attested by the ungrammaticality of (82b). Which of the two Wh-elements uses the adjunction position, and which the escape hatch is difficult to determine.⁴⁹

Further evidence in favour of the present analysis comes from examples like (83). If complex Wh-Phrases like the one underlined in these examples, are base generated in CP (Pesetsky (1982)), then only the Wh-word in the higher CP moves, and only one extraction

⁴⁸ The contrast observed in the word order in simple questions, strongly suggests that Wh may surface in [Spec, VP2] rather than in [Spec, CP].

⁴⁹ It is interesting to consider which position is used in the higher sentence by the extracted Wh word. The ungrammaticality of (i) below, when contrasted with (82a) in the text, would indicate that the Spec of VP2 rather than adjunction to VP1 is the path taken by the element.

(i) *A quién_i Juan no sabía qué_j le había regalado Pedro t_jt_i ayer

site is used for Wh-movement. (83a,b) and (81a,b) are then identically derived.⁵⁰

- (83) a. A quién_i no sabía Juan qué cosa le había regalado Pedro t_i ayer
to who not know John what thing to-him had given Peter yesterday
- b. A quién_i no sabía Juan qué cosa Pedro_j le había regalado t_j t_i ayer
to who not know John what thing Peter to-him had given yesterday
- 'To whom did John not know what thing Peter had given?'

The relative word order freedom of Spanish, and the phenomenon of Subject Inversion in Wh-constructions can be explained in terms of the interaction between general principles of grammar and the particular configuration that this language has as a result of the application of V-movement. Languages with V-movement are postulated here to trigger Category Switching. Basically, Category Switching extends the government domain of operations such as Case-assignment and antecedent government, laxing the locality constraints between the elements involved in these relations. Languages with Category

⁵⁰ But see Torrego (1984) who accounts differently for subject inversion in simple and in embedded questions. The former are explained as a result of an upward movement by V to the left of the subject, somewhat as in (84). Such a movement could be interpreted to be to C.

(84) [_S...V_i...NP...t_i....

The analysis is restricted to main sentences, although inversion is also observed in embedded contexts like (81) above, where C is occupied. To account for examples like (81), Torrego proposes that subject inversion is triggered automatically only when a Wh-Phrase stops or goes through the first Comp, (but not when the movement skips Comp). Sentences like (83b) above where CP is occupied by a Wh-element and inversion is not triggered, are problematic for Torrego's account. In addition, it would require the undesirable effect of postulating language specific rules such as subject lowering in embedded sentences.

Switching have properties that set them apart from languages like English, where V-movement is absent.⁵¹

3.3.1.4 Category Switching and the Projection Principle

The categorial alteration of a node S (84P or TP) into VP produced by Category Switching does not have obvious consequences for the Projection Principle. This change would be effected in matrix sentences like (84a) and embedded sentences like (84b).

- (84) a. [_{TP,VP} Jean décide toujours].
 'Jean always decides'
 b. Pierre dit [_{CP} que [_{TP,VP} Jean décide toujours]].
 'Pierre says that John always decides'

If we assume that matrix sentences are not complements, the change in this context is not relevant for the Projection Principle. In embedded sentences, if the verb subcategorizes for a CP, the change at the TP level does not alter the relationship between the matrix verb and its CP complement.

The position expressed by Long (1974) and Rochette (1988) that there exists a correspondence between the syntactic category of complements and specific semantic types should not have any bearing on the assessment of the Category Switching Hypothesis. Because their theories concern complements, Category switching in matrixes should not have any relevant effects. As for embedded complements,

⁵¹ It should be remarked that V-movement is not responsible for all parametric distinctions existing between languages. Factors such as directionality of Case assignment, impose severe restrictions on word order; different lexical inventories be responsible for language specific properties.

the situation is partly analogous to that discussed in relation with (84b). CP complements -Rochette's "propositions"- do not alter their category since V does not raise to C. As far as infinitival complements, which Rochette distinguishes into two types: "Action" -VPs- and "Events" -IPs-, cf. (85a,b) respectively,

- (85) a. Sarah commence [_{VP} à manger].
 b. Danielle veut [_{IP} manger à l'heure].

there appears to be no unwarranted effects. As argued by Pollock (1989), verbs do not raise in infinitival sentences, cf. (86), and as shown by Iatridou (1990), neither do English auxiliaries.

- (86) a. *Sarah commence à ne manger pas.
 b. *Danielle veut ne manger pas à l'heure.

While these two types of constructions cannot serve to evaluate the Category Switching Hypothesis, French infinitival constructions with ÊTRE and AVOIR, which Pollock argues to undergo Raising, are particularly interesting for this purpose. Negative sentences such as (87a,b) indicate that ÊTRE and AVOIR (both thematic and non-thematic) can undergo Raising to a functional position, perhaps IP:

- (87) a. N'être pas optimiste apporte des malheurs.
 b. N'avoir pas été en France le rendait triste.
 c. N'avoir pas de voiture est bon pour la santé.

In these sentences the postulation of Category Switching has no consequences for the Projection Principle, since it applies in non-selected subject infinitival clauses. Notice now the contrast

between (87) and (88), where the latter are selected object infinitival clauses:

- (88) a. *Sarah commence à n'être pas optimiste.
 b. *Jean aime n'avoir pas de voiture.
 c. *Danielle voulait n'avoir pas été en France.

Movement in these examples is restricted for no obvious reasons. Nonetheless, if Category Switching is an effect of Raising a lexical item to a functional position, the unacceptability of (88) is explained as a violation of the Projection Principle, for the category of the selected complement is altered. Pollock offers literary examples such as (89) (his (20)), all with modal-like verbs:

- (89) Je pensais ne pouvoir pas dormir dans cette chambre.

3.4 Conclusion

It has been shown in this chapter, that the morphological properties of T-Asp systems condition the X^0 -movement of V, Asp and T positions. The AfC was postulated to capture the fundamental requisite that formatives specified as affixes in the lexicon be given morphological support. It was argued that X^0 -Raising is the mechanism most commonly employed to satisfy the AfC because of independent properties of the grammar. On the one hand, syntactic α -movement is the first operation available that applies in the derivation of sentences capable of uniting two X^0 s; thus, it is

responsible for the overwhelming use of this strategy for the formation of finite elements. On the other hand, X^0 -a-movement was argued to leave anaphoric traces, thus defining the movement as raising rather than lowering. The FMC was introduced to account for the local character of SHM, particularly for the fact that it affects contiguous heads. The salience of this semantic condition will become evident when we examine LHM in Chapter 5.

The different types of T-Asp systems, were defined according to a morphological parameter that allows T and Asp formatives to be realized either as bound affixes or as free auxiliaries. According to this distinction, it is possible to construct a typology based on the correlation between T-Asp systems and SHM. More importantly, a morphologically based theory of SHM was shown to be preferred to other attempts in which extra-morphological motivations are called in to justify SHM. Indeed, our theory was shown to account for (certain) different types of variation observed in language. To support our view that SHM is the generalized option to form finite elements, certain characteristics of Spanish word order were examined in the light of the idea that government domains are extended by the application of Category Switching. The view that linguistic operations are not language specific has been maintained here. Thus, neither Category Switching nor VP-adjunction are language specific properties. Similarly, in the following chapter, lexical differences between the T-Asp systems of Spanish and English will be shown to be responsible for

the absence of V-movement in English, and for the triggering of Category Switching in Spanish.

Chapter 4

Verb Inertness

4.0 Introduction

The present Chapter is concerned with a syntactic property of English that sets it apart from most languages. The characteristic that concerns us is the fact that lexical verbs are regularly inert. This appears to be the case whether auxiliaries can be observed or not at S-Structure. On the one hand, English sentences such as those in (1), with auxiliaries, are comparable in this respect to Slavic forms like those discussed in 3.2.2.3, repeated in (2). The positions corresponding to Tense and Aspect are occupied by auxiliary elements, and the verb remains in what appears to be its basic position. The behaviour of the verb in examples (1) and (2) is expected given the X^0 positions directly above V^0 are occupied by non-affixal heads.

- (1) a. I was writing a letter.
b. I had been writing a letter.
c. I must have been writing a letter.

- (2) a. Past
Ja som napísal list
I have:Pres write:Part letter
'I wrote the letter'
- b. Pluperfect
Ja som bol napísal list
I have:Pres have:Part write:Part letter
'I had written the letter'

On the other hand, and as previously observed, sentences such as those in (3) do not exhibit V-movement.

- (3) a. I write a letter.
 b. John considers Mary intelligent.

Pollock (1989) presents four sets of contrasts with French that demonstrate the inert character of the English verb compared to that of French. First, as in (4), V cannot appear to the left of negation:

- (4) a. *John likes not Mary.
 b. Jean (n')aime pas Marie.

Second, English Lexical verbs do not raise to C in Subject-Inversion constructions -(5)-; an interesting fact given that English does have this sort of structure with auxiliaries -(6)-:

- (5) a. *Likes he Mary?
 b. Aime-ti-il Marie?

- (6) Has he liked Mary?

Third, English finite lexical verbs cannot appear to the left of VP/IP-adverbs like often. This type of adverb may surface either to the right or left of a finite auxiliary, in the first case in a position below Tense, in the second, presumably above it.

- (7) a. John has often kissed Mary.
 b. John often has kissed Mary.

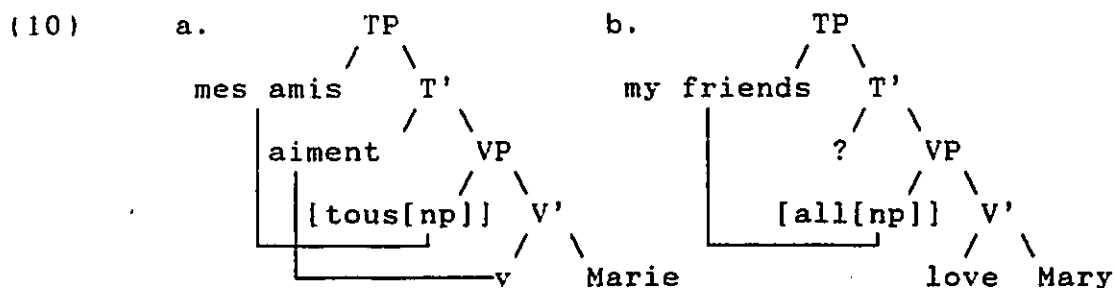
In contrast with this pattern, lexical verbs appear regularly to the right of this set of adverbs, as demonstrated by (8):

- (8) a. *John kisses often Mary.
b. John often kisses Mary.

If finite V raised to T, as does the auxiliary in (7a), (8a) with the adverb in its VP usage -i.e. below T- should be grammatical. Fourth, the contrast in the position of quantifiers between French and English in (9) also shows that English finite verbs do not move.

- (9) a. *My friends love all Mary.
b. Mes amis aiment tous Marie.
c. My friends all love Mary.
d. *Mes amis tous aiment Marie.

Following the analysis offered by Sportiche (1988) for "floating" quantifiers, and the analysis of VP internal subjects presented in the previous Chapter, the facts in (9) are interpreted as depicted in (10):



The VP internal subject is moved to the specifier of TP, leaving the quantifier behind in VP. The French verb separates the subject from the quantifier at S-Structure because it climbs to the

intermediate position T. In English, in contrast, the only effect of NP-movement is the inverted order between the subject NP and its quantifier. Because the verb does not raise to T, it surfaces to the right of these elements.

The principal interest in this Chapter is to investigate why the verb is inert in structures such as (10b), where apparently, and in contrast with the examples (1), there is no auxiliary in the structure to prevent V-movement. Related to this question are two other syntactic problems of English Syntax and one of semantic import that must be discussed. The first, and most problematic, concerns the manner by which affixation is carried out in examples (11).

- (11) a. John kisses Mary.
 b. John Kissed Mary.

If we assume following work by Pollock, Chomsky and others, that affixes occupy different positions from that of their hosts at D-Structure, and that V/Aux-Raising is the general process employed to form finite forms in languages like French, then English stands out as problematic for finite verbs cannot be formed by means of Raising. In the first part of the Chapter we will examine the consequences of including in the Grammar an operation of Affix Lowering to account for finite forms such as those in (11), as proposed originally by Chomsky (1955).

The second aspect of English that will concern us here is related to the existence in this language of an auxiliary of very

particular behaviour, the element DO, that may optionally appear in sentences such as (12), corresponding to those in (11).

- (12) a. John does kiss Mary.
b. John did kiss Mary.

This item has been generally assumed to be semantically empty, and to be used only in order to mark emphasis, as in the sentences directly above, and in negative and interrogative sentences:

- (13) a. John does not kiss mary.
b. *John not kisses Mary.
c. Does John kiss Mary?
d. *Kisses John Mary?

The third aspect that sets English apart from most languages is the fact that the Present Tense has regularly a generic aspectual value -(14)-, which we will label unlimited. The examples (15) show that, in contrast with French, for example, reference to the Moment of Speech cannot be obtained.

- (14) a. Oscar étudie philosophie.
b. Oscar studies/does study philosophy.
- (15) a. Oscar étudie la leçon de demain.
b. *Oscar studies/does study tomorrow's lesson.

We will argue that the three aspects of English presented here are not idiosyncratic nor do they issue from different parameters, we will show that they must be viewed as a constellation of related phenomena. Basically we will propose that the auxiliary DO of English is an aspectual element that is functionally related to

Perfective HAVE and Progressive BE, that its semantic content can be defined as Unlimited (Permanent, Generic), and that in this respect it resembles the Turkish Aorist described in section 3.2.1.2. This aspectual auxiliary is shown to behave similarly to subject pronouns in Pro-Drop languages. Basically, the element can be omitted in certain types of constructions, and when used in these its import is one of emphasis. The auxiliary DO -with its null variant / $\emptyset$ /-, is shown to be an aspectual auxiliary on a par with HAVE and BE. This hypothesis is supported by the fact that (a) the three auxiliaries have parallel syntactic behaviour; (b) the use of DO/ $\emptyset$ correlates with certain aspectual qualifications of Tense; (c) there are certain cooccurrence restrictions between DO/ $\emptyset$ and particular classes of predicates, typical of elements with lexical content.

The basic features of English Verb Inertness, and the possibility of including Affix Lowering in the Grammar of English are presented in Section 4.1. The possibility of altering our model and generating affixes in the Lexicon for this language is contemplated. It is shown that this manoeuvre would require including DO at D-Structure among semantically relevant elements, but that this would not solve without problems the question of how affixes are distributed in (11)/(12). The discussion in Section 4.2 concerns the status of DO. It is proposed to occupy Asp(P), analogously to HAVE and BE. It is argued that English has a saturated Asp(P), which prevents V-to-T movement, and that affixes

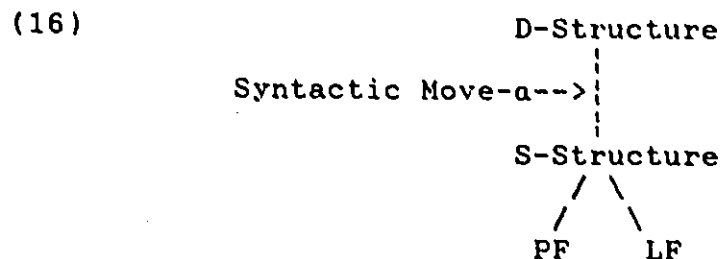
surface on V when the allomorph /Ø/ of DO heads AspP. Some consequences of the analysis are explored in Section 4.3.

4.1 Verb Inertness and the Status of DO

4.1.1 Affix Lowering

The choice of SHM as the standard strategy followed to satisfy the AfC is a consequence of the interaction between the form and principles of Grammar with language particular lexical properties. In particular, the fact that α -movement leaves a trace that must be c-commanded by an antecedent, requires that finite element formation in Syntax assume the form of Asp/V-raising rather than lowering. This accounts for the fact that X^0 -raising is more commonly found across languages than lowering. I will argue that if the X^0 -movement strategy of Affix Lowering is included in the Grammar, that it must be considered an unmarked option even though it is less commonly observed than SHM. Lowering can be considered the default alternative to satisfy the AfC when syntactic SHM fails to operate. In a sense, Affix Lowering must be considered to apply in a different component from SHM. Given the model of Grammar adopted in Chapter 1, and repeated here as (16), there are two logical alternatives to ensure that Affix Lowering apply after SHM. One is that there be a syntactic operation different from -and ordered after- α -movement in Syntax; the other is that lowering be

a PF rule.¹ We adopt the latter option in order not to complicate the model, and also because Affix Lowering has no effects at LF.²



At first sight, the formation of finite elements in English appears to be very complex. T and Agr affixes may surface attached to a verb, as in (17a); to an auxiliary, as in (17b); to the auxiliary element DO, as in (17c); or may be replaced by a modal, as in (17d). In sequences of auxiliaries like (17e), the first bears T and Agr morphology.

- (17) a. The mailman walks/walked under the rain.
 b. The mailman has walked/is walking under the rain.
 c. The mailman does/did walk under the rain.
 d. The mailman will/could walk under the rain.
 e. The mailman has been walking under the rain.

¹ The first choice is contained in Chomsky (1988), the second in Pollock (1989).

² Why movement at PF should assume the form of lowering rather than raising is an interesting question which cannot be answered at this moment, knowledge about lowering processes is very limited. Perhaps, as argued by Chomsky (1982), PF representations are analyzed as chains. This could be taken to imply that "lowering" is in fact left-to-right movement. Being PF closer to peripheral modules than the syntactic component, the directional strategy might be correlated with parsing and perception. Directionality, however, is not the only relevant parameter needed to account for lowering. In John often walks, the affix skips the intervening adverb.

Leaving (17d) aside, the generalization to draw from (17), is that T and Agr surface on V -i.e. (17a)- if there are no auxiliaries or modals in the sentence, otherwise these affixes appear on the first of a sequence of auxiliary and verbal items. This is the typical pattern found cross-linguistically, already discussed in Chapter 3 in terms of SHM. However, X^0 -raising is not the rule underlying all the examples in (17).³

In Chomsky (1957), the strings in (17) are generated by means of the PS rule (18) and the Auxiliary Transformation (19).⁴ The first rule generates the basic structures, the second attaches the affixes to the first verb or auxiliary to their right.

(18) Aux $\rightarrow$ C (M)(have+en)(be+ing)(be+en)

(19) Auxiliary Transformation - obligatory:

Structural Analysis: $X-Af-v-Y$ (Where *Af* is any *C* or *is en* or *ing*; *v* is any *M* or *V*, or *have* or *be*).

Structural Change: $X_1-X_2-X_3-X_4 \rightarrow X_1-X_3-X_2^\#-X_4$

Rule (19) captures the fact that the first element of the series always bears the inflections. Since all auxiliaries are optional in the Syntactic Structures model, the element where the affixes surface varies, as instantiated in (20).

³ Romance and Slavic Inverted Conjugations, that is, constructions where the finite element surfaces below the non-finite one, are not counterexamples to this general statement. See Chapter 5 below.

⁴ Chomsky refers to this rule as "Affix Lowering" (1955), and as "R Rule" (1981); it is generally known as "Affix Hopping".

- (20) a. John must have been walking/being obstinate.
 b. John has been walking/being obstinate.
 c. John has walked/been obstinate.
 d. John is walking/being obstinate.
 e. John walks/is obstinate.

The M(odal) -(20a)- occupies the initial position of the Aux-V group, and no agreement marker is realized. There is a special proviso whereby the third person morpheme /s/, i.e. C in (18), is omitted if M is present. Notice, however, that the category M (modal) is included in (19) as a potential bearer of affixes. In the absence of a modal, (20b-e), the agreement marker surfaces on the first element to the right.

While (19) reflects appropriately the facts about aspectuals, predicative BE, the rightmost bracket in (19), is mischaracterized as another optional auxiliary. In copular sentences, BE is obligatory. Notice also, that (19) generates aspectual HAVE but does not specify the position of possessive HAVE; this fact indicates that a distinction must be made between argumental and auxiliary have, a distinction that should also carry over to copular BE. As discussed in Chapter 2, aspectuals are not part of a category like Aux in (19); they are located in Asp(P). Modals are the only auxiliary-like elements that are, to this day, thought to belong to the same phrase as inflections; here, they are in T(P).

Interestingly, missing from (19) and (20) is the auxiliary DO. DO has always been recognized as distinct from all other English auxiliaries. Its status and location has varied from model to model, from Chomsky (1955), where DO is considered to be inserted

by rule into the Aux position,⁵ to Pollock (1989), where DO/Ø is obligatorily present in AgrP when the sentence lacks HAVE or BE.⁶ Yet, no conclusive analysis has been arrived at, thus far.

4.1.2 Lexical Motivation of Affix Lowering

Because there are free and bound syntactic forms in natural language, a morphological condition such as the AfC is part of the formal nature of Grammar. Bound morphemes result from movement, from attaching one onto another formative. This process applies iteratively until the morphological complex becomes syntactically free, and support is no longer required by other affixes. Affix Lowering is not, strictly speaking, the strategy chosen by English to prevent the generation of sentences such as those in (21). Affix Lowering is forced upon the PF component because V SHM does not apply in the syntactic component of English.

- (21) a. *John -s go camping.
b. *John -ed walk to the door.

Lowering is simply the last resort available in a derivation to satisfy the AfC when V SHM has failed to apply. Naturally, to

⁵ Jackendoff (1977) similarly proposes that DO is inserted, but under M, when it is empty; cf. section 2.2.1.3 example (9). M, the position of modals, is roughly equivalent to Aux or I.

⁶ Akmajian and Henny (1975), and Emonds (1970, 1976), among others, support a DO Deletion version of the DO/Ø alternation. DO is taken to be present at D-structure and deleted when not required as a support element. Pollock is first to treat DO and /Ø/ as separate listed allomorphs, each inserted under different conditions.

comprehend Affix Lowering we must know why SHM does not satisfy the affixal requirement in English.

The typological characterization of SHM, presented in Chapter 3, serves to delimit the problem at hand. Temporal reference in English can be made to the Future, Present and Past. We see in (22) that the Future is realized by means of the modal /will/, that the Present has no tense marking, and that the Past has an affix /-ed/

- (22) a. Future: The visitors will walk in the corridor.
 b. Present: The visitors walk in the corridor.
 c. Past: The visitors walked in the corridor.

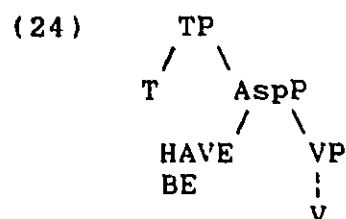
The form will, like modals in general, is generated in TP.⁷ Because modals are auxiliary-like syntactically free forms, SHM by an auxiliary X⁰ into this position is not expected. The future modal in (22a) has isolating properties. In the Simple Past and Simple Present, V is inert, and manifests the same isolating properties as the future. The pattern is similar to that of Slovak in 3.2.2.3. The only non-isolating properties of the English T-Asp system are exhibited by aspectual elements, although in these constructions, V is still an inert element:⁸

- (23) a. The visitors had all walked.
 b. The visitors are all walking.
 c. The visitors had all been walking.

⁷ See section 2.2.1.6.

⁸ We do not address the possibility that gerunds and participles might be formed by means of V-movement to a participial or gerundive phrase headed by -ed and -ing respectively. The question that is relevant to our analysis is the fact that these elements appear lower in the structure than quantifiers, as in (23) in the text. If movement has applied, the target position is lower than T.

The isolating properties of V in (23) are explained by the fact that AspP is occupied by aspectual auxiliaries, as illustrated in (24). Under these circumstances, V is unaffected by the AfC. The [-Free] morphemes heading TP require the X⁰ directly below them to raise, and thus aspectuals are the elements bearing T-Agr. In a sense, the relation between V and Asp in English is isolating, and that between Asp and T-Agr is agglutinative, except in the Future, where modals with isolating properties assume the referential role.



Notice that the isolating character of the English T-Asp system is particularly obvious in sentences like (25), where all the forms remain inert:

(25) The visitors must have been walking.

The behaviour of the English Present Tense, (22b), is discordant with the general behaviour observed under apparently similar conditions in other languages. Normally where V SHM should be triggered by the presence of affixes in T, V remains in situ displaying isolating properties. In typological terms, the inert character of V in English suggests that an element in AspP must

prevent V-to-T movement in sentences (22b,c), just as it is observed in (23) and (25). In other words, the inertness of the verb suggests that the affixes in T are not directly above V.

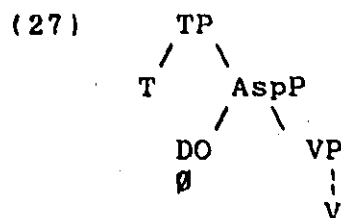
The behaviour of English V can be understood if the language has a) a T-Asp system similar to that of Slovak, i.e. with free forms to mark most contrasts, and b) a saturated Asp(P) similar to that of Turkish, with auxiliaries instead of affixes. This amounts to saying that if sentences like (22b,c) have a non-affixal element in Asp(P), just like all other T-Asp combinations, e.g. (23) and (25), then V-to-T movement in the Syntax will not apply. As I will argue shortly, the element in Asp(P) that prevents V-movement in (22b,c) is the null version of DO.

Sentences constructed in the "Simple" Present like (26a) are referentially synonymous with sentences like (26b), where the auxiliary DO appears.

- (26) a. This type of watchdog often costs a lot of money.
 b. This type of watchdog does often cost a lot of money.

When DO is used, the verb remains in its basic position, and the auxiliary surfaces in T, as proved by the position of the adverb often which appears to its right in (26b). DO is not generated in T like modals; it must raise from a position situated between VP and TP. Supporting evidence comes from the fact that DO lacks T-Agr morphology; unlike modals, DO is not in complementary distribution with T/Agr inflections. (27) is the proposed partial

D-Structure representation for sentences like (26), where AspP is filled either by DO or by its phonetically null version.



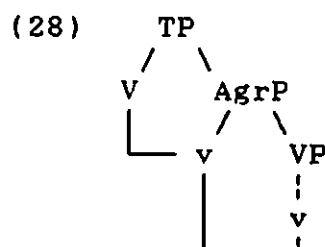
We will show that DO and its null allomorph are morphosyntactically equivalent to HAVE and BE in (24). When DO is used, it raises by SHM to T like other aspectual auxiliaries in accordance with the AfC. DO plays an interesting dual role. On the one hand, it does not trigger V SHM for it is not an affix, and on the other, it cannot act as a morphological base for T-Agr because it is phonetically null. In the derivation of (26a), if the affix appears without morphological support at S-Structure, an operation such as Affix Lowering must apply. Like most E(mpty) C(ategories), /∅/ is not transparent neither in the Syntax nor at LF: in the Syntax it blocks V-movement, and at LF it has a specific aspectual contribution. In contrast, /∅/ is transparent at PF, where I and V are taken to be contiguous by the AfC, and are thereby united.

Because the application of Affix Lowering is correlated with the existence of DO/∅, the principal aim in this chapter is to elucidate its aspectual content. Hence, both its syntactic and semantic properties are discussed.

4.1.3 A Non-Parametric Interpretation of Affix Lowering

We have claimed that Affix Lowering applies only because the default process of V/Asp SHM fails to satisfy the AfC. Nonetheless, this rule is part of UG, and therefore available to all languages to form finite compounds. Lowering is language specific only insofar as the language has a lexical property that causes some affixes to remain stranded after syntactic Move- α . English has a phonetically null version of DO, this being a language specific lexical property that blocks V-raising, and is ultimately responsible for Affix Lowering.

Pollock (1989) argued that the implementation of V-raising or Affix Lowering is parametrically determined, and dependent on certain properties of Agr. Basically, the claim is that languages differ in terms of whether Agreement (subject agreement) is transparent or opaque to the formation of a θ -Chain between the moved V and its trace in VP, as in (28):



Supposedly, Agr is opaque in languages with "poor" agreement morphology such as English, and transparent in languages with "rich" agreement such as French. The conclusion is that V-raising in languages with an opaque Agr produces a θ -criterion violation.

Chomsky (1988) adopts this view and replaces the terms opacity and transparency for poverty and richness.⁹ The adequacy and necessity of this parameter is a highly controversial matter. To ground the setting of a parameter on the richness and poverty distinction, is questionable, because the limits between these notions are extremely hazy. Also, within a Relativized Minimality framework based on Rizzi (1990), defining a parameter in terms of the interaction between θ -theory and antecedent government, appears to be inconsistent: θ -theory concerns a relationship where the targeted element is an XP, whereas the antecedent government relationship mentioned in the parameter is one that concerns X⁰s. In addition, there is empirical evidence to disclaim that poverty of agreement correlates with lack of V-movement. Consider the following facts from Vata (cf. Koopman, 1984:42):

- (29) a. à lì saká.
 we ate rice
 'We ate rice'
- b. à la saká li.
 we PERF-A rice eat
 'We have eaten rice'

Vata is a non-Pro-drop language in Chomsky's (1981) sense. One of its most striking morphological characteristics is that it lacks all forms of overt agreement, thus it has "poorer" agreement than English. The prediction is that V-movement cannot apply, yet this

⁹ Despite the dates of reference to Pollock (1989) and Chomsky (1988), Pollock's work antecedes Chomsky's manuscript.

prediction is not borne out as demonstrated by (29a). The basic order of constituents in Vata is SIOV (Subject, Inflection, Object, Verb). The SVO order in (29a) is the result of V-raising into the second position, that is to T. V-Movement in (29b) does not apply because of the intervening aspectual auxiliary which will eventually surface in T. A straightforward account of these facts is possible within the framework presented here. The verb moves to T if there is no intervening aspectual auxiliary -(29a)-; V remains in situ otherwise -(29b)-.¹⁰

A further example that poses a problem for the parameter in question, comes from English sentences such as (30), where HAVE has raised to T over the negation.

(30) I haven't any money.

According to Pollock and Chomsky, opaque Agr inhibits movement by verbs that assign a θ -role, but allows Aux-raising since these verbal elements are not θ -role assigners. Such a differentiation would explain the Raising asymmetry that BE and HAVE do raise in English while verbs do not. (30) is set aside by Pollock as a case of Aux-raising. Nevertheless, HAVE in (30) cannot be considered a non- θ -role assigner for the object in (30) bears a θ -role. HAVE in

¹⁰ Jaeggli and Safir (1989), claim that the proper notion of richness of agreement associated with the Null Subject Parameter, should be defined in terms of "morphologically uniform inflectional paradigms", i.e., with paradigms having all their forms either inflected or non-inflected. Languages having only some forms of their verbal paradigm inflected would be non pro-drop languages, like French and English. Clearly this interpretation of richness of agreement cannot coincide with Chomsky's view for the V-movement parameter: French has V-movement, and English does not.

(30) is not simply an auxiliary, it is the possessive verb that selects the object. We would like to consider these two elements as distinct. Nonetheless, if possessive HAVE and the (Perfective) auxiliary HAVE are considered a unique item, then Pollock's parameter must be redefined in terms of categories or items rather than in terms of thematic properties, for these are ultimately disregarded. Sentences related to (30), are examined in detail in section 4.4. If HAVE in (30) is a main verb and it raises to T, it not only represents a potential counterexample to Pollock's theory, but to ours too. We will argue that this element is an auxiliary and that the theta-role assigner is a null verb GOT observed in (31):

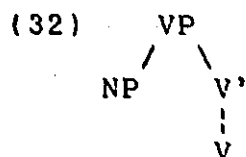
(31) I haven't got a clue.

4.1.4 An Alternative to Affix Lowering

As previously mentioned, Pollock maintains Affix-Lowering as a viable explanation of the process whereby English T-Agr affixes become attached onto thematic verbs. Though he is particularly clear as to where in the derivation this process applies, it can be deduced that it is later than Syntactic α -Movement, perhaps at PF. Chomsky (1989) also accounts for the process as the result of Affix-Lowering, though he explicitly places it in Syntax. The problem posed by the inclusion of syntactic Affix Lowering in the Syntax is the fact that the trace of the affixes ends up higher than the moved element, that is than the potential antecedent.

Chomsky circumvents this problem by postulating that Affix Lowering is followed at LF by a second movement which raises the finite verb and covers the syntactic trace of the affixes.

Iatridou (1990), discussing agreement, has argued that an alternative means to view affixation that would do away with Lowering, is to consider the third person morpheme -s as the effect of a relationship between the subject and the verb in structures similar to (32).



If the Subject is in the specifier of VP at D-Structure, then it is in a position where it can be related with the verb by means of Specifier-Head Agreement. Given the structure and the process, the third person affix is attached onto the verb. The alternative is interesting for it solves the problem of the trace, yet it cannot be adopted without further development, for it excludes from the analysis the status of the other problematic morpheme -ed, which is a mark of Tense and not of Agreement. The origin of this affix cannot be explained as an effect of Specifier-Head Agreement. Tense, even within Iatridou's model, is considered an IP type projection. Affix Lowering is a general problem for the Theory of Grammar. Our intention has been to give a possible interpretation of the phenomenon if it is to be included within UG.

4.2 Syntactic Properties of Aspectual Auxiliaries.

4.2.1 The Aspectual Auxiliary DO

Affirmative statements without aspectuals HAVE and BE, like those in (33), may take the auxiliary DO. When present, as in (33a), it is emphasized with stress. In negative contexts like (34), DO is mandatory, it is not stressed, and its presence does not correlate with emphasis. To obtain the emphatic effect in negative sentences, the negation must be stressed instead.

- (33) a. John DOES/?does like his desk.
 b. John EC likes his desk.

- (34) a. John does/*DOES not/NOT like his desk.
 b. *John EC not like his desk.

The lack of a lexico-semantic distinction between the two examples in (33) has led to attribute to DO a purely functional role: as supporting element for emphatic stress (33a), for negation (34a), and also for interrogation (35a). In Wh-questions, DO behaves as in negative sentences like (34): the absence of DO yields an ungrammatical sentence.

- (35) a. What does/*DOES John like?
 b. *What EC John like(s)?

In contrast, in yes-no questions like (36), DO is not obligatory in a very different sense from that observed in (33). When the auxiliary is present, it cannot be stressed (like in (34) and (35)); when it is omitted, focalization ought to be obligatorily made in the sentence by stressing any one of the constituents.

- (36) a. Does/*DOES John like his desk?
 b. EC John likes his desk?

The apparent optionality of DO, as well as its being correlated with a function of emphasis are misleading. DO is neither optional in the sense of being devoid of any lexical content, nor is it a topicalizer (and in this sense, elective as such);¹¹ its emphatic capability is a by-product rather than its defining property. Consider a similar phenomenon found in Null Subject languages like Spanish, where explicit subject pronouns alternate with their phonetically null version pro. In contexts where the alternation is permitted, emphasis is associated with the use of the explicit form as in (37a) vs. (37b), parallel to (33).¹²

- (37) a. ELLOS/?ellos siempre llegan tarde.
 b. pro siempre llegan tarde.
 'They always arrive late'

In contexts where the pronoun must be obligatorily present, e.g. under conjunction and as prepositional complement, emphasis ceases

¹¹ Morphological topicalizers are common across languages. Their properties are quite different from those of DO. Consider to this effect Nahuatl /ca/.

(i) ni-qu-itta in chichime' (ii) ca chichime' ni-qu-itta
 1s-3o-see det dogs Top dogs 1s-3o-see
 'I see dogs' 'It is dogs that I see'

¹² Within the generative framework, the emphatic contrast between an explicit pronoun and its absence has been recognized since Perlmutter (1971). More recently, Montalbetti (1984), Rigau (1984) and Luján (1986), among others, have examined the properties in greater detail. Lema (1987a) discusses semantically equivalent contrasts between the strong subject pronouns and clitic subjects in French.

to play any role in the use of the pronoun, as in (38), parallel to the English examples (34) and (35), above.

- (38) a. Juan y *(ella/ELLA) siempre llegan tarde.
 'Juan and her always arrive late'
- b. Juan fue visto por *(ella/ELLA).
 'Juan was seen by her'

The pronouns in these examples are not devoid of lexico-semantic meaning; they belong to a complex pronominal system. If DO is isolated in pairs like (33), its appearance seems to correlate uniquely with emphasis, just as it would happen with the pronouns in examples like (37); but if DO is examined and contrasted with aspectuals HAVE and BE, its lexical content becomes evident. In the next section, the syntactic behaviour of HAVE, BE and DO will be examined, and shown to be sufficiently similar to be regarded as members of the same morphosyntactic category: Asp(P). In a subsequent section, the semantic correlates of DO/Ø are unveiled and opposed to forms with aspectuals HAVE and BE. In particular, DO will be shown to play a crucial role on the referential content of the English "Simple Present", where DO/Ø is in fact a required aspectual auxiliary. A relevant observation is that the English Simple Present differs systematically from its counterpart in languages like French and Spanish where there is no equivalent of DO. It is our contention that the referential distinction between these languages is not language specific (Van Voorst, 1986), nor is it the effect of the position occupied by the verb at S-

Structure (Zagona, 1990), but it is the effect of differences in the sets of aspectual elements, available in a given language.¹³

4.2.2 HAVE, BE and DO

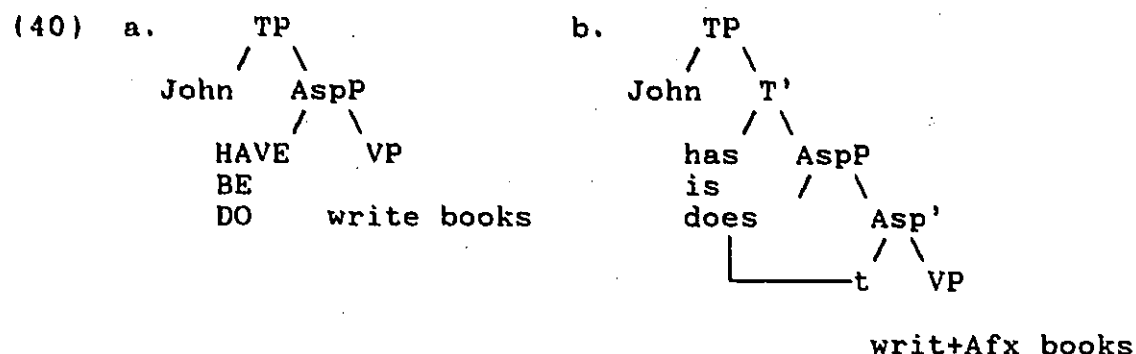
A first argument that can be advanced in order to support the postulation that DO is an aspectual auxiliary derives from the fact that its syntactic behaviour is comparable in many respects to that of the two other aspectual auxiliaries of English HAVE and BE. It is to be expected that syntactic elements of same category exhibit similar behaviour, though this does not imply identical behaviour in all constructions. Within the bounds set by categorial identity elements have their own individuality. Thus, for example, verbs belong to the same category, and within a language exhibit certain common properties such as that of selecting arguments, yet they differ according to different axes: some are accusative, some unaccusative. Aspectual auxiliaries, for example HAVE and BE, belong to the same grammatical category, share certain properties, yet differ in others. For example, HAVE may precede BE in a

¹³ Van Voorst (1986) showed that the same distinction exists between English and Dutch, and explained it as a result of cross-linguistic variation in the referential content of Tense itself. Zagona (1990) has stated that the differences can be related to different positions of the verb at S-Structure. A V in VP will yield the "English" reading, a V in Infl will give the "Spanish" reading. Her analysis shares with ours, correlating semantic differences with the process of finite element formation. Bouchard (1984), argues that the meaning of constructions must follow from the meanings of its morphemes. This is the view also taken in this work. As a corollary to the Principle of Full Interpretation (Chomsky (1986a)), let us say that if English conjugations have properties beyond those of Tense, these must be correlated with a morpheme in the construction. Cowper (1991) also proposes that Tense should be compositionally analyzed, though our methods and results are different.

sequence of auxiliaries, as in John had been walking, but BE may not precede HAVE, *John was having walked.

For sentences like those in (39), a unique explanation is proposed whereby all three auxiliaries head AspP and take a VP complement, as illustrated in (40a), and where these auxiliaries raise into the position of T, heading TP, as in (40b).

- (39) a. John does write books.
 b. John is writing a book.
 c. John has written books.



The three items select the same type of complement; this 'selection' however, is distinct from the characteristic Thematic-selection of verbs. Auxiliaries are not involved in θ -role assignment, although it is conceivable to assume that they may transmit to the subject the θ -role assigned by the verb of the verbal complement, (see Roberts (1987) for Perfective HAVE; Grimshaw and Mester (1988), for light verbs such as Japanese suru). Thus, in the examples (41) and (42), the inclusion of auxiliaries in the sentence does not cause a thematic alteration of the arguments:

- (41) a. John built a house.
 b. John did build a house.
 c. John has built a house.
 d. John was building a house.
- (42) a. John suffered the winter.
 b. John did suffer the winter.
 c. John has suffered the winter.
 d. John was suffering the winter.

If the notions subsumed by the process of selection are extended to include Aspectual, besides Thematic features -c.f. 2.3.3-, T, as well as Asp, will select an element with aspectual content. T and Asp will select either an Aspectual or a Verb. TP will always dominate AspP, for T is never selected itself; AspP will always dominate VP, for V selects on the basis of thematic primitives.¹⁴

The three auxiliaries also share the property of exhibiting third person agreement, which sets them apart from Modals, although, as will be seen, Modals and Aspectuals also share some properties. HAVE, BE and DO move into T where they blend with Tense and Agreement. This is proven by the fact that they surface to the left of negation, (43), and to that of adverbs like always, (44).

- (43) a. John has not arrived from work.
 b. John is not singing opera.
 c. John does not work in a factory.
- (44) a. John has always sung in the choir.
 b. John is always working at his desk.
 c. John does always understand his teachers.

¹⁴ The idea that subcategorization be carried out in terms of Aspectual notions is not new. See Van Voorst (1986, 1988), Tenny (1987), and Pustejovsky (1988), among others.

The three auxiliaries similarly raise into C(omp) in subject-inversion constructions like the yes/no questions in (45) and the Wh-questions in (46).

- (45) a. Has Magoo lost his glasses again?
 b. Is the car working?
 c. Does he have a name?

- (46) a. What has he lost again?
 b. Where is the auxiliary generated?
 c. How does she know?

Tag-questions (47), So-constructions (48), and Too-conjunctions (48), show the identical behaviour of the three auxiliaries. There is a distinction between these structures based on whether the conjunct exhibits or not Subject-Inversion or V-second effects. Tag-questions (47) and So-tags (48), are formed by movement to C, and exhibit Subject-Inversion effects. Sentences without either HAVE or BE, as the g examples (47)-(49), require the auxiliary DO to surface.

- (47) a. John had arrived, hadn't he?
 b. John is dancing, isn't he?
 c. John did send it, didn't he?

- (48) a. Reginald had seen the show and so had Mary.
 b. Reginald is entertaining the notion and so is Mary.
 c. Reginald thought much about auxiliaries and so did Mary.

- (49) a. Reginald had seen the show and Mary had too.
 b. Reginald is entertaining the notion and Mary is too.
 c. Reginald thought much about auxiliaries and Mary did too.

There is requisite that the two conjuncts in structures like the above have identical reference. As a first approximation, we see that the presence of the same tense bearing elements is required in the two conjuncts of some of these structures, as observed in (50) and (51).

- (50) a. John could arrive, couldn't he?
 b. John had sent it, hadn't he?
 c. John could have danced, couldn't he?
- (51) a. Reginald could see the show and so could Mary.
 b. Reginald had entertained the notion and so had Mary.
 c. Reginald could have thought much about auxiliaries and so could Mary.

Although the same tense bearing elements appear in the two conjuncts, it cannot be postulated that Tense is the sole factor involved in this process. It is possible, on the one hand, to construct Tag-structures such as (52), where the two conjuncts bear the same Tense, and yet are ungrammatical:

- (52) a. *John can do it, doesn't he?
 b. *John could do it, didn't he?

The contrast between (50) and (52) indicates that the presence of something other than Tense is required in the two conjuncts. It is not lexical identity for examples (53) show that different lexical elements are sometimes required to appear in the two conjuncts:

- (53) a. John works at the shop, doesn't he?
 b. *John works at the shop, worksn't he?
 c. Reginald survived the crash, didn't he?
 d. *Reginald survived the crash, survivedn't he?

British English allows us to see that aspectuality is involved in these structures. Consider (54), notice that inclusion of an aspectual auxiliary is allowed in the second conjunct, and that it too must be identical to that in the first.

- (54) a. John could have danced, couldn't he have?
 b. *John could have danced, couldn't he be?
 c. John could be working, couldn't he be?
 d. *John could be working, couldn't he have?

Also, Too-tags behave differently from those in (50) and (51), perhaps due to the fact that there is no movement to C in these structures, a property which may be linked to the fact that only one auxiliary element appears generally in the second conjunct of Tag-questions and So-tags. Sentences (55) show that the aspectual auxiliary, besides the tense bearing element, must be reproduced in the second conjunct. Like (54b,d), (55c,d) prove that besides temporal concord, aspectual concord must be observed.

- (55) a. John will have seen the show and Mary will ?/*(have) too.
 b. John will be watching the show and Mary will ?/*(be) too.
 c. *John will have seen the show and Mary will be/do too.
 d. *John will be watching the show and Mary will have/do too.

The auxiliary DO/Ø behaves like aspectuals HAVE and BE in the type of structures discussed directly above. If it is present in the first conjunct, it must also appear in the second, with the proviso

that the phonetically explicit version of DO appear in the latter.¹⁵

- (56) a. John works for his living, doesn't/*isn't/*hasn't he?
 b. John works for his living, and so does/*is/*has Mary.
 c. John works for his living, and Mary does/*is/*has too.

Consider that if DO is simply a semantically null element that serves to bear Tense, as generally argued in the literature, and that Tense were the only factor required to be present in the two conjuncts, that examples like (57) should be correct, for the two conjuncts appear to have the same temporal value. Similar results should be expected if DO were taken to be a 'proverb', if in (56), DO were to copy the content of the main verb work, it should be able to be copy that of can in (57).

- (57) a. *John can work for his living, doesn't he?
 b. *John could work for his living, didn't he?

A general rule can be postulated to account for all the facts under consideration, and that is that the same auxiliary in the first conjunct must be reproduced in the Tag. If aspectual besides temporal concord is part of the restriction on tags, DO may be considered play a role in this respect.

The three auxiliaries HAVE, BE and DO differ from thematic verbs in their ability to license VP-deletion, as seen in the

¹⁵ Because the Auxiliaries in the second conjunct must duplicate the Case functions of their verbal complements (besides Thematic ones), it is perhaps necessary that they be visible to the Case Filter just like the NPs they have to assign case to.

contrast between (47)-(49) and (58)-(60).

- (58) a. *John made the carpenter work, and so made Peter.
 b. *John saw the carpenter work, and so saw Peter.
 c. *John had the carpenter fired, and so had Peter.
- (59) a. *John made the carpenter work, maden't he?
 b. *John saw the carpenter work, sawn't he?
 c. *John had the carpenter fired, hadn't he?
- (60) a. *John made the carpenter work, and Peter made too.
 b. *John saw the carpenter work, and Peter saw too.
 c. *John had the carpenter fired, and Peter had too.

Despite the many similarities between DO, HAVE and BE, Chomsky (1955) gave two reasons to set DO apart from aspectuals HAVE and BE. The first is that DO does not cooccur with the either HAVE or BE, whereas HAVE and BE do, as seen in (62).

- (61) a. *John did have gone.
 b. *John did be going.
 c. *John has done go.
 d. *John is doing go.,
- (62) a. John had been walking.
 b. John [_{ASPP} had [_{ASPP} been [walking]]]

The second reason is that DO cannot cooccur with predicative BE: although the other auxiliaries can:

- (63) a. *John does not be particularly intelligent.
 b. John has not been particularly intelligent.
 c. John is not being particularly intelligent.

A third reason, which makes these items different is that DO cannot cooccur with Modals, whereas the two other aspectuals can:

- (64) a. *Caesar must do enter into Rome.
 b. Caesar must have entered into Rome.
 c. Caesar must be entering into Rome.

The fact that certain items cannot cooccur -(61)- may constitute evidence that they share the same structural position, and that they are disjunctively related. If this is indeed the case, the need to define DO separately from the aspectuals HAVE and BE may thus be eliminated. However, we see in (62) that AspP may have two layers, and in principle, DO should be able to occupy one of the two and to cooccur with another aspectual element. Yet, as discussed in Chapter 2 section 2.3.2, the cooccurrence between HAVE and BE is itself restricted to the order portrayed in (62), with the Progressive in the scope of the Perfective, to the exclusion of the *[+Progressive]>[+Perfective] order.¹⁶ After presenting the semantic properties of DO, an explanation based on semantic incompatibility between DO and the different elements in (61), (63) and (64) will be furthered. As we will argue, languages that allow several aspectual elements to cooccur, do not allow all possible combinations between these elements.

4.2.3 Tense Reference and Aspectual DO

The semantic contribution of aspectual DO/Ø is not identical in the Present and Past Tenses. In the Present, the aspectual qualification of do, does can be characterized as unlimited; in the

¹⁶ This points towards the existence of an aspectual hierarchy, based perhaps on the different types of functions performed by each specific aspect.

Past, did can refer to generic properties, but can also be used for non-reoccurring -and perhaps punctual- events. As will be seen, the two usages observed in the Past are not contradictory.¹⁷ It is interesting to note that the Present and Past usages of DO/Ø preclude unique reference to M-S (Moment of Speech), and in this respect, English DO is an Aorist.¹⁸ Of course, examples such as (65a) can be understood to mean that Einstein is in Princeton at M-S, nonetheless this reading is produced by the fact that live is a stative predicate that implies no changes of state, and that it is applied in (65a) to an interval in time that includes M-S. M-S is not referred to (65a) directly, only by implication. Sentence (65b) shows, in fact, that reference to M-S can be dissociated from reference to the interval.

- (65) a. Einstein lives in Princeton.
 b. Einstein lives in Princeton, but is in Spain at this moment.

As DO contrasts with [+Perf] HAVE and [+Progr] BE, we will assume that it is [-Perf, -Progr]. The location of Asp(P) between T and VP, gives rise, on the one hand, to particular qualifications of

¹⁷ Sweet (1898:100) captures in a simple statement the intuitive content of the English Simple Present. It is a "neutral tense, implying that a statement is of general application, and holds good for all times, *The sun rises in the east*, or that an action or phenomenon is habitual, *We get up at six regularly every morning*, or recurrent, *Whenever she sees him, he begins to laugh*.[...] If the actual present is meant, the definite form is used, *He is getting up now?*, *Where are you going?*"

¹⁸ The label 'Aorist' is not used to refer to forms having the same T-Asp properties. In Turkish, the Aorist is generic in the Present and either generic or voluntative in the Past (Underhill, 1987:185); in either case it must not be linked to MS. In contrast, the Albanian Aorist is perfective (cf. Rivero, 1990).

particular qualifications of T by Asp, and on the other, to combinations (and mismatches) between the content of Asp and verbal Aktionsarten. The auxiliary DO can no longer be viewed as a supporting element void of semantic content. If it were so, its presence should not alter temporal and aspectual properties of sentences, yet such alterations do occur. This proposal finds support in the clear contrasts that exist between the English "Simple" Present and Past and the corresponding Simple Tenses of French and Spanish.

4.2.3.1 Aspect and the English Simple Present

It has been already pointed out in Chapter 2 section 2.3.4 that the referential character of the Simple Present in English differs qualitatively from that of French and Spanish.

- (66) a. Juan canta. (unlimited and speech-time)
 b. Jean chante. (unlimited and speech-time)
 c. John sings. (unlimited)

Temporal referentiality in (66a,b) is basically unconstrained. The only requirement is that M-S be included in the time-interval defined, as represented in (67). This conception permits to visualize the event either as unlimited, spanning along the entire interval, without making specific reference to M-S, as in (68a), or occurring precisely at M-S, as portrayed in (68b). In contraposition, English (66c) allows only the unlimited reading (68a); direct reference to M-S is inaccessible in this language, as proven by (69), where secondary reference by means of a temporal

adverb allows a permanent property to become habitual, cf. (69a), but where reference can not to be pinpointed to M-S, cf. (69b).¹⁹

(67){.....}.....
 Past M-S Future

(68) a.{.....<.>.....}
 Past M-S Future

 b.{.....>.<.....}
 Past M-S Future

(69) a. John sings everyday, but is asleep right now.
 b. *John sings at this very instant.

There are at least two ways in which the properties of the English Simple Present can be characterized. The first is to allow tense reference to be language specific, the second, to be endorsed here, acknowledges the fact that the referential content of Tense is language independent, and that cross-linguistic distinctions result from language particular combinations of Tense and Aspect.

If the value of Tense is language specific, then the distinction between languages like French and English can be accounted for in a number of ways; one could be to posit a special feature, something like [-M-S] proper of the English Present Tense element that impedes exclusive reference to M-S; alternatively it could be suggested that in languages like French the Present has

¹⁹ It will be seen in the next section that certain types of verbal classes allow speech-time reference thanks to their particular lexico-aspectual content. For example in Look how he walks, walk may refer to M-S, but only because its Aktionsart depicts an Activity (Vendler, 1967), in fact, a 'Complex Activity' (Dowty, 1979) which flows from the past into the future, and thus includes the moment of speech.

two separate values, one being reference to a point in time, the other to an interval, while in English it has only the value associated with the interval interpretation.

The problem with solutions that would attempt to explain the peculiar referential content of the English Present by allowing the value of Tense to be language specific is twofold. On the one hand, postulation of a parameter that allows languages to differ as to the value of Tense is required. If this is done, then we expect to randomly find languages with the English value and languages with the French value. However, the English value seems to be rather idiosyncratic, and the parameter is postulated basically for English alone. This, in fact, becomes a recurring -and rather questionable- phenomenon: there is a parameter for V-movement where English is basically the only language with the no-movement value; there is a Tense parameter where English is basically the only language with the no-reference to M-S value; and there is perhaps a third parameter for DO-support, with English, again, more or less alone on one side. Instead of postulating parameters, our analysis attempts to correlate these three facts of English.

The second problem with a parametric interpretation of the difference between French and English temporal reference, is that defining the value of the Present Tense as [-M-S] or exclusively as an 'interval', misses the important fact that this value of the Present arises only in those sentences where DO may be used. In sentences where DO is not allowed, temporal reference differs. Take the examples in (70):

- (70) a. John is/*does be ready.
 b. John is/*does be on top of the mountain.
 c. John is/*does be happy to see you.

In all these cases, exclusive reference to M-S is being made. Whether or not the copula is considered as a semantically empty functional element that only serves to bear Tense and to mark the nexus between Subject and Predicate, the question remains that these sentences are referring to M-S, a property that would be excluded if Tense were defined as an element that cannot refer to M-S, or only to an interval. In order to account for the fact that the value of Tense is different in sentences where DO is not allowed, one would have to postulate two separate temporal elements for English, one with the English value for structures with DO and one with the French value for those structures where DO cannot appear. This is a complication that our analysis escapes.

Another approach to the problem can be found in Van Voorst (1986:224). This is a functionalist interpretation where it is proposed that the value of Present differs between English and Dutch, where the Dutch Simple Present, like French or Spanish, allows the two readings exemplified in (68). The contrast is claimed to lie on the fact that Dutch has only one morphological form which must assume all the possible referential functions of the Present, whilst English has two semantic 'ly specialized forms, the Simple and Progressive Presents to yield (68a) and (68b)

respectively.²⁰ Basically, in this framework, the value of the Present is maintained to be universal, and the crosslinguistic differences are explained as differences in the morphological choices made by distinct languages. Nevertheless, the referential possibilities presented in Table (71) are not limited to those discussed by Van Voorst. Next to Dutch/French (71a), and English (71b), there is also the Spanish case (71c). Notably, an account based on a notion of semantic specialization leaves out a language like Spanish, which has two conjugational forms like English, but in which the Simple Present has the referential properties of Dutch and French as well. As can be observed in this table, the problem cannot be explained in terms of semantic specialization. The Simple Present in (71a) and (71c) has wide reference (67), which is its basic value.

(71)

		Form	Reference
a.	Dutch French	Simple	Generic; M-S
b.	English	Simple Progressive	Generic M-S
c.	Spanish	Simple Progressive	Generic; M-S M-S

The reference in the English and Spanish Progressives is

²⁰ Van Voorst's position must be consistent within a Reichenbachian "Instants" view of Tense. In an Intervals model, however, Tense elements cannot be constrained by means of temporal features like [-moment of speech]. If so, this would amount to saying that the Present Tense be defined, on the one hand, as a time interval containing M-S, and on the other, excluding M-S.

constrained to M-S due to an aspectual qualification. Similarly, the unlimited value of the English "Simple" Present must be produced by an aspectual element. It is our contention that the auxiliary DO/Ø, which optionally surfaces in the Simple Present, must be the cause underlying the generic effect. The Present in English, like in French, Dutch, and Spanish, sets an interval that includes M-S, as in (67); this interval is then converted into (68a) by DO, just like (68b) is produced by BE from (67).

If the English Aorist is typified as [-Progr, -Perf], in opposition to [+Perf] HAVE and [+Progr] BE, then the unlimited interpretation (68a) of the English Present is appropriate. An event, such as that in (69a), must be [-Progr], and thus not take place at M-S, it must also be [-Perf], and thus not be limited.

Consider the further asymmetry in the Present Progressive between English on the hand, and French and Spanish on the other, cf. (72).²¹ While in French and Spanish the answers may be phrased using either the progressive or the simple form of the Present, English permits only the progressive.

- (72) a. i. -what is J doing?
 ii. -he is drinking a glass of water.
 iii. *-he drinks a glass of water.
- b. i. -qué está haciendo J?
 ii. -está bebiendo un vaso de agua.
 iii. -bebe un vaso de agua.
- c. i. -qu'est-ce-que J est en train de faire?
 ii. -il est en train de boire un verre d'eau.
 iii. -il boit un verre d'eau.

²¹ Because French lacks a Present Progressive conjugation, to isolate the M-S reading, the examples are constructed with the analytic expression en train de.

The questions are built with the progressive aspect, which in the Present requires, as seen above, reference to M-S. The ii answers are adequate in all three languages because there is aspectual concord between question and answer. English (72iii) is unacceptable on the grounds that there is no aspectual concord between question and answer; the two Presents are aspectually marked, one with [+Progr], the other with [-Progr]. The Simple Present is permitted in French and Spanish (72b,c.iii) because it is free of aspectual restrictions, and reference to M-S is included in its frame. In these two (and other) languages the existing redundancy in the forms employed to render Progressive and Simple Presents, is expected with an unsaturated Asp(P). Only languages like English or Turkish, c.f. 3.2.1.2, with a saturated Asp(P), will have complementary referential forms.

A similar contrast between these languages is observed when a question is expressed in the Simple Present. In (73) the question set in the b (Spanish), and c (French) versions, bears wide reference, consequently they admit a response formulated with either of the two referential possibilities of the aspectually unmodified Present -or default value of the Present-, the habitual generic and the progressive. Again, since the English Present sets the referential value of permanent (or habitual:repetitive), any answer restricting the event to M-S, or to a unique occurrence is excluded, as expected, hence (73aiii) and (73aiv) are ungrammatical (or infelicitous). (73aiv) clashes aspectually with the [-Perf] of

the question it responds to: such an answer comprises existential quantification over the object restricting the occurrence of the event to a single one. (73aiii) is unacceptable as well because, in addition to the quantificational restriction, it also makes reference to M-S.

- (73) a. i. -what does J do?
 ii. -he writes books.
 iii. *-he is writing a book.
 iv. *-he writes a book.
- b. i. -qué hace J?
 ii. -escribe libros.
 iii. -está escribiendo un libro.
 iv. -escribe un libro.
- c. i. -que fait J?
 ii. -il écrit des livres.
 iii. -il est entrain d'écrire un livre.
 iv. -il écrit un livre.

As a conclusion, we suggest that the referential content of Tense is defined by UG, and that its values do not vary cross-linguistically. Referential variation of particular tenses between languages will be a consequence of different choices of aspectual repertoires. Morphologically simple conjugational paradigms like the Simple Present of Spanish or French, render the basic value of certain temporal elements. Besides these simple conjugations, all the structures traditionally known as conjugational tenses, are aspectual -or modal- articulations of the basic categories. The conjugation known as the Simple Present in English does not fit the general pattern because it is a compound paradigm. It is formed

with the auxiliary DO/Ø which qualifies the reference of the temporal element Present as unlimited.²²

4.2.3.2 Aspect and the English Simple Past

The other apparently simple conjugation found in English is the Past Tense exemplified in (74a) through (76a). The auxiliated b versions have the same semantic properties as the simple a versions, except for emphasis.

- (74) a. Dinosaurs ate mosquitoes.
b. Dinosaurs did eat mosquitoes.

- (75) a. Alexander entertained guests every christmas.
b. Alexander did entertain guests every christmas.

- (76) a. The child fell off his bike.
b. The child did fall off his bike.

As observed, the (Simple) Past can refer to a permanent property, as in (74), to a habitual attribute, as in (75), or to a single - perhaps punctual- incident. Clearly the lexical aspect of the verb, and the other aspectually loaded elements in the sentence modify the event. This is a property of Aorists, such as that of Classical Greek, in the Past. In this language, the Past Aorist contrasts with the Perfect, a characteristic paralleled by English, though

²² The English (Simple) Present is comparable to the Turkish Present Aorist. See note 19 in this chapter, and Ch. 3., section 3.2.1.2.

in English it takes the form of analytic conjugations rather than synthetic ones.²³

- (77) a. ἔλυν-έν 'I untied'
 b. λεί-λυν-κε 'I have untied'

The unlimited character of the aspectual element cannot be exposed as clearly as in the Present Tense, where the Moment of Speech plays a central role, as it escapes explicit reference. The feature that unifies, however, uses of the Aorist in the Past such as those in the three examples (74)-(76), is that there is no connection between the event depicted and M-S. (74) implies that dinosaurs no longer eat mosquitoes, (75), that Alexander no longer entertains every christmas. In (76), the aspect of the verb imposes itself the exclusion of M-S.

The English (Simple) Past is semantically complex, it has properties in common with both the Romance Simple Past or Preterite, and with the Imperfect, and it is not equivalent to either of these tenses. It shares with Romance Preterites the characteristic of situating an event in the past, without linking it to M-S.

- (74) a. The dinosaurs ate mosquitoes.
 b. The dinosaurs did eat mosquitoes.
- (78) a. Les dinosaures mangèrent des moustiques.
 b. Los dinosaurios comieron mosquitos.

²³ In this respect it is comparable to the Old Slavonic Past Aorist. In Old Slavonian "the meaning of the three past tenses, Aorist, Imperfect and the Perfect, corresponds to [...] the Simple Past (he did), Imperfect (he was doing), and Perfect (he has done) (de Bray, 1980:61).

Despite this point in common between the English (Simple) Past and the Romance Preterite, the examples in (78) do not have the permanent reading of (74). To obtain this particular reading, French and Spanish resort to the Imperfect:

- (74) a. Dinosaurs ate mosquitoes.
 b. Dinosaurs did eat mosquitoes.
- (79) a. Les dinosaures mangeaient des moustiques.
 b. Los dinosaurios comían mosquitos.

As a first approximation, the English Aorist situates an event in the Past, and where possible marks its permanent or unlimited character. These are two properties that languages like French or Spanish must render by means of two separate conjugational forms. On the one hand, the English Simple Past sets events in an interval that is not linked with M-S (with the Present), on the other it allows the events to be unlimited, that is to allow a permanent interpretation.

4.2.3.3 Imperative DO

Pollock (1989) analyzes the element DO in sentences (80) (Pollock's (87)) as a "living fossil" of a Middle English causative DO 'make', comparable to modern let in structures like let's go/*don't let's go.

- (80) a. Don't (you) have finished your work when I come back!
 b. Don't be silly!
 c. Don't (you) be singing when I come back!
 d. Do be a good sport! Lend me five dollars!

We consider Pollock's analysis to be in the right track, and assume his interpretation. One of his basic arguments is that sentences such as (80a) and (80c) allow a subject to surface, and thus may optionally Case mark and govern the subject of its infinitival complement. After this analysis Pollock (1989:403) considers that sentences such as (80d) are a residue to his analysis, that "it is not very plausible to analyze do in, say, Do be quiet! as a main verb, if only because imperatives like *Do you be quiet! seem impossible." In our view, however, (80d) need not be considered a residue to Pollock's proposal. The unavailability of subjects in sentences such as *Do you be quiet is not exceptional, in fact it is the rule, as we observe in sentences (81a,b,c) which are the polar opposites of those in (80).

- (81) a. Do (*you) have finished your work when I come back!
 b. Do (*you) be silly!
 c. Do (*you) be singing when I come back!
 d. Don't (you) be a good sport! Don't lend me five dollars!

It is a regular fact, that negative imperatives allow a subject to surface, whereas affirmative imperatives do not, the same can be observed in examples (82), without auxiliaries.²⁴

- (82) a. Don't (you) jump.
 b. Do (*you) jump.
 c. Don't (you) believe that.
 d. Do (*you) believe that.

²⁴ I have no explanation for this.

Example (80d) need not be given a different explanation; on a par with (80a,c), see (81d), a subject may surface in the negative version. I add Don't you be silly, with the explicit subject, to Pollock's (80b).

The analysis of DO in imperatives as a verb distinct from the Aorist DO is supported also by the following fact. We know that aspectuals cannot appear in imperatives, (83), if this a general rule, the Aorist should also be excluded from this context.

- (83) a. *Have finished your work!
b. *Be working at home!

We also know that the Aorist cannot cooccur with Perfective HAVE nor with Progressive BE, (84), and yet it appears in (81a) and (81c) licensing, in fact, aspectuals in imperative sentences.

- (84) a. *I do have gone.
b. *I do am going.

Also, the Aorist may not appear with copular BE, (85), and is found in (81b,c). See further discussion of this question in 4.3.1.2 below.

- (85) I do be good.

In summary, DO in imperatives can be analyzed as a fossilized reflex of the Middle English Causative form. The modern use of this construction is distinct, however, from that of the causative because the construction does not allow the subject of DO to be distinct from the embedded subject, as was the case in Middle

English, see (86), Pollock's (92a). In this respect the imperative is a reflex of a form of the causative, where the biclausal structure had been reduced.²⁵

- (86) Grim dede maken a ful fayr bed.
 Grim made make a very nice bed
 'Grim had a very nice bed made'

4.2.4 DO: Aspect and Aktionsart

Just as the presence of both DO and of its null variant / $\emptyset$ / have an effect on temporal interpretation, they also interact with the lexico-aspectual content of V(P). Further evidence of the lexical content of DO can be obtained by examining its interaction with verbs of different aspectual classes. If DO/ $\emptyset$ has semantic content, as argued thus far here, its combination with verbs belonging to some aspectual classes will show signs of compatibility and incompatibility. There are no cooccurrence restrictions between T and verbs. A priori, any verb may be used in any particular tense. For example, there are no cases such that items like jump or exist not be allowed to describe events set either in the Past, Present or Future. Cooccurrence restrictions are observed, however, between Asp and V. This is due to the fact that these two categories share lexical content of the same type, cf. 2.3.1. The coupling of Asp

²⁵ In some respects, the origin of the Aorist DO can also be traced to the Middle English causative verb DO. A similarity of its evolution with that of imperatives is the fact that only one logical subject is possible in these constructions. It is conceivable that a causative use of DO, I do me go, after the loss of the biclausal structure, I do go, might have given rise to an aspectual reanalysis of DO and to an aoristic reinterpretation of its content.

and V often results in the creation of a compounded aspectual nuance; for example, when progressive BE is used with certain punctual verbs. Punctual verbs postpone their terminus -or telic reading-, as seen in (87c). The combination may also produce infelicitous effects, as it occurs with certain stative verbs in the scope of the progressive, (88c).

- (87) a. John did reach the summit.
 b. John has reached the summit.
 c. John is reaching the summit.
- (88) a. John does know a number of answers.
 b. John has known a number of answers.
 c. *John is knowing a number of answers.

The English Simple Present Tense, a compound conjugation with DO/Ø, does interact with the lexical aspect of verbs, evidencing that this auxiliary has lexical content. Consider the type of verbs defined as achievement verbs by Vendler (1967) and Dowty (1979). These are either instantaneous (punctual) or have a terminus (telic), like reach, find, obtain, recognize, realize, spot and kill. When they are used with DO/Ø, their semelfactive reading is suppressed, and must be obligatorily interpreted as iteratives.

- (89) a. What does John do *at this instant/every three weeks?
 b. John does reach the summit *at this instant/every time he climbs.
 c. John spots the enemy *at this instant/every time he is on watch.
 d. John kills spiders *at this instant/every time he sees one.

Lexical aspect is tightly linked with the nature of the event as defined by its corresponding verb. Matching verbs across culturally similar languages, e.g. in English, French and Spanish, have

similar lexico-aspectual content and interpretation. Taking achievement verbs, we observe that the semelfactive reading is maintained in the Spanish and French Simple Presents (90) and (73), unlike in the English (89). The disparity between (89) and (90)/(73) is explained by the presence of an aspectual element in English, non-existent in the Romance Simple Present forms.

- (90) a. Qué hace Juan en este instante/cada tres semanas?
 b. Alcanza la cima.
 c. Localiza al enemigo.
 d. Mata arañas.
- (91) a. Que fait Jean en cet instant, chaque trois semaines?
 b. Il atteint le sommet.
 c. Il localise l'ennemi.
 d. Il tue des araignées.

Accomplishment verbs have a telic content comparable to that of achievement verbs, although they are durative instead of punctual. To this class belong verbs like dissolve, bake, make and build. That progressive BE can postpone the telicity of verbs implying a change of state, is further attested with accomplishment verbs, like in (92). As usual, DO excludes the semelfactive reading, surfacing the repetitive reading only. Notice that DO requires 'partitive' non-singular objects for the distribution of its iterativity.

- (92) a. The sugar is dissolving in the coffee.
 b. John is baking a cake.
 c. John is building a house.
- (93) a. (*The) Sugar does dissolve in (*the) coffee.
 b. John does bake cakes.
 c. John does build houses/a house every year.

Verbs denoting activities like walk, dance, swim, eat and breathe are semantically unaltered by DO, because their durative lexico-aspectual content harmonizes with the aoristic unlimited character. If adverbial phrases are included, the iterative reading is brought out easily. Because the activity may be viewed as an ongoing property, the effect of the unlimited character of DO does not interfere, and reference to M-S can succeed. Note though, that this reference does not obtain by pinpointing the event at M-S, as it is done by the Progressive Present. The reference is achieved indirectly, by implication. In an activity verb, an event reoccurs in such a regular manner that it can be viewed as continuous. For example, if breathing in (94a), is referred to the Present, M-S is included by implication.

- (94) a. Plants do breathe.
 b. The salesman does walk (three miles every saturday).

In addition to cases where DO/Ø modifies verbal Aktionsart producing particular denotations, there are also cases where the result is patently ungrammatical. It has already been noted in Verkuyl (1972) that only non-stative predicates can be questioned with forms involving DO.²⁶ Thus (95a,b,c) are grammatical contrary to (95d).

²⁶ Dowty (1979) has extended this observation to all constructions involving DO, for example Pseudo Clefts and DO SO Reductions.

- (95) a. Activity: Does John sleep in the silo?
 b. Achievement: Does John spot his friend*(s)?
 c. Accomplishment: Does John climb up the ladder?
 d. Stative: *Does John be polite?

Note that a syntactic explanation is not sufficient to account for the facts in (95) because the contrast is not simply between Statives and non-Statives. DO is not equally compatible with all non-Static Predicates. Achievement predicates like (95b) must be interpreted iteratively to yield a felicitous outcome since DO excludes the semelfactive reading.

4.3 Some Further Consequences

4.3.1 Autonomy of DO

Three problems presented in section 4.2.1, regarding the fact that DO/Ø does not combine with a) other aspectuals, b) Predicative BE, and c) Modals, must now be addressed.

4.3.1.1 Cooccurrence Restriction with Aspectuals HAVE and BE

First, let us discuss the facts observed in (96), repeated here, that DO cannot cooccur with either HAVE or BE.

- (96) a. *John did have gone.
 b. *John did be going.
 c. *John has done go.
 d. *John is doing go.

To prevent the generation of combinations like these, we could simply formulate a condition to filter them out, but this is

unnecessary.²⁷ As shown in this Chapter, the behaviour of DO can be properly characterized as Unlimited, in the etymological sense of the Aorist; absence of the combinations in (96) simply indicates that temporal reference cannot be simultaneously qualified by aspectuals as both unlimited and limited, as unlimited by the Aorist and as limited by Perfective HAVE or Progressive BE.

4.3.1.2 Cooccurrence Restriction with Predicative BE

The second combination that is not allowed, is between DO and predicative BE. As exemplified in (97), though (97a) is ungrammatical, combinations between predicative BE and the other two aspectuals are possible.

- (97) a. *John does not be particularly intelligent.
 b. John has not been particularly intelligent.
 c. John is not being particularly intelligent.

Interestingly, this behaviour is not peculiar of English. The Classical Greek auxiliary *εἶμι* 'be'/'have' was defective lacking an Aorist, that was used regularly with thematic verbs. A similar phenomenon is observed in Modern Turkish. In this language, as discussed in 3.2.1.2, the Present Aorist is regularly formed by means of the morpheme /ir/, as observed in (98).

- (98) Halil çok çalış-ir-Ø
 Halil much work-Aorist-Pres
 'Halil works very hard'

This pattern does not extend, however, to copulative sentences,

²⁷ Wolof, as mentioned in Ch. 3, has numerous aspectual auxiliaries, yet does not allow any combinations.

these are formed, as in (99), by attaching a copulative postposition with agreement onto the predicate. Inclusion of the aorist is not possible in these cases, (100).

(99) a. Çaliskan-ir
hardworking-be:1s
'I am hardworking'

b. Çaliskan-dim
hardworking-be:3s
'He is hardworking'

(100) a. *Çaliskan-irir
hardworking-Aorist-be:1s

b. *Çaliskan-ir-dim
hardworking-Aorist-be:3s

Another parallel between Turkish and Greek is observed in the Past Tense. The Aorist aspectual morpheme can be used in the Past, as in (101), but not in copulative past constructions, (102) vs (103).

(101) Halil çok çalış-ir-di
Halil much work-Aorist-Past
'Halil used to work/would have worked very hard'

(102) a. Halil çaliskan-di
Halil hardworking-Past
'Halil was hardworking'

b. Çaliskan-di-m
Hardworking-Past-1s
'I was hardworking'

(103) a. *Halil çaliskan-ir-di
Halil hardworking-Aorist-Past-1s

b. *Çaliskan-ir-di-m
Hardworking-Aorist-Past

Crosslinguistic parallelisms exhibited by the use of Aorists do not stop here. As noted by Dahl (1985), Aorists are only found in the Past and the Present. English DO is not used in the future, whereas Perfective and Progressive are. In Turkish, use of the Aorist is also restricted to the Past and Present.

4.3.1.3 Cooccurrence Restriction with Modals

The third problem, exemplified in (104), is that DO does not cooccur with modals.

- (104) a. *Caesar must do enter into Rome.
 b. Caesar must have entered into Rome.
 c. Caesar must be entering into Rome.

The reason for this restriction may perhaps be related to the semantic content of the Aorist. The unlimited character of the denotation, which is realized as a permanent effect may be incompatible with modal reference. Modals denote possibility, e.g. can, could, might, obligation, e.g. should, ought, must (Horn, 1989), that is potentialities. In this respect modality contrasts with the content of DO, whose basic function is to define unlimited and permanent properties. Notice that this restriction operates only when DO is in the scope of modals, DO may be used to introduce items such as have to, whose content has a modal character.

- (105) a. John does have to go now.
 b. John has to go now.

4.3.2 Inertness of Possessive HAVE

The facts in (106) are, apparently, problematic for our proposal that AspP is saturated in English, and that argumental verbs must remain in VP. Possessive HAVE, an argumental verb that assigns a θ -role to its object, seems to have raised to T, as it surfaces to the left of negation:²⁸

- (106) a. John hasn't any money.
b. John hasn't a cold.

Two possibilities to account for (106) come to mind. One is that Possessive HAVE and DO cannot cooccur, and therefore that there is no Asp(P) intervening between VP and TP in these sentences to block raising of the verb. As the facts in (107) prove, this alternative is not adequate, since Possessive HAVE and DO do cooccur.

- (107) a. John doesn't have any money.
b. John doesn't have a cold.

A second possible solution for the coexistence of (106) and (107), could be that DO -a generic- is optional with stative verbs like Possessive HAVE.²⁹ Even though this solution is appealing, a series of independent facts of English forces us to consider a third, and more complex explanation.

²⁸ These are counterexamples to Pollock's (1989) and Chomsky's (1988) view of the problem as well. Since theta-assigning elements cannot raise out of VP in English by rule. Our analysis below solves this problem.

²⁹ This option could account for sentences like he knows not and he believes not, where V appears to have climbed over the negation.

4.3.2.1 Possessive HAVE, and Aspectual HAVE

There is an asymmetric behaviour exhibited by VP-deletion structures having forms of BE and HAVE in the first conjunct. On the one hand, sentences with tensed BE in the first conjunct require a copy of the same auxiliary in the second one, as we can see in (108a) vs. (108b,c). On the other hand, sentences with tensed HAVE may appear with an identical copy, (109b), or with a form of the auxiliary DO, (109c).

- (108) a. John is poor and so is Louie.
 b. *John is poor and so has Louie.
 c. *John is poor and so does Louie.
- (109) a. *John has a penny and so is Louie.
 b. John has a penny and so has Louie.
 c. John has a penny and so does Louie.

This asymmetry is generally found in complex structures requiring the auxiliaries to agree in their constituents, as with Pos/Neg Tag-questions:

- (110) a. John is walking, isn't he?
 b. *John is walking, hasn't he?
 c. *John is walking, doesn't he?
- (111) a. *John has a penny, isn't he?
 b. John has a penny, hasn't he?
 c. John has a penny, doesn't he?³⁰

Prima facie, the two auxiliaries are differently specified: the restrictions on BE are stronger, for it can only agree with an

³⁰ The acceptability of (72b) and (72c) above varies across speakers. Some prefer one over the other, others accept both.

element identical to itself, whereas HAVE can agree with both HAVE and DO. Upon closer examination, this general observation happens to be false. When HAVE is clearly an aspectual, as in (112), the agreeing element can only be identical to it:

- (112) a. *John has arrived, and so is Louie.
 b. John has arrived, and so has Louie.
 c. *John has arrived, and so does Louie.

- (113) a. *John has arrived, isn't he?
 b. John has arrived, hasn't he?
 c. *John has arrived, doesn't he?

Moreover, when the finite element in the first constituent of this type of structures is the verb, only DO surfaces in the second constituent.

- (114) a. *John brought a book, and so is Louie.
 b. *John brought a book, and so has Louie.
 c. John brought a book, and so did Louie.

- (115) a. *John sold his soul, isn't he?
 b. *John sold his soul, hasn't he?
 c. John sold his soul, didn't he?

The appearance of DO is expected, given our analysis of DO/Ø as an aspectual auxiliary, and the observation made in 4.2.1, that Tags must replicate the temporal and aspectual content of the first constituent. Examples with Predicative BE -(119a)-, and aspectuals BE -(121a)-, HAVE -(112b) and (113b)-, and DO/Ø -(114c)- support this general observation. The examples where HAVE and DO alternate in the second conjunct remain to be explained, i.e. (120b)/(120c)

and (122b)/(122c), repeated together as (116) and (117) respectively:

- (116) a. John has a penny and so has Louie.
 b. John has a penny, hasn't he?

- (117) c. John has a penny and so does Louie.
 d. John has a penny, doesn't he?

The respective aspectual auxiliaries in the second conjuncts of (116) and (117), lead us to treat HAS in (116) differently from HAS in (117). In essence, two separate items HAVE must be postulated: a [+Perf] aspectual HAVE -replicated in the second conjuncts of (116)-, and an argumental Possessive HAVE verb -with DO/Ø for aspectual in (117)-. An important consequence of this account, is that the presence of the [+Perf] aspectual in the (116) continuations requires that the item HAVE in the first conjunct be Perfective, and not Possessive HAVE. If this judgment is correct, the item HAVE in (116) is an aspectual auxiliary and not a verb, and our proposal that argumental verbs do not undergo SHM as a rule is confirmed. The question to answer is how the direct objects in (116) and (117) obtain their θ -role.

4.3.2.2 Possessives GOT and HAVE

Examples (116) and (117) must be analyzed as (118) and (119) respectively. The second conjuncts in (118) have the aspectual DO as proof that the item HAVE in the first conjunct is the verb that assigns a θ -role to the object. Because Perfective HAVE shows up

in the second conjunct of (119), HAVE in the first conjunct must also be the aspectual auxiliary. A phonetically null verb must be postulated here to account for the selection and θ -marking of the Direct Object.

- (118) a. John does/ $\emptyset$ _i have a penny and so does_i Louie.
 b. John does/ $\emptyset$ _i have a penny, does_i n't he?

- (119) a. John has_i $\emptyset$ a penny and so has_i Louie.
 b. John has_i $\emptyset$ a penny, has_i n't he?

We propose that the verbal EC in (119) is the defective verb GOT, exemplified in (120):³¹

- (120) a. John has_i GOT a penny and so has_i Louie.
 b. John has_i GOT a penny, has_i n't he?

The analysis is extended to account for the examples in (118). The item that raises over the negation is the aspectual auxiliary and not an argumental HAVE:

- (121) a. John has_i n't t_i GOT/ $\emptyset$ any money.
 b. John has_i n't t_i GOT/ $\emptyset$ a cold.

There is apparently a dialectal contrast between British English, which uses the two alternatives in (122), and American English, which uses only (122b), with the explicit GOT.

- (122) a. John hasn't $\emptyset$ any money.
 b. John hasn't GOT any money.

³¹ Possessive GOT is a defective verb whose unique form is its participle. It is not directly related to GET 'obtain' which has GOTTEN as participle.

The dialectal distinction has a lexical explanation; British English has both the phonetically explicit and null versions of GOT, whereas American English has only the phonetically explicit version.

4.4 Conclusion

In this Chapter we showed that Affix Lowering, like Asp/V SHM, is a Head Movement strategy available in language to satisfy the AfC. We maintained that lowering follows SHM in the derivation of syntactic structures, and that it operates only in those instances where the non-application of SHM leaves the AfC unfulfilled. Asp(P) of English has been interpreted to be saturated; therefore there is always an aspectual X^0 intervening between argumental verbs and the position of T. The auxiliary DO has been shown to be an aspectual element that confers Tense the general properties of an Aorist. The phonetically null version of DO was identified as the (indirect) trigger for Affix Lowering. When AspP is headed by the null aspectual element, movement of V-to-T is predictably blocked. In the light of the Principle of Full Interpretation (Chomsky (1986a)), we can say that since DO/ $\emptyset$ contributes to the semantic interpretation of sentences, it must be present at LF and S-structure. Only at PF is the EC no longer required; there, it no longer prevents X^0 -movement, which assumes the form of Affix Lowering. Affix Lowering was claimed not to belong to the syntactic

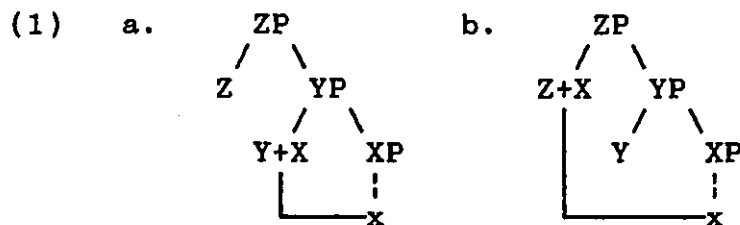
component of the Grammar, (but to be probably in PF), because a-moved X^0 s must bind their anaphoric traces, and syntactic X^0 -movement must assume only the form of Raising. We strongly advocate the idea that recourse to X^0 -lowering instead of SHM -as is the case in English-, should not be attributed to a parameter (due to its rarity in language), but that it should be grounded on a lexically based solution.

Chapter 5

Long Head Movement

5.0 Introduction

Some of the dominant characteristics of Long Head Movement will be examined in this chapter. In Chapter 3, it was claimed that X^0 -movement of the form portrayed in (1a) could be properly accounted for in terms of the morphological AfC. Similarly, that a semantically motivated condition, the Feature Minimality Condition (FMC), interacted with the AfC to determine the locality conditions of this form of movement. The role of the FMC is somewhat clouded, however, by the more obvious morphological requirements of affixes. As will be seen here, the role of the FMC is more prominent, and evident, in the application of LHM (1b), particularly in those cases where affixal requirements are extraneous to the application of such 'long' movement.¹



¹ Long Distance Government Phenomena can also be in areas such as Case Assignment. See Raposo and Uriagereka (1990).

The clearer cases of LHM are those where the skipped element, Y in (1b), is syntactically free, i.e. does not require support, cf. Bulgarian (2a) and Slovak (2b).² Syntactic independence of the intervening head is not, however, the condition that licenses the operation of LHM. This is attested by the ungrammaticality of English (3), where movement of an aspectual auxiliary is forced over a syntactically free modal.

- (2) a. Procel_i sum t_i knigata
 Read have:Pres:1s book:the
 'I have read the book (completely)'
- b. Napísal_i som t_i list
 Wrote have:Pres:1s letter:the
 'I wrote the letter'

(3) *Have_i must John t_i gone.

The Aux-movement over Neg(ation) in English (4) will be shown to be an instance of LHM. Moreover, LHM of the sort illustrated in (2) and (4), as well as the lack of LHM in structures like (3) will be shown to receive a unifying treatment under the FMC.

(4) John had_i NOT t_i been reading the book.

The organization of this chapter is divided in four parts. In section 5.1, I will outline some of the principal features of LHM as presented in Lema and Rivero (1989, 1990a). LHM is exemplified

² It is possible for LHM to skip an affixal X⁰; see the discussion of contracted negation in English in 5.4.2 below.

with data drawn from Modern Slavic languages, from Medieval Spanish, and from 19th Century European Portuguese.

I will proceed, in section 5.2, to examine in detail some syntactic structures of Medieval Spanish involving Futures, their earmark being that the two X^0 -movement strategies -LHM and SHM- alternate in near perfect complementary distribution. The syntactically conditioned alternation between the two X^0 -movement strategies resolves itself historically in favour of SHM, and the Modern Spanish synthetic Future evolves from medieval periphrastic constructions built by a reflex of the Latin auxiliary HABERE and an infinitive, as schematized in (5a).

(5) a. HABEO+CANTAR --> b. CANTAR+E

The study of this diachronic transformation will reveal a new facet of the morphological correlation between free and bound formatives, i.e. between auxiliaries and affixes, examined in Chapter 3. Likewise, it will show that besides the obvious contrast between [$\pm$ Free] forms, there is a continuum along the two opposite poles: a free auxiliary can become a bound affix. This change, though, is not instantaneous, and the (temporal) X^0 s involved are alternatively realized as free or bound depending on the structure.

The movement of auxiliaries over negation in English is addressed in section 5.3. Because this problem has been the focus of several recent debates, the proposals by Chomsky (1988), Pollock (1989), and Ouhalla (1990), will be discussed first. The point of

controversy resides in the status of negation in derivations like (4). In the discussion, however, certain relevant morphological, syntactic, and semantic data has been largely overlooked, data proving that Aux-movement over Neg is an instance of LHM over an intervening X^0 , cf. (1b). The evidence substantiating such an analysis will be discussed at length. To conclude, certain questions concerning the lexical specification of negation will be addressed.

5.1 Romance and Slavic Long Head Movement to C

5.1.1 Morphologically Light Formatives and LHM.³

The factor that activates LHM in Romance and Slavic languages, is a CP-initial restriction on morphologically light pronouns and/or auxiliaries. The movement is reminiscent of last resort operations (Chomsky, 1988), for it prevents the violation of this constraint by providing a CP-initial element.⁴ For instance, the non-finite capitalized V in (6) is raised to C, over (and in front) of the B(ulgarian) and C(zech) underlined auxiliaries, producing Wackernagel's Aux-2 effects; in M(edieval) S(panish) and E(uropean) P(ortuguese), V raises over the pronominal clitics -and temporal auxiliaries- creating Tobler-Moussafia Cl-2 effects.

³ The Slavic data is basically from de Bray (1980), and from Lema and Rivero (1990a).

⁴ As we will see in 5.2.2, however, LHM has precedence over SHM, and must thus, not be a last resort mechanism.

(6) a. B: PROCEL sum knigata
 READ have:Pres:1s book:the
 'I have read the book (completely)'

b. C: PREDSTAVIL isem se mu
 INTRODUCED have:Pres:1s me him
 'I have introduced myself to him'

(Toman: 124)

c. EP: SEGUIR- te- ei por toda a parte
 FOLLOW- you- will:1s by all the part
 'I will follow you everywhere'

(O Bobo: 110)

d. OS: DARte he un exemplo
 GIVE:you will:1s an example
 'I will give you an example'

(Calila: 291)

An interesting parallel that arises between SHM and LHM is that both apply to provide support for another element. In the case of (incorporation-)SHM, the support is morphological, being triggered by affixal requirements. In the case of LHM, without incorporation, the support is not properly morphological, but syntactic and/or phonological.^{5,6}

⁵ The constraint may be that unstressed light elements cannot surface sentence initially; or, alternatively, that the CP-initial element must be stressed, thus morphologically light elements are excluded since they are unable to comply with such constraint.

⁶ Uriagereka (1988), examines clitic placement in Galician, a language similar, clitic-wise, to Medieval Spanish. The distribution of clitics in Galician (i) and (ii), (Uriagereka's (68) and (71), pp. 349, 351), is accounted for in terms of a notion of Government. The argument is that clitics are attracted to T, but may be proclitic only in governed IPs. This accounts for enclitics in affirmative matrix IPs, (i), and when following left-dislocated constituents, (iib). The proclitic appears in (iia,c,d) because IP is governed by an element in C -explicit or null- and by Neg.

(i) ouvimo-lo

(ii) a. quero que o oiades.
 want:1 that it hear:2s

c. quén o ten ouvido.
 who it has heard

b. dixen que este concerto, ouvin-o.

d. non o ten ouvido.

5.1.2 Temporal Auxiliaries and LHM

The examples (6) reveal an important property of LHM: in all cases, the skipped X^0 is a temporal auxiliary. This category and type of formative was characterized in Chapter 3, section 3.2; they are homologous to the Tense affixes of Modern English and French, but unlike these, they can surface as syntactically free forms. Affixes cannot be skipped by LHM for this would violate the AfC. The semantic properties of the type-(6) auxiliaries enable LHM. Consider the FMC in (7). It establishes that a lexical head can govern its trace over a non-lexical intervening X^0 .

said:ls that this concert, heard:ls-it not it has hear

Although promising, explaining the distribution of clitics in terms of Government is problematic, because in Galician, proclitics are often seen in matrix affirmative IPs (Alvarez et. al, 1986):

- (iii) a. Os mesmos veciños o contaban. b. Entrambos o fixeron
 The same neighbours it related the:two:together it did
 'The neighbours themselves related it' 'They did it between the two'

The reasons that license proclitics in languages like these are difficult to discern, albeit the 'weight' of the CP-initial element is clearly important. Emphasized subjects freely license proclitics. Also, attesting to morphologically rooted nature of clitic placement, is the fact that European Portuguese does not permit proclitics with pronominal subjects, cf. (iva), but Brazilian Portuguese does, cf. (ivb) (Dunn, 1928):

- (iv) a. eu lembro-me/*eu me lembro. b. eu me lembro/eu lembro-me.
 I remember-it

In any case, Medieval Spanish proclitics were common in affirmative matrix IPs:

- (v) El conde le rogó que-l dixiese cómo fuera aquello.
 The count him beg that-him tell how was that
 'The count begged him to relate to him how that came about' (Lucanor, p.53)

The generalization to be kept, is that proclitics cannot be CP-initial, similarly to the data examined in the text.

(7) Feature Minimality Condition

In the configuration [Z° [Y° [W°]]], Z° governs W° if they are [αLexical], they are coindexed, and the intervening Y° is [-αLexical].

Notice that in the Slavic examples, the auxiliaries trigger and permit the movement, whereas in the Romance languages the triggering factor is the pronominal clitic.⁷ Further evidence in support of the FMC will be given in section 5.3, in our analysis of English Negation. Before proceeding, however, we examine two types of phenomena which seem to support the postulation of a version of Relativized Minimality based on the content of formatives, such as (7).

5.1.2.1 LHM over Determiners

Baker and Hale (1990) argue that Relativized Minimality based on the contrast between Functional and Lexical categories finds support in some examples of Noun Incorporation over Determiners in Southern Tiwa. If Abney's (1987) proposal that Determiners head a DP, and that Nouns are in turn the heads of their complements, the example (8b) must be interpreted as a case of LHM, the noun seuan

⁷ According to Menéndez-Pidal (1964), there were also weak auxiliaries in Medieval Spanish. Whether these items triggered LHM is difficult to determine: it cannot be shown with certainty in sentence initial structures like cantar-e, whether V simply incorporates, or whether there is LHM followed by cliticization of the auxiliary. We can speculate, nonetheless, that the derivational ambiguity of these structures might have given rise to the change of light auxiliaries into affixes. See discussion in 5.2 below.

in (8) is observed to incorporate unto the verb in (8b), skipping the determiner Yede.

- (8) a. [Yede seuan-ide] a-mu-ban
 that man-suf 2sS/A-see-past
 'You saw that man'
- b. [_{DP} Yede [_{NP} [_{N1} e]] a-seuan_i-mu-ban
 that 2sS/A-man-see-past
 'You saw that man'

Of course, this example is not decisive of itself to support postulation of something like (7), for the determiner Yede could be interpreted to be in the specifier of NP, and N-movement would simply be that of an λ^0 over an $\lambda^{\max}$, and this would not be proof of a violation of the HMC.

5.1.2.2 Clitics and Negation

Kayne (1989) discusses the contrast between (9) and (10), where Clitic Climbing is possible where the negation is absent.

- (9) Jean la fait manger à Paul.
 'Jean makes Paul eat it'
- (10) a. *Jean/Cela l'a fait ne pas manger à l'enfant.
 b. ??Jean/Cela lui a fait ne pas manger sa soupe.
 'Jean/That made the boy not eat it'

Kayne argues that clitics are X^0 s, and that they are prevented from climbing in (10) by the intervening X^0 negation, in accordance with the HMC. Notice, however, that in (9) the clitic skips the verb,

which is an intervening X^0 . While negation blocks Clitic Climbing, verbs do not. The interpretation of this data in the light of the FMC would lead us to conclude that clitics and negation, have a property in common which distinguishes them from verbs. If the property in question concerns the lexical/functional status of categories, clitics and negation will have to be considered on a par as functional heads. In 5.3 below, we argue that negation is functional and not lexical. Whether clitics are functional or lexical is problematic; we have, however, Uriagereka's (1988) proposal that these items can be analyzed as the heads of the functional category DP. If this author is correct, the fact that clitics can skip verbs but not negation may be explained.

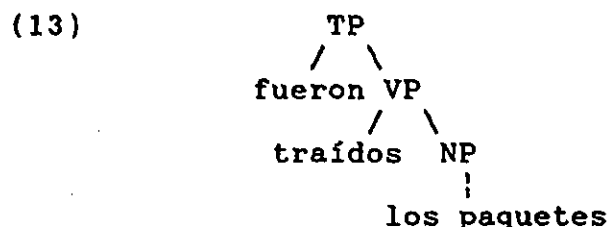
5.1.2.3 Case Assignment in Spanish Passives

Spanish Passives contrast with those of English and French in one important respect. As observed in (11), the movement of NP to a position to the left of the auxiliary is not obligatory, whereas in English and French, it is, cf. (12).

- (11) a. Los paquetes_i fueron traídos t_i por el cartero
 the packages were brought by the mailman
 b. Fueron traídos los paquetes por el cartero
 were brought the packages by the mailman
 'The packages were brought by the mailman'

- (12) a. The packages were brought by the mailman.
 b. *Were brought the packages by the mailman.
 c. Les paquets furent apportés par le facteur.
 d. *Furent apportés les paquets par le facteur.

The general analysis of examples such as (11b) and (12a,c) is that Nominative Case is assigned by the element in T to a subject in the specifier of T. The ungrammaticality of (12b,d) is explained as due to the fact that the Passive Subject cannot receive Case in its basic Object position. (11b) proves that this is not entirely so, and that in some languages Passive Subjects may remain in situ and receive Case. As we argued in 3.3.1.1, the assignment of Case can apply in the right direction in Spanish, whereas in French and English it cannot. An effect of this is the possibility of obtaining sentences like (11b). Notice, nevertheless, that Case in this example proceeds over the intervening X^0 , as seen in the partial representation (13).



In this example, the element in T must assign Case to the NP over an intervening potential governor, in fact a governor which assigns a thematic role to the NP in question at another level of representation. As argued by Treviño (1990b), Case can reach the lower NP in (13) because there is no intervening Case assigning X^0 between the two relevant elements. In a sense this type of

phenomenon could be used to support a more fine-grained and more general version of our FMC.⁸

5.1.3 LHM: Root Phenomenon

LHM is, borrowing from Emonds (1976), a Root Phenomenon. It has the basic properties of Germanic V-second constructions (Den Besten, 1978). Its application is restricted to main clauses, as observed in (6). In all the examples, the capitalized non-finite verb appears sentence initially to the left of a finite auxiliary. Conversely, though, the finite element cannot appear sentence initially preceding the non-finite verb, as seen in (14) corresponding to (6a):

(14) B: *sum PROCEL knigata

The main clause order contrasts asymmetrically with that of embedded contexts, where the finite auxiliary precedes the non-finite form, as demonstrated by the disparity between (6a) and (15).

(15) B: Znam [cp ce sum PROCEL knigata]
 Know-1s that have:1s READ book:the
 'I know that I have read the book'

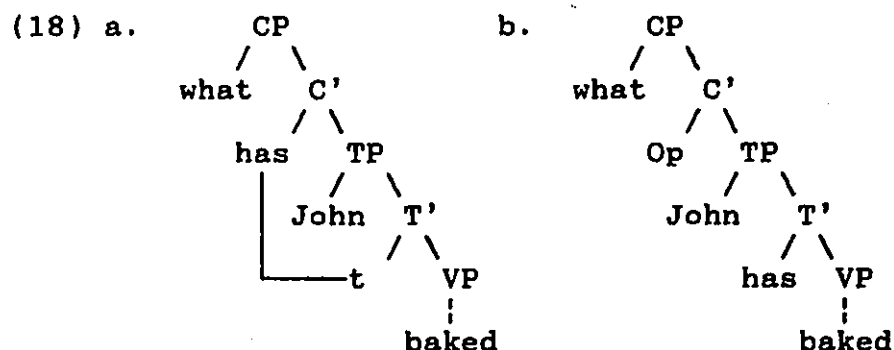
⁸ If we adopt Speas' (1986) distinction between Kase, assigned by non-lexical categories such as Infl, and Case, assigned by lexical categories such as V, then the fact that V cannot prevent the passage of Nominative in these structures is another case of Functional vs. Lexical relativization.

The example (16), corresponding to (15), further corroborates than the non-finite element cannot appear to the left of the finite auxiliary.

(16) B: *Znam će PROCEL_i sum t_i knjigata

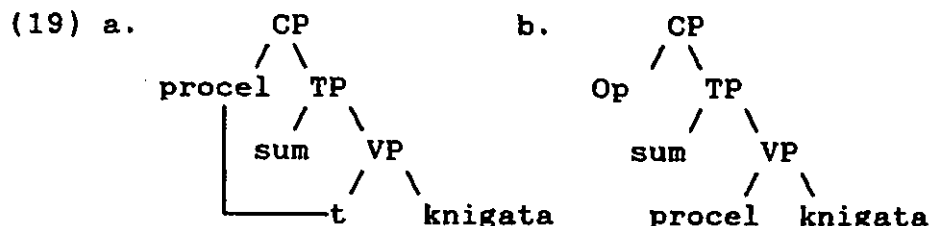
The pattern exhibited by the examples (6)-(16) parallels, for the most part, that found in V-second languages: a tensed element raises to Comp in main clauses, but is barred from occupying the same position in embedded sentences. English subject-verb inversion in questions is a case in point. In main sentences, the tensed element must appear above the subject, -(17a) vs (17b)-, while in embedded sentences it must appear below it -(17c) vs (17d)-. The analysis of (17a) and (17c) is presented in (18a,b), -irrelevant details omitted-.

- (17) a. What has John baked?
 b. *What John has bake?
 c. He doesn't know what John has baked?
 d. *He doesn't know what has John baked?



In main clauses, where C is empty, the tensed auxiliary can raise from T to C; in embedded sentences where C is occupied, the movement is not triggered, and the auxiliary maintains its T position.

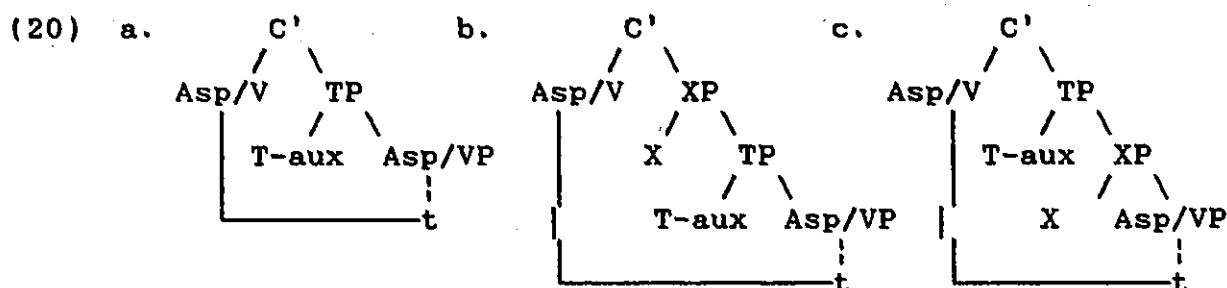
The distribution of LHM-to-C constructions is similarly explained: in main clauses, a verb can raise to C, while in embedded clauses the element maintains a position lower in the tree. Notice again that the order between finite and non-finite elements in the LHM examples (6) is reversed from that found in V-second constructions like English (17a). The derivations (19a) and (19b) are needed to account for the asymmetry between (6a) and (15), respectively. Movement to C by a verb must also apply, but it is the non-finite item in VP that raises instead of the tensed element in T.



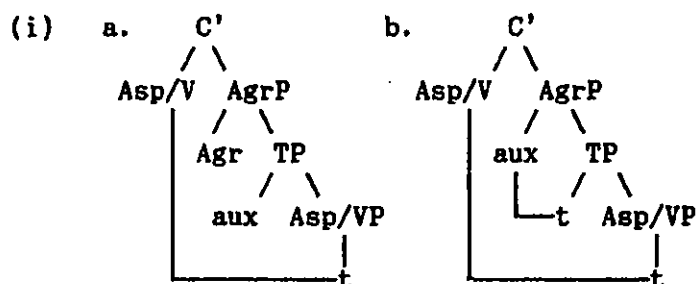
LHM is characterized in the present examples by the movement of a head to Comp, over another head. The divergence with Germanic movement to C, which moves the higher of a series of auxiliaries - as in English (18a)-, is explained by the fact that the higher of the auxiliaries in structures like (6) is morphologically light and cannot surface CP-initially.

5.1.4 LHM: Locality Conditions

LHM is not a local operation in the sense captured by the HMC (Travis, 1984; Chomsky, 1986; Baker, 1988). While the HMC requires movement of an X^0 to the next X^0 position above it, as in (18a), LHM allows X^0 -movement over an intervening head, as in (19a). Despite the greater range of LHM, it is permitted only under very strict conditions. In the cases of LHM discussed thus far, the verb, or the aspectual auxiliary directly below the temporal auxiliary, raises to C, as in (20a). Let us now consider the potential derivations portrayed in (20b,c).⁹



⁹ If IP is split into AgrP and TP, as in (i), then LHM will always assume the form of (14b), with XP=AgrP.



Because the two intermediate positions, {aux...t}, form a chain, they can be considered as a single head in the path of LHM. In a sense, (ib) is an instance of Pesetsky's (1982) notion of (proper) "containment" applied at the X^0 level. The Category Switching Hypothesis also unifies TP and AgrP at S-structure and LF. At these levels of representation, AgrP and TP are projected from a single head and from its trace, and are, therefore, categorially alike. The movement applies over one single element that has two segments.

There are two situations where a phrasal category (XP) can appear above TP, cf. (20b). The first is exemplified in (21), where a NegP appears above TP. In (21a), the normal order is realized, with the (underlined) finite temporal auxiliary preceding -and above- the (capitalized) non-finite verb. Forcing LHM over T and Neg, as in (21b), results in ungrammaticality.

- (21) B: a. Ne sum PROCEL knigata
 Neg have:1s read book:the
 b. *PROCEL ne sum knigata
 'I have not read the book'

The second situation similar to (20b) is illustrated by the Slovak Conditional, which is formed by means of the conditional auxiliary by and the temporal auxiliary som. The basic order is presented in (22a); as observed in (22b), LHM applies over the two auxiliaries.¹⁰

- (22) a. Ja by som volal
 I Cond have:1s call
 b. Volal_i by som t_i
 'I would call'

The principal difference between (21) and (22), is that LHM applies in the latter because the intervening element is a light formative, whereas in (21), Negation is not a light element. Negation can, and

¹⁰ Perhaps /by/ could be considered a specifier because in Slovak it is invariable. However, in other Slavic languages -Czech for instance-, it bears agreement, a fact which can indicate that /by/ heads a second TP or a Conditional Phrase.

does surface sentence initially. Conditional auxiliaries have to be included in the set of non-lexical heads; as such, these allow lexical heads to govern their trace across them, in accordance with the FMC. As proven by the Old Spanish and European Portuguese examples (23), the (underlined) Conditional auxiliaries are regularly by-passed by V-LHM.

- (23) a. OS: et si allá vamos, tajará esta red et LIBRAR_i-nos ia t_i de-lla
 and if there we:go cut:3s this net and free-us would of-it:fem
 'and if we go there, he will cut this net and would free us from it'
 (Calila :204 1.3)
- b. EP: PODER_i-se -ia t_i dizer igual cousa do homen em relação à mulher?
 can-SE -would say same thing of-the man in relation to woman
 'Could the same thing be said of man in relation to woman?'
 (F. da Silva: 385)

The potential situation depicted in (20c) is actually realized in the Bulgarian Renarrated Mood or Quotative Aspect.¹¹ To form this periphrastic conjugation, the two auxiliaries sum and BIL must precede the argumental verb -cetjal in (24)-. (24a), with the explicit subject pronoun, portrays the basic order. When the subject is not present, (24b), LHM of the (capitalized) auxiliary carries on in the manner portrayed in (20a).

- (24) a. Az sum BIL četjal knigata
 I have:1s have read book:the
 b. BIL sum četjal knigata
 '(According to someone) I am reading the book'
 c. *Cetjal_i sum BIL t_i knigata

¹¹ The Renarrated Mood, also known as the Quotative Aspect (Dahl, 1985), is used to introduce 'non-witnessed', 'imperceptive' and 'second hand' information. The speaker reports a message, of which he is not the original source.

The auxiliary that raises is an aspectual (or modal-like) head. It is lexical in the sense expounded in chapter 2, and its movement conforms to the FMC. If the lexical head below it raises instead, as in (24c), it yields ungrammatical results. This is expected, for the FMC prohibits raising a lexical X^0 over another lexical X^0 . The Slovak Pluperfect in (25) reproduces the same pattern as (24), where the higher lexical head, the aspectual auxiliary, undergoes LHM. Movement by the lower of the two lexical heads violates the FMC, as attested by (25c).

- (25) a. Ja som BOL napísal list
I have:ls have write letter
- b. BOL som napísal list
'I had written a letter'
- c. *Napísal_i som BIL t_i list

Similarly, in the European Portuguese and Old Spanish examples in (26), the passive auxiliary corresponding to English 'be' is raised to C, over the temporal auxiliary; neither the participle below, nor the more remote V may undergo LHM.

- (26) a. EP: SER_i me- a t_i 'permitido falar-lhe?
BE to:me-will allowed speak-to:him
'Will I be allowed to talk to him?'
(O Bobo: 174)
- b. OS: SEER_i uos an t_i perdonados u<uest>ros pecados
BE to:you will forgiven your sins
'Your sins will be forgiven'
(Picatrix: 25r79-80)

Returning now to the English example (3), repeated below, we can say that one of the reasons why LHM does not apply here is because English modals are [+Lexical] heads, they have modal content, and do not serve simply to refer propositions temporally, as operators. According to the FMC, these items cannot be skipped by an aspectual X^0 . Besides this, English Modals, though they appear in V-2 patterns such as (27), may also surface sentence initially, (28), showing that they do not fall within the set of elements that fall within Wackernagel's Law.

(3) *Have_i must John t_i gone.

(27) Why must John go?

(28) Must John go?

To sum up, LHM as presented in this section is a root-phenomenon. It is an operation that prevents morphologically light formatives from surfacing sentence initially, or, conversely, it is an operation licensed by an independent constraint on CP-initial elements. The movement accords with the FMC: only lexical heads skip non-lexical temporal (and conditional) auxiliaries. The idea of dividing auxiliaries into two sets according to their [$\pm$ Lexical] properties, correctly predicts that non-lexical temporal and conditional auxiliaries (such as those in Slovak), allow LHM to bypass them, and also, that lexical auxiliaries with aspectual and modal properties will block LHM.

5.2 Alternative Analyses

There are two basic alternative analyses to X^0 LHM. The first is that the phenomenon observed is VP-preposing rather than X^0 -movement. The second is that the intervening temporal elements are in a specifier position rather than intervening heads. In this section I will present some evidence and arguments that these analyses are not viable alternatives to explain the data under consideration.

5.2.1 VP-preposing

Among the root contexts where LHM is not observed are negative sentences. The position of NegP, as argued in Rivero (1988) and Zanuttini (1989), is located between CP and IP (i.e. dominating TP). In this type of construction, V remains in situ in Rumanian, as in (29a), and incorporates in Old Spanish, as in (30). Raising the verb SPUNE over the negation nu in Rumanian (29b), results in ungrammaticality. Example (29c) shows that placement of the verb between the auxiliary and the negation is also barred; therefore the landing site of LHM must be above the negation.

- (29) a. Nu mi va SPUNE ?
Neg me Fut tell
b. *SPUNE nu mi va ?
c. *Nu SPUNE mi va ?
'Will she/he not tell me?'

- (30) Aqui non vos FARan si non todo plazer
Here not to+you MAKEwill if not all' pleasure
'Here they will not give you anything but pleasure'
(Zifar: 85)

In comparison to LHM, VP-preposing (movement of a phrase rather than a head) in negative contexts is possible, as seen in Old Spanish (31a) and Rumanian (31b).

- (31) a. [_{VP} Desalabar su fermosura]_i non puede t_i
 Disdain her beauty not can
 'Disdain her beauty, she cannot' (Corbacho: 139)
- b. [_{VP} Citi cartea]_i Maria nu poate t_i
 Read book+the Mary not can
 'Read the book, Mary cannot'

Evidence that the constructions we are discussing as effects of LHM are not VP-preposing structures can be derived from the contrast between (32) and (33) in Bulgarian. As can be observed, whereas procel may be raised over sum the entire VP may not appear to the left of it.

- (32) Procel sum knigata
 Read have:Pres:1s book:the
 'I have read the book'

- (33) *Procel knigata sum
 Read book:the have:Pres:1s
 'I have read the book'

Besides the fact that VP-preposing and LHM differ by the fact that the first is X^{max} -movement to an A-bar position and the second is X^0 -raising, there are also interesting contrasting properties between the types of auxiliaries that license each process. The auxiliaries that allow LHM have functional or temporal values exclusively (conditional, future, past). These auxiliaries, though

they allow an X^0 to skip them, see (32), do not license VP-preposing, as seen in (33). In contrast the type of auxiliary that licenses VP-preposing disallows LHM, as seen in Rumanian and English:

(34) a. Citi cartea poate
 Read the:letter can
 'Read the letter, he/she can'

 b. *Citi poate cartea
 Read can the:book
 'He/She can the book'

(35) a. I must earn a living.
 b. *Earn I must a living.
 c. Earn a living, I must.

5.2.2 Temporal Auxiliaries as Specifiers

The second alternative to a LHM analysis is to consider the intervening auxiliaries as specifiers of VP, as in (36). Notice that under this alternative, V-movement out of VP may comply with the HMC, as the process need not cross an intervening head, in contrast with the LHM proposal.

(36) [_{VP} AuxP [_V V']]

A first argument that shows that (36) is not a viable analysis is the fact that if LHM does not apply in languages like Old Spanish and European Portuguese, the verb incorporates into the auxiliary. Within the framework adopted here, Incorporation is Head-to-Head and not Head-to-Specifier movement, as the analysis

(36) would require to account for examples like the following.

- (37) N o nos ACONTECERa como nos outros jornaes
 Not to+us HAPPENwill as in+the other journals
 'It will not happen to us as in the other journals'
 (Vasconcellos, Cartas: 78)

Second, the auxiliaries skipped in LHM structures carry T-Agr features which are characteristic of heads. To stand, the analysis (36) would require a rule of Specifier-into-Head Raising, or an Affix Hopping rule into the Specifier to reflect this fact. An analysis based on the idea that temporal auxiliaries are specifiers leads to complications that are avoided by the framework adopted here.

5.3 Futures and Conditionals in Medieval Spanish

This section examines the formation of synthetic futures and conditionals from periphrastic constructions, in Medieval Spanish. The analysis involves discussing the structures where LHM and SHM alternate. Synthesis is seen as the generalization of SHM and the concomitant change of syntactically free temporal auxiliaries into bound affixes.

5.3.0 Future Formation in Medieval Spanish: Introduction

Since Nebrija (1492), it has been accepted that the synthetic forms of the Spanish Future and Conditional Tenses, i.e. CANTARE 'I will sing' and CANTARIA 'I would sing', originate with the fusion of an infinitive, e.g. CANTAR, with a finite form of an auxiliary HABER

'have', i.e. CANTARE+HABEO and CANTARE+HABEBAM.¹² The two conjugations will be jointly referred to as "futures". The evolution of these tenses can be schematized in three distinct diachronic stages: first, an analytic stage, where the infinitive and the auxiliary surface regularly as separate words -(38a)-; second, a mixed stage, where the two elements appear either as separate words in analytic constructions, or united in synthetic compounds -(38b)-; and third, a synthetic stage, where futures surface regularly as a single word -(38c)-. The position of the nontonic pronoun in relation to the verb and the auxiliary is the symptomatic property that serves to distinguish the synthetic and the analytic forms during the 'mixed' period. The position of clitics in (38a) and (38c), has no consequences for our analysis.¹³

- (38) a. ANALYTIC: CANTARE HABEO
 b. MIXED: CANTAR LO HE LO CANTARE
 c. SYNTHETIC: CANTARE

The first stage corresponds to Latin, where the periphrastic or analytic construction begins to cooccur with the generalized synthetic future AMABO 'I will love'.¹⁴ The second stage, upon

¹² The form HABEBAM is hypothetical, for there was no conditional conjugation in Latin.

¹³ Following Rivero (1986), non-tonic pronouns are considered to be full NP's.

¹⁴ Futurity was also found "implicit in verbs expressing intention or obligation [...] in such verbal combinations as DEBEO CANTARE ['I must sing'], VOLO CANTARE ['I want to sing'], and in the familiar HABEO AD CANTARE, HABEO CANTARE, or CANTARE HABEO ['I have to sing']" (Elcock, 1960:106).

which the present work is concentrated, can be dated back to the earliest 10th Century Spanish texts, and lasted until the 16th Century. The third stage commences in the 17th Century, and holds up to the present state of the language.

The relevant stage is (38b), because it bridges the gap between the purely analytic and synthetic periods. During this time the two variants coexist in 'near perfect' complementary distribution.¹⁵ Analytic futures exhibit the LHM properties presented in section 5.1. These constructions always occur in main clause initial position:

- (39) a. si yo vivo, doblar vos he la soldada
if I live double you will:1s the wage
'if I live, I shall double your wages' (Cid: 80)
- b. et quando la mugier touiere esta ymagen consigo; amar la a aquel omne
and when the woman had this image withself love her will:3s that man
'and when the woman has the image with her, that man will love her'
(Picatrix: 19v88)
- c. et esto fecho, casar-me he con una muger muy fermosa
and this done marry-I will:1s with a woman very beautiful
'and this done, I will marry a very beautiful woman' (Calila: 265, 1.1)
- d. quando se allegare el sol a el fazer se-a sobrel zonte de .c.
when se reach the sun to it:masc do self-will over-the horizon of 100
'when the sun reaches it it will be done on the horizon of one hundred'
(Albaten: 12r15)

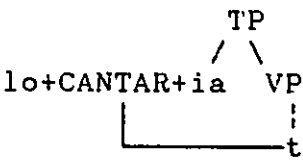
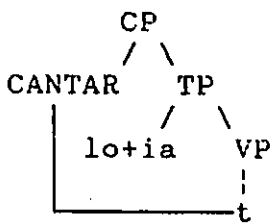
¹⁵ The distribution of the two futures is not perfectly complementary (as was wrongly argued in Lema (1988b)), there are some examples in the literature of CP-initial futures like escalentar-án-se 'they will warm up'. These futures were formed by means of a general [+Finite] V-to-C strategy utilized to place clitics in second position, as in montar-on-se 'they saddled'. When the temporal mark is only affixal, as in the Past, the AfC requires V-to-T and disallows LHM.

Analytic futures are never found in embedded sentences, only synthetic futures, exemplified in (40), appear in this context.

- (40) a. *devemos creer* [_{CP} *que le dar-á Dios buen pago allá*]
 we-must think that to-him give-will God good pay there
 "we must believe that God will give him good pay there"
 (*Celestina*: 1, 245/9)

- b. *que aún verná ora* [_{CP} *que-l veré á-l cantar*]
 that still will-come hour that-him will-see to-he sing
 "that time will still come that I shall see him sing"
 (*Alexandre*: v.159)

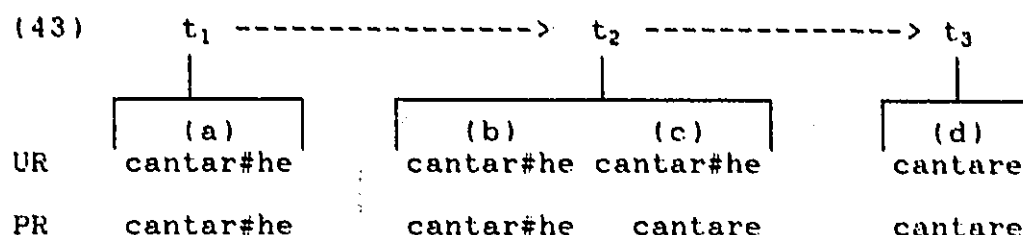
The alternation is due to the coexistence of SHM with LHM. The synthetic futures in (40) are created by incorporating infinitives into temporal auxiliaries, as in (41a).¹⁶ In contrast, analytic futures are the effect of LHM as in (41b). LHM applies to prevent unstressed pronouns from surfacing in CP initial position.¹⁷ SHM applies when the constraint on light formatives is not in jeopardy.

- (41) a.  b. 

¹⁶ This analysis contrasts with the traditional view that Romance futures are fused forms of the infinitive with the auxiliary, created by low-level phonetic or phonological weakening processes aided by contraction. Whether explicitly discussed or simply assumed, this is the view in Meyer-Lübke, (1890); Hanssen, (1913); Menéndez Pidal, (1964); Elcock, (1960); Bourciez, (1967); Benveniste, (1968); Valesio, (1968); Anderson, (1973); Tagliavini, (1973); Coseriu, (1977); Anderson, (1979); Anderson and Rochet (1979); Yllera, (1980); Fleischman, (1982); Alvar and Pottier, (1983); Company, (1986), among others.

¹⁷ The description of what is known as Tobler-Moussafia effects in Romance, dates back to the 19th century. Menéndez Pidal (1964) identifies this constraint in Old Spanish. Recently, Rivero (1986) contributes to the explanation of this phenomenon in Old Spanish.

position. During t_2 , the basic form -or U(nderlying) R(epresentation)- is analytic, with /#/ serving to represent the verb and the auxiliary as different words. At the level of P(honetic) R(epresentation) this form sometimes surfaces as the analytic (43b), sometimes as the synthetic (43c).¹⁹



Menéndez Pidal (1944) also opted for an analysis of the mixed Spanish period, resembling that in (43). For him too, the basic form is the analytic version. The Future is a compound tense formed with the infinitive plus the present -"se forma con el infinitivo más el presente e, hemos, etc."- (Menéndez Pidal, 1964:285). In his work, the explanation given for the existence of analytic futures is the constraint on clitics; in verb initial constructions, the pronoun is placed between the two elements of the future -"el pronombre se coloca entre los dos elementos del futuro [...] yrgelo he"- (ibid.:407). Menéndez-Pidal correctly classifies futures among the other compound conjugations despite its synthetic

¹⁹ The labels UR and PR are used somewhat loosely. Thus UR indicates that the forms presented underlie the PR realizations. UR may be any level of representation except PR.

variant.²⁰ As noted by Hanssen (1913), however, these constructions stand out from among all other periphrastic conjugations because the auxiliary follows the nonfinite verb: cantar-he, while the (aspectual) auxiliary normally precedes the verb, as in he cantado 'I have sung'.²¹

5.3.1.2 Gili-Gaya

The opposite point of view, where the basic form is the synthetic variant, and the analytic the derived one, is sustained solely by Gili Gaya (1961). Gili Gaya recognizes that the synthetic forms are historically derived from the periphrastic constructions "por aglutinación del infinitivo con el presente del verbo haber", (by agglutination of the infinitive with the present of the verb haber), (Gili Gaya, 1961 [1973:165]). He proposes, nonetheless, that the synthetic forms were basic during the period t2, and that they could take interpolated pronouns -"podían llevar pronombres interpolados: encontrar te he = te encontraré" (ibid.)- giving rise

²⁰ Nebrija (1492) classified synthetic futures as periphrastic conjugational forms. This may indicate that futures were not felt as synthetic conjugations at the end of the 15th century.

²¹ Hanssen puzzles over the fact that Perfects with the order V+Aux, as cantado he did not "contract" like Futures and form a synthetic conjugation. Unlike the temporal auxiliaries, Medieval Spanish aspectuals are not affixal, and thus never incorporate. These inversions are stylistic (Lema and Rivero, (1990b)), and are analogous to Icelandic Stylistic Inversions (Platzack, (1990)).

to the analytic versions.²²

(44)

	t1	----->	t2	----->	t3
UR	cantar#he		cantare#lo cantare		cantare
PR	cantar#he		cantarloe cantare		cantare

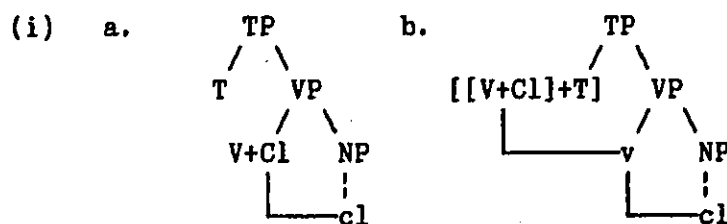
Basically, clitics are inserted -interpolated- into the synthetic forms.²³

5.3.1.3 Valesio

More recently, Valesio (1968), presupposing a period similar to t2 in (42), comes to differ from Meyer-Lübke and Menéndez-Pidal by considering the analytic forms archaic, next to the newly created

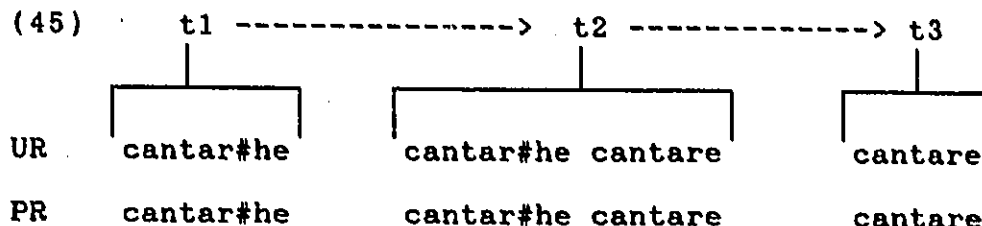
²² The example offered in Gili Gaya is not a case of interpolation. Interpolation of pronouns is movement by an unstressed pronoun over and not into syntactically independent elements: *por lo_i luego t_j uengar* (Alex. 971c); *que ellos te_j non t_j digan en que puede finir* (Alex. 2138c). It is a phenomenon almost exclusively found in subordinate sentences, while analytic futures are almost exclusively found in main sentences.

²³ As argued in Rivero (1986), clitics were NPs during this period. If we were to imagine however that they are X^0 s, as might be the case today, analytic futures could have been formed as in (i). The complement clitic incorporates into the verb, and then the verb moves to T, giving the appropriate order of constituents.



This possibility has two weaknesses, however. It cannot account for the order of morphemes in the synthetic construction, nor for the syntactic distribution of futures.

synthetic forms. He bases his conclusion on the notion of 'usage', arguing that this latter plays a more capital role. The characteristic of his proposal, depicted in (45), is the treatment of synthetic and analytic forms as being systematically unrelated.



Likewise, Company (1986), has reached similar conclusions on the basis of a distributional description. In her analysis, the two forms are explicitly treated as contrasting forms which may be alternatively found in certain syntactic contexts, and therefore they are considered to have "emic" status. Despite the novel attempt to account for the phenomenon in syntactic terms, the analysis is problematic in that the distribution of analytic futures, always formed with clitics, is compared with that of synthetic futures regardless of whether they have clitics or not.²⁴

²⁴ Rossi (1975) examined the syntactic distribution of these structures, and concluded that synthetic futures in main sentences were preceded in most cases by emphasized constituents. There are of course many contexts where emphasis is not associated with the initial element. This analysis is partly correct, for LHM does not apply when emphasized subjects and topicalized XPs appear before the clitic, but misses the point that LHM does not apply when non-thematized elements appear before the clitic. Such is the case with non-emphatic subjects, negation, Wh-words. In fact, Rossi's comments could be interpreted to indicate that Medieval Spanish was a Topic-Comment language, but this is not the case, for in the absence of clitics, there is no movement to C, nor the need for an XP to precede the verb; verbs surface often sentence initially, as in (i):

(i) Dize Sant Gregorio en el *Dialogo* que un sacerdote...
Says Saint Gregory in the *Dialogue* that a priest...

The contrast is observed, however, because futures without clitics, which are synthetic by definition, appear without restriction in all sentential positions, and are thus found in the same positions as the contextually restricted analytic futures. The analysis of these forms is more successful if only the two versions of futures with clitics, i.e. cantar lo he and lo cantare are examined.

The general view advocated by Meyer-Lübke and Menéndez Pidal, essentially represented in (43), is taken here to be basically correct. The formation of futures must be handled, however, from a syntactic point of view. Establishing the relation between the two forms purely on morphological grounds obscures the true character of the alternation.

5.3.2 Auxiliary to Affix Transformation

In a historical perspective, a series of syntactically free conjugated auxiliaries are transformed into bound temporal affixes. During the mixed stage t₂, the status of the future and conditional formatives alternates between the two poles of the [$\pm$ Free] opposition: they surface as free auxiliaries in analytic futures, and as incorporated forms, simulating affixes, in synthetic futures. During t₂, there is a tension between SHM and LHM. The former is part of a move towards the generalization of synthetic forms and the concomitant conversion of temporal auxiliaries into affixes; the latter is to maintain the free status of temporal auxiliaries due to the independent existence of a CP-initial constraint on clitics. When this constraint ceases to apply near

the end of the 16th Century, incorporation becomes general, and the transformation of auxiliaries into affixes is complete.²⁵

The involvement of SHM in the formation of synthetic futures during the mixed period, can be regarded to be optional in the sense that the incorporation is not required by the AfC. Temporal auxiliaries do not require support like their affixal counterparts. They clearly surface as free forms under LHM. However, whenever LHM is not required to comply with the CP-initial constraint on clitics, SHM applies regularly. There are no cases where the infinitive remains optionally in its D-Structure position. Examples like (46), where the (capitalized) infinitive follows a form of HABER, are not to be regarded as futures without movement, as has generally been the tradition since Menéndez-Pidal.

- (46) El Campeador a los que han LIDIAR tan bien lo castigó.
 The Campeador to those that have:3p to:fight also them admonished
 'The Campeador also punished those who had to fight'
 (Cid: v.3523)

In her study of 13th Century Biblical translations, Rossi (1975) shows that this type of pattern was felt by the Medieval translator as modal -obligation- rather than temporal. While Latin futures were regularly translated either as analytic (LHM) or synthetic (SHM) futures, Latin active periphrastic constructions like (47a)

²⁵ Because the distribution of the free and incorporated forms is clearly morpho-syntactically regulated, a non-syntactic lexical account of inflection and incorporation such as that in Di Sciullo and Williams (1987) cannot be maintained. The fact that analytic futures do not occur in relative clauses, for example, is clearly beyond the descriptive capacity of lexicalist views of inflection.

were rendered into Old Spanish by means of aver + infinitive, as in (47b); and Latin patterns with futurus- a - um + esse, (48a), were rendered by aver de seer 'to have to be', as in (48b). The conclusion to draw from this is that the non-incorporated use of haber was modal, whereas the auxiliary seen in SHM and LHM is temporal.

- (47) a. Audite quoniam de rebus magnis locutura sum Prov 8:6
 b. Ascuchat, ca vos e a fablar grandes cosas
 Listen, since you I:have to tell big things
 'Listen, since I have important things to tell you'
- (48) a. Quid est quod fuit? Ipsum quod futurum est Ecl 1:9
 b. Qué es lo que fue? Aquello que a de seer
 What is it that was? That which has Prep be
 'What is that was? That which has to be'

Rivero (1989b) presents as evidence in support of this position, the fact that the first and second plural persons of the paradigms of the future auxiliary differed from those of the modal in (46). The temporal forms (h)emos and (h)edes/(h)eis contrasted with the modal forms (h)avemos and (h)avedes/(h)aveis.

Lema and Rivero (1989, 1990a), suggest that the regular application of SHM in Old Spanish futures is performed to create the required trace-variable to satisfy the quantificational property of Tense, which is assumed to be an operator à la Pollock. In this thesis, however, this solution cannot be embraced because Tense is not viewed as an operator that requires to bind a variable. The reason why SHM applies in all cases where LHM need not prevent clitics from surfacing sentence initially cannot be established. Perhaps there is a constraint that requires movement

to take place when possible. When there is no constituent to the left of a clitic, LHM must obligatorily apply, for otherwise the constraint on CP-initial clitics is violated. Only in those instances where LHM is not required to apply, does incorporation proceed. Notice that the AfC is not violated when SHM does not apply, evidencing that future and conditional formatives are not affixes during t_2 . These formatives are nonetheless lexically subcategorized as hosts for an incorporated X^0 . Movement applies only when the syntactic structure permits it, that is when LHM does not "bleed" SHM. Whenever SHM can apply, it does. As observed, LHM is not a last resort operation, cf. Chomsky (1988). Although the movement prevents the generation of structures that would otherwise violate the CP-initial constraint on morphologically light elements, it acts in the manner characteristic of syntactic α -movement, and is "earlier" than SHM.

5.4 The Status of Negation in English

5.4.0 Introduction

I will address certain questions concerning the syntactic status and behaviour of negation in English. In particular I will examine some of its morphological and semantic correlates in an attempt to provide an answer to some of the problems raised by its particular location below T. As observed in (49), English negation is to the right of finite auxiliaries, and in this respect contrasts, for example, with languages like Spanish, see (50).

- (49) a. John has NOT read the book.
 b. John was NOT reading the book.
 c. John did NOT read the book.

- (50) a. Juan NO ha leído el libro.
 b. Juan NO está leyendo el libro.

As proposed originally by Klima, on the basis of evidence like that in (51), finite auxiliary formation in English assumes the form of raising. In (51a), with a modal in Infl, non-finite HAVE surfaces below the negation -presumably in its basic position-; in (51b), without the modal, finite HAVE has apparently raised to Infl. We will assume a derivation similar to (52) for (51b), where Aux-movement is an instance of Head Movement that proceeds over Neg.

- (51) a. John must NOT have been reading the book.
 b. John had NOT been reading the book.

- (52) John had, NOT t_1 been reading the book.

The negation in derivations similar to (52) will be shown to be an X^0 , and the movement effected will be included among LHM phenomena.

5.4.1 Previous accounts

5.4.1.1 Chomsky (1988)

Assuming negation to be an X^0 that heads NegP below TP, Chomsky interprets Aux-movement as in (52) to violate the HMC, but argued, adopting Lasnik and Saito's (1984) gamma-marking convention and a

problem in this language. On the one hand he suggests that if not is the head of NegP, that a version of Rizzi's Relativized Minimality must be adopted in order to explain how the auxiliary can skip negation. On the other hand, he tells us that strict adherence to Rizzi's theory would require us to place not in the specifier of NegP, and allow movement of auxiliaries via its empty head, somehow as represented in (54). If the latter solution is adopted, Aux-movement over NOT is unproblematic for the HMC and for Relativized Minimality.

(54) John [_{TP} has_i [_{NegP} not [_{N'} t_i [_{t_i} [read the book]]]]]

We will argue further below that there is a negation in English that can be adjoined to phrases like VP, but whose properties are quite different from those of sentential negation. We consider it to be adjoined to phrases and not in their specifier because the specifier of VP, in particular, is occupied by the subject. Sentential negation is situated in the head position of NegP, and a version of Rizzi's Relativized Minimality, one based on the FMC, is endorsed.

5.4.1.3 Ouhalla (1990)

More recently, Ouhalla has circumvented the problem by proposing that aspectual auxiliaries are in fact generated above Neg, as portrayed in (55), that Neg is not in the path of Aux-to-T, and

therefore that neither the HMC nor RM are threatened by the movement.

(55) John [_{TP} has_i [_{AspP} t_i [_{NegP} not [read the book]]]]

Recall, however, that in Chapter 2, the position of AspP is argued to be directly above VP.

The forthcoming discussion on negation will show that the facts should not be interpreted according to the HMC and RM; also, that it cannot be concluded that sentential negation in English is not the head of NegP, nor that it must be situated below auxiliaries despite evidence like (51). Instead, a solution will be offered where LHM applies and where the FMC is the relevant principle at stake.

5.4.2 Sentential and Phrasal negation in English

First and foremost, the proposal of two English negations requires a separate characterization of each of them. One, S(entential)-Neg heads a maximal projection, presumably a NegP, as in Chomsky's (53a); thus Aux-to-T movement has to be an instance of LHM. The relevant properties of S-Neg are that it has wide scope; that it moves in Syntax as an X⁰; and that it has the morphological property of contracting. Two, P(hrasal)-Neg is adjoined to AspP or VP; it is somewhat parallel to Pollock's (54), and any potential movements over it are not instances of LHM. P-Neg has narrow scope, it is syntactically inert, and does not contract. Most of the facts

discussed in the present analysis are drawn from Horn (1989); the syntactic interpretation of the data is nonetheless ours.

Consider the sentence (56). It is ambiguous, as it allows the two interpretations presented in (57); negation can have wide scope and be interpreted above the auxiliary in T, (57a), or it may have narrow scope, and be situated below the auxiliary in T, (57b).

(56) John has not accepted his guilt.

- (57) a. NOT [PAST [ACCEPT John, his guilt]]
 b. PAST [NOT [ACCEPT John, his guilt]]

In fact, the contrast of scope in (57) ensues as a direct consequence of the particular syntactic location of Neg. Examples (58), with two negations, sustain this conclusion. In general, sentences like these have the first negation stressed, (58a), or contracted, (58b). A sentence is apparently not acceptable if the two negations are not contrasted, see (58c).

- (58) a. John could NOT not steal.
 b. John couldn't not steal.
 c. ?/*John COULD not not steal.

The following series of tests constitute ample justification to our explanation of the ambiguity in (56); that is, as being the effect of Neg bearing different syntactic locations. It must be noted, before entering into the discussion, that our analysis allows for more than two positions for negation in a sentence, and also for more than two negations to be simultaneously present. In (59), we can see that not can appear to the left of any of a series

of auxiliaries and verb.²⁶ Given (59), examples (60) must be possible.²⁷

- (59) a. John must not have been criticized.
 b. John must have not been criticized.
 c. John must have been not criticized.
- (60) a. John must not have not been criticized.
 b. John must not have been not criticized.
 c. John must have not been not criticized.
 d. John must not have not been not criticized.

5.4.2.1 Location of Negation Relative to Adverbs

First, (61a) and (61b), with an aspectual and a modal in T respectively, exemplify that a negation may surface above certain adverbs; (62) indicates that a position for negation is also available below these same adverbs. Example (63a), John couldn't simply not steal, shows that two negations may cooccur. The ungrammaticality of (63b,c) is proof that where two negations cooccur in sentences with adverbs, one must be above and the other below the adverbs.

- (61) a. John hasN'T/has NOT emphatically/always accept his guilt.
 b. John couldnN'T/could NOT often pass his students.

²⁶ My informants tell me that sentences (59) have different semantic properties, though they cannot identify their exact nature. Ambiguity is clearly detectable when negation is viewed in relation with T, and most particularly with modals. When negation is adjoined to AspP, its scope is not only the aspectual element itself, but the structure contained by AspP. In (59b) the negated constituent is been criticized, not only been.

²⁷ Cognitive factors independent of Language must play a role restricting the use of sentences with multiple negations. Interestingly, my informants accept examples such as Hasn't Mary not done it?, with one negation in C with wide scope, more readily than any of the other alternatives, including Mary hasn't not done it.

- (62) a. John has emphatically/always NOT accept his guilt.
 b. John could often NOT pass his students.
- (63) a. John couldN'T/could NOT simply NOT steal.
 b. *John could simply NOT NOT steal.
 c. *John could NOT NOT simply steal. (not not-simply)

In (61a) and (61b), the negation above the adverb may have wide scope and contract, in this instance it is a S-neg. In contrast, the negation below the adverbs in (62a) and (62b) does not have wide scope, and does not contract. Contraction can be viewed as Head-to-Head movement, and not structurally possible if it involves a Head and an element adjoined to a phrase below it. Notice that whereas contraction is possible in (64a) with have, it is not possible in (64c) corresponding to (64b).²⁸

- (64) a. They haven't arrived.
 b. They must have not arrived.
 c. *They must haven't arrived.

5.4.2.2 Tags and Continuations

The following tests show that examples with a S-Neg have the syntactic properties of affirmative sentences, whereas examples with a P-Neg have the properties of affirmative sentences.

²⁸ It is of course possible to suggest that contracted negation is generated in TP when a modal appears in the sentence, otherwise that it is generated on the head that moves to TP, that is in VP for copulas and AspP for aspectuals. This potential analysis would require preventing forms such as *John couldn't haven't gone.

Alternatively it can be suggested that contracted negation is in T, and that it is distinct from the free negative that may also have wide scope. This view is interesting for it allows different D-Structures with identical semantic counterparts.

Negative/Positive-Tags. Examples (65) show that Negative-Tags follow affirmative sentences, and Positive-Tags must follow negative ones. The contrast between (66a) and (66b) is expected: a sentence with a negation above the adverb, a S-neg, must be followed by a Positive-Tag. On the other hand, (67) shows that a sentence with negation below the same adverb, a P-Neg, must be followed by a Negative-Tag, and thus that it is an assertion.

- (65) a. John has arrived, hasn't/*has he?
 b. John hasn't/has not arrived, *hasn't/has he?
- (66) a. John couldn't/could not simply call a cab, could he?
 b. *John couldn't/could not simply call a cab, couldn't he?
- (67) a. John could simply (not) call a cab, couldn't he?
 b. *John could simply (not) call a cab, could he?

(In (67), the potentiality of John calling a cab is not negated, what is negated is only the VP, i.e. the act of calling.)

Neither-Continuations. Similar effects are observed with Neither-Continuations, which must follow negative sentences, as in (68a). If, instead, they follow a positive sentence like (68b), an ungrammatical outcome ensues. As predicted, sentence (69) with a S-Neg allows the Neither-Continuation, while (70) with P-Neg, does not.

- (68) a. John hasn't/has not called, and neither has Peter.
 b. *John has called, and neither has Peter.
- (69) John couldn't/could not simply call, and neither could Peter.
- (70) *John could simply not call, and neither could Peter.

So-Continuations. The behaviour of So-Continuations is the mirror image of those with Neither. Sentences with a P-Neg, cf. (71a), may be followed by a clause introduced by So, whereas those with a S-Neg, cf. (71b), may not. (72), with the P-Neg below the adverb simply, correctly admits a So-Continuation, while (73), with the S-Neg, does not.

- (71) a. John has arrived, and so has Peter.
 b. *John hasn't/not arrived, and so has Peter.

(72) John could simply not phone, and so could Peter.

(73) *John couldn't/could not simply phone, and so could Peter.

Not Even-Continuations. The negated sentence (74a) may be followed by a Not Even-Continuation, the affirmative one (74b) may not. Example (75), with a S-Neg, licenses a NOT EVEN continuation, but (76), with the P-Neg does not.

- (74) a. John hasn't/has not answered, not even once.
 b. *John has answered, not even once.

(75) John couldn't/could not simply answer, not even once.

(76) *John could simply not answer, not even once.

In general, different polarity effects are obtained depending on the location of negation in the sentence. Our view that these effects should be correlated with the existence of two separate negations, will be strengthened in the following discussion.

5.4.3 Phrasal negation

5.4.3.1 Pseudo-clefts

Pseudo Clefts allow us to isolate the two negations under examination, and to situate the narrow scope P-Neg inside VP. Sentence (56), repeated here, has two possible analyses: (77a) with a S-Neg, and (77b) with a P-Neg.

(56) John has not accepted his guilt.

- (77) a. John has [not accepted his guilt] (he swore he was innocent).
 b. John hasn't [accepted his guilt] (but will eventually).

The two Pseudo-cleft versions of (77a,b) are presented in (78a,b). In (78a), negation has narrow scope, and is situated with the rest of the VP material.

- (78) a. What John has done is [not accepted his guilt].
 b. What John has not done is [accepted his guilt].

5.4.3.2 VP-preposing

VP-preposing structures demonstrate that narrow scope negatives are transported along with the moved VP, and therefore that they are part of this phrase. The introductory sentence in (79), which has a P-Neg, must be followed by the VP-preposing version (79a), where negation is carried by the VP, but not by (79b) where negation is not in VP.

- (79) They said the president could have not signed the treaty, and
 a. [_{VP} not signed the treaty]_i he could have t_i.
 b. *[_{VP} signed the treaty]_i he couldn't have t_i.

Contrary to it, the introductory sentence in (80), where negation is sentential, must be followed by a VP preposing version where the negation is not carried along with the VP, as proven by the ungrammaticality of (80a).

- (80) They said the president couldn't have signed the treaty, and
 a. * $[_{VP}$ not signed the treaty] $_i$ he could have t_i .
 b. $[_{VP}$ signed the treaty] $_i$ he couldn't have t_i .

5.4.3.3 Absence of Contraction

Narrow scope P-Neg cannot contract. If we examine (81a,b), the Pseudo-cleft examples in (78a,b), we notice in particular that only (81b) with S-Neg, allows contraction of negation and the auxiliary. In (81a), where the negation is adjoined to VP, rather than an X^0 in a Head-to-Head relation with the auxiliary, contraction is barred.

- (81) a. *What John has done isn't accepted his guilt.
 b. What John hasn't done is [accepted his guilt].

Similar results obtain in examples where P-Neg is adjoined to the AspP headed by been, (82), and/or the VP headed by visited, (83).

- (82) a. Could $_i$ our neighbours [$_T$, t_i have not been invited].
 b. *Could $_i$ our neighbours [$_T$, t_i haven't been invited].

- (83) a. It would have been a shame [$_T$, to have not visited Paris].
 b. *It would have been a shame [$_T$, to haven't visited Paris].

Notice also that P-Neg cannot contract whether the auxiliary to its left is finite, (81a), or non-finite, (82b) and (83b). To conclude briefly, P-Neg has always narrow scope; it is part of VP in Pseudo-Cleft and VP-preposing structures; and it cannot contract.

5.4.4 Sentential Negation

5.4.4.1 Movement to C and Contraction

Subject-Inversions like those in (84a) and (85a) occur in root constructions as a result of X^0 -movement by auxiliary from T-to-C.

- (84) a. Has he arrived?
 b. He wondered if he had arrived.
 c. *He wondered if had he arrived.

- (85) a. What has he bought.
 b. He saw what he had bought.
 c. *He saw what had he bought.

Notice that in negative questions like (86), the auxiliary carries negation to Comp along with it. If negation surfaces in the C^0 -position, it must be part of the complex X^0 , and be itself an X^0 .

- (86) a. Hasn't John read the book?
 b. Where isn't she going?²⁹
 c. Didn't the police arrest him?
 d. Why Couldn't they do it?

²⁹ There is an interesting contrast between yes-no questions like (66a), and Wh-questions (66b) above in the text. The former, included herein in (ia), can have a non-contracted wide scope negation in situ, as in (ib). The latter, (iia), cannot have a wide scope reading when Neg is not carried to C, (iib).

- (i) a. Hasn't John read the book?
 b. Has John not (always) read the book?
 (ii) a. Where hasn't John gone?
 b. Where has John not gone?

The contrast between (86) and (87) shows that only contracted negation can surface in C, indicating that these negations are incorporated in the auxiliary, and as such are X^0 s.

- (87) a. *Has not John read the book?
 b. *Where is not she going?
 c. *Did not the police arrest him?
 d. *Why Could not they do it?

Similarly, the Neg/Pos-Tags (88), which are also root constructions produced by movement to C, situate the negation at the X^0 -level in C.

- (88) a. John has read the book, hasn't he?
 b. John could have read the book, couldn't he (have)?

Once again, contraction is obligatory in structures like (89), corroborating the fact that for Neg to reach C, Neg-to-Aux incorporation must previously apply. As seen in (89c), negation need not necessarily form a compound with the auxiliary and raise to C.

- (89) a. *John has read the book, has not he?
 b. *John could have read the book, could not he (have)?
 c. John could have read the book, could he not (have)?

5.4.4.2 Wide Scope

Questions with double negatives provide further evidence that the Neg in C in (90a) is the S-Neg correlated with wide scope. Sentence (90b) confirms that the negation below the adverb is a P-Neg, and

therefore that the other negation originates above the adverb. The impossibility of having a contracted negation in C and another directly above the adverb, as in (90c), justifies our assumption that these two elements are one and the same.

- (90) a. Couldn't John not go to the party?
 b. Couldn't John simply not go to the party?
 c. *Couldn't John not simply go to the party? (not not-simply)

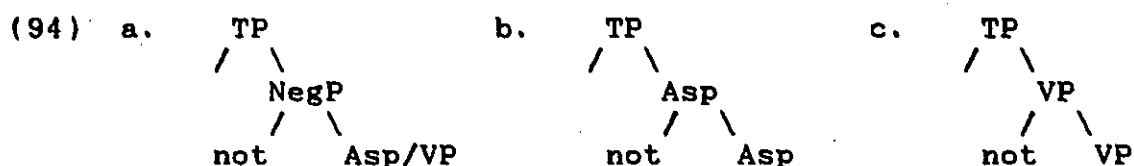
The negation in C does, in fact, have wide scope. Sentence (91a), though potentially ambiguous, has only the narrow scope interpretation (91b). The use of INSTEAD after the VP2 conjunct forces NOT to be interpreted as a VP1 narrow scope P-Neg. Notice, in (92a), that the contracted negation in C does not permit the narrow scope reading imposed by INSTEAD, and is therefore ruled out.

- (91) a. Could the president not sign the document and do it tomorrow INSTEAD?
 b. COULD the president [[NOT-VP1] AND [VP2 INSTEAD]]
- (92) a. *Couldn't the president sign the document and do it tomorrow INSTEAD?
 b. *NOT[COULD the president [[VP1] AND [VP2 INSTEAD]]]

Not Even-Continuations, which may only follow sentences with a S-Neg, cf. 5.4.2.2 above, also provide evidence that the negation in C has wide scope:

- (93) a. Couldn't John answer the phone? not even once?
 b. *Could John answer the phone? not even once?

As a preliminary conclusion, S-Neg has wide scope, contrary to P-Neg. In subject inversion constructions, S-Neg is part of the X^0 in C, and is thus an X^0 itself. A prerequisite for negation to reach C is that it contract with an auxiliary and, as we argue, contraction is incorporation. We propose that S-Neg heads a phrase situated between TP and the lexical Phrase below it, which may be AspP or VP, (94a). P-Neg is adjoined to AspP or VP as in (94b), and may appear in both phrases, see (59) and (60) above.³⁰



Having now established certain parameters to identify the two negations of English, we can proceed to examine, in some detail, the syntactic properties of X^0 -movement operations involving S-Neg.

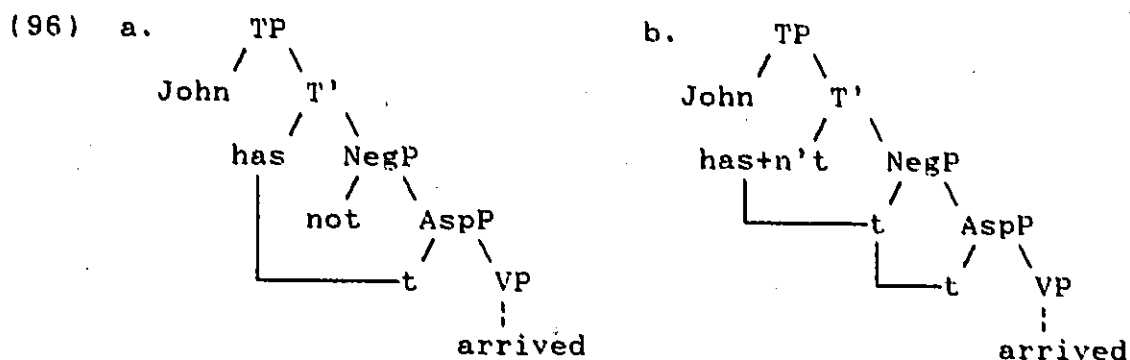
5.4.5 Head Movement and Negation

The fact that negation in sentences like (95a) can have a wide scope reading, and that the negation in (95b) has wide scope, indicates that S-Neg has two allomorphs: syntactically free NOT, and incorporated N'T.

- (95) a. John has not arrived.
b. John hasn't arrived.

³⁰ This proposal is parallel to Zanuttinni's (1989) analysis of Romance negation. The difference between the two accounts are a) the location of S-Neg, which in Romance is above TP, and b) the placement of P-Neg by Zanuttinni, in Agr instead of Asp/VP.

The derivation of sentence (95a), with a free S-Neg, is realized via LHM as in (96a). For the sake of clarity, Neg-incorporation is first depicted as sequential head-to-head movement by Aux-to-Neg-to-T in (96b).



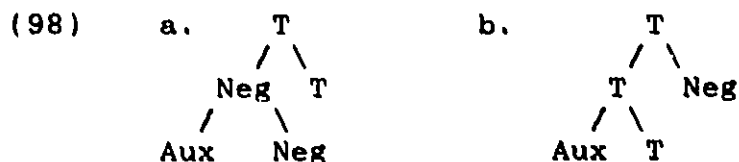
Our contention is that LHM (96a) appropriately accounts for (95a), and that the derivation satisfies the ECP because it complies with the FMC: since negation is non-lexical, it does not block proper government of the trace by the aspectual auxiliary. In addition, we claim that (96b) is not a correct derivation of (95b) because it violates the Mirror Principle (97) (even though it does conform with the HMC and RM).

(97) Mirror Principle (Baker, 1985a)

Morphological derivations must directly reflect syntactic derivations (and vice versa).

If the derivation of contracted forms follows in a head-to-head fashion, as in (96b), negation would be attached to the base of the auxiliary prior to movement to T/Agr, and would surface in the

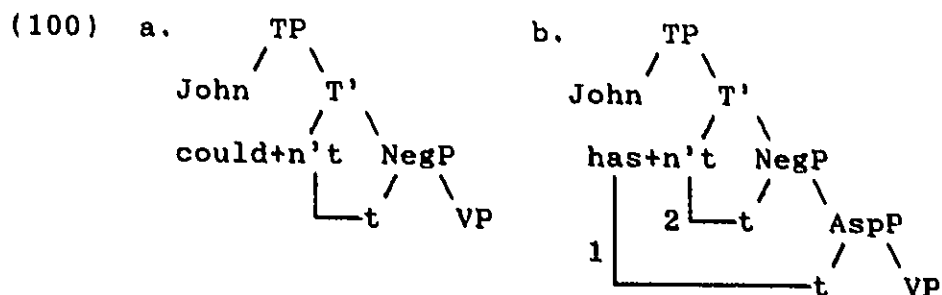
middle of the word, as in (98a), rather than on its edge, as in the expected (98b).



Notwithstanding the different location of modals and aspectuals with regards to negation -the former above it, the latter below-, examples (99a) and (99b) show that negated aspectuals and modals are morphologically parallel: the auxiliary with T/Agr markings is internal to the contracted negation, as in (98b). To capture this property, similar incorporation processes must underlie the formation of compounds like (99b).

- (99) a. John couldn't read the book.
 a'. Couldn't John read the book?
 b. John hasn't read the book.

Since modals are generated in TP, Negative Contraction -or rather incorporation- with these elements must proceed as in (81a): negation raises directly to the modal host in TP, where such derivation respects the Mirror Principle (and also the HMC and RM). Notice, that Neg-raising is syntactic α -movement since it applies prior to movement to C, (99a'). In order to capture the parallel between negated modals and aspectuals, the derivation (81b) must be postulated instead of (96b).



The derivation (100b), though apparently more complex than (96b), also proceeds in two steps. The derivation is complex only in the sense that it requires the application of two independently motivated X^0 -movements. First LHM of Aux-to-T applies over the negation -cf. (96a)-, motivated by the AfC. This movement is followed by an otherwise independent operation of Neg-raising (100a), that attaches the negation onto the element heading T.³¹

It appears to be of crucial importance that LHM override the application of a sequential SHM in these derivations, specially in the light of the fact that the allomorph N'T is not syntactically free, and that its raising is thus independently motivated by the

³¹ Baltin (1982) proposes that movement rules are regulated language internally by means of statements that condition the landing site of the moved element. For French, he proposes that clitics move to the left periphery of V, an assertion confirmed by data such as (i). Things, however, are not as regular. For instance, Spanish cliticization applies sometimes to the left, sometimes to the right of V, see (ii). Nahuatl (iii) shows that some tense morphemes appear to the left of V, while others appear to its right. While Baltin's theory accounts for many facts of many languages, there is also evidence that the order of X^0 -elements in compounds is often construction or morpheme dependent.

(i) a. Il le voit venir. (ii) a. Lo ve venir.
b. Il veut le prendre. b. Quiere cogerlo

(iii) a. ni-choc-a a. o-ni-choc
I-cry-Present b. Past-I-cry

AfC. It is probably vital that Neg c-command T word internally, as in (98b). If so, LHM applies in the context of negation to block generation of semantically deviant forms like (98a).

5.4.6 Negation: Lexical Status and Transparency

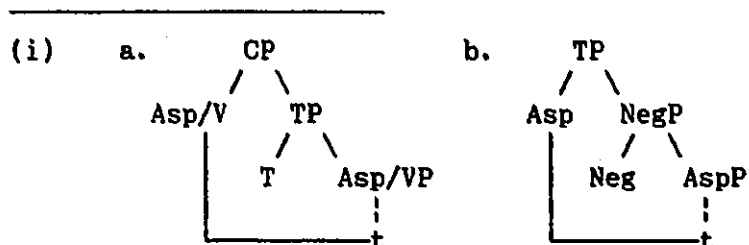
We will briefly inspect certain consequences of our analysis related to the lexical specification of negation. We will comment on the role of negation, or rather on its apparent passivity, in the process of selection; and we will evaluate two proposals that contrast with our views because they consider negation to be a barrier to X^0 -movement.

5.4.6.1 Negation and Selection

The analysis developed herein makes a strong case in favour of a X^0 -Neg not being a barrier to X^0 -movement in English. As we have maintained throughout this thesis, syntactic categories must be defined according to the two features [$\pm$ Lex] and [$\pm$ Fun]. Since aspectual auxiliaries can properly govern their trace over an intervening negation, we must deduce, in accordance with the FMC, that negation must be [-Lexical]. The conclusion seems adequate in view of the fact that Negation, like Tense, has no "descriptive content", that it is an operator with a purely functional role.³²

³² Roberts (1990) attempts to explain Romance LHM by subjecting X^0 s to the A/A-bar distinction. Briefly, and in a simplified version, Roberts claims that V-to-C in (ia) is A-bar movement over the A-head T. Thus, T is not a potential governor, and the verb in C properly governs its trace.

The location of S-Neg in the sentence is symptomatic of its [-Lex, +Fun] properties. Consider the fact that it does not enter into selectional relations with [+Lex] categories, a property that excludes it from the lexical layer, where all heads and complements are selectionally imbricated. Sentential negation must situate itself in the functional layer, and as such will always be at least above AspP. Similarly, Phrasal Negation does not play a role in selectional processes, it is adjoined to maximal projections. Excluded from the lexical layer, sentential negation does not seem



This solution is problematic in at least two respects. First, the model wrongly predicts that LHM by an auxiliary to C over modals, as in English (iia), and movement by V-to-C in Slovak (iii) should be grammatical, for these would be instances of A-bar movement over A-heads.

- (ii) a. *Have_i must t_i John?
b. Must_i John t_i go?

- (iii) a. Ja som bol napísal list
I have:Pres have:Part write:Part letter
b. *Napísal_i som bol t_i list
'I had written the letter'

Second, this theory cannot account for LHM (ib), nor explain the English data discussed here in 5.3. Consider that T is an A-position in Roberts' terms, for it allows A-bar V-to-C movement in (ia); as a consequence, Aux-to-T must be A-movement, and the negation in its path, an A-bar head, for it does not block proper government. However, if negation is A-bar, and T is an A-head, Neg-to-T raising (80) in the text, would be A-bar movement to an A-position, producing a binding violation. Attempting to solve the problem by reformulating RM, as Roberts does, is an appropriate move, but the distinction on which to establish RM for X⁰s must be a property of heads, e.g. the [±Lexical] contrast, and not the stipulated A/A-bar property of Phrases.

to be constrained to occupy any particular position, the reason being unclear. It seems, however, that the morphological properties of negation in a particular language may, at least, conspire to determine its location in the sentence. We would like to venture the idea that the free vs. bound distinction discussed in terms of T and Asp, may be at the root of this question. Consider, to illustrate this possibility, the asymmetric location of negation between Spanish and Bulgarian, on one hand, and English and Slovak, on the other. The negation of Spanish and Bulgarian is regularly above Tense, it is syntactically free, and does not participate in X⁰-movements:

(101) Sp: a. Martín no había estado escribiendo la carta
 Martin neg had been writing the letter

B: b. Ne sum procel knigata
 Neg have:1s read book:the

c. *Procel, ne sum t_i knigata

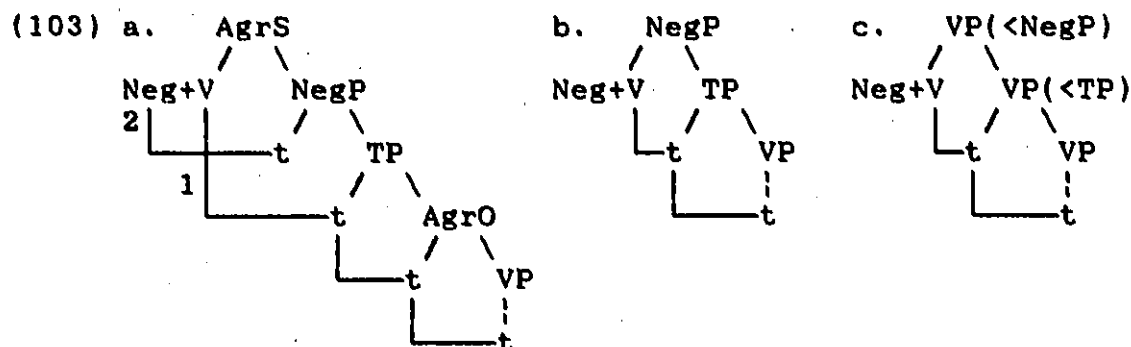
In English and Slovak, Sentential Negation is situated below T, as illustrated by (102a) and (102c); it has at least an affixal allomorph, cf. (102b) and (102d); and it participates in X⁰-movements. English (102b) and (102c) show the two forms of X⁰-movement involving S-Neg discussed in this chapter, and Slovak (102e) features a Slavic affixal negation involved in X⁰-movement. As demonstrated by Rivero (1991) for Serbo-Croatian, Slavic affixal negation moves along with the verb to C under LHM conditions, as in Slovak (102e).

- (102) Eng: a. Max has_i not t_i been writing the letter.
 b. Max has_in't t_i been writing the letter.
 c. Has_in't Max t_i t_i been writing the letter.

- Sl: d. Ja som ne+napísal list
 I have:1s Neg+write letter:the
 e. Ne+napísal_i som t_i list

We cannot explain why there appears to be a correlation between the morphological status of negation, and its syntactic location. Belletti (1991), after Moritz (1989), accounts for the placement of negation in Italian, which is like Spanish (101a) and Bulgarian (101b), by placing NegP between AgrS and TP, as in (103a). Belletti proposes a two-step derivation, where Neg is skipped by V, and then Neg, a clitic in her view, raises to the left of V (see Pollock (1989) for a similar two-step proposal for French). The status of Neg as a clitic in these languages is not clear; the fact that nothing -but clitics- intervenes between Neg and V is not necessarily proof that the items are joined. Notice, however, that her proposal is not adequate for situations where Neg is clearly affixal, cf. (102b), nor for those where skipped Neg is not an affix, cf. (102a). The appeal of Belletti's proposal lies, however, in that it accounts for the order of elements, while placing the subject in the specifier of AgrS. In this respect, it may be intuitively better than an analysis similar to (103b), where NegP is above T (and Agr), and the subject must surface in the specifier of NegP. However, if negation in languages like Spanish is in fact a clitic, cf. Zagana (1988), the Category Switching analysis allows

us to postulate D-Structures similar to (103b), and derived structures like (103c), where the subject surfaces in the specifier of VP, not of NegP.³³



5.4.6.2 Clitic-Movement and Negation

Kayne (1989a) argues that (104) is ungrammatical because clitic climbing, for him an X^0 -movement, is blocked by the intervening ne.

(104) *Jean/celà l'a fait (ne) pas manger à l'enfant.

Though sentences like (105) prove that ne is an X^0 -Neg that surfaces in C as part of an X^0 in subject-inversions, the ungrammaticality of (104) need not be due to the fact that this element blocks the movement. Consider that the clitic must also skip the P-Neg pas, and that this may be reason behind the unavailability of (104).

(105) N'écoutent-ils pas ses conseils.

³³ See Rivero (1988) for another proposal to situate NegP above T, while allowing the subject to be in the specifier of IP.

For example, it is claimed in Treviño (1991), that, for Spanish, clitic-climbing is a complex operation that involves both XP and X⁰ movements. Examples like (106), where the clitic skips negation, are explained by the fact that the first step of clitic-climbing is XP-movement through an available specifier, from where an X⁰-movement places the clitic on the verbal host. In light of this analysis, the ungrammaticality of (104) above, may be in the fact that the phrase containing the clitic cannot transit through the specifier occupied by pas.

- (106) El presidente lo_i podría no firmar t_i.
 the president it:cl could not sign
 'The president could not sign it'

5.4.6.3 LHM and Negation

Lema and Rivero (1989, 1990a) and Rivero (1991) maintain that negation is a barrier to (L)HM. The arguments are based a) on the observation by Menéndez-Pidal (1964) and Rossi (1975) that negated analytic futures and conditionals are never found in Old Spanish, and similarly b) that languages like Bulgarian do not exhibit LHM in negated sentences like (107a). The ensuing conclusion is sustained by the fact that applying LHM over Neg, as in (107b), produces an ungrammatical sentence.

- (107) a. Ne SUM procel knigata
 Neg have:Pres:1 read book:the
 b. *procel ne SUM t_i knigata
 'I have not read the book'

Within the present study, the absence of LHM in negated Old Spanish structures parallel to (107a), is explained by acknowledging the fact that negation is not a morphologically light formative, hence its presence in front of a clitic is sufficient to satisfy the Tobler-Moussafia constraint. This is demonstrated in (108), where negation appears in front of a clitic:

- (108) No me hinchas las narizes con essas memorias
 not me swell-up the nose with these memories
 'Do not bother me with those memories'
 (Celestina: II, 102/11)

Similarly, example (107a) shows that negation in Bulgarian is not light: and this fact alone is sufficient to not trigger LHM. Notice also that parallel results to those in (107b) are obtained in (109b), where the subject NP is skipped by LHM.

- (109) a. Az sum procel knigata
 I have:pr:ls read the:book
 b. *Procel_i az t_i sum knigata
 'I read the book'

Clearly, it must be the case that subjects satisfy the CP-initial constraint on light elements, thus, LHM is not licensed under these conditions (for LHM is not an optional operation).

5.5 Conclusion

This chapter offered an analysis and unified two apparently distinct types of LHM: Romance or Slavic Asp/V-to-C over T, and English Aux-to-T over S-Neg. The two types of LHM are triggered

by different factors, though both serve ultimately the function of supporting other morphological elements. LHM-to-C applies in some Romance and Slavic languages to support morphologically light pronominal clitics and temporal auxiliaries, producing Tobler-Moussafia Cl-2 and Wackernagel Aux-2 effects. Aux-raising over Neg in English complies with the AfC. It was shown that the two operations are instances of movement of lexical over non-lexical heads. It was argued that the FMC is the relevant underlying principle that licenses (L)HM. This principle reflects the requirement that anaphoric binding is possible only if the elements involved are categorially alike. Only analogous [α Lex] X⁰s can form a chain. Intervening [- α Lex] X⁰s do not interrupt antecedent trace relations.

Chapter 6

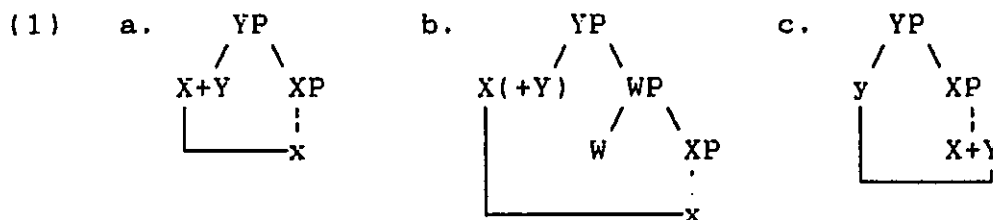
Conclusion

We have examined movement phenomena involving X^0 s situated at the periphery of the functional and lexical layers in natural language, and shown that the assortment of movement strategies observed, is related to the morphological and categorial diversity of the formatives that lie in the limits of these layers.

The often blurred boundaries of such layers can be substantially sharpened when $[\pm\text{Lex}]$, $[\pm\text{Fun}]$ are the features relevant to characterize elements belonging to one or the other border, or to a shared area. Asp, for example, has been defined as a $[+\text{Lex}, +\text{Fun}]$ category, while T (and Neg) as a purely $[\pm\text{Fun}]$ one. Along with this characterization, the theory here developed assumes a rather strong version of Feature Projection from which the Category Switching Hypothesis is derived. A most salient feature of the latter hypothesis, is that the labelling of D-structure $[\pm\text{Fun}]$ categories is switched to a $[\pm\text{Lex}]$ S- or LF-interpretation in the process of $[\pm\text{Lex}]-X^0$ -movement (to a $[-\text{Lex}]-X^0$ -host). Three types of movement were amply discussed: Short Head Movement (SHM) and Long Head Movement (LHM); to better comprehend the nature of these movements, the phenomenon of Verb Inertness in English, which is generally associated with a process known as Affix Lowering was

also examined. We concluded that the underlying catalyst unifying such an apparent diversity of movement-types, always dealt with questions of morphological support. In other words, the licensing motivating conditions for X^0 -movement are basically (strictly) morphological in nature. Thus, the two types of syntactic elements identified as potential triggers for X^0 -movement are syntactic affixes, and morphologically light formatives. A CP-initial constraint on such light formatives accounts for movement in structures exhibiting Tobler-Moussaïfia and/or Wackernagel effects. The Affix Condition (AfC) was postulated to acknowledge the (universal) property of affixes, that of requiring them to be morphologically fused.

(1a,b) represent the two basic types of derivation available to satisfy the AfC, whenever an affix Y requires support, it must be attached to an element X in one of these two manners. The derivation portrayed in (1c) is known as Affix Lowering. This type of movement is highly problematic, and if included in the Grammar must be considered as a late PF operation.



SHM (1a) proves to be a common strategy followed to satisfy the AfC; the main reasons conspiring for the preeminence of this

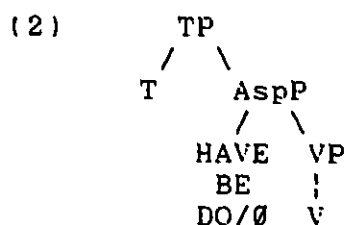
option are the availability of α -movement in the Syntax, and the binding requirement of traces to be c-commanded. The movement must be upwards because traces left by syntactic X^0 -movement are anaphors and their antecedent -the moved X^0 - must be in a commanding position. SHM is connected to the morphological configuration of Tense-Aspect systems. It was seen that languages have the option to realize T and Asp either as bound affixes, in which case SHM is required, or as free auxiliaries, in which case it is not. A typology of the relationship between T-Asp systems and SHM was drawn. The two clear prototypic T-Asp systems are, the one composed of affixal elements, and with agglutinative properties, and the other with auxiliary elements, and isolating characteristics. Between these two, languages vary having T-Asp systems with both agglutinative and isolating properties. The typological make-up of T-Asp systems must be differentiated and detached, of course, from the morphological properties exhibited by other elements of a given language.

LHM (1b) is the second means available to satisfy the AfC; several conditions though, must be simultaneously met to accomplish this operation. English Aux-movement to T over Negation is prototypical of LHM motivated by the AfC. Other common instances of LHM have been identified with situations involving Tobler-Moussafia Cl-2, and/or Wackernagel Aux-2 effects. It was argued that certain morphologically light pronominals, i.e. clitics, and temporal auxiliaries, are unable to surface CP-initially, requiring

a heavier formative to precede and support them, even though affixation does not apply.

Affix Lowering (1c), is the third type of possible movement examined. If operative in English to satisfy the AfC, it must be in PF.

The absence of V-movement in English was explained as the effect of the saturated character of Asp(P) in this language. It was argued that in finite sentences without a copula or a modal, AspP is regularly occupied by an aspectual auxiliary, as shown in (2), and that a phonetically null version of DO was responsible for sentences exhibiting the Affix Lowering effect.



The regular intervention of an aspectual auxiliary between V and T, whether phonetically overt or null, accounts for the inert character of English V, and if affixation not lexical, for the need of a strategy distinct from SHM to form English finite verbs. The syntactic and semantic properties of DO/∅ were shown to correlate with those of the aspectuals HAVE and BE: semantically, this element has the general properties of Aorists. In particular it was observed that the value generally associated with the Aorist, that of being unlimited, had a more obvious effect on Tense in the Present than in the Past. A characteristic that is not uncommon for

languages having an Aorist in both the Present and the Past.

Among the licensing operational conditions, the syntactic ones are the most discussed in the literature. In this study we showed the importance and consequences of considering semantic licensing conditions for (X^0 -)movement. In particular the Feature Minimality Condition (FMC) was proposed to make explicit some of the 'locality' properties of SHM and LHM. We showed that the [$\pm$ Lexical] content of formatives plays a significant role, and that it is associated to the anaphoric properties of traces. The FMC licenses LHM only when the moved X^0 and the intervening head W differ according to the [$\pm$ Lexical] contrast. Relativized Feature Minimality allows a [$+$ Lex] head X to skip only an intervening [$-$ Lex] W; the prediction that [$+$ Lex] V or Asp may skip the intervening [$-$ Lex] Neg or T, is empirically borne out by the languages examined. In contrast to the few restricted situations where LHM is applicable, i.e. when X^0 s raise out of the lexical layer to a position in the functional layer over a [$-$ Lex] X^0 , SHM is the only other X^0 -raising alternative. SHM is involved in lexical-to-lexical (N-to-V), lexical-to-functional (V-to-T), or functional-to-lexical (Neg incorporation in English) movements.

In parallel, the FMC is shown to have some properties that could be viewed in terms of Binding Theory. In fact, if part of the content of the notion of 'anaphoric identity' is that the elements participating in anaphoric relations must be categorially, and thus

lexically alike, the FMC can be reduced to Binding Theory. This move would allow the two types of X^0 -movement discussed, to be licensed by a unique and more general principle. In a structure like (1c), a lexical anaphoric trace x of a moved X^0 , will not pick $\underline{W}$ as its nearest potential antecedent if the latter is not lexical. On the other hand if W is lexical, the derivation will result in a Binding (and ECP) violation. SHM will always produce proper Binding situations.

In conclusion, X^0 -movement between lexical and functional positions is licensed by interacting morphological and semantic conditions. On the one hand, the movements serve to support affixes or morphologically light formatives; on the other, they must comply with the FMC and/or Binding Theory.

Finally, we took the (theoretical) position that cross-linguistic 'parametric' patterns can be explained as the effect of the interaction of the general principles of UG with the lexical make-up of particular languages. We showed, in particular, that the choice of either of the movement strategies depicted in (1a,b) to satisfy morphological requirements, or the choice of Verb Inertness is determined by the principles of grammar itself, and by the morphological properties of T-Asp systems.

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